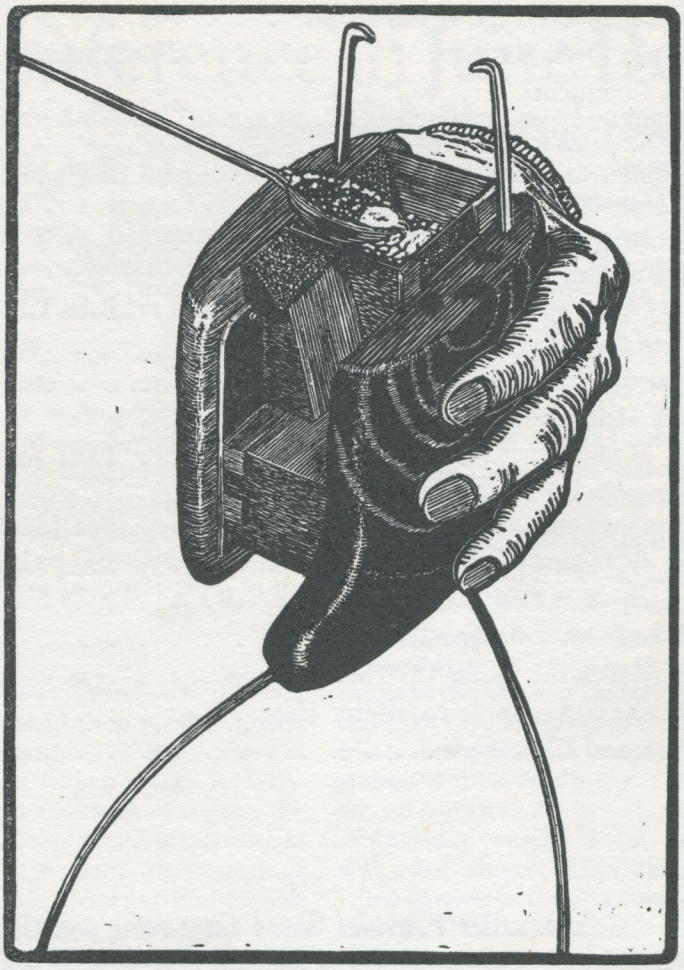

ATF NEWSLETTER 27

continuing the tradition

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Gale Mueller Provides Wood Engraving and Cover

Since the two lead articles in this issue concern themselves with the ancient hand mold and its modern manufacture and use, it is altogether appropriate that we go to the equally ancient process of wood engraving for our cover illustration. The work has been very ably produced by Gale Mueller of Spokane, Wash., who did the sketches (working from photos of a mold Stan Nelson was working on), and then did the actual wood engraving and printed the entire outside cover on his Vandercook. Many, many thanks to Gale, who did this work several months ago just as he was recovering from knee replacement surgery. He endured the pain and finished the work and got it off to me just to have it sit on the shelf while I slowly finished the rest of this issue. I apologize especially to Gale for the delay in getting to press. Gale, by the way, is a participant in the Wood Engravers Network, a group of individuals as equally enthusaistic about their revival efforts as we are with type, typecasting and linecasting.

ATF Newsletter has been published *occasionally* since 1978 for the American Typecasting Fellowship, an informal group of hot metal typecasting and linecasting enthusiasts, by Richard L. Hopkins, Post Office Box 263, Terra Alta, West Virginia 26764. You may be added to the mailing list by sending $20.00 U. S. to the editor. Cost per issue is stated at $5.00 for U. S. and Canada, $10.00 elsewhere. A recapitulation of your "account" should be found somewhere within this issue's envelope.

ATF Newsletter

Published for the American Typecasting Fellowship

NUMBER 27 MARCH, 2002

Utah Conference in June Detailed

Even"after 24 years, the American Typecasting Fellowship is demonstrating vigor and renewal in the planning of its 13th Biennial Conference, to be staged June 20-22, 2002, at the Courtyard Marriott Motel in Provo, Utah. Technical sessions will preceed the Conference, extending throughout the day on both Tuesday, June 18, and Wednesday, June 19.

Thom Hinckley, Conference Coordinator for this year's event, sent preliminary information out to all persons on the ATF mailing list in mid-February, along with a detailed tentative schedule. This year's events will have something for everyone, but do have focus on designing typefaces for hot metal production, and on the earlier processes involved with the hand mold. A very impressive list of "presenters" involved in these processes today is included in the program.

The schedules looks like this:

Pre-Convention Workshops

Tuesday, June 18—workshop on the Gorton engraver, and a matrix cutting workshop taught by Ben Pratt at the Pratt Wagon Works. A morning session will concern making patterns and the equipment. Afternoon sessions will involve use of the patterns made in the morning. These sessions will be at Cove Fort, Utah, about two hours south of Provo, so participants likely will opt to stay at Cove Fort that evening. A list of accommodations in the vicinity of Cove Fort is provided with pre-registration materials. Fee $45.00 including lunch. Sessions restricted to eight students.

Wednesday, June 19—two or three concurrent workshops beginning at 9 a.m. with all three sessions conducted at the Crandall Historical Printing Museum at Provo. Those workshops include:

A workshop in handcasting, directed by Stan Nelson. This workshop will be a thorough discussion and hands-on use of the hand mold. Requirements for student-supplied apparel are included with pre-registration materials. Session from 9 a.m. until noon. Fee $40.00. Registration limited to 15.

A two-session Monotype workshop will be conducted by Rich Hopkins. Session 1 will be from 10 a.m. until noon and will be oriented for the individual planning on getting his own equipment: "What to look for when seeking and acquiring Monotype equipment." Session 2 will be from 1:30 until 3:30 p.m. and is entitled "Troubleshooting a Composition Caster," though intended for persons who have begun using the equipment, the session is open to all. Registration for each session is $20.00. Registration limited to 15 persons.

A third technical session concerning Linotype and Intertypes will be organized if there is sufficient interest expressed by Conference applicants. The session will extend from 10 a.m. until noon and concern itself with basic machine operation and maintenance. Fee is $20.00.

The Conference Itself

Wednesday, June 19—registration will be conducted throughout the day, at the Courtyard Marriott Hotel. Persons attending should be ready to board buses at 5 p.m. to go to a Book Arts Open House at the Marriott Library, University of Utah, Salt Lake City. Students in the book arts program will make a presentation and a number of historic presses will be on display. The open house will extend from 6 to 8 p.m.

Thursday, June 20, 9 a.m. the program begins with a discussion of "The Other ATF" by Dave Peat. Other persons on the program include Phil Driscoll and Steve Heaver, along with technical and/or historical presentations. That evening the Crandall Historical Printing Museum at Provo will stage an open house with at least seven presses locked up with ink and paper provided, ready for participants to study and use.

Friday, June 21, 9 a.m. until noon, will include a discussion of new hot metal faces, presented by Dan Carr, Rob Buchert, Stan Nelson, and Jim Rimmer—a great selection of 21st century practitioners. Afternoon sessions will concern "Why Hot Metal in the 21st Century?" by Rob Buchert, "The Best Faces of the 20th Century" by Bill Riess (Quaker City Type), and two round-table discussions: "The Faces I Would Like to See Recut or New Faces I Would Like to See Commissioned" and a roundtable on "Book Arts Concerns and Typecaster Concerns."

Friday evening will feature a genuine "Chuckwagon Dinner," followed by a presentation "in abstentia" regarding the combined efforts of Theo Rehak and Alan Waring in cutting and casting the Gutenberg B42 type.

Saturday, June 22, 9 a.m. until noon. Fleamarket of equipment for sale (conducted by all interested Conference attendees, followed by a traditional auction. After a luncheon, the Conference will end.

Registration Fees

Registration fees for this year's event will be $135.00, with a $10 discount offered to all persons whose registrations are postmarked on or before April 30. Meals included with the registration fee are lunch on Thursday, Friday and Saturday, and the dinner on Friday evening.

A special "student registration" is provided at $60.00 per student. Spouses and other guests who wish to take all their meals with the group but not participate in sessions otherwise, may do so for a fee of $50.00.

Guest Activities

For the spouse or friend who is coming and wishes to "do his/her own thing" and not attend our meetings, information on tourism sites and activities is available from Thom Hinckley.

Hotel Accommodations

The Conference hotel is the Coutyard Marriott at 1600 North Freedom Boulevard (200 West), Provo, Utah. Phone (801) 373-2222. *Each registrant is responsible for his/her own hotel-motel accommodations.* The Courtyard Marriott has a block of rooms set aside for ATF only until June 5, with the following rates established: $72 per night, 1 or 2 persons, double bed or king-size bed, plus 10.762% in taxes. Contact the motel direct. Other major motel chains also are located within a two-mile radius of the Courtyard Marriott, if you wish to stay elsewhere.

Registration materials also include details about RV parks in the area, airport shuttles, etc. If you did not receive this information, write or call:

Dr. Thomas Hinckley, Conference Coordinator, Crandall Historical Printing Museum, 275 East Center Street, Provo, Utah 84606. Phone (801) 754-3805; e-mail thom_hinckley@yahoo.com.

Things to Bring With You

ATF Conferences are an excellent opportunity for participants to get to know each other and to learn more of what all others are doing with type and typecasting equipment these days.

A major way this is done is through the exchange of keepsakes. ATF Conference keepsake "bundles" have an established reputation for variety and excellence, so plan now to have your own keepsake prepared and ready for this meeting.

All participants are urged to bring at least 100 copies, and all contributions should be planned to fit within a 10"x 15" envelope. These will be distributed at the Friday night Chuckwagon Dinner.

Special Exhibits

In addition to keepsakes, individuals who wish to showcase new faces they have cut, or other examples of their recent casting endeavors, are urged to bring these items along for exhibit. In light of airline security, it is strongly recommended that you mail or Fed Ex these items in advance, to be held for your arrival at the Conference. Send to Thom Hinckley, address elsewhere on this page.

Also, if you wish to "show your shop to others" during the Conference, you're invited to bring along 35mm slides which can be shown on equipment at the Hospitality Room during leisure hours of the Conference.

American Typecasting Fellowship Conference Registration

Please Xerox, complete and return with your check to Thom Hinckley, Crandall Historical Printing Museum, 275 East Center Street, Provo, Utah 84606. (Remember, fee is $135 if mailed after April 30, 2002)

Name _____

Business _____

Address _____

City, state, zip _____

Phone (work) _____ (home) _____

e-mail _____

Number of guests_____ (please provide names) _____

_____

Full participant ($125/$135) ..... $ _____

Student registrant ($60) ..... $ _____

Guest(s) $50.00 each ..... $ _____

Gorton Workshop ($45) ..... $ _____

Handcasting Workshop ($45) ..... $ _____

Face shield (if needed) $12 ..... $ _____

Linotype ($20) ..... $ _____

Monotype Selecting ($20) ..... $ _____

Monotype (Troubleshooting) $20) ..... $ _____

Total enclosed ..... $ _____

Mold Making at the Atelier Press & Typefoundry

By Stan Nelson

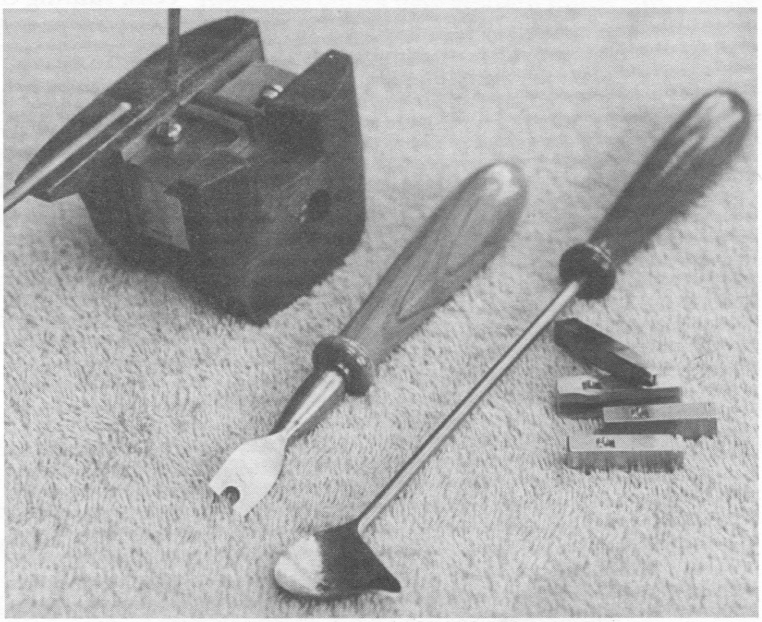
I descended a cobblestone paved street, lined with vintage buildings, which curved on its way down the hill, then made an abrupt left turn. I encountered a quaint book shop that faced this lane, just where it jogged, and displayed in its windows was a series of prints from an early encyclopedia. Eager to go in, I found a sign taped to the glass in the door, informing me that the owner was on vacation and would not return until late August, which I knew was only a day or two before my summer program at Graz University (in Austria) ended, and I would have to return home. It was frustrating, having to wait, and I returned from time to time to peer with anticipation into the windows of the darkened shop.

True to their word, the shopkeeper and his wife were indeed open on the day they had posted. I searched eagerly through a loose pile of pages of illustrations, looking for anything that had to do with printing; and sure enough there were a number of things there. One showed a pressroom, another typesetters, and there were other fascinating things—including some pages on typefounding. I was disappointed to learn that images that had people in them, and views of interiors were selling for fifteen dollars, while the sheets illustrating tools were only three dollars a leaf. Nearly broke, I felt I could only afford one page, and settled upon a sheet that illustrated a type mold, whole and in parts. Somehow I knew that it held the most promise.

Looking back, over 30 years later, I'm pleased to be able to say that I made the right decision, for because of that single piece of paper I was encouraged to pursue typefounding, making my first type mold in 1971. It was a 36 point mold, based upon one I'd seen and sketched at the Smithsonian Institution, where I had visited in the summer of that year while searching for more information. With all of its flaws, this first mold allowed me to cut punches and to cast type all by myself. I cannot begin to express the excitement I experienced as those parts reluctantly went together, and I cast my first piece of type. It was magic.

Since then I have made ten molds from scratch, as well as converting three 'pivotal' type into hand molds. With each one I have learned something more about the process of building them, as well as more about type molds generally. Some of this information was included in an article titled "Mold Making, Matrix Fitting, Hand Casting," written for *Visible Language, Vol.* 19, Winter 1985. A complete treatment on making hand molds is currently being written, as part of my comprehensive work on the type founder's hand mold, which will be published (one way or another) within the next couple of years. This chapter will contain not only precise direction for constructing molds, but also will provide working drawings for at least five different kinds of hand molds.

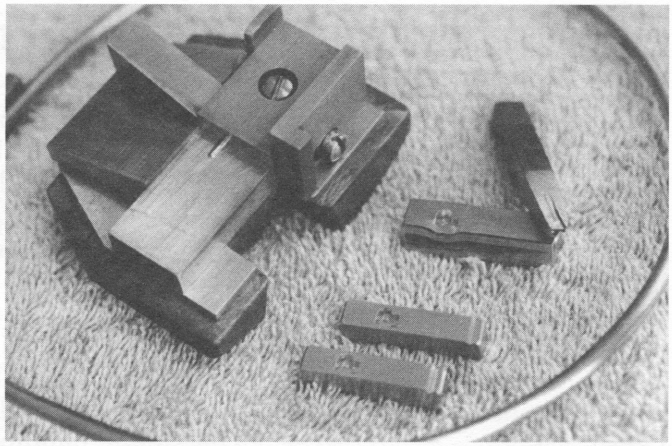
My most recent effort at mold making is an eighteen point tool, based upon a common nineteenth century design, in which a base



View of 18-point mold with screwdriver, ladle, punch, strike and two fitted matrices.

plate supports the various parts of the mold. A 'Cupper register' or 'wing,' works with the lower 'register' to guide the two halves of the mold as they move, keeping them parallel. This mold incorporates a feature often seen in German molds.

The 'body piece' is fastened to the 'carriage' by a screw that is set into a counter-bored hole. While it simplifies the removal of the body, and eliminates one screw, there is no great advantage in this feature. I just wanted to try it. One may easily insert a shim under the body, thus changing the size of the type; but the mouthpiece has to be shimmed as well, and this necessitates stripping off the woods. Still, it was very handy when I was engraving the grooves for the nick wire.



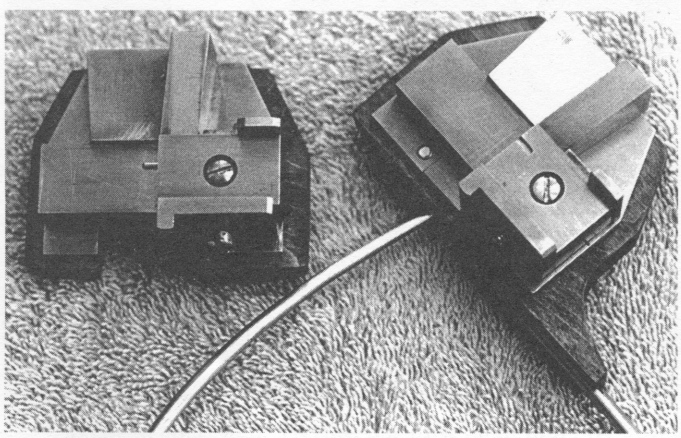
View of top half of mold with punch, strike and fitted matrices. Note the bulging side of the copper strike, caused by the displacement of metal during striking. This is all filed away during fitting.

The mold is made of mild steel. The insulators here are stained maple, and the bow is bent from spring steel. Machine tools are used in shaping the parts, yet all of the components are hand finished to remove tool marks, and to bring them to precise dimensions. Both mouthpiece halves (where metal is poured into the mold) and body pieces present challenges, as these must fit perfectly; and to date this is a tedious process, consisting of careful measurement and repeated assembly and disassembly. New tools may simplify the work.

The ladle is based upon an eighteenth century illustration of a German foundry, and was made by hammering the bowl from a sheet of 18 gauge steel, then gas welding it to some 3/16" steel rod. Careful grinding and filing smooth out the curves and surfaces. One really needs a variety of graduated sizes of ladles for casting different widths and sizes of type, thus many are needed. As a result I make these routinely. This handle is turned from mahogany, although I use a variety of exotic woods depending upon what I happen to have.

Note the unusual screwdriver, made to fit the special slotted nuts that fasten the woods to the mold. It is possible to remove the slotted nut with a narrow, flat-bladed screwdriver, but often one damages the slots in the process, ruining the nut. Thus, the special tool is best used. As these are not commercially available, I provide one with the mold.

My efforts to date have been directed towards providing the means to cast a wide variety of bodies at *The Atelier Press & Typefoundry.* This goal is driven by unbridled ambition, and also by curiosity. What are the factors that affect hand casting such a range of types? Casting six point by hand is quite different from pouring sixty point type. Dumping a minute amount of fairly hard alloy into a small mouthpiece, and getting a complete letter isn't easy. Yet, filling a sixty point mold with enough metal, while getting a good face on the type is tough too. The type founder in Paris taught me that brushing French chalk, or talc, into the matrix just before each cast helps.



View of mold opened.

Of course, all of this seems much akin to 'tilting at windmills.' Why on earth make type in this tedious manner? Aside from the occasional need to cast from historic matrices by hand (as I do in my work at the Smithsonian's Museum of American History, and is also done at the Imprimerie Nationale, in Paris) there is a strange appeal to using these materials. I enjoy this challenge.

Others are as strange as I am. Steve Pratt, of Cove Fort, Utah, is currently casting his own version of Gutenberg's type (see following article), in a hand mold of his own construction, which is based upon an ancient brass mold in the collection of the Plantin-Moretus Museum in Antwerp. Richard Arlin, of Stockholm, Sweden, has cut several fonts in steel, and cast them in a hand mold of his own construction. Richard's work is featured in *Matrix 17*, 1997. Edmund Cutler, of New Zealand, has made a very nice mold and cast a font of Monotype Lutetia as well as ornaments of his own cutting. These can be seen in his page in *It's a Small World,* 1996. So there is a remarkable degree of activity in this rather arcane field.

My most recent type mold, shown here, was made to be used in an exhibit, as well as in actual casting demonstrations, at the Glasgow Science Center, in Scotland. There it will serve to educate generations of visitors and school children about the origins of this fascinating process of type casting, which is really a large part of what my life's efforts are all about.

Now, if I can just convince them to invite me over so I can instruct their staff in its use.

Mold & Matrix Making at Pratt Pressworks

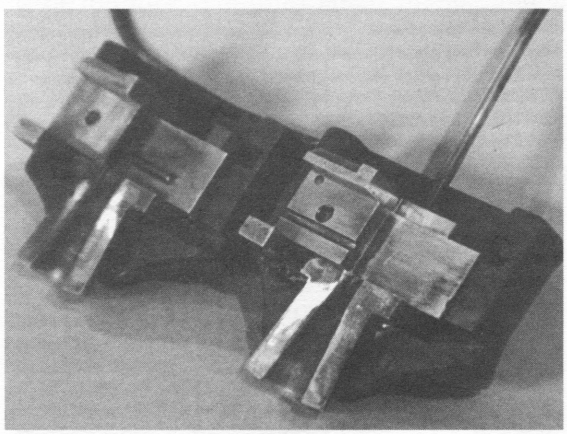
By Steve Pratt

Ever since my son Ben and I built our first "hypothetical reconstruction" of a Gutenberg press about five years ago, I have had a strong desire to do a handcast interpretation of Johann Gutenberg's B42 type. Following Stan Nelson's expert guidelines on punch cutting and mold making, we made punches for the letters "Bible," struck the matrices, and made handmolds to cast these letters.

At the San Jose ATF Conference, Stan drew a sketch of the oldest known handmold in the world. At the Rindge ATF Conference, he provided three good photos. With that encouragement, we decided to try a replica of the oldest handmold. The parts of the mold are made of brass. The big difference between this earliest handmold and later molds is the mouthpiece. It is a funnel and not an "L." The original, catalogued as GI 48, is on exhibit at the Plantin-Moretus Museum and dates back to the 1500s—about a century after Gutenberg. Mike Parker, in his 1974 book *Early Typefounders' Molds at the Plantin-Moretus Museum,* describes it as follows:

The mold . . . appears to be the earliest in the collection. It is about as simple and primitive as a mold can be and still cast type. In it, we appear to be looking at a form, a stage more primitive than anything else in the collection, perhaps an echo of the original German invention.

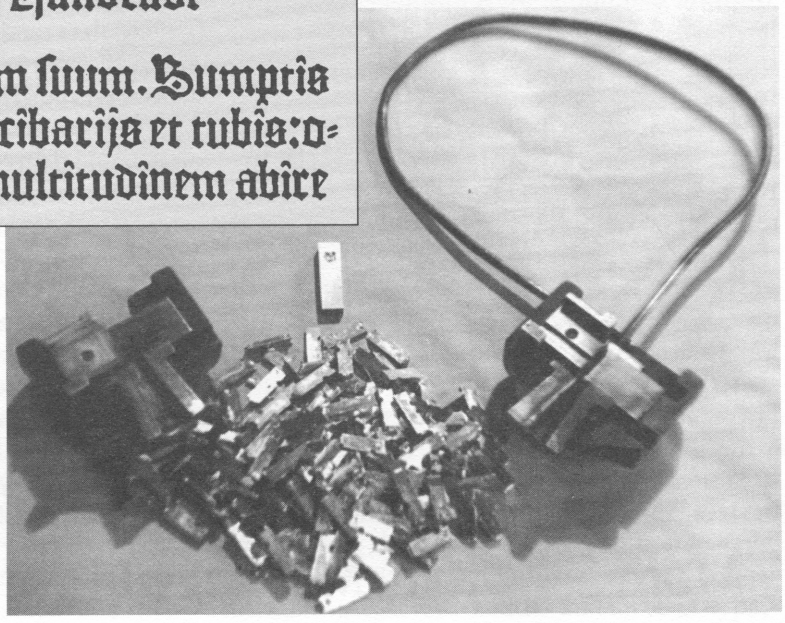
On the lathe we made a wooden pattern of the funnel and cast three sets of mold parts in our backyard foundry. To cut the brass parts to form the type cavity precisely, we took an idea from the Wood Engravers Network magazine, *Block and Burin.* They have a picture of a "disc-planer" cutting end-grain wood to precision thickness with a very smooth finish. Since brass cannot be ground easily in a surface grinder, we made two nine-inch discs for sandpaper—one coarse, one fine—and turned our milling machine into a horizontal disc-planer. This was very suitable to produce a fine, accurate finish. We dressed the small brass components to



Pratt's mold, based on the Plantin-Moretus model.

Gutenberg Handcast

reuertatur in locum ſuum. Sumptis itaq; pro numero cibarijs et tubis: omnem reliquam multitudinem abire



Hand-cast specimen of Pratt's matrix work on the B42 replica, shown above, along with a small lot of characters cast utilizing his 15th-century mold replica.

produce type with a body-size of 0.270 inches (19.5 points).

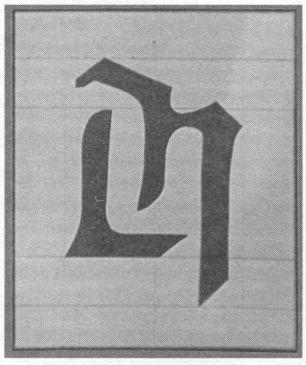
We arrived at this number by careful measurement of a choked negative of four columns of a B42 type. This negative was produced from two original B42 pages from the sixth chapter of Judges. These are at the Crandall Historical Printing Museum in Provo, Utah, and came from the incomplete Gabriel Wells copy that was sheeted. We also measured four columns of B42 on an original sheet in the Texas A&M University Rare Books Library.

As I write, I enjoy reflecting back to Theo Rehak's excellent article, "Diary of Two Madmen," in *ATF Newsletter 26*. My enjoyable feeling is not that Theo and Alan suffered great stress, but that Ben and I have had no deadlines! Nearly three years have passed since San Jose, where I first began thinking about a hand-cast interpretation of B42 type in a Plantin-Moretus replica mold. We have finally achieved all of this. The dressed types measure 0.918 inches high.

At this rate, I can see that I may not live long enough to cut all the punches by hand to strike 290-plus Gutenberg matrices. Paul Duensing's San Jose talk about matrix-cutting with a pantograph has lingered in my mind. It's not surprising that sight-unseen, we ordered a 40-year-old Gorton PI-2 pantograph engraver from a surplus dealer in Pennsylvania. After four days of clean-up and repair, it works well. We also purchased a 40-year-old precision cutter grinder. After a lesson on cutter grinding from Bruce Longstroth, computerized engraver salesman, we were ready (!) to cut a first matrix. Remember, we have no obligations (other than earning a living)—we are engaged in this project for the pure joy of replicating B42 type. Next step, we needed patterns for the pantograph.

A good friend, Thom Hinckley, brought me *Typologia* by Frederic Goudy (1940). After an enthusiastic reading, I studied Goudy's chapter on "Making the Patterns" and "Matrix Engraving." We then applied Goudy's procedures line-by-line. From the negative, choked to compensate for ink spread, we selected letters to be enlarged 30 times. Having dressed the ragged letter edges, a paper pattern was made and transferred with carbon paper to a piece of thick paper (± 0.020 inch). We constructed Goudy's five horizontal guide lines on the thick paper: (1) the bottom of the type-body, (2) the baseline, (3) the top of the 'x' height, (4) the top of the capital letters, and (5) the top of the type body. With great care, we placed and traced each letter onto the thick paper. The height of the type-body on the thick paper was exactly 8.1 inches, which is

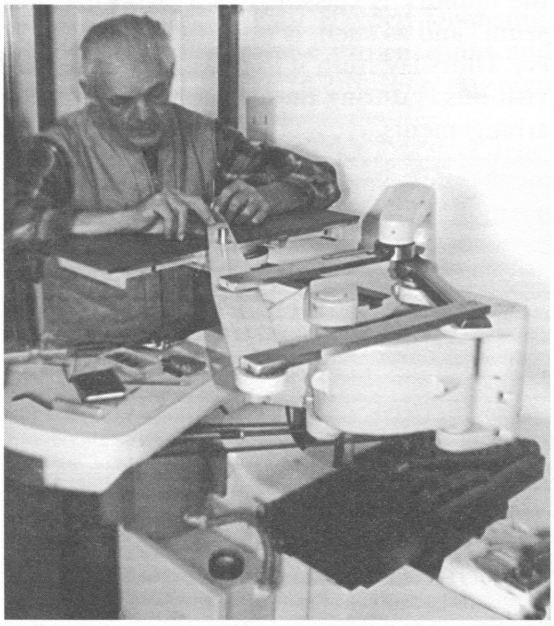
thirty times larger than the finished type size of 0.270 inches. With a scalpel, we cut out the large letters and glued the parts onto a backing-sheet.



Goudy-style pattern cut in heavy paper.

Following the cut-out with a stylus, we engraved a hard pattern in plastic three times smaller than the paper pattern. Goudy used cast sheets of type-metal for the hard pattern. We used screen door plastic—free from the scrap barrel at the lumber yard. The hard pattern was then reduced on the pantograph to a free-machining brass matrix that was ten times smaller. When the matrices were fitted to the hand mold, the casting began.

We dressed the type in a hand-dressing stand, distributed to the case, set three lines of the B42 and printed. So far we have made 35 characters and it's likely we will have completed the basic alphabet by the time this article appears. Goudy's method is inexpensive, works well, and is a lot of fun! We are calling our type "Gutenberg Handcast."



Steve Pratt at his pantograph.

Other current projects include a brass punch with which we will strike a soft lead matrix. We then plan to cast at least a hundred pieces of type in the lead matrix to study with an optical comparator the deterioration of the matrix.

We also have recently built three replica Albion tabletop presses. We used a press built by D & J Greig in Edinburgh for the pattern. We now have done 20 replica hand presses. Larry Erickson has completed the typesetting for our first fine-press book. The type was set at the Crandall Printing Museum on a Model 5 Linotype. I did the wood engravings. The book is about 45 pages. It is the heretofore unpublished journal of Jane Seymour, my wife's great aunt, relating her trip to Yellowstone Park, commencing July 11, 1900.

Indeed, activities abound at the Pratt Pressworks! We hope to see it all at the upcoming ATF Conference!

Neil Giroux Is Also Working With Hand Mold

Another person has indicated he's getting involved with the hand mold. Neil Giroux of North Adams, Mass., has sent the following e-mail:

"I've been working on my hand mold this summer, along with another big project. I'm setting it up to cast 18 point Monotype matrices, both display and cellular. Also, it will accommodate ATF and traditional matrices as well.

"I expect to be casting with it by midfall. In the interim, I've melted a bucket of foundry type into small ingots, and given my melting pot a workout. I bought some molds for chess pieces, and have been working on my hand casting techniques in hopes that when I start to cast type, I can be somewhat productive. I am installing one "V" nick in my mold (really a dandy trademark) and may call my shop the V-Nick Foundry and Press.

"I read somewhere where Hanson of Boston was the only foundry to use a V-nick. Also, I have been restoring a Golding Pearl Lever Press from about 1876 for my friend Bill Soucy."

The Saga is Ended: M&H Type is Relocated!

For those of us who have been following the saga of the M&H Typefoundry and its mandated relocation, all will be happy to know the foundry now is moved and back into operation at El Presidio near the Golden Gate Bridge. Address is 1802 Hays Street, San Francisco, Calif. 94129. Phone (415) 561-2546.

Lew Mitchell, who now boasts more than 50 years' service with the foundry, has provided several interesting details regarding the move and preparation of the new site for the foundry. Prior to moving, the staff spent three weeks and nearly 300 gallons of paint to get things ready. Can you imagine using 300 gallons of paint on anything? The building they now occupy had been vacant since 1987.

The move itself was effected in February, 2001, in nine days, with over 600 dollies and carts of materials being moved by professional movers—and just across town! It took them four days alone to move the presses. One major mishap occurred when the mover dropped a skid of over 5,000 pounds of cast strip material into the street. Lew reports he's had to re-cast nearly all this for the fall damaged all the rule faces.

A last-minute hitch regarding environmental emissions forced Lew and crew to go through two massive jobs of smelting metal while inspectors monitored the smokestack on the roof. Unhappy with the results of their first test, the inspectors demanded a second. After its completion they candidly reported that a car going by on the street would emit more lead fumes than M&H generated in an entire day's activity. Lead levels in all employees were checked and were found to be less than common to people living in old housing units (where exposure to lead-containing paints might have been a problem in the past).

Because of stiff regulations regarding earthquake preparation, all items along walls and all shelving had to be screwed to the walls of the new building. Lew says they used over 400 boxes of cement screws and literally wore out a hammer drill doing this work.

Regarding what was moved and what was not: Lew reports three comp casters were stripped for parts and not moved, and one Thompson caster was sold, but no keyboards were junked. He made efforts in contacting others (including Rich Hopkins) to find homes for various components "discovered" as the shop was prepared for the move and deemed unnecessary for the present situation. Energy efficiency regulations required that they replace their refrigerator, microwave, stove, and air compressor, and the stories Lew tells regarding compliance with various federal, state, city and local agencies, are enough to cause a sane person to cry.

In summary, Lew reports the new facility is much more "airy," with a great deal more natural light, and that the new landlords seem really committed to accommodating the foundry in every way possible. El Presidio, by the way, has its own police, fire department, and even its own electrical inspector. As part of the arrangement with El Presidio, the foundry is classified as a "working museum" and as such, is open to the public every Thursday from 9 to 5 p.m. Anyone may visit M&H during these times without prior arrangements.

Early English Typopgraphic Usage

Correction

Chris Manson has called attention to an apparent omission in his article on page 38 of *Newsletter 26* which was a discussion of the "Conventions of Early English Typographic Usage." At the top of column 2 we are discussing the use of v and u. Here's what it should have said about positioning of the two characters:

"'V' was *always used initially, with 'u' being* used medially. It was not until around 1625 that 'u' and 'v' were generally used as they are today." Text which is now italicized was omitted, which, of course, would create complete misrepresentation of the subject. For the omission I apologize.

Practical Electrotyping Guide—

How to Make Your Own Matrices

By Mike Anderson

How many times have you looked into a case of type and wished you had a few more sorts of a character so you could do something with the face? Or how often have you looked at a set of matrices and wanted to cast the font, but it was missing the "e" matrix or some other character? Well, you can fill up that box or replace the mat in the set if you set up a mini-electrotype station and "grow" your own matrices.

The Fever Strikes

In 1999 I had the opportunity to attend Monotype University 3, held at Rich Hopkins' Hill & Dale Private Press and Typefoundry in Terra Alta, West Virginia. Two of the instructors, Roy Rice and Paul Duensing, were well qualified in the art of electrotype matrix making. Both gave presentations in matrix production, and Roy provided a copy of his excellent paper *Matrix Making at the Oxford University Press: With notes on the same process as used at The Recalcitrant Press* (Atlanta, Georgia, The Recalcitrant Press, 1982). Paul, who has mastered the art of punch cutting and engraving, provided his definitive work, *Matlas: An Atlas of Matrices* (The Private Press & Typefoundry of Paul Hayden Duensing, 1988). It was from these presentations and papers that the urge to produce my own matrices consumed me.

Later, I read Theo Rehak's *Practical Typecasting* (Oak Knoll Books, 1993). Theo's chapter 12 covers the process of electros in great, but very understandable, detail and bred new life into the process. Then Jim Walczak, printer and typefounder (who is responsible for getting me into casting my own type), gave me two pounds of copper sulfate. The fever was burning!

However, everything I read seemed to be talking about seven to 50 gallons of chemicals and an extensive (and probably expensive) power supply. And above all else, where to buy the copper sulfate and sulfuric acid needed to make the solution? I decided to find a way to produce my own matrices on a *small scale* at a reasonable startup cost. To do this, I had to determine what was needed. (Table 1)

Background

Copying other foundry typefaces was a common practice almost from the beginning. There was no such thing as patents in the 14- and 1500s, so once a face was designed, cut and produced, it became fair game for the other printers to copy. Aldus Manutius understood this all too well. Aldus petitioned the Venetian Senate for a ten-year privilege for the exclusive use of italic to prevent its usurpation in Venetian territory for the famous italic face cut by Francesco Griffo in 1500-1501. However, Griffo had cut a second set of punches and sold them to Girolamo Soncino of Fano, who used them in 1503.

The early copyists had to re-cut the punches, a time-consuming and often inexact art that resulted in altered characters. This was to change in the 18th century when, in 1789, Luigi Galvani chemically produced electricity and in 1799 Aslessandro Volta built the first electric battery. In 1834, two other players invented improved versions of galvanic cells, using zinc and copper plates suspended in copper sulphate and sulfuric acid. Thomas Spender found that copper was deposited on the cathode "negative metal," and that the zinc pole (positive or anode) was etched. Spencer

Table 1
Costs for Small Electrodepositing System

ITEM	AMOUNT	COST
Copper Sulfate	7 pounds	$10.00
Sulfuric Acid	1 Ltr.	6.00
Distilled Water	2 gal.	2.00
Power Supply	1-12 volts 300 ma	13.00
Variable Resistor	3 Watts/wire wound	4.00
Hydrometer	Battery Tester (scale)	6.00
Multi Meter	2 v/dc min.	20.00
Container	3 gal. min.	5.00
Copper Tubing	3 ft. @ $1.60 ft.	4.80
Aquarium Air Pump	30 gal capacity	5.00
Wire 12 Gauge	10 ft. @ .60 ft.	6.00
Total		$81.80

Does not include additional items such as bolts, nuts, connectors, small gauge wire and shipping

and John Wilson were granted a patent in 1840 for "engraving metals by voltaic electricity." Spencer continued research and was able to reverse the procedure (*i.e.,* not etch the positive, but deposit on the negative) and reproduce seals and plate small objects by the process that became known as "electrotype."

Once electrotyping was understood, the next step was to buy a font from another foundry and electrotype new matrices—and this was done throughout the printing world for decades. Today most fonts are, shall we say, in the public domain. However, there are many that are the property of private presses and their ownership *must* be respected. *In other words, do not copy someone else's work!*

The keywords in the above are: anode, cathode, copper sulfate and sulfuric acid. These, plus distilled water, are the key players in making matrices.

Preparation

During a phone conversation with Roy concerning the building of his power supply, he mentioned that his electrical unit was providing only 0.58 volts and 85 milliamps (mA—or 1000ths of an amphere), very low voltage and current. Also, Theo's book had addressed low voltage and current and it was then that the thought of a simple power supply came to mind.

After further study and consideration I decided to try to control the voltage of the common AC/DC power adapter used to re-charge or run various direct current (DC) devices, such as cell phones. To do this, a very low voltage, low current adapter would be needed along with a variable resistor to control the voltage output.

A trip to Radio Shack provided a 1.5–12 volt, 300 mA AC/DC power adapter and a 25-Ohm rheostat (3 watt, wire wound variable resistor), and a Vtvm (Multitest unit). All this was mounted on a wooden block, wires fixed on one end with connector and soldered to the rheostat (also known as a "pot") on the other. Checks with the Vtvm showed the voltage could be varied with the pot from almost zero to the full three volts and drop the current from 300 mA to almost zero.

A stop at the local auto parts supply house provided me with a cube (1 liter) of sulfuric acid. Sulfuric acid is used in all automobile batteries, but today, most car batteries come "charged" and ready to put in the car. However, motorcycle batteries are not charged because the demand for them is less and they sit on the shelves much longer. Therefore, some auto parts supply houses will have sulfuric acid.

Copper sulfate ($CuSO_4$) can be purchased from ceramic shops, pet supply companies (and probably veterinarians), and some nurseries. Copper sulfate must have greater than 25% copper. Distilled water is on the supermarket shelves. Mixing the three ingredients together in the proper proportions provides the electrolyte (or "soup," as it is sometimes called).

Step 1: Preparing the Solution

As mentioned, copper sulfate, sulfuric acid and distilled water are needed to make the electrolyte solution for electrotyping. The following formula follows Roy Rice's article advice on specific gravity of the mix. The volumes have been determined through experiments in preparation for this paper.

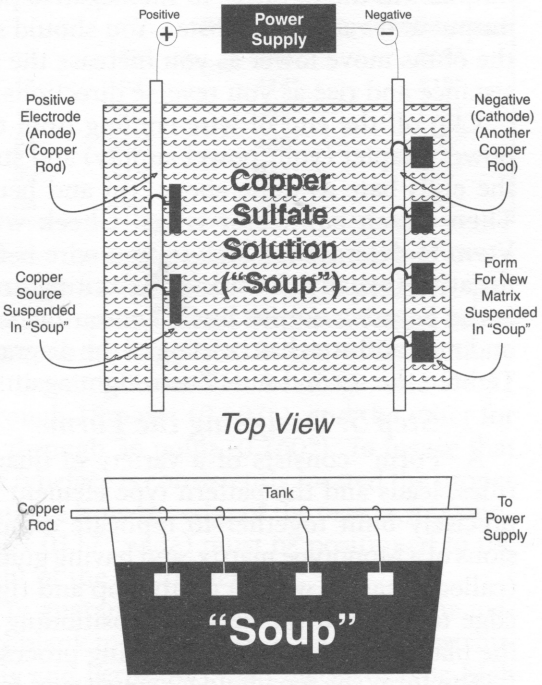
The finished electrolyte needs a final specific gravity (SG) of approximately 1.125. A simple hydrometer purchased at the auto supply store will perform well for the following procedure (however, be sure to buy one that has a floating indicator with markings and not the floating balls).

The following formula and procedure works for all volumes, with one for a 2-gallon batch being presented here.

2 gallons distilled water.
2½ pounds of copper sulfate
Approximately 18 fl. oz. sulfuric acid

Pour one gallon of the distilled water into a large plastic container. Slowly add the copper sulfate and stir with a wooden stick until most of it is dissolved. This may take some time and it is best to return periodically and stir. At saturation, no more copper sulfate will be dissolved; if all does dissolve, add a few more ounces of copper sulfate until saturation is reached. The SG of saturated copper sulfate is approximately 1.150 to 1.160 (according to my hydrometer). Pour the heavy solution into a one-gallon plastic container; keeping the remaining sludge in the larger container to dispose of.

FIGURE 1



Wash out the larger container with fresh water, and then return the heavy solution. The SG will be approximately 1.150. Add approximately three quarts of distilled water (from the second gallon), checking the SG, until it reads between 1.103 and 1.105.

Now, caution and protection is required for the next procedure. Wear rubber gloves, apron and eye protectors, and in a throw-away measuring cup (can be purchased at camera supply houses) or a Pyrex measuring cup marked with fluid ounces, slowly pour 18 fluid ounces of sulfuric acid from the cube into the cup. Add sulfuric acid to the solution 5 fl. oz. at a time, and with the wooden stick slowly stiring the contents. Check the SG, and repeat the process until the SG reads approximately 1.125. Your solution is finished.

NOTE: add the acid to the copper sulfate solution *slowly*—never, never add the solution to the acid!!!! Remember, add acid to water, never water to acid!

You can make the electrolyte without a hydrometer by mixing all the solution as listed (7 quarts distilled water, 2 pounds copper sulfate and 18 fl. oz. sulfuric acid) and the process will function fine. However, if the SG is too low, the growth will be faster and perhaps a little rough. When the SG is too high, the growth will be slower and complete filling of the hole will not always occur.

The soup you have mixed is low on sulfuric acid by volume, but please remember that it does have acid in it and can irritate the skin, burn the eyes and rent holes in fabric. This is similar to the solution found in car batteries, so use caution and common sense. *Read the label on the cube.*

Step 2: Building the Growing Tank

Growing tanks can be made from any glass or plastic/rubber material. It was found that a deep, square, two-quart glass container was ideal for growing up to four mats at a time. For doing more mats, a plastic container worked well. The plastic container was drilled with ¼-inch holes two inches above the two-gallon mark on opposing sides of the container to hold the copper rods from which the anode and cathode are hung (Figure 1). These were made from ¼-inch tubing. One end of each rod was flattened and a 5/16-inch hole drilled through and a bolt and nut were inserted to attach the power source on both rods.

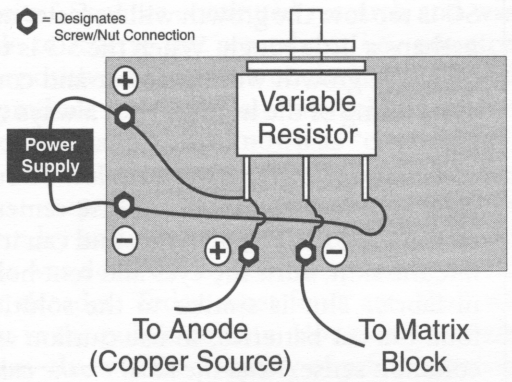
Step 3: Building the Power Supply

To build the power supply you will need the following:

1 piece of ¾"x4"x5" wood
4 1½" No. 42 bolts with 8 hex nuts to fit
1 3-watt rheostat
1 ½"x1/16"x4" piece of metal strapping (a tin can cut in 1" strips and folded in half will work).
1 1.5-12 volt 300 mA AC/DC power adapter
1 wood burning tool and a piece of solder (you can do without this if necessary)
1 16" piece of small gauge wire cut into 4 equal pieces. Remove insulation from both ends approximately ½ inch
2 ½" wood screws
1 package solderless connector rings.

Following the layout (Figure 2, next page), drill four holes, insert the bolts and tighten down with one nut each. Drill two holes into the metal strap, one ½" from end and the other

FIGURE 2



1" from same end. Drill a 5/8" hole in the strap ½" from the opposite end. Bend the strap at a 90 degree angle ½" inch from the second small hole drilled. Attach the strap as shown in Figure 3. Remove the hex nut and washer from the rheostat and insert and attach with washer and nut to metal strap (as shown).

With the soldering iron or wood burning tool, tin the ends of the four pieces of wire, bending one end of all in half (for attachment to solderless connector rings). Attach the connector rings to the ends of all wires using the wire cutter portion of a pair of needle nose pliers (do this gently as you can cut through the connector). Attach two of the ring connectors to the poles on the input side, and two to the poles on the output side. Place second nut onto pole and tighten down to hold the connector rings.

Following the diagram, insert the negative input wire into the bottom finger (#3) of the rheostat and the positive input wire to the top finger (#1). Twist the wires making a solid connection. Next, insert the negative wire from the output side to the center finger (#2) on the rheostat and the positive finger into the top finger (#1). Twist to make good connections. Now, with the soldering iron or wood burning tool, heat each finger and flow the solder onto it, making sure the solder runs smoothly and makes a good solid connection.

Step 4: Testing the Power Supply

With the multimeter (Vtvm), test all connections for continuity (place in the ohm test position and then touch the positive to the positive input pole and the negative to the other poles in turn on the rheostat)—you should get a reading. Now zero adjust the ohm meter, fix the positive to the positive pole output and the negative to the negative pole output and vary the rheostat. You should see the ohms move lower as you increase the resistance and rise as you reverse directions.

Clip off the end of wire coming from the power adapter (your power supply) and strip the ends bare as done above, tin and bend. Then attach connector rings. Check with Vtvm to determine which output wire is the negative (usually the side with writing on it is the negative output line). Loosen the second nuts and attach according to the diagram. Tighten the second nuts down tight again.

Step 5: Designing the Form

A "Form" consists of a variety of quads, rules, leads and the pattern type element all precisely built together to replicate dimensions of a Monotype matrix, and having guides (called "bearing walls") on the top and right edge to assist in the accurate positioning of the blank matrix for the depositing process.

The form (or type holder) consists of four main bodies (Figure 3): the upper quad (A), the type piece (B) the lower quad (C) and a standoff (D). Dimensions of quads A and B vary according to the point size of the type you're duplicating. Check Table II for proper sizes. These dimensions are very important if the matrix is to be used on Monotype Sorts Caster, for the operator of this machine is not

FIGURE 3

Components of a "Form"

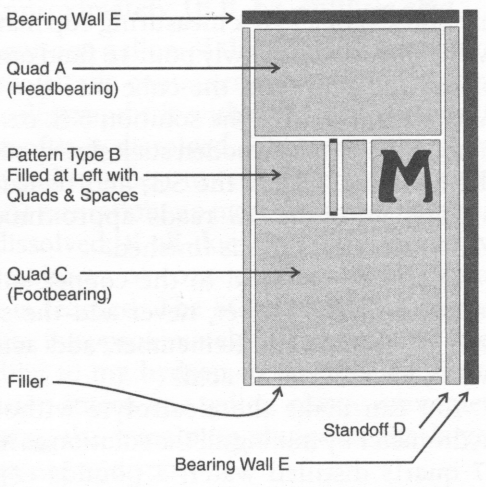


Table II
Image Positioning on Matrix

Point	Body	Quad A (Headbearing)	Quad B (Footbearing)
12	.166"	.441"	.518"
14	.193"	.414"	.518"
18	.249"	.358"	.518"
24	.332"	.428"	.365"
30	.415	.345"	.365"
36	.498"	.262"	.365"

able to move the character on the body very much in either direction (as is possible with the Thompson); thus, the matrix must be accurate in the first place. As you will note, there are two important foot bearings, one for 12 through 18 point (0.607"), and the other for 24 through 36 point (0.760"). To insure that the typeface is consistently located the proper distance from the edge of the matrix, a "standoff" (.0117" wide) must be positioned to the right of the sample letter.

To guarantee correct alignment of the matrix blank to the face with the body (horizontally and vertically), two pieces of type-high 6 point rule are placed on the right side and the top. These pieces (called "bearing walls") form a right angle in which the prepared matrix is held. A 3 point lead is used as a low bearing wall on the offsides of the form. The spacing material used to hold the pattern type firmly against the standoff pieces are shoulder-high quads and spacing to fill the remaining width precisely.

Step 6: Building the Form

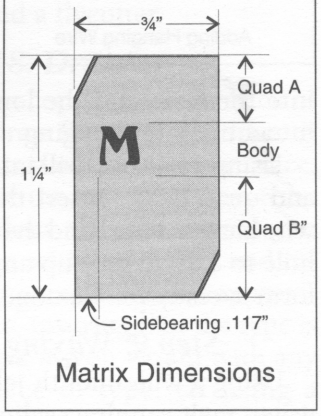
The form has two important functions: 1) holding the piece of type square and firm, and 2) holding the prepared matrix square and firm. To do this, the form must be prepared square and firm.

The two body parts are first positioned with the correct point size 2 em quad between. The pattern type, which has had a layer of Scotch tape affixed to the feet (this gives added height so that the face can be worked down to type high (.9185), is placed against the quad. The pattern type is fitted into place with the notch facing Quad B and more quads and/or spaces added until it is held tightly in place like filling out a line of type in a stick. The standoff pieces are then placed against the sides of the body pieces and the pattern type. The right bearing wall is longer (7.5 picas) and overlaps the top of the top body piece by 6 points. The top bearing wall (4.5 picas) butts up against the overhang. Next position a 3-point lead (7 picas) as an offside bearing wall to help hold the form together. Do the same for the bottom of the form. Then the whole form is tightly Scotch taped around the body, to hold the form together. The form will be secured further later when the prepared matrix has been added.

Step 7: Preparing the Matrix

The matrix (Figure 3), is described in Paul Duensing's paper as .747"x1.125"x.096" brass stock with 30° chamfered corners on the upper left and lower right. *Reuse of matrices that are mismatched or unusable is possible (and recommended).* If new stock is used, it is very important that all sides be true, insuring proper alignment of the form and the matrix for proper casting.

FIGURE 3



Matrix Dimensions

A hole in this stock must be drilled and counter-sunk in the precise area where you wish to grow your matrix face. Precisely determine the positioning of the letter and drill a hole slightly larger than the type body being deposited. Remember, you are working from the backside of the matrix: The face will be "looking up" through the hole when placed over the form.

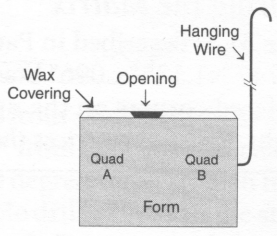
After your hole is drilled, use a larger size drill to counter-sink the hole. Bring the larger drill down into the previous hole just enough to add slope to the sides of the first hole. The counter-sink provides a more secure back to the matrix face. Clean burrs off the matrix by rubbing it across 220 grit sandpaper and check the fit of the hole over the pattern type, insuring that there is clearance all the way around the body of the pattern type for the new copper to be deposited. If the hole needs to be opened, use a chain saw sharpening file.

Once drilled, the matrix is securely taped to the form, insuring that the matrix is firmly and squarely held against the bearing walls. The form is then completely covered with Scotch tape in preparation for drilling of the form and immersion in melted wax.

Step 8: The Hanger

To suspend the finished matrix, cut a piece of #22 gauge insulated copper wire to a length that will allow the form to be hung from the copper tubing, which the negative pole is attached, plus 1-inch. Strip the insulation 3/8" for one end and 1" from the other. The short end will be inserted into the form and the long end will be bent into a hook for hanging.

FIGURE 4



Adding Hanging Wire

Using a 5/64" bit, drill into the center of filler and quad B 3/8". Insert the bared end of the wire hanger, then bend the wire at the entrance hole to a 90 degree up angle (Figure 4). The form is ready for waxing.

Step 9: Waxing the Form

Using a wide-mouth jelly jar and a pan of water, melt canning sealing wax (available at the local supermarket). Reduce the heat to where the wax is held in the liquid state, but the water is not boiling. Holding the form by the hanging wire, dip into the wax, completely covering the form. Pull the form out of the wax, allow the wax coating time to solidify, then dip again. Do this three times, then move the dipped form to the opposite hand, pick up another form and continue. Repeat the process until all forms have been dipped, dried and re-dipped three times. This will provide about 1/16" coating over the form and onto the hanging wire.

Step 10: Finishing the Form

Once the form has been dipped in wax and the coating is solidified, use an X-Acto knife to carefully cut the wax and Scotch tape from over the typeface, following the outline of the drilled hole. With swabs, clean the exposed area with rubbing alcohol to remove any oils or wax that may have contaminated the area.

Step 11: Turning on Power

Once the power adapter is attached to the input poles, set the variable switch on the adapter to 3 volts (second marking). Plug into wall outlet. With the multimeter set to volts (at least more than 3), touch the probes to the proper input poles and read the voltage, which should be 3 volts. Now turn the meter to DC mA (insuring that it is set higher than 300 mA) and check that reading, which should be approximately 300 mA.

Now put probes to output poles and check the readings—again making sure that the meter is set high enough to handle the load. By varying the rheostat you should be able to adjust the voltage from near zero to 3, and the amps from 0 to 300. If this doesn't happen, use your probes to check the input into the rheostat and the outputs. If the connections are not "cold," you should read the same input as you do at the poles and be able to vary the output by moving the dial.

Step 12: Power to the Soup

To get the power to the soup, cut the 24" piece of #8 wire in half, strip the ends, tin, fold in half the tinned ends and attach connector rings. Attach one to each of the output poles, tightening down the second nut. Attach the end of the positive output to the anode copper rod at the tank and the negative output to the cathode (or form) rod.

Step 13: Charging the Soup

The soup is now ready for use. Slowly pour the solution into your growing tank and mark the level on the side. The soup evaporates and the level will go down. However, only the distilled water is lost and by bringing the level back to the mark with more water, your solution will remain usable. However before use, attach the power source (see Figure 1) hang a copper anode on the positive rod and another one on the negative (cathode) side. Apply the power and leave for 24 hours. This will "charge" the solution and provide better initial growth.

Step 14: Loading the Tank

Turn the power on before loading the forms and have the anode(s) in place from the posi-

tive rod. Hang the forms onto the negative rod. With the Vtvm reading the output poles, set the output voltage at .50 volts (half a volt). Check the output amps, which will be between 90 and 140 mA. If the amps are higher than 140 mA, adjust the pot to read 120 mA, then check the voltage. The voltage should never be less than .45. If it is, move the forms around on the rod—there might be a bad connection between hanger and rod, causing more amps to be drawn.

Step 15: Checking the Progress

Check your voltage at least once a day—at the source and again at both rod connections at the tank. This voltage will change as the matrices begin collecting copper deposits. Readjust the voltage to the original setting to ensure smooth deposits.

Continual circulation of the soup is very useful in assuring a more even deposit. To do this, a small aquarium tank air pump is used. The plastic hose is inserted in a ¼" hole in the lid of the tank. The hole is located against the side of the tank behind the positive rod and the bubbles move the soup continually.

Step 16: Growing Time and Rewaxing

Growing time varies because of changes in temperature and voltage. Growing time ranges from 7 to 14 days. The matrix is considered finished when the deposit has completely filled the hole. Sometimes the "flower" (or copper deposit around the hole) grows too fast and it is necessary to re-wax the form to force the deposit to fill the hole rather than add to the flower. To do this, heat the wax as initially recommended. Then pull the form and fill the hole with a small, rolled piece of paper towel. This keeps the face area moist (otherwise oxidation will occur). With a small oil/watercolor paintbrush, carefully cover the flower. Keeping the twisted piece of paper towel in the opening also ensures that wax will not get into the area where you want more growth. After re-waxing, remove the paper towel and return the form to the soup.

Step 17: Finishing the Matrix

Once the copper deposit is of sufficient depth to insure complete growth inside the matrix, remove form and wash under running water. Remove the hanging wire, strip the wax and tape from the form and disassemble. The pattern type will be affixed to the matrix. This can be removed by dangling the matrix by holding the pattern type shank and gently tapping with a small metal rod. The type will break loose and then be removed from the matrix. If part of the face remains in the matrix, continue with the finishing and remove it by submerging the matrix quickly in molten metal at your caster's pot and tap gently.

Once the matrix is free from all attachments, place in a vice and with a hacksaw remove the flower. You will note that the wrapping and wax will form a slot large enough for the hacksaw blade and to act as a guide. The matrix is now ready to be "dressed." If you have a mill, this step can be accomplished with an end mill and a flycutter.

Step 18: Dressing

Remove all excess copper from the back of the matrix with a draw file until it is smooth and flush with the rest of the matrix surface. Run the face side of the mat gently over the draw file (always draw the mat toward you while holding down with the thumb and index finger). Set up your caster for the approximate size of the face, insuring that the type is aligned in the matrix as you would with any matrix. Cast a piece of type. (If using a Thompson, retrieve it before it goes under the type shoe. Break off the jet and file away the raised area of the jet.) Check height to paper with a micrometer. If too tall, rub the face of the matrix with wet emory cloth. Repeat this process until you get the type height desired. Aim for .9185" unless you're matching an existing matrix font. If that's the case, compare with type cast from other mats in the font. (I stop at .919 and then allow the Thompson to actually plow the jet on several samples and then check height to paper again. Final finishing of the depth also can be checked with a needle depth gauge (most U. S. Lanston display mats from 12 to 36 point are .050").

Step 19: Enjoy

The cost is small and the rewards are wonderful, so get started *and enjoy!* You can cast from this matrix now and for years and years to come.

Your Notes and Comments

There's a belated word of thanks due in this *Newsletter.* In the 24th issue I published a wonderful article about German Linotypes, written by BRUCE ANDERTON in England. What I failed to do was credit the well-detailed line drawing which accompanied the article. This note and reproduction of the drawing (once again) of the German Delta Linotype is to recognize Bruce's friend ERIC COPE, who put a great deal of time and effort into getting the drawing "right." Thanks, Eric, belatedly, for your assistance.

One question that has cropped up regarded the "cover artist" for the last *Newsletter.* I thought it would be obvious that CHRIS MANSON was the artist from my discussion on the first page, but I guess I was not clear. Several people commented on Chris's ability to put a Monotype into Gutenberg's shop, and the sometimes-hit bucket of pi on the floor also was noted. An altogether excellent rendering, don't you think? Even the caster's smoke is highly decorative!

JERRY KILLIE of Hoffman Estates, Ill., carried the article on the cost of a Linotype in the last issue a bit further, just to help us fix on things relative. He remarks "during the 1950's a Linotype priced at $8,300 equaled the price of 1.3 Cadillac Fleetwoods. . . .Also, during the 1950s a Linotype priced at $8,300 equaled the price of 3.8 Ford V-8 Deluxe four-door sedans. Tony, the composing room foreman of the paper published in the county seat, was paid $2.00 per hour."

And on the subject of "what things used to cost," PAT LEARY of Brookings, S. D., sent along a little price sheet from the Rouse company of Chicago indicating the much-sought-after Rouse Type Mortiser, bench model, cost $570.00. That price sheet is dated 1967. An extra blade cost $29.00. The pedestal model cost $625.00, new, F.O.B. Chicago.

STEPHEN O. SAXE writes from White Plains, N. Y., regarding the article on the obituary of George B. Lothian in the last issue. "I think you missed one detail in your reprinting of the obituary of George B. Lothian. Did you notice that it was signed with the initials 'D.B.'? The person who wrote so knowingly of George Lothian was an old friend—David Bruce, Jr., inventor of the pivotal caster. Bruce wrote often for Conner's house organ, *The Typographic Messenger.* In 1867 his article 'Type founding in the United States' was published in the *Messenger.* In 1850 he wrote a report on typefounding for the U. S. Commissioner of Patents, and of course he wrote *History of Typefounding in the United States*, published by the Typophiles in 1981. Bruce was born in 1802, grew up in the midst of the typefounding fraternity, and knew all the major and minor founders from boyhood. P. S.: Lothian's middle name was Baxter. I don't know where 'Buxtox' came from."

"Your latest issue is another 'smash hit'! Every soul who is hypnotized by the magic of the history, design and actual casting of classic typefaces in metal owes you and your knowledgeable colleagues a great debt and thanks. *ATF Newsletter* itself is a classic, and one of the few I consider to be required cover-to-cover reading."

—Tom Tolnay, Delhi, N.Y.

"I would like to tell you how much I admire the spirit you have given type making. I can't think of anyone who has contributed more. I know there are learned men, professors, designers, digiters, people with large plants, people who print all day, but none has spread the word like you."

—Harold Berliner, Nevada City, Calif.

BARRY SCHRADER of Livermore, Calif., has generously donated "to the cause" a group of five videotapes he recorded during the ATF Conference at Sunnyvale, Calif., four years ago. If anyone is interested in seeing the nuts and bolts of the proceedings, let me know and I will forward the tapes to you for review (and to return to me).

FRANCIS STANLEY reports from Richmond, Ind., that after 52 years, "we are converting Igelman Printing to a museum with letterpress intact!" Further, he adds that he has specified that he be buried with his pica pole! Now there's an interesting thought. It definitely shows a true lifetime dedication to the craft!

FRED GAGE writes from Auburn, Maine, that he thoroughly enjoys reading the *Newsletter.* "As you know, I'm not into typecasting, but I enjoy using the products you produce. I probably couldn't tell a Monotype machine from a thresher, but I truly like reading about casting projects and type history. I've always liked Californian and look forward to your next issue in that neat design."

DON WINTER, who started at L. A. Type in 1937 while still in high school, took over the manager's position in 1962 when the owner, Walter Gebhard, died, and worked continuously with the company until it was closed in 1998, has graced Monotype University programs with the donation of several manuals on Monotype operation. My thanks go to Don for this generous gift; future students certainly will appreciate having the manuals!

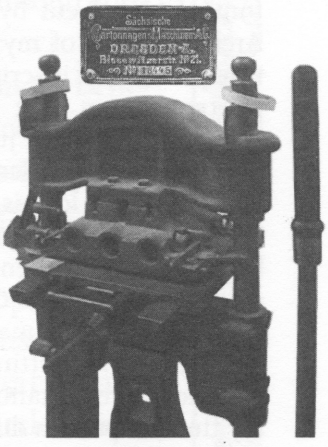
Regarding the costs of new equipment in the "golden days" of letterpress, the late LEONARD SPENCER of San Rafael, Calif., forwarded to me documentation on the purchase of a Model 15 Linotype in 1915 by the Timber Lake Printing Co., Timber Lake, S. D. It was bought on contract and Leonard calculated that the machine cost $1,725.00 plus interest. Interestingly, too, Leonard reported the machine still was in the same shop in perfect condition—that he visited the shop a few years ago and said it sits with a Model 31 and a Ludlow. Jim Byington and his wife Mary had operated the shop for years and Jim had a good reputation as a Linotype machinist. The old weekly newspaper shop's still there, but not being utilized by its present publisher.

NORMAN CORDES called in October, 2001, to provide a new address: 120 Sandy Cove, Tinton Falls, N. J. 07753. Soon after moving into this retirement center, Norm made acquaintance with a new neighbor, Jerry Craw. He said, "Are you related to Freeman Craw?" The man's response: "That's me." So the heralded designer of Craw Clarendon and several other ATF faces is alive and well. We're going to try to get him to give us some commentary in a future *Newsletter.*

PAT LEARY of Brookings, S. D., was cleaning out a drawer when he came across a publication titled the *Linotype Matrix*, published by Linotype & Machinery, Ltd., England, in the summer of 1951. The publication was heralding the installation of Teletypesetter equipment at *The Times* of London, and remarking at what a momentous event it was. The publication also had an article discussing a "letterpress printing productivity team" which had gone to the United States to study operations there. Obviously (since this was a Linotype publication) there was much emphasis on slug composition and its benefits, and the veiled reference to Monotype preferences in England said, "In this matter of slug composition there are still printers in Britain who hold to certain prejudices which are contrary to known facts." Well, it was a hotly contested argument between Monotype and Linotype, but it's now all ancient history—except for folks like us!

Speaking of clearing out drawers, ALEX LAWSON, the dean of all typography instructors, retired from RIT and living in comfort in sunny Florida, has sent to me three original documents published back around 1905 relating to a massive scandle at the Government Printing Office in Washington over the purchase by the Public Printer of 72 Monotype machines. The Mergenthaler Linotype people were a bit "bent out of shape" over the matter and the subject got so hot the President of the U. S. (Theodore Roosevelt) was asked to intervene—and he did! It's a fascinating story and these documents add so much to rekindle the heat of the argument. Thanks, Alex, and someday we'll turn the whole thing into a little booklet!

"Leafing through *Newsletter* 23, I read your note on the Krause fired Blocking Press. Krause was the largest manufacturer of bookbinding and die cutting equipment in Germany from the 1840s to about 1920. The Company is now Krause-Biagosch and does not manufacture any longer any of the perfect cast machinery. I've several pieces of Krause equipment in my shop, a boardcutter with a 52" blade, presses and also a gas-fired blocking press; the gas feed is a fork which is inserted into the heating channels above the mounting block. I use alternate gas or electric on it, as each has its own merits."



—*Charles Mohr,* Los Angeles, Calif.

We simply must be impressed at the work of people like JIM DAGGS of Ackley, Iowa, who takes it upon himself to restore linecasters. I have in hand a leaflet done by Jim on his completely restored Intertype Model H-4-4 display machine. Not only has he restored the machine fully, he also has a nice selection of faces for the machine in the unusual (for linecasters) sizes of 24, 30, 36, 42, 48 and 60 point. In addition to a keyboard, the machine has a "Stick Attachment," introduced about 1933, as a way of casting larger, full-width display faces up to 60 point from matrices handset into the stick and then cast into slugs. I guess this machine was Intertype's (better?) answer to Ludlow machines and the All-Purpose Linotype?

Golgonooza Foundry Acquires Two Küstermanns

News of what is happening with various "associates" of our organization is always invited, especially when the news relates to things happening at their typefoundries. Here's some very informative information from Dan Carr, who (with Julia Ferrari) runs the Golgonooza Letter Foundry & Press at Ashuelot, N. H.; they were hosts for our ATF Conference in 2000.

"I've been casting 42, 48, and 60 pt. ATF Garamond (from original ATF matrices) on the Monotype Super Caster with good success; rubbing a few large letters is no problem. But what's really exciting is the addition this past summer of two Küstermann casters. I have just finished my first job—a 60-pound font of type I cut by hand. The type is an Archaic Greek of my own design, based on research in the inscriptions in stone and on pottery from the sixth century B.C. Interestingly, it has just won a certificate of excellence in type design from the bukva:raz competition held this winter by Atypi.

"Getting the Küstermanns to run well has been a serious challenge. I did get some guidance in key points in Germany, but it is an extremely flexible machine with many possibilities for setting adjustments. I do not have a manual, so much of my time is spent in discovery by trial and testing.

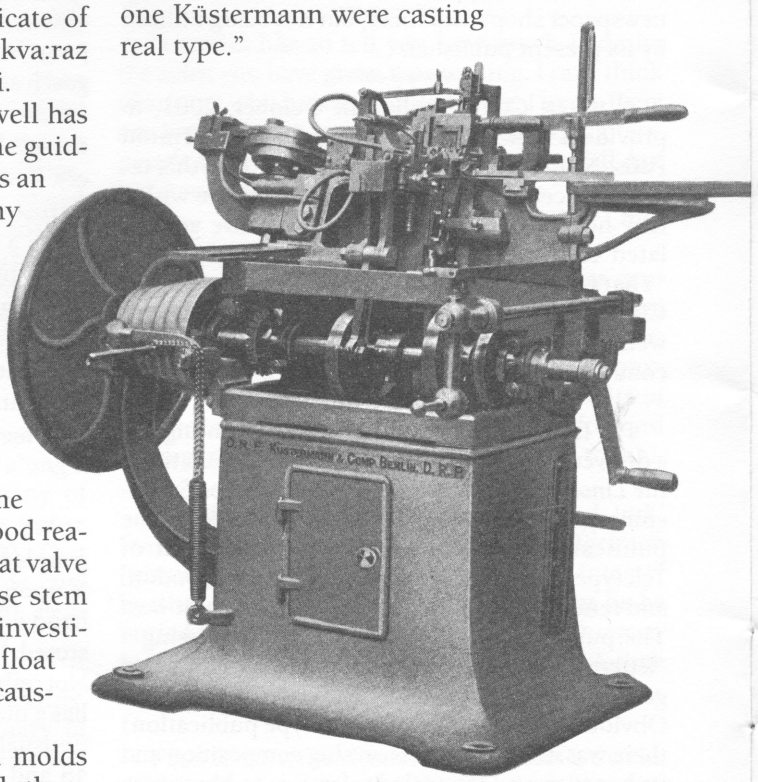
"The machine that would do 14 point had seen heavy use and over the last decade was quite neglected. It had been at the Wagner foundry in Germany at one time. For example, one day it simply stopped casting for no good reason. The pumping is controlled by a float valve which acts in a similar way to the loose stem end in English Monotype casters. I investigated and discovered a second broken float valve in the pump channel, which was causing my problem.

"We had to fit the machines with molds which were not meant to be used with these specific machines in order to get the standardized .050" drive. Normally the molds were fit at the factory, but that option is out, so I had to do extensive testing before I got the new molds right. How much testing? Well, the 60-pound font really involved the production of about 240-pounds of type including jets.

"I am excited about the results overall. The type is solid, faced up cleanly, and trimmed on all four sides. When all is set rightly the machine puts out type quickly.

"Soon I will be able to make new typefaces as economically as I can cast with the Monotype machines here. I have a new appreciation both for the Kücos and the Monotypes.

"Shortly after the first caster arrived here, I was invited to speak about punchcutting in Leipzig and there I found more information about the Küstermanns along with several in running condition. Eckerhart Schumacher-Gebler and his folks—some very well trained castermen and women—were casting a font of Henric Lettersnider's 1492 blackletter from the *original mats*. The entire time I spent cutting punches there the Monotype casters and one Küstermann were casting real type."



The Küstermann Typecasting Machine, patented in 1889, a German machine, was imported into the United States. The Golgonooza Letter Foundry & Press recently has acquired two of these machines. (Illustration from Legros & Grant).

Goudy's Californian

The amazingly good and useful font of hot-metal type being displayed before your eyes as you read here is a font created by Frederic W. Goudy and pegged by him as "the one face for which I have no regrets." It is a font I have coveted for over 30 years and it's a great pleasure to be presenting the face to you now in composition and display form: University of California Oldstyle.

Frederic Goudy justifiably could be called "self-aggrandizing" and maybe even "pompous" because he wrote so much about what he did for a living. But it is far more beneficial to folks trying to trace the heritage of a face to have too much information available, rather than none at all, which is the case with far too many credible type designs created in the 20th century.

Today the face is seen daily in a variety of applications both good and bad (mostly bad) primarily because it was latched onto by the International Typeface Corporation and re-released as "Berkeley." Curiously, they did a little homework, for Goudy himself had suggested that name early in its development. But he backed away in favor of the longer name at the prodding of University of California officials. I have two stories to tell. The first relates to the face itself, which is well-documented in Goudy's *A Half-Century of Type Design and Typography*, issued in 1946 by the Typophiles and re-issued by the Myriade Press in 1978 under the shorter name *Goudy's Type Designs*. More extensive documentation of its genesis is found in Goudy's *Typologia*, published by the University of California Press in 1940 to commemorate creation of the face for the University, and detail "studies in type design and type making."

Reflections of a "Better Time"

Perhaps it's a reflection back on an era which to me seems much farther away than the 60 years since the face was introduced. In reading Goudy's reminiscences in *Typologia*, a window opens onto an era when large institutions had both the financial freedom and the intellectual inclination to aspire to such a lofty thing as a proprietary face for the University's press. Today, university presses often are struggling for their existence; they frequently are no more than in-house duplicating services rather than envied cloisters of intellectual discourse and the truly correct, studied academic publishing we like to think they once were.

8 POINT UNIVERSITY OF CALIFORNIA OLDSTYLE
ABCDEFGHIJKLMNOPQRSTUVWXYZ& ÆŒ
ABCDEFGHIJKLMNOPQRSTUVWXYZ& Æ
abcdefghijklmnopqrstuvwxyz ct st fi fl ff ffi ffl
$1234567890 $1234567890 [(.,-:;"!?)] æœ
ABCDEFGHIJKLMNOPQRSTUVWXYZ& ÆŒ
abcdefghijklmnopqrstuvwxyz ct st fi fl ff ffi ffl æ œ
$1234567890 $1234567890 [(.,-:;"!?)]
Swash and alternates A B C D E G M P R T g v w e

This is a specimen of University of California Oldstyle done in the 8 point size. The design was originated as a proprietary face for the University of California by noted type designer Frederic W. Goudy. First use of the face was in 1940. Of the face, Goudy said this is "the one face for which I have no regrets."

The design was not released to the printing industry as a whole until 20 years later when the

Goudy got so turned on to the project that he started work long before he had any solid commitment from the University. Rather than sit back and wait for things to happen, he ventured to California for a "vacation," and along the way vigorously pursued the commission. Indeed, the trip helped him secure the commission. This speaks for the tenacity and single-mindedness of Goudy. Meeker souls would have waited for things to fall into place, but Goudy knew well that "if you don't beat your own drum, no one else will."

One would find it difficult to comprehend that the genesis of this project came from a member of the University of California's board of regents. Regents deal with finances, with paperwork and accreditation and all the other self-

indulgent stuff that clutters up universities. Regents don't think about *unique typography.*

Edward A. Dickson was that person. I know nothing of him other than what Goudy reported: that he was a newspaperman and was interested in type. Indeed, he considered it his "favorite subject." Since somehow Gutenberg's invention of movable type was proclaimed to be 1440, the idea evolved that it would be a great move to launch a new typeface for the University during the 400th anniversary year of Gutenberg's invention. Institutions make themselves feel better by latching onto such musty information and then becoming very ceremonial about it. But I digress.

A Possible Source for a Commission

It's interesting to note that Goudy stated he had been intrigued by the fact that "no university with a university press, so far as I could recall, possessed a type which had been designed for its exclusive use, and I could not help wondering why the head of some great university had not tried to gain greater distinction for its publications by acquiring a type which should be the university's own." You could read between the lines to see that he also was brainstorming about potential buyers for what he had to offer: type design.

The commission did materialize and the realm of typo-

10 POINT UNIVERSITY OF CALIFORNIA OLDSTYLE
ABCDEFGHIJKLMNOPQRSTUVWXYZ& ÆŒ
ABCDEFGHIJKLMNOPQRSTUVWXYZ& ÆŒ
abcdefghijklmnopqrstuvwxyz ct st fi ff fl ffi ffl
$1234567890 $1234567890 [(.,-:;"!?)] æœ
ABCDEFGHIJKLMNOPQRSTUVWXYZ& ÆŒ
abcdefghijklmnopqrstuvwxyz ct st fi ff fl ffi ffl æ œ
$1234567890 $1234567890 [(.,-:;"!?)]
Swash and alternates: A B C D E G M P T g v w e
This is a specimen of University of California Oldstyle done in the 10 point size. The design was originated as a proprietary face for the University of California by noted type designer Frederic W. Goudy. First use of the face was in 1940. Of the face, Goudy said this is "the one face for which I have no regrets."

graphy is better for it. I feel Goudy's reputation is better for it too. It is often said that many Goudy designs have a bothersome similarity or kinship—that there is a feel for Kennerley in Italian Oldstyle, for example. One might even say that Californian appears to be a redrawn, better proportioned version of Goudy Oldstyle. Goudy's growing maturity as a designer (he had already finished 101 designs when he took on the U of C commission) is reflected in these guidelines, which he set up for the design as he began: "A book face . . . that would need to be simple in form, dignified, distinguished, and, above all else, easily legible—a type which the University would take pride in using for its finest and most important productions."

12 POINT UNIVERSITY OF CALIFORNIA OLDSTYLE
ABCDEFGHIJKLMNOPQRSTUVWXYZ& ŒÆ
ABCDEFGHIJKLMNOPQRSTUVWXYZ& ÆŒ
abcdefghijklmnopqrstuvwxyz ct st fi ff fl ffi ffl
$1234567890 $1234567890 [(.,-:;"!?)] æœ
ABCDEFGHIJKLMNOPQRSTUVWXYZ& ÆŒ
abcdefghijklmnopqrstuvwxyz ct st fi ff fl ffi ffl æ œ
$1234567890 $1234567890 [(.,-:;"!?)]
Swash and alternates: A B C D E G M P R T g v w e
This is a specimen of University of California Oldstyle done in the 12 point size. The design was originated as a proprietary face for the University of California by noted type designer Frederic W. Goudy. First use of the face was in 1940. Of the face, Goudy said this is "the one

That was a challenging idea to "draw around." (I allude to the Goudy quote saying he would picture a design in his mind and then just "draw around it.") Goudy did an admirable job in meeting his own goals. But the face came very close to never happening; nearly all drawings were destroyed when his shop at Deepdene burned to the ground January 26, 1939. Luckily, Goudy was using Lanston Monotype for a lot of the "grunt" work in cutting punches and

driving matrices. At the time of the fire, all Goudy's metal patterns were at Philadelphia, at the Lanston factory, being transformed into punches and matrices for trial castings. The involvement of Lanston Monotype is important and we will get back to that subject later.

Evidence Goudy Was Learning

Now, however, I wish to address the University of California design from the standpoint of a typecaster and with a look into the mechanics of making metal types. It was in 1921 that Fred Goudy prodded the American Lanston Monotype Company away from its standard C-C matrix case arrangement. Until that time, Lanston denied all pleas to allow variation; all faces were *forced* into the letter proportions dictated by the C-C matrix case arrangement. The company reluctantly gave in and, for the first time, came out with unique wedge, keybar and stopbar arrangements especially prepared for the Garamont design.

With display sizes of other Goudy designs, set widths are "all over the place," with no apparent effort made to make similar letters, such as "u" and "n," conform to the same width specifications. I know this from having cast several

14 POINT SPECIMENS

ABCDEFGHIJKLMNOPQRSTUVWXYZ&

ABCDEFGHIJKLMNOPQRSTUVWXYZ& ÆŒ

abcdefghijklmnopqrstuvwxyz ct st fi ff fl ffi ffl

$1234567890 $1234567890 [(.,-:;"'!?)]

ABCDEFGHIJKLMNOPQRSTUVWXYZ& Æ

abcdefghijklmnopqrstuvwxyz ct st fi ff fl ffi ffl

A B C E G M Q R T X æ œ g v w

$1234567890 $1234567890

18 POINT ALPHABETS

ABCDEFGHIJKLMNOPQRSTUVWXYZ&
abcdefghijklmnopqrstuvwxyz ÆŒæœ ctst
$1234567890 $1234567890 [(.,-;:''!?)] fiflffffiffl

ABCDEFGHIJKLMNOPQRSTUVWXYZ& ÆŒ

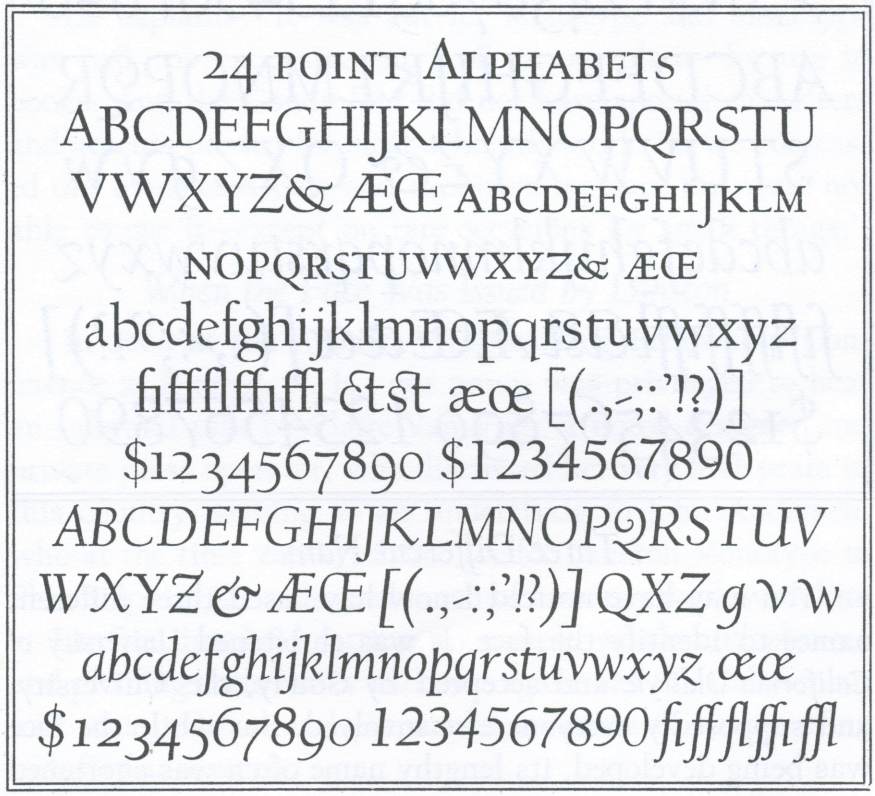
ABCDEFGHIJKLMNOPQRSTUVWXYZ&
abcdefghijklmnopqrstuvwxyz ÆŒæœ ctst fiflff ffiffl
$1234567890 1234567890 [(.,-;:''!?)] QXZ gvw

Goudy fonts from Monotype matrices. It impressed me as I laid out the matrices for 18-point Californian Italic the first time: every single letter was cut to a width which was an exact multiple of one point. No quarter-point changes, no eighth-point changes. Goudy had discovered that mathematical and geometric constraints indeed did help the design. Of course such concepts had been advocated for for centuries. But every designer must have his own revelation. Perhaps Californian was Goudy's?

The 1940 deadline was met. That is the year in which *Typologia* was issued by the U of C press, being the first book published using the University's new proprietary type design. Since the University had and used Monotype equipment, and since Californian was designed to be used as a text face, it likely would have been developed as a composition face by Lanston Monotype, a process far from the garage shop mentality of some other Goudy designs done only as display faces in limited sizes by Goudy himself in his private workshop.

Lanston's involvement apparently came with some provisos. August Frugé, in his *Design & Printing at the University of California Press* (published by the Western Heritage Press, Berkeley, Calif., in 1991), explains the design 20 years later was licensed to Lanston for general sale under the name "Californian."

For 20 years Lanston kept its hands off the type design except (we presume) to manufacture matrices ordered by the University. Here again, it's a reflection on an era long past in both design and business. Exclusive rights even guaranteed by copyrights or patents rarely seem to be honored for more than a day or two before lawyers and pirates tackle the legal restraints and blow them wide open.



30 POINT ALPHABETS

ABCDEFGHIJKLMNOPQ

RSTUVWXYZ& ÆŒæœ

ABCDEFGHIJKLMNOPQRSTUV

WXYZ& ÆŒ fiffflffiffl ctst xyz

abcdefghijklmnopqrstuvw

.,-;:'!?$1245678912345678 90

ABCDEFGHIJKLMNOPQR

STUVWXYZ& QXZ gvw

abcdefghijklmnopqrstuvwxyz

fiflffffiffl ctst ÆŒ æœ [(.,-:;"!?)]

$1234567890 1234567890

Three Different Names

You may have noticed I now have used three different names to identify the face. It was christened *University of California Oldstyle* and accepted by Goudy, the University, and supposedly everyone else involved. But while the face was being developed, its lengthy name often was shortened

to *Californian*. That's the name Lanston used when the face was released in 1959. The third name, *Berkeley*, was one suggested by Goudy early in its development, and it was that name which ITC chose to use when creating the (fairly faithful) digital rendition so widely used today.

Limited Use by the University

Referring back to Frugé's book, it is explained that the design received very limited use at the University during the years it was proprietary. Goudy's *Typologia*, and his *The Alphabet and Elements of Lettering* (1942), were issued by the U of C Press utilizing the design. Only a single other full-length letterpress book, *The Letter and the Spirit* (1943) made use of the face "and that was virtually the end of the affair."

He explains "it was cut for Monotype and Monotype was just too expensive—at least in our plant—for use in books. And the Goudy font did not have special characters and accents needed for most scholarly work. So we possessed our own handsome and exclusive typeface but were not able to use it—except on rare occasions for small things."

When the Face Was Issued by Lanston

In 2000 at the American Typecasting Fellowship Conference at Rindge, N. H., our group was privileged to hear an informal talk by Claire Van Vliet, a noted designer and private press operator, who discussed her very first years in this country, serving as an understudy to John Anderson, who at the time was type director for Lanston Monotype in Philadelphia. She indicated much of her early work with him at Lanston involved setting up sample words and phrases and proofing them—over and over again—as the Californian font was justified and prepared for release to the printing industry as a whole.

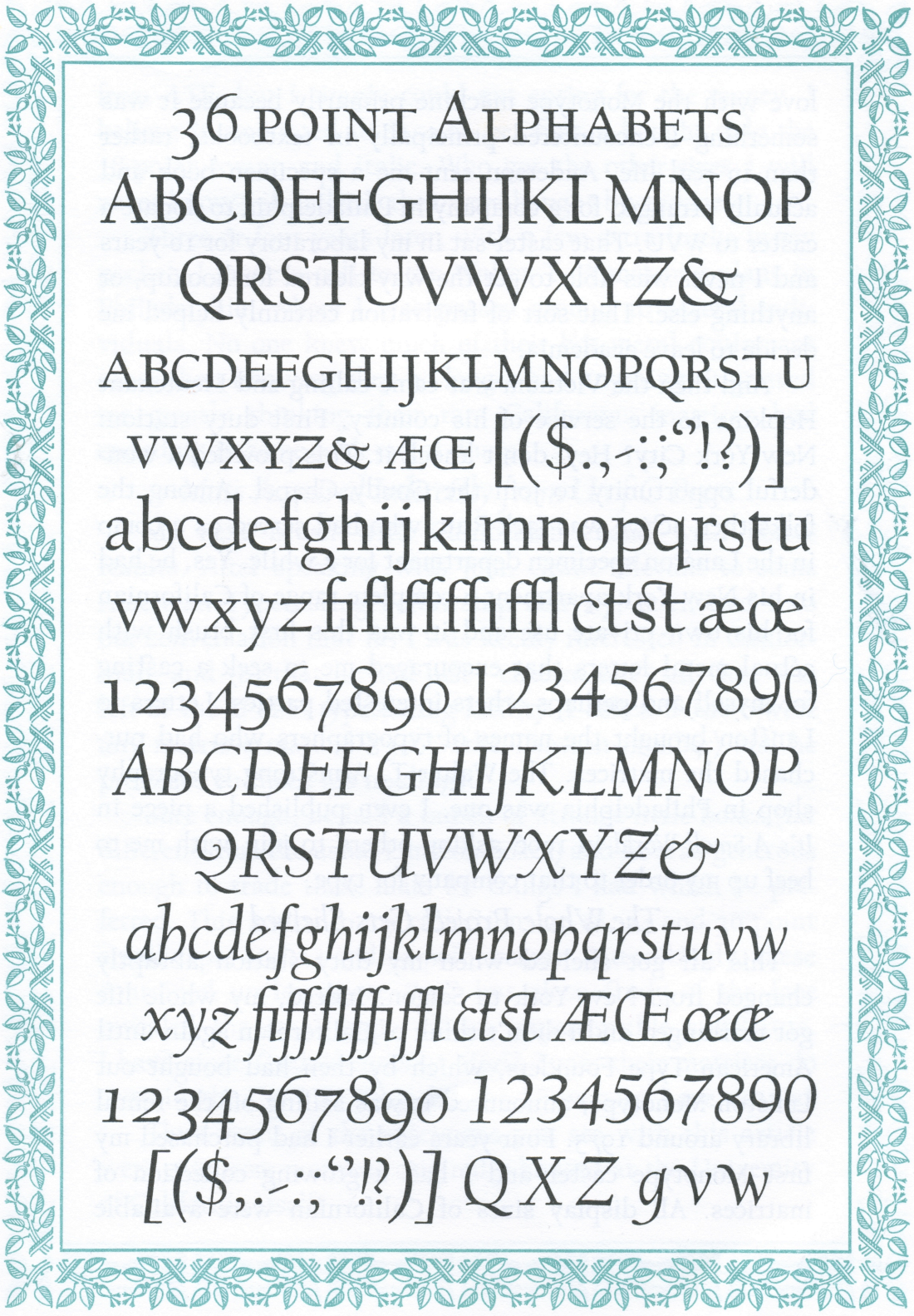
That information puzzled me, for one would have thought all this work had been completed as far back as 1939 or 1940 when the face was first done for the University. Goudy's *The Alphabet* was necessarily hand set for it was done in 18 point, which never was made available for keyboarding. But *Typologia* utilized 14 point, which was developed for the keyboard as evidenced by this work.

I have discovered the design was first released in impractical arrangements for keyboarding: The italic fonts had no provision for figures! A second set of arrangements had to be developed to include the italic figures; it required different wedges and stopbars. Paperwork I received from Greg Walters on these new arrangements carries a 1961 date. Probably this was the setup Claire helped develop. Interestingly, this setup removed unique things like swash italic characters, and the tied ct and st in both roman and italic. These items likely were considered unnecessary on the typographic scene as viewed in the 1960s.

My Long Quest for the Face

Now we get spooky. I am going to suggest that the matrices used for this casting have a life and spirit all their own, and that a near-mystical set of circumstances has preserved the components' use for today, in 2002. I have lusted for Californian ever since I discovered it in a Lanston Monotype specimen book. I got my first such book from Lanston Monotype itself, through Spencer Anderson, who answered my letter around 1964. I was seeking guidance and possible assistance in acquiring Monotype equipment for my Typography Laboratory at West Virginia University.

Don't seek that facility today. It ceased to exist shortly after I left WVU for greener pastures in 1973. But in the early 1960s I really got turned on to typography and fell in


36 point Alphabets
ABCDEFGHIJKLMNOP
QRSTUVWXYZ&
ABCDEFGHIJKLMNOPQRSTU
VWXYZ& ÆŒ [($.,-:;"!?)]
abcdefghijklmnopqrstu
vwxyz fiflffffiffl ctst æœ
1234567890 1234567890
ABCDEFGHIJKLMNOP
QRSTUVWXYZ&
abcdefghijklmnopqrstuvw
xyz fiffflffiffl ctst ÆŒ œæ
1234567890 1234567890
[($,.-:;"!?)] Q X Z g v w

love with the Monotype machine primarily because it was something I encountered principally in textbooks, rather than in real life. Anderson sent me a specimen book and actually arranged for a company in Philadelphia to donate a caster to WVU. That caster sat in my laboratory for 10 years and I never was able to get the way cleared for hookup, or anything else. That sort of frustration certainly helped me decide to leave academia.

And then the Vietnam war came calling 2nd Lieutenant Hopkins to the service of his country. First duty station: New York City? Hey, don't knock it. This provided a wonderful opportunity to join the Goudy Chapel. Among the folks then active was Jack Rau, who had served as a comp in the Lanston specimen department for a while. Yes, he had in his New York apartment a complete range of Californian for his own private use and it was this first brush with actual metal letters that encouraged me to seek a casting for myself and perhaps others interested parties. Letters to Lanston brought the names of typographers who had purchased the matrices. The Walter T. Armstrong typography shop in Philadelphia was one. I even published a piece in *It's A Small World* in 1966 asking others to join with me to beef up my order to that company for type.

The Whole Project Gets Shelved

This all got shelved when my duty station abruptly changed from New York to Saigon. Indeed, my whole life got rearranged and I didn't think of Californian again until American Type Founders, which by then had bought out Lanston Monotype, announced it was selling off the rental library around 1975. Four years earlier I had purchased my first Monotype caster and I had a growing collection of matrices. All display sizes of Californian were available

from ATF, but I simply could not spring for the money. I believe it amounted to $150.00 per font. I bought only the 18-point roman and italic. Who got the other sizes I will never know—if, indeed, they were bought by anyone!

Three or four years later, with a few extra bucks in my pocket, I made a call to the Walter T. Armstrong plant in Philadelphia, where I was passed around to several individuals. No one knew much of their hot metal equipment other than knowing they no longer had anything. It grieved me greatly thinking their rare Californian matrices had ended up in some junk metal dump.

Mats Acquired Indirectly from U of C Press

My next brush with Californian ended with better results. After speaking with John Grant relevant to some American Typecasting Fellowship activity, it entered into our conversation that (a) I was keenly interested in Californian, and (b) that he had just "cleaned out" all that was left of the U of C typecasting facility. I asked if there were any matrices marked "300" (the Lanston number) and he promised to check his holdings.

Sure enough, he had a bunch of strange little boxes (far different from the usual Lanston boxes) and he was generous enough to trade these mats for things I had which he preferred. This added to my collection 14, 18, 24 and 30 point small caps, and 24 and 30 point roman. Interestingly, these contained no lowercase "z," but close study of the face revealed the small cap "z" an imperceptible substitute. I have since studied mats at M&H Type; their matrices do contain the "z." So why did the University have no z's?

Thus, some of the specimens you see with this article were cast from matrices originally housed at the University of California itself!

My next contact with Californian was my visit to Hartzell Machine Works, where Dick and his crew were processing "last chance" orders for matrices before they shut down their composition matrix making facility in 1984. Wouldn't you know it? They were making 12-point for Heritage Press—the whole font! How I wish I could have taken advantage of that opportunity. But it was both too late to place an order, and too costly for me. Of course, I still would have needed keybars, wedges, stopbars, and all other items which Hartzell could not have supplied. I showed a photo of the 12-point punches in *ATF Newsletter* No. 9, issued in May, 1984, with an article announcing Hartzell's sale of what remained of Lanston Monotype.

How Was I Supposed to Know?

I was contacted by the Van Fos Typefoundry in Philadelphia sometime during the past 15 years asking whether I would be interested in acquiring any of its equipment. After receiving their list, I saw nothing of interest and so I passed the opportunity to others. Kent Kasuboske ended up getting much of the composition equipment and components, and Greg Walters traveled from Ohio to Philadelphia, to pick up all the Van Fos matrices that remained. After Kent's untimely death, Howard Bratter purchased Kent's casters and during his second trip to pick up his materials, was implored to take all the other components left around. He did not want it all, but he complied.

Howard called me one evening after that "haul" to boastfully report he'd found the keybars for both 14 point and smaller sizes of Californian. I already had heard from Greg Walters saying he had found all composition sizes of Californian with stopbars and wedges in the bounty he had carried back to Ohio. Had I any knowledge that the

Walter T. Armstrong equipment was stashed in Van Fos's basement, totally unlisted in the material circulated at the time of the Van Fos liquidation, I would have been in Philadelphia at a moment's notice.

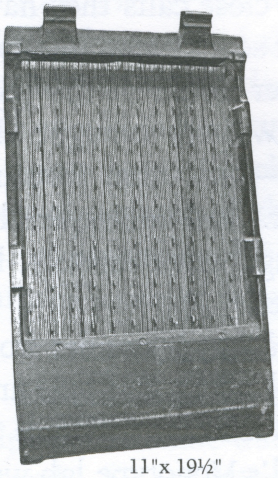
The matrices obviously have had a life of their own. No other explanation can be given for the close calls they have had with destruction, their subsequent separation, and now their reunion. It began to come together for me at the 1996 ATF Conference at Charlotte. Greg Walters brought the bulky part of the load—the keybars—with him. Howard Bratter had given them to him earlier. And subsequently, Greg loaned the matrices to me, though unfortunately, he had misplaced the stopbars and wedges.

Finally, Mike Bixler, esteemed private typefounder from Skaneateles, N. Y., came to my rescue lending stopbars and wedges he had in safekeeping from Rochester Institute of Technology, obtained when that school's Monotype lab was dismantled. The fact that his wedges and keybars did not match Greg's fonts from the Armstrong shop brought the aforementioned revelation about two different setups. With some maneuvering, finally I was able to cast the fonts! Lew Mitchell at M&H Type in San Francisco also was helpful in allowing me to inspect Californian matrices during ATF's 1998 Conference tour of M&H. The firm has matrices for the complete series and on occasion, uses them for various publications for the University of California itself!

So, 35 years after my "lust" began, I have a complete run of Californian in my cases. My success has involved several associates of our typecasting fellowship. I can only sing the praises of the many in our group who are willing to work with others in helping them meet their hot metal goals. *Isn't this fellowship wonderful?*

Explanation of Monotype Terms

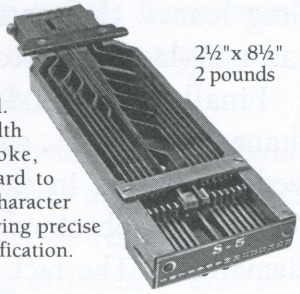
Some Monotype terms may be baffling to the un-initiated. Four components are necessary for composition work: The KEYBAR, the STOPBAR, the WEDGE, and the MATRIX CASE. The keybar and stopbar *generally* are common to all sizes of a face, but a different wedge is needed for each point size available. Several type designs use the common S-5 wedges and stopbar, but if a "special" wedge is designated, that wedge and corresponding stopbar will be *required* for successful composition. Different keybars, stopbars and wedges also are required when one moves from regular composition sizes to large comp sizes.



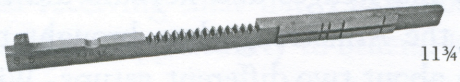
11"x 19½"
30 pounds

KEYBAR—a component of the keyboard. The keybar fits under the QWERTY-arranged KEYBUTTONS and translates each keystroke into a call for two punched holes in the paper ribbon: one to designate the horizontal row and another to call out the vertical row of the matrix case. Generally, two unique keybars are required for each matrix case arrangement—one for the left side of the keyboard and another for the right.

STOPBAR, another component of the keyboard. The stopbar assigns width values to each keystroke, and enables the keyboard to accurately count every character as it is called, thus allowing precise calculations for line justification.



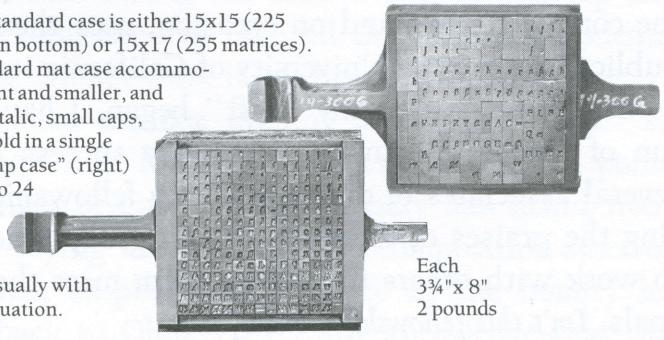
2½"x 8½"
2 pounds



11¾" long, 12 ozs.

WEDGE (side view—viewed from the top it is wedge-shaped), a component of the caster, corresponds to the keyboard's stopbar. If a S-5 stopbar is used, a S-5 wedge is *mandatory*; different wedges are used for each "set" (size) available in a particular typeface. Thus, if 8-point is 8¾ set and 9 point is 9 set, the difference between the two wedges would be a mere *quarter of a point*! If the proper wedge is not available, automated composition is nearly impossible, for the wedge controls the width of every letter as it is cast.

MATRIX CASE. A standard case is either 15x15 (225 matrices, as shown bottom) or 15x17 (255 matrices). Generally, a standard mat case accommodates sizes 12 point and smaller, and includes roman, italic, small caps, and sometimes bold in a single case. A "large comp case" (right) handles sizes 14 to 24 point and can accommodate just one cap and lowercase font, usually with figures and punctuation.

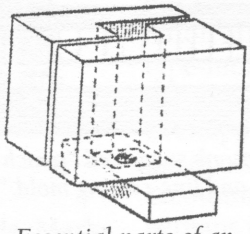


Each
3¾"x 8"
2 pounds

What Did Gutenberg Invent?

By John S. Thompson
Published in December, 1960, by A. R. Tommasini
as a Christmas Keepsake

JOHANNES GUTENBERG did invent something, indisputably; and that was the type punch—the key to the whole type-founding art. It is of no importance that letters cut in reverse were made by Assyrians, Romans, or Chinese in ancient times. With those crudities no continuing practical results were achieved, nor is it at all likely that Gutenberg was ever acquainted with them. It may have been discovered by some early experimenter that a duplicate of an engraved wooden block could be made by impressing its face into clay or some other plastic material and pouring hot metal into this matrix after a frame had been placed around it. The next step would probably be taken when the thought occurred to him that he might cut several letters of the wooden block apart and impress them one by one into the clay and thus compose new lines and from the casting print a whole page. It would consume many years of experimentation by one unskilled in the art of type-casting to discover the many obstacles: to learn that clay and other plastic materials are unsuitable for a matrix—that lead would be better; that wooden letters would not withstand the pressure required—that brass would be better; that impressions made one letter at a time caused distortions in the soft matrix which destroyed or damaged the preceding letters; that a uniform depth of impression was essential for all the letters, so that the casting would present an even printing surface. And time is what Gutenberg took—about fifteen years;—and he had not then achieved the goal. There is no positive evidence that he ever completed a printed book.



Essential parts of an individual type mold.

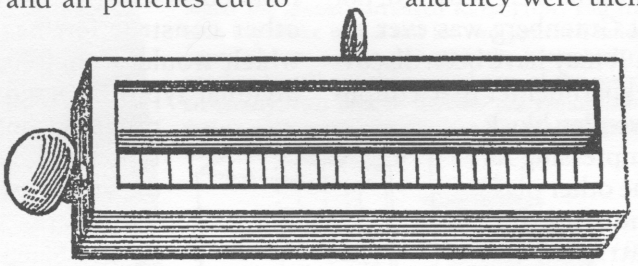
De Vinne, one of the few practical printers who have undertaken an analysis of what Gutenberg invented, says regarding the "thing of four pieces" which all writers have stated to have been an individual type mold: "The gravest difficulty in the way of this conjecture is, that the type-mold of modern type-founders has, including the matrix, but three detachable pieces." De Vinne of course knew that all type molds capable of casting type by hand consist of two L-shaped pieces, and no other construction has ever been devised which would accomplish the casting of individual types by hand. The matrix is not properly considered a part of 'the type mold, and only by a stretch of the imagination could Gutenberg's "thing of four pieces" be construed to have been an instrument for casting individual types.

To cast individual types by hand requires that after the hot metal has been injected into the mold it must be capable of being quickly cleared of the cast type and quickly closed again for repeated casts. As accuracy in size and shape is a prime essential in type-casting, a two-piece mold is the only construction that will maintain this condition when the device is held in one hand while the metal is poured into it with the other. It may be positively asserted that until this fundamental principle was discovered, type-casting by hand could never have been successfully accomplished in the fifteenth or any other century, although some peculiar constructions have been devised by nontechnical writers in an effort to reconcile this well-known fact with what their theories required them to believe was Gutenberg's four-piece type mold.

To cast a single type in a four-piece mold would indeed be possible. To open it up, discharge the casting, and reset the mold for successive casts and produce enough accurate types to print a book, would consume a lifetime. There must have been, and there was, a simpler way.

We have said that Gutenberg did invent the type punch and have suggested the steps he may have taken to reach that important stage. Having finally found the proper materials—a copper plate for his matrix, and hardened steel punches for his letters—and the necessity of driving all the punches a line at a time to the same depth into the matrix plate, it was but a mechanical detail to make the punch-holder and linecasting mold.

As punching a whole line at a time required the punches to be closely fitted to each other, they were filed or "lapped" on both sides to permit this, and were squared top and bottom with the sides, and all punches cut to the same length. It was in cutting the punch that the exceptional skill of the goldsmith, who was also an engraver, was employed. It was essential that several duplicates be made for all letters, more for the most used letters than for those in occasional use; and as it was not possible, nor indeed deemed necessary, that these hand-cut duplicates be exact replicas, the reason for the variants sown in the printed pages of the Bibles which have confounded the experts is apparent. Following the style of the old wood-engravers, many letter combinations were cut as one punch, practically all of which have been discarded in modern times.



Thompson's suggested "punch holder and line-casting mold."

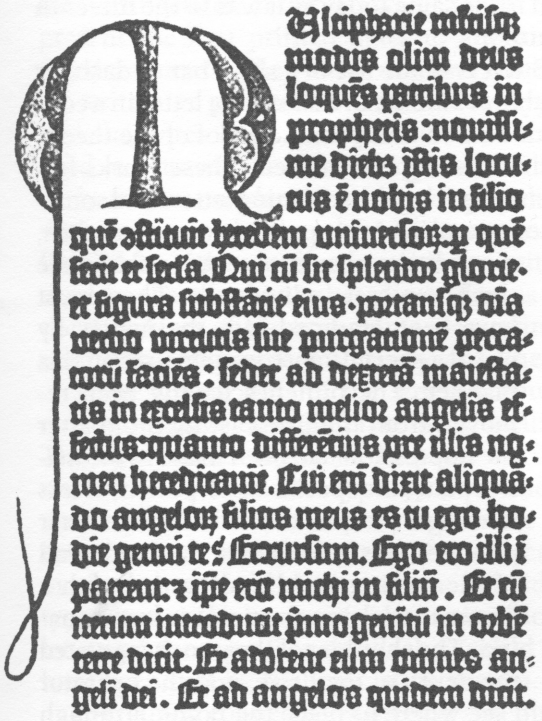
We do not know exactly how Gutenberg built his punch-holder and line-casting mold "of four pieces," but, given the problem, we can readily reconstruct one today which will do the work, with the clues disclosed at the Strasbourg trial. (See sketch above).

The line of punches having been assembled in the punch-holder with blank spaces of somewhat shorter length between the words, the screw in the end of the box was tightened to hold them in place, and the other screw, in the side of the box, was tightened against the movable wall in the box to press the punches into alignment with each other. Then a strip of brass or copper, perhaps a quarter of an inch in thickness, was laid upon a flat surface, and the box and contents placed upon it, face down. The combined pieces were then placed on the bed of a screw press, such as was in common use by the block-book printers and in several other trades, the hand screws of the punch-holder were loosened a little, and the upper plate of the press screwed down until the punches, the upper ends of which projected slightly above the margins of the box, were driven into the matrix plate until their ends were flush with the top of the box. The completed matrix and the box were then removed, the hand screws released, and the punches taken out of the box and distributed, and they were then ready for composing succeeding lines. The now empty punch-holder was replaced on the matrix plate and used as a mold for casting a solid line of type from the impressed matrix. Hot metal was poured into the mold, and when the metal was cool the base of the slug was scraped or wiped to a level with the side walls. Both screws were then backed off and the cast line ejected from the mold. The matrix plate, having served its purpose, was remelted and reused.

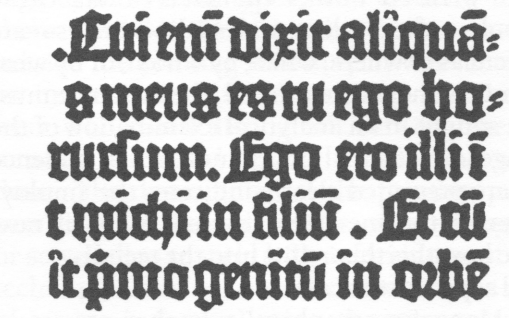
The height of the casting-box, plus the depth of the matrix, was approximately one inch (type height today is slightly under this, .918 inch). The length of the box was about four and a half inches, and the width about one and a half inches, but length and width were factors governed only by practical considerations.

The cast line was now ready, and when succeeding lines were similarly cast they were assembled and the page was ready for printing. This was more than four centuries before another German inventor, Ottmar Mergenthaler, in Baltimore, Maryland, built a machine which by an analogous method automatically cast a similar slug, and called it a "line o' type."

Gutenberg's line matrix was of a size favorable to this simple method of line-casting—approximately 24-point (or one-third of an



Multipharie multisq; modis olim deus loquēs patribus in prophetis: nouissime diebꝫ istis locutus ē nobis in filio quē ꝯstituit heredem uniuersoꝝ: ꝑ quē fecit et secla. Qui cū sit splendor glorie et figura substātie eius. portansq; oīa verbo virtutis sue purgationē peccatorū faciēs: sedet ad dexterā maiestatis in excelsis tanto melior angelis effectus: quanto differētius pre illis nomen hereditauit. Cui enī dixit aliquādo angeloꝝ filius meus es tu ego hodie genui te? Et rursum. Ego ero illi ī patrem: ⁊ ipe erit michi in filiū. Et cū iterum introducit ꝑmo genitū in orbē terre dicit. Et adorent eum omnes angeli dei. Et ad angelos quidem dicit.



Cui enī dixit aliquās meus es tu ego horursum. Ego ero illi ī t michi in filiū. Et cū it ꝑmo genitū in orbē

Part of a column of the 42-line Bible. Enlarged is detail from text shown. Note differences in position and shape of abbreviation marks above letters.

inch) according to modern standards. Marks indicating word-contraction were punched by hand above the already impressed letters in the matrix plate before the line was cast. These and other emendations can be seen in practically every page of the Bibles printed by this method.

Like the early manuscript-writers and wood-engravers, Gutenberg made no attempt to "justify" his lines, i.e., make them all come out even at both ends. The screw at the end of the punch-holder took up any excess space at that end, making the over-all length of the cast lines equal. With the former system of block-book printing, to make all the lines of equal length was impractical, and it did not occur to Gutenberg to make any change, although his successors did so when they observed that increasing or diminishing the spaces between the words affected the appearance of the pages. The 36-line Bible pages exhibit much greater variation in length of lines than do those of the 42-line Bible.

The evidence that Gutenberg did not use individual types was at times overwhelming to that master printer, De Vinne, and it was only with difficulty that he attempted to surmount the obstacles to his theories. He was not satisfied that the conventional interpretation of the "thing of four pieces" was a hand type-mold; he was frequently confronted by the appearance of interlocking letters and overlapping marks above them in the printed pages of the incunabula, and had difficulty in accounting for them. He could not realize that perhaps none of the books produced prior to 1466 were printed from individually cast types—that they were printed either from wood engravings or from line castings.

The unevenness of "height to paper" which he often noted as proof that the letters had been cast individually could as readily be accounted for by variations in the length of the punches, causing some of them to make impressions deeper than normal when the line matrices were made. The inversion of letters and the occasional use of a "c" for an "e" or an "n" for a "u," cited by him as examples of errors which could only be made by compositors, proves, perhaps, that the specimens under examination were not wood engravings, but does not exclude the possibility of the use of individual punches in composing lines for casting solid lines of type, such as Gutenberg invented. However, as De Vinne wrote his *Invention of Printing* in 1876, nine years before Mergenthaler completed his historic invention of machine linecasting, he was unaware of this simple solution to all his problems.

It has been asked how it can be proved that the Gutenberg Bibles were not printed from movable, individual types. The answer lies in

the printed books themselves. As these books—the 36-line and 42-line Bibles—are silent as to where, when, by whom, or by what process they were printed, the evidence must be sought in an analytical examination of the pages. The factual and circumstantial evidence there presented clearly indicates the employment of the line-casting system. We shall now see how this theory fits into the technical aspect of the case.

Many typographical mistakes are known to exist throughout both Bibles: "outs," "doublets," letters and whole words missing, etc. But there are no "work-ups." If there can be found a single instance of a work-up of space or quad anywhere in either Bible, it can be confidently asserted that that page was incontrovertibly composed of separate, individual, movable types. Surely somewhere in the 1,282 pages of the 42-line Bible, or the 1,764 pages of the 36-line Bible, work-ups of spaces or quads would have occurred had they been composed of individual types, especially in view of the crude justification and slack lockup then employed.



Special mark punch

The sticky ink and primitive inking-balls would certainly have helped to produce this evidence were it possible. With every line a solid unit, work-ups were not possible. During the latter part of the fifteenth century, when books were being printed in many places with movable types, work-ups occurred frequently.

If individual types had been used they would have shown increasing wear as the work of printing progressed. Since this wear is not apparent, the deduction that the Bibles were printed from line castings is further justified, as with this system every page is printed from newly cast types.

Uniformity is an essential characteristic of individual types. Every letter must be identical with every other letter cast from the same matrix. While it might be admissible to have a variant or two in a font of type, practical considerations would limit them, as the preponderance of cost in the making of type is in the punch and matrix, and when no practical ends are served by variants of a character, they would be ruled out automatically. This situation is the same today as it was in the fifteenth century.

But it is in the use of a short bar or dash for an abbreviation mark above the letter in a contracted word that positive proof of the theory of line-casting is best seen. These marks frequently overlap the adjoining letters and sometimes extend over the space between the words, a condition absolutely impossible were the letter cast individually. They must have been stamped into the matrix by use of a special-mark punch, used in this manner: The punches having been removed from the line-casting mold after the impression had been made in the matrix plate, the special-mark punch, of less than half the thickness of regular letter punches, was held against the inside wall of the casting-mold and tapped with a hammer to drive the point into the matrix. The shoulder of the punch regulated the depth of the drive, and the operator could see where to place the point, although not always doing so exactly. After the line casting had been made, an engraving tool was sometimes used to trim away unwanted portions of the marks, thus making them appear in a variety of ways throughout the pages. Books printed after the invention of individual types show none of these peculiarities.

Every printer knows that it is impracticable to produce diacritical marks above letters in a line at will (except to meet a special demand) if such letters were cast originally without such a mark, and when so cast the mark will always be on the body of a letter, and in no case will they vary. If there is a bar above a certain letter, such as "ī" or "ū" it will always be the same in shape, size, and position. Unless some particular purpose is served, it will never extend beyond the body, to the left or right, or overlap another letter. Yet every page of these Bibles shows such discrepancies. The variations in many of the bars or marks indicate the use of the graver to trim them after the line had been cast.

Still one thing more. If the present theory be correct—that the practice of casting individual types was not generally introduced until several decades after the two Gutenberg Bibles had been completed, it is necessary to explain the appearance of what are known as

the Indulgences of 1454 and 1455, as they present the first printed dates to appear on any documents. They have been described by all writers as printed from individual types, and the types have been identified as those used in printing the Gutenberg Bibles. There is, however, no identity of the display lines with the types of either the 42-line or the 36-line Bible, either in face or size; the initials used in the two issues are dissimilar, as are the type faces of the text. Some were printed with thirty and some with thirty-one lines.

There are variants of the letters throughout both issues, and differences in spelling. The right-hand margins of the pages are very uneven, and it is said the type faces were never used in any other job of printing. As the letters interlock and the marks of contraction overlap, they could not have been individual types, and as the lines were about nine inches long and the type face small, they could not have been cast by the linecasting system.

Everything connected with these specimens points to one conclusion, namely, that they are definitely the product of the wood-engraver. Their similarities are due to the xylographic system of transferring a printed page to a wooden block before engraving the duplicate. The work was done at various times and places by various wood engravers, Peter Schoeffer perhaps printing the original. Schoeffer had joined Gutenberg's staff of workmen about the year 1451.

When the change was made from line castings to individual types, it is unlikely that there was widespread interest in the matter outside the printing fraternity. It was merely an improvement in method, and few there were who could distinguish between them, or at all interested in how the printing was done. The descriptions of the printing process given by the early writers were so vague or so veiled as to yield little information of its techniques, and so, with the advent of the art of casting individual types, the prior system of casting whole lines of type was soon forgotten. It had but a short life—fifty years at most, and less than twenty in a majority of instances, from 1450 to 1470. By the end of the fifteenth century it was a lost art, and it was the popular assumption that individual types had been cast from the beginning of the practice of typography. The steel line-casting molds found their way to the scrap-metal dumps; the line matrices and the leaden slugs had been re-melted soon after use; the punches were obsolete. If anything of this old equipment escaped destruction it would have been unrecognized or unwanted by sixteenth-century printers.

Now that the method by which the first Bibles were really printed is disclosed, it is possible that some of the equipment used by fifteenth-century printers will be discovered in some out-of-the-way corner of Europe and recognized as the line-casting implements invented by Johannes Gutenberg and used by him in casting the first metal "line o' type."

Original Credits for Author of Article

John S. Thompson (1872-1955), inventor of the Thompson Typecaster, a forerunner of the modern Monotype machine, and author of textbooks in mechanical type composition, contended that Gutenberg's invention was not a mold for casting separate characters, as has commonly been stated, but rather a punch-holder and line-casting mold that produced a line of type at a time.

He based his contention chiefly on a careful study of pages of the Gutenberg Bibles (which in his opinion were printed, not by Gutenberg, but one by Schœffer and the other by Pfister); and, being a mechanical inventor, he quite naturally tested his theory by making a practical example of what he conceived Gutenberg's invention to have been and casting lines with it.

He wrote down his ideas on various aspects of the much-controverted subject: on the documents (provided they were genuine), on the earliest printers (if what little is reported about them may be credited), and on the printed works (which perhaps supply the only dependable evidence).

For permission to print the essential passages dealing with the question of the invention, grateful acknowledgment is hereby made to Mrs. Alice P. Thompson, of Menlo Park, California.

*Editor's note: The Thompson Type Casting Machine was **not** a forerunner of the Monotype. It was patented in 1909, long after the Monotype had been introduced.*

Things Relevant to Gutenberg Are Simply Getting Out of Hand!

There seems to be a new wave of "literature" on the subject of what, precisely, Gutenberg invented. Some of this new writing is being fostered by the availability of high-tech devices for exploding images so large they're no longer recognizable, and then optically comparing them with other similar images. On such analysis, one so-called "learned scholar" has brought forth the conclusion that Gutenberg simply could not have used matrices in the process.

Rebuttal to Thompson article... and other so-called 'experts' too.

Surprisingly, this information was presented to the Grolier Club in New York City and reported in the *New York Times* Jan. 27, 2001. The article gives no evidence anyone challenged any part of the research or conclusions, but the article showed clearly that the researchers had applied a lot of modern-day micro-photo technology and then spouted off with theories about the whole realm of mold making and casting, about which they revealed absolutely no experience whatsoever.

One suggestion was that Gutenberg used sand molds for casting his type! Certainly that would have been far *more* time-consuming than the metal matrix theory, for a new sand mold would need to be made for every letter cast. The new theory is advanced because large computer images of individual letters vary from page to page and letter to letter in Gutenberg's Bible. Since they varied, they obviously were not from the same matrix, they concluded. But nowhere did they show evidence of knowledge of the letterpress printing process itself, especially with consideration given to the very primitive implements Gutenberg most likely had at his disposal.

It brings to mind a passage in a mystery novel I just read. One sleuth expounded to another: "If you want to know about furniture construction, you go to a furniture maker. If you want to know about ironwork, you go to an ironworker." Such logic seems solid to me. So why not go to the typefounder if you want to know about typefounding, or to a printer if you want to know about printing?

In the case of the above-mentioned article, the authors consulted neither a typefounder nor a printer. Had they done so, perhaps the research and definitely the conclusions wouldn't have been so pathetically immature.

But this sort of facetious discussion of Gutenberg is nothing new. In one instance, a person who actually invented a typecasting machine, John Thompson, allowed himself to go off the deep end. I had heard of Thompson's article before, but hadn't read it myself until the late Leonard Spencer sent me a published copy, sent out as a Christmas greeting by Tommy Tomasini, back in 1960, not long after Thompson's death (in 1955). Because the piece is heralded by some as being so significant, I have taken the time and effort to reproduce the entire article in this *Newsletter.*

I wanted to address some of the central points of Thompson's argument in this publication, so I went to our typefounding brother, Theo Rehak, for his response to both the Thompson piece and other recent "revelations about Gutenberg's work." As you read in the last *Newsletter*, Theo has only recently completed re-creating type for the entire Gutenberg 42-line Bible, working with his close ally Alan Waring in studying the Bible thoroughly with photo enlargements and all, and then re-creating in matrix form what they collectively have concluded would be the entire Gutenberg font, which they say consists of about 245 characters. Theo had said emphatically, after having indulged so heavily in the project, that there remained in his mind no question that Gutenberg had done the very same thing nearly 600 years ago—engraved matrices and cast individual types for printing the entire Bible.

Theo and Alan's study even revealed one instance where Gutenberg broke a punch, but rather than re-cut the punch, chose to smooth it off and keep working with the same punch.

Only great familiarity with the entire process could bring this sort of observation. So what's Theo say about the new learned research?

"Yes, there are no fewer than a half dozen or more of those new Gutenberg fakers out there, "trying to make it real, compared to what?" I had rather hoped I could live out my days without being vexed by these things, but they have discovered that we are all living at the end of an era, when most in our society are sufficiently unknowing, and have become bold in their wrong-mindedness. With every passing year we grow farther away from what everyone used to take for granted and could prove as well. I don't argue that what they suppose happened actually did, I just don't see how they can apply this hokum to the 'up and running' B-42 types of his Bible. I suspect that since there are so very few of us left to challenge their position, that they may eventually win out over the historic truth. Tolkien once remarked that the distance between a thing legendary and a myth was a short one. This holds true for dragons as well as metal printing type."

'With every passing year we grow farther away from what everyone used to take for granted and could prove as well.'

I had hoped Theo would have addressed individual points in Thompson's piece, which I had forwarded to him, but he has grown tired of all the argument. So I shall make the attempt myself.

The essence of Thomspon's argument was that Gutenberg cut punches and assembled them into lines. Only then did he drive the punches to make some sort of matrix for casting *lines*. Thus, as Harold Berliner so entertainingly explained to our very first ATF Conference back in 1978, "What Gutenberg really invented was a Linotype."

There's no doubt Thompson had vast experience in typesetting and typecasting. He "wrote the book" on the subject of Linotype operation and maintenance and authored a continuing column on Linotype for years in the *Inland Printer*. And as already mentioned, he invented and manufactured the Thompson Typecaster, later selling his company to Lanston Monotype. The principle behind the Thompson was casting type from matrices available from Mergenthaler Linotype for about five cents apiece. A struggling remote weekly newspaper could make its own type with a Thompson, getting around the expensive stuff which it otherwise would be forced to buy from a typefounder.

I fear Thompson's experience with punch and matrix making might have been a bit shallow. Otherwise, I don't think he would have ventured forth with his idea about "lines of punches."

First, using the manual processes which Gutenberg was forced to use, making more than one matrix of each letter and making multiple matrices to closely (precisely?) resemble each other would have been a very difficult undertaking. Ask Stan Nelson, Steve Pratt or others who have tried engraving matrices by hand.

Gutenberg's goal was to imitate the scribe. He was attempting to *counterfeit* the scribe's work, and for that reason, he had to make multiple versions of some letters. But he was also up against a deadline and answering to investors. Therefore, it's very unlikely he would do the same letter over and over again if he could find a faster way.

But let's discuss punchmaking a little closer. Look at any historic punch and you'll see it is chisel-shaped. Tiny at the face and progressively larger as its body extends. This shape is to give the punch strength to withstand the stress imposed on it when it is driven into copper (or perhaps another metal). Even so, typefounders were plagued with broken or splintered punches. So Thompson's suggestion that Gutenberg would make punches shaped much like type and assemble them into lines for punching all at once would carry three things with it: (1) that the punches would be inherently more fragile and breakable; (2) that punching a whole line at time would require much more force (applied equally across the entire line) and thus more stress on the punches (as compared with driving them one at a time); and (3) the whole issue of punch justification would become

infinitely more difficult. Of course Gutenberg could have driven his punches into something much softer than copper, but whatever he used, these three factors still would be present.

Then comes the issue of casting the lines of type from this "matrix line." One need only watch a demonstration of hand typecasting a minute or two before it becomes obvious *it is difficult to get a good cast.* Often there are more rejects than acceptable casts. And any typefounder will tell you that the larger an item to be cast becomes, the more difficult it is to cast properly. The line-o-type concept would have made the entire process of casting type for the Bible *far more difficult.*

Finally, talking of accuracy, think of the precision that would have been necessary to cut all those punches so they would align accurately when locked up into some sort of holding device. If the truth be known, even American Type Founders failed in this endeavor; they required very thorough and time-consuming manual adjustment of alignment and width as each letter in a font was set up for casting, even when utilizing matrices engraved with great precision on the Benton pantograph. Gutenberg had a far better chance at "justifying" individual matrices after they were punched. The idea of justifying hundreds of punches *to each other* is overwhelming to anyone who ever has known the process at all.

. . . think of the precision that would have been necessary to cut all those punches so they would align perfectly when locked up into some sort of holding device.

One reason for Thompson's conclusion was that accents and other marks placed above certain letters appeared erratic and thus (he concluded) provided evidence these were not individual letters. But Jim Walczak and Chris Manson convincingly demonstrated in our last *Newsletter* the process of shaving off the main letter and placing a smaller-bodied supplemental character above that letter. Certainly that small piece of metal would be inclined to move around in a common press, and that's a far better explanation than using this as proof they weren't individually cast characters in the first place.

In two instances, Thompson makes "matter-of fact" statements which are, if nothing else, arbitrary. First, he says Gutenberg invented the punch. It's highly likely that he did, but there's no evidence of this fact anywhere. And in another place, he casually states that Gutenberg's type was about an inch tall. He hasn't a shred of evidence to back this claim. Not a shred. Simply because modern types generally were about that tall provides no substantiation for such a claim.

This all brings me to the suggestion that either Thompson was writing this article hurriedly for an inexperienced (and thus, uncritical) audience or perhaps he was himself trying to be a bit *humorous.* After all, he was considered as *the* authority on Linotype. In my mind, he did nothing for his reputation in allowing his name to be affixed to the piece; its depth of practical study is far too shallow and/or his humor isn't obvious.

Returning for a brief moment to other research, we again defy the knowledge and experience of the authors. One suggested that since Gutenberg's 42-line Bible started with a page of only 41 lines, that he obviously had gone back and re-cut his type to allow the change in line count before starting page 2. The author obviously never heard of leading out a form. Keep in mind that Gutenberg was attempting to counterfeit the scribe's work. If the scribe had 41 lines, certainly Gutenberg could have accommodated that variance with some method other than cutting additional matrices and making a different mold, such as inserting pieces of paper between the lines to spread them out!

Consulting any worthy letterpress printer, we quickly learn that paper dampening, mixing of ink, quantity of ink used, inking technique, impression, wear, front vs. back of the sheet—even the weather outside—all contribute to a differing impression from the same piece of type. And considering that even today with ultra-precise offset printing all these factors still are problems, give me a break! By tradition we understand Gutenberg was working with a device that perhaps was a modification of a wine press. Isn't it just a bit ludicrous to study and compare his pages with 21st-century optical devices? I might suggest

similar conclusions (that each letter is microscopically different) might be reached studying modern-day newspapers!

It's like when I visited a prestigious historic colonial print shop which shall remain nameless. "We hand-set this whole newspaper page from the types you see behind me," the hired hand proclaimed to his eager audience. The cases had an inch of dust in them, which make me suspicious. So I studied the form in his press. To avoid embarrassment, I waited until the crowd was gone. "You know you're printing from a photoengraving," I said. "What's that?" he replied.

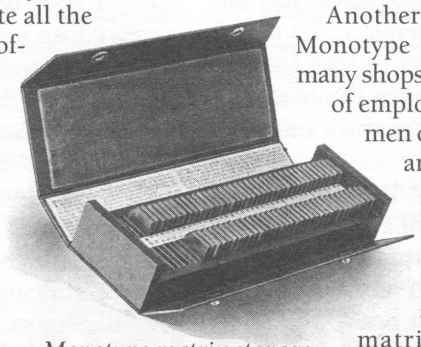
Those who don't know printing and typefounding should refrain from calling themselves experts and making grandiose pronouncements, for in the end, they only prove they're fools!

But still, I quiver to think that Theo's projection might be right. Who was it that said, "history is but an agreed-upon lie."

Perhaps It's Time for a Typecasting Website?

Being known as "Mr. Monotype" is beginning to bedevil me just a little bit. There's no doubt I am genuinely interested in the machinery and in the two companies that manufactured these devices and all their components. But it's a bit unfair to heap all the compounded knowledge of nearly 150 years of machine making onto a single person. (I'm counting U. S. and English operations separately).

There's no doubt I appreciate all the information being sent to me, often unannounced, by various people as they "clean out" their dens or workshops, but I'm bothered about what I should be doing with it all. There is so much to be known, and there are so very few persons still interested in the machines or their makers.



Monotype matrix storage boxes were introduced about 1917 at a cost of 80 cents. In today's money, that's over $13.00 each.

For example, only recently I came across a bound volume of a publication titled *Monotype: A Journal of Composing Room Efficiency*. Yes, I'd heard of it before, but this bound volume spans the years from May, 1917, until March, 1920. It helps document the American company in ways I never envisioned would be possible.

Yes, I had copies of a publication by that same name put out in the 1940s, but the earlier volumes were more about the company, its products, and its users. A real cheerleader of sorts. It's fascinating reading and shows a host of neat pictures of varied Monotype installations. One especially fascinating picture is of the Monotype plant in Philadelphia, "in patriotic dress" on April 7, 1917, with no fewer than 720 small American flags, one in every window, plus a huge 15x20-foot flag atop the building. No doubt this was tied to the end of World War I. At that time, Monotype had over 700 employees and was producing more than 130,000 matrices each month.

Where else would you learn that the popular velvet-lined black boxes sized 8½x2⅞x1½, used to store Monotype display matrices was introduced in 1917?

Another war-related "revelation." Monotype was suggesting that since many shops were short-handed because of employees going off to war, these men could be replaced by *women*, and Lanston was willing to give free training at the Monotype school.

Rarely a month goes by that I am not asked by someone about a particular matrix case arrangement, or which wedge goes with what composition face. And often I am able to answer the questions.

I think the best (and only) way to better preserve this information is the promulgation of a website whereby a person could access and print out the necessary information. It's a very ambitious idea, but perhaps in this way we could preserve information in a way which would transcend the few fragile persons still having the knowledge. I've already got the domain reserved: *typefounding.info*. Therein we would have a section for foundry casting, one for Monotype casting, and another on linecasting/slugcasting.

If you've got a wealth of information too, perhaps you can work with me in getting this site up and running. It's a massive undertaking, but it's necessary.

'Dressed' Ludlow Mats Can Be A Real Problem

The issue of maintaining Ludlow matrices has come to my attention via a curious communication from Pat Molitor of West Hartford, Conn., who himself is a Ludlow user.

There's a good chance the problem hasn't been so visible if you've been accustomed to using only larger sizes of Ludlow matrices. But Pat is hand-setting 10 point and there, the problem becomes visible rather quickly.

It all revolves around the fact that Ludlow matrices, more, perhaps, than with any other system, get handled by oft-clumsy fingers and therefore, there's a far better chance they will become damaged.

When the matrices get damaged, invariably there are dings on the corners and perhaps the very fragile sidewalls of the matrices (where the letter nearly comes to the edge of the matrix) might get bent in or broken.

Correcting the "dings" especially involves "dressing" the matrices on the sides. You see, if the dings are allowed to remain, the matrices will remain splayed apart during lockup, allowing metal to flow between the matrices, causing undesirable and unsightly hairlines between the letters.

Pat explains, "The tiniest imperfection or protrusion in the matrix will cause it to leak lead between matrices and cause hairlines. The only way to remedy this is to remove the burr so that there is brass against brass.

"I would say that there's a definite advantage in having Intertype and Linotype mats in that there is less handling or chance of mishandling. I'm sure that most shops would not turn an inexperienced person lose on a Linotype. However the opposite is true of the Ludlow, because it is relatively easy to quick train someone to operate it, and thus carelessness due to inexperience. Of course this is speculation on my part, but it lends itself to a palatable explanation on how matrices may have gotten in the shape their in."

But over-correcting can mean the letters get far too close together—to the point where they are actually touching. Such an ugly phenomenon is quite common in photo and computer composition and no one seems to care, but with hot metal, we do care because we want things to look right.

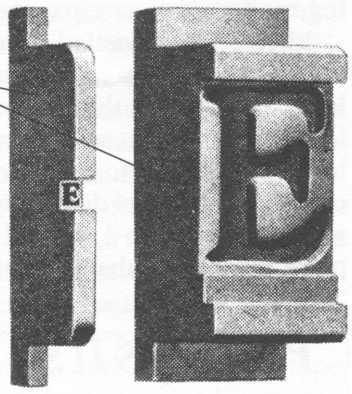


Illustration from Ludlow literature

The issue of "dinged" and "dressed" Ludlow matrices is brought up to alert would-be buyers to look for evidence of this dressing, because it may have rendered a font less than desirable.

Pat dismissed my suggestion that this dressing had been done intentionally to get a tighter fit. "If that were the case, the owner sure screwed up a good font of mats," he said.

The entire issue of matrix dressing is covered well in Jim Parrish's book on operation and maintenance of the Ludlow. Contact him at 1316 NW Sheridan Road, Lawton, Okla. 73505. He's usually on the road, so a letter would be best.

The subject also was discussed in the defunct publication *The Ludlow Quarterly*, done by Bill Simon. Lots of good advice, so please consult one of these publications before you even consider dressing your own fonts.

Casting Success

A brief e-mail Jan. 10, 2002, from Jim Walczak: "I report one of those infrequent happy successes out in the foundry today."

"I turned to the old sorts caster and rigged it for 36 point Lanston display. I decided to leave the ⅞ inch comp pump in the pot for the initial test casting of a Forum cap H, a full 35¼ points wide. Expecting the worst, I was delightfully surprised at good, solid type pouring out of the channel at the machine's snail speed of about 10 rpm. To make sure it was not beginners luck, I did three more characters before shutting down for supper. I sawed one of the H casts in half; it was ATF solid! Am afraid to change to the larger pump with such results."

As they say, "If it ain't broke, don't fix it!"

Students Give Insight Into Fourth Session of Monotype University

The fourth session of Monotype University was held August 19 through 26, 2001, at Terra Alta, W. Va., with Rich Hopkins again serving as "dean" of the school. This time there was a virtual one-on-one faculty ratio, with Paul Duensing, Roy Rice, Jim Walczak, Mike Anderson, Dan Jones, working with students, and a visit from Greg Walters, a Mono U graduate himself (as were Anderson and Jones).

Receiving diplomas this time were Dave Clinger of Richmond, Va., Bob Magill of St. Louis, Mo., Sara and Kylian Wrzesinski (the first-ever husband-wife team) of Middleton, Wisc., and Paul Aken of Beach Park, Ill. Dave Miller of Atlanta, Ga., attended sessions but did not complete the course. Below are impressions from three of the six students:

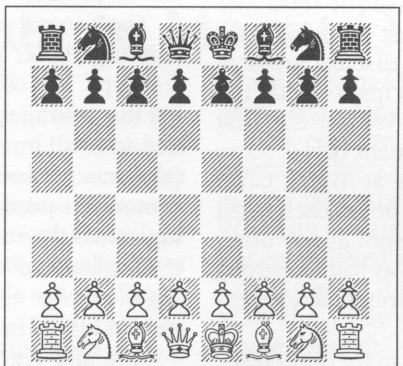
The Land of Oz

BY PAUL AKEN

I always thought that you traveled to the "Land of Oz" through someplace in Kansas. I entered it through the village of Terra Alta in West Virginia. Passing straight through the financial district (the street between the town's two banks), Toy Street. How aptly named. I drove straight out to the Hill and Dale Type Foundry where I was met by the wizard himself, Rich Hopkins and "Glenda the Good Witch" posing as his wife Lynda.

The wizard brought in the top minds in the industry to help, and there were so many it ended up as a one-on-one teaching environment. These included Paul Duensing, who mainly worked with the keyboard; Roy Rice on the Thompson; Dan Jones on the Supercaster; Mike Anderson on the composition caster; and Jim Walczak on the Orphan Annie.

There were six "Dorothys," really five and me "Toto," who came with their dreams, goals and thirst for knowledge about the Monotype System.



A chessboard setup from 16-point characters cast by Paul at MU4.

Sunday afternoon started with a quick meal and self-introductions of everyone with their varied backgrounds and interests. Then a tour of Oz. The wizard briefly explained and demonstrated the keyboard and comp caster (which was a goal for the majority of students). He also pointed out the other five machines that we would run during the week. Handouts were provided, explaining many adjustments.

The six of us shared a house about three miles away over a yellow brick road that ran to the type foundry. We car-pooled at least twice a day. In the morning (when we brown bagged it for lunch) and in the evening when we returned for a program or continuing work on our projects.

My project was the casting of a font of chess type. This could be done only on the Orphan Annie as it was 16 point and had English mats. (Rich had no 16-point blades for the Thompson, nor a 16-point mold for the Supercaster, but he did have an American 16-point display mold for the Orphan Annie.) On Monday morning we broke into groups and I learned the basics of the Thompson and general safety. Before lunch I moved to the Orphan Annie, where I immediately discovered which side was the front of the machine. Knowledge came fast and furious: how to change a mold; what a bridge was and how it went on the machine and came off; how to adjust the set size; how to move the face side to side and up and down on the body; keeping the nozzle from freezing up and what to do if it did; and how and when to put the matrix holder in the machine.

I was casting type by dinner time. This was not very good type and I learned what was wrong with it and how to correct it. I was introduced to the concept that if you are going to cast type with your name on it as the typefounder, the only standard is "excellent."

The "Wicked Witch of the West" was present in the form of squirts, splashes, misaligned type, hollow type, flash around the face and a machine that refused to hold its settings.

Monday evening we had a presentation on how to duplicate faces and ornaments using the electroplating process and a second presentation on engraving matrices.

Tuesday morning, though not part of the curriculum, it was decided the Orphan Annie needed to be torn down, cleaned and readjusted so that the settings would not vary as the machine was running. We started at the top and worked our way down and several things were found which could be causing the problem. What an interesting and complex machine! Cleaned, checked and

put back together, it was discovered that many adjustments had to be reset in order for the centering pin to lock in and good type to be cast. I clicked my heels together three times and it began to cast type.

The rest of the week went by in a blur, with some days running from 8:30 a.m. until midnight, with only breaks for lunch and dinner. I cast the chess type (my goal) and a font of Pabst on the Orphan Annie. It was totally a hands-on experience. The camaraderie between students and students and faculty was great. At times we pulled type off of machines, hand finished type, fonted the type and set our diploma (which was designed and printed by fellow student Sara Wrzesinski).

There were many gifts passed on to me: the knowledge that I too could run a Monotype, the courage to tackle a machine which has been sitting in my shop unused for months, the knowledge that the machine will cast really good type, and that help is available only an e-mail or phone call away from many sources. Another gift was the chance to go through Rich's legendary "barn" and purchase needed fonts, molds, books and parts to speed me along in getting my machine working. The best gifts of all were the friendships with the other students and the faculty—these will last a lifetime.

My goals all were achieved, plus many which I did not formulate until during the week. Would I go back again as a student? They wouldn't have me. I have a long way to go to even become the most junior member of the faculty, but if ever I was offered the opportunity I would return to the "Land of Oz" with no hesitation.

Monotype University 4 was great!!!

A New Respect for the Talent Necessary to Cast a Font of Type

By Bob Magill

November 10, 2001—It's another Monday morning, but today the routine meetings are punctuated by my thoughts of set widths, vertical mold blades, and three-phase converters; and my feet have stopped aching. The lapses are a direct result of my return from Monotype University 4. I returned home armed with new skills, good friends, a new respect for the talent necessary to cast a font of type—and yes, a real desire to acquire the equipment necessary to join the small fellowship of type casters.

On the previous Sunday, I arrived at Terra Alta with Paul Aken. Our trip "out east" allowed us to become better acquainted and discuss areas of mutual interests. The six participants gathered quickly that Sunday afternoon. We got our first overview of the shop and equipment before moving into our temporary residence at Alpine Lake. The home we occupied for a few hours each night would be a wonderful vacation spot at any other time, but the draw of the casters was just too strong to allow anyone time to enjoy Alpine Lake's tranquil wooded setting.

The students were nicely split in their interests, thus allowing each participant to concentrate on his/her primary areas of interest. Although encouraged to periodically rotate to other equipment, this only happened the last couple of days. To my delight, I was assigned to the Thompson Caster first. Ky and Sara Wrzesinski and David Clinger began study on the Composition Caster and its Keyboard. Paul Aken took on the Orphan Annie—but more on that later.

My mentor on the Thompson was Roy Rice who I found patient, instructive and willing to turn the machine over to me as soon as I displayed an interest in taking control. Roy and I started with a detailed overview of the Thompson and its operation and moved quickly to the dismantling of the upper mechanism in preparation for my first project, sorts casting of 24 point Californian Italic, a beautiful face highlighted in this *Newsletter*. (My casting is used as the specimen for 24-point italic.) As I soon learned, the Thompson is a simple but finely crafted caster that produces excellent type, albeit slower than the Orphan Annie that Paul, Jim Walczak, Mike Anderson and Rich Hopkins continued to work on.

The second full day and the Thompson was running "letter perfect," producing lines of perfect type. We oiled, adjusted the water flow, varied the casting speed, and the Thompson continued to push out a fine bounty of type. My attention was focused on the Thompson because of rumors of squirts, flashes, and lead splashes streaking across the room—but they never came. A few quick glances over my shoulder found Paul removing the bridge again or worrying over the wedges; he had lots of help, but no type yet.

Sara and Ky, along with David were working on the Monotype Keyboard under the expert supervision of Paul Duensing. It was a real treat to hear Paul's views on a variety of topics during our early morning meetings.

To hear about and actually see examples of the new face designs he is currently working on was an unforgettable experience. I did not have the opportunity to work closely with Paul, the Composition Caster and Keyboard were not on my primary agenda, but I was pleased to periodically discover him reviewing my progress and then simply

moving on with an approving nod. Paul Aken, Rich, and Jim were pondering set width deviations and debating what adjustments should be made.

Twelve large fonts of 24 pt Californian Italic were completed on the fourth day, the Thompson was working perfectly.

Paul Duensing brought a matrix carrier for the Thompson that would allow casting from foundry mats (which are more like brass bar stock than the flat brass or aluminum Monotype mats). I wanted to cast some border, and Paul had a beautiful pair of very old mats for use with his mat carrier. The border selected is depicted in Dave Peat's most recent specimen book, *A.W. Kinsley & Co. Albany, NY, 1829*, page 118. Could these be original Kinsley mats? I am granted an additional day on the Thompson to cast a border which appeared in a publication over 172 years ago.

The Kinsley border Bob Magill cast.

Paul Aken seems a bit skittish in his activities. But the Orphan Annie is now producing some type—finally!

We changed the mold blades and reset to 18 point. The border body piece cast well in the new mat carrier. The corner piece, however, was a much smaller mat and needed special support to hold it in casting position on the carrier. After several hours with the drill press, files, and taps, a jig was contrived to do the job. The border was finally completed, and I moved to a Monotype flower border (much more easily cast).

Finally, Paul is having better luck with the Orphan Annie. The faster machine completes his sorts casting project very quickly.

Time was passing quickly and my feet hurt, but I found myself eager to get back to the shop after dinner and reluctant to turn off the switches supplying power to the casters even at midnight. Sara willingly worked on the layout for our diploma, and Ky produced another border at the Thompson. Paul Aken, who had completed his casting on the Orphan Annie, reluctantly turned over a carefully tuned and calibrated machine to me!

The Orphan Annie performed well as I cast more decorative elements. I made an extra font for Sara, since she had discussed a similar interest earlier in the week. Others seem a bit out of sorts—maybe their feet were hurting too.

On the way home, Paul and I agreed that his experience of stripping the upper mechanism of the Orphan Annie was invaluable, especially since he had a Monotype in need of assembly. Where else could one obtain such hands-on training?

Departing expressions of thanks can only partly let Rich know how appreciative we students were for instruction, mentoring, and access to his marvelous shop. We also thanked Lynda for allowing us to invade her home. I came away with examples of each student's work, a working knowledge of typecasting, new friends, and an intense desire to continue the goals of Monotype University!

A Journey to Mount Olympus

BY DAVE CLINGER

Terra Alta, high in the mountains of West Virginia, is the dwelling place of Richard Hopkins and his Hill & Dale Private Press and Typefoundry which is transformed every two years into a molten-metal lyceum of learned philosophers and eager postulants. To reach this summit, travelers from the east must first survive a 60-mile ordeal of complex hair-pin curves and steep straight-up and straight-down grades that torture-test both car and driver. Figuratively and literally, it is an ascent to Mount Olympus, at least for type nuts.

My grandchildren prepared me for Monotype University by giving me a school composition book with lots of blank pages. On the cover, they had lettered "Monotype for Dummies." Very perceptive! While the Monotype keyboard and I had a brief encounter in the late 1980s, I was really starting from zero. I didn't know the difference between a wedge and a keybar. The week at MU4 was intense, exciting and incredibly rewarding. The faculty, experienced and long-suffering. The camaraderie, legendary.

Any concern I may have had about the long hours—8:30 a.m. to midnight—quickly disappeared in a rush of adrenaline that kept me so keyed up I couldn't get to sleep even when I tried. I accomplished my main goal: the Keyboard and Comp Caster. Added dividends were handshakes with the Thompson, Supercaster and Orphan Annie. I also did my tedious share of fonting; never again will I complain about typefounders' prices!

I came away with the confidence I need to begin to tackle my own keyboard and caster, and to read and comprehend the Monotype manuals, which heretofore were as clear as ancient Greek. My "Dummies" book no longer has blank pages. When I get in a jam, I know where to call for help. Best of all, I have my "Master of Typecasting" diploma which will always remind me of the great time I had and the good friends I made at Monotype University 4.

Four Books to Help You Keep Yesterday Alive!

I have four separate book items I wish to review, and not much space, so I'll jump right into them.

First is a wonderful private press publication, *L. A. Type. A Concise History of Los Angeles Type Founders, Inc.* It was published in 2000 by Vance Gerry at his Weather Bird Press, 450 South Arroyo Boulevard, Pasadena, Calif. 91105. Letterpressed from Lino slugs! It's based on an oral history from Don Winter, who first joined the company in 1937 (soon after it was founded) and also had the dubious honor of helping pack up the plant for shipment to Chicago in 1998 when it closed. It's a great little story about a firm which had an abiding national reputation in the days of hot metal. And it's a story of triumphs and failures of individuals as the business grew and then faded. I'm happy to have Don Winter as a correspondent and recipient of our *Newsletter*, and anyone who wants to know about the foundry should get the book. It's still available from Vance, who apologetically says "sorry to say, but because of cash charges against the book, it sells for $100.00." Still worth it if you want to know more about this once-great type house.

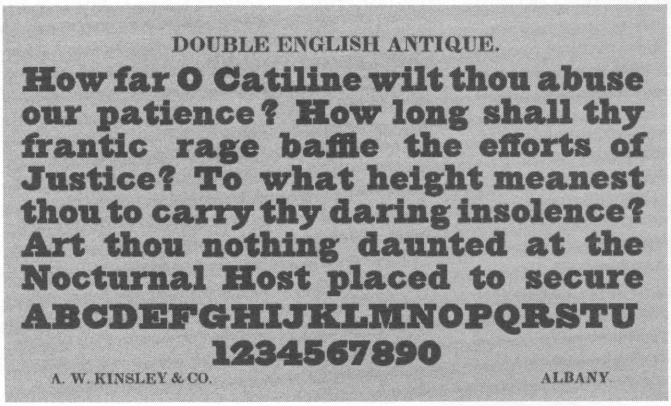
Next are two publications I had a hand in and therefore, my observations are a trifle biased. First is *A Catalogue of Nineteenth Century Printing Presses*, by Harold E. Sterne, published by Oak Knoll Press, 310 Delaware Street, New Castle, Del. 19720. Cost is $75.00. I have Hal's first book and I thought it was wonderful. But this one is expanded by more than 150 additional illustrations. If you ever even thought about buying or collecting old printing presses, this will be an invaluable resource.

Many of the new illustrations came from loose and tattered advertising material in Dave Peat's collection, and I worked with Hal and Dave in converting this variety of very fragile sheets and leaflets into line negatives for the book. Since they all appear so well in the book it's deceiving. Rest assured a large portion of the new illustrations have come from one-of-a-kind materials which themselves are disintegrating. So the book will remain unmatched forevermore, and you owe yourself a copy just to wander down memory lane and review the hundreds of devices sold back in the heyday of hand-set letterpress.

The third publication is a complete facsimile edition of *A Specimen of Printing Types Cast By A. W. Kinsley & Co., Albany, N. Y.* This exceedingly rare gem dates to 1829, and is published by Dave Peat, 1225 Carrol White Drive, Indianapolis, Ind. 46219. You need to buy this edition (only $20.00) just to encourage Dave to do a lot more of these facsimiles.

When I located this book at a used bookdealer in Vermont before the ATF Conference at Rindge, N. H., two years ago, I had no hint of its rarity. Since I collect matrices, not books, I put Dave on its trail and eventually, he made the purchase. There are only two other known copies, both locked up in libraries. As a typefounder, I am stunned at the extent and the variety of this founder's offerings. From 20-line pica to Nonapreil, all in metal! Amazing. Great ornaments, and nice electros too.

An historic book and a great little reference for anyone interested in the history of the typefounding industry. My commercial shop did the negative work and printing and we're very proud to include it among our accomplishments. But Dave Peat deserves all the credit for rescuing the book and making it available once again, after 170-plus years!


DOUBLE ENGLISH ANTIQUE.

How far O Catiline wilt thou abuse our patience? How long shall thy frantic rage baffle the efforts of Justice? To what height meanest thou to carry thy daring insolence? Art thou nothing daunted at the Nocturnal Host placed to secure

ABCDEFGHIJKLMNOPQRSTU

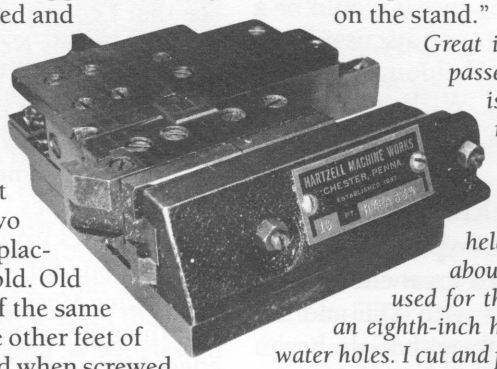
1234567890

A. W. KINSLEY & CO. ALBANY.

The Cicero text, frequently done in Latin in specimen books, here is done in English in the KINSLEY *book. Verbal content of specimen books is the subject of* ALPHABETS TO ORDER *(next page).*

Fixing a Water Leak on a Composition Caster

Chris Stern of Sedro Woolley, Wash., operates a rather older American Monotype Composition Caster and has been having some difficulty getting a good water seal between the machine base and the bottom of the mold. Thus, he seemed to be fighting water leaks and was having great difficulty getting a proper gasket inserted and kept in place during the process of changing the mold (shown at right).



Chris had been working with the time-honored process of cutting a small gasket of paper with three holes (two for water, one for screw) and placing it on the bottom of the mold. Old timers also advise a "shim" of the same thickness be placed under the other feet of the mold so it won't be stressed when screwed tightly to the machine. But Chris was having leaks.

As Chris reports, "once again, Jim Rimmer (of Vancouver, B. C.) came to my rescue. I followed his method and it worked just dandy. For your storehouse of information, here's what I did.

"Rather than place a precut gasket on the stand, I placed a well-oiled, uncut square of newsprint on the mold stand. I then punched the holes for the waterways and base screws with a pin wrench. Then I placed the mold into the machine. Jim also suggested removing the crossblock hook so it's easier to place the mold on the base.

"I then screwed the mold down tightly, and reattached the crossblock hook. Then I trimmed the paper from around the mold and underneath with an X-acto knife. Worked like a charm. No leaks."

Chris continues: "Obviously, with my old method, I must have sometimes moved the gasket so it didn't seal properly. This new method makes it almost impossible to disturb the gasket once it's on the stand."

Great idea and that's why it's being passed along! But just to labor the issue further, I note that I make my gaskets of the old-fashioned lick-and-stick stock which probably is 20-pound bond or thereabouts. I use two hand-held paper punches. One punches about a quarter-inch hole and it's used for the screw holes. The other has an eighth-inch hole which is used for the two water holes. I cut and punch the small gasket, lick it, and stick it directly to the bottom of the mold. I cut small squares of the same material and stick them to the mold's other two feet.

After cleaning the machine base thoroughly to be sure not a single fleck of metal is in the area, I turn the caster to the point where the type carrier hook is flush with the edge of the frame where the mold fits in. Then, holding the mold with right thumb and index finger, I ease it into the machine taking care not to let it hit the machine base (and thus disturb the gaskets) until I click it into position. After screwing into place, I find I rarely have difficulty with water leaks, and yes, I confess to performing this operation usually without removing the bridge. It makes changing the mold a two-minute breeze instead of a 15-minute ordeal.

Book Reviews, Concluded

Alphabets to Order: The Literature of Nineteenth-Century Typefounders' Specimens, by Alastair Johnson, also published by Oak Knoll at $39.95, is fascinating reading for anyone who has ever spent time with old type specimen books. My first experience was with the 1951 American Type Founders catalog. All specimens read "Pack my box with five dozen jugs." As a teenager, I pondered what a "jug" was in printing. Only later did I discover the phrase contained every letter of the alphabet, but had nothing to do with printing.

Much later I was browsing a much earlier specimen book when I actually *read* what the specimen said, rather than just looking at the type. It was hilarious, though I now forget the specific quote. Then the whole realm opened up to me regarding the fact that composing a type specimen gave unmatched opportunity to countless unnamed typesetters to exercise their wit (just as long as it fit). This delightful book concentrates on what the type specimen books *say*, and not so much on what they show. You'll find it interesting reading. Johnson starts off with the very familiar Latin "Quousque Tandem Abutere, Catalina, Patientia Nostra?" which appears so many times in early type specimens, and fills us in all the details.

There are two great appendices detailing the lineage of both American and British typefounders. If you have even one old specimen book, you need this book too. It details wit and humor on a level that modern society (and processes) seem to have obliterated.

Six Fellowship Associates 'Hang Up Their Aprons'

Since the last *Newsletter* was published, no fewer than six persons have been "taken from our fraternity" by death. Their passing has been mentioned in other publications, but since all six have been actively involved in our typecasting fellowship too, it would be a sad oversight to omit a proper discussion.

These persons are Gale Sheldon, Phil Cade, Leonard Spencer, Fred Williams, Ernie Lindner, and Blaine Lewis. I will discuss them in no particular order.

Gale Sheldon

GALE SHELDON didn't cast type, but he was a life-long user of type and a great cheerleader to yours truly and efforts with ATF and the *Newsletter.* My association with Gale began when he edited the *National Amateur* for the National Amateur Press Association and I served as printer. Since he was in California and I was in West Virginia, that required a lot of correspondence and several phone calls (this was before e-mail). I found him to be both exceedingly knowledgeable about printing and very exacting when it comes to details. That makes all the difference in the world when it comes to publication printing. Later, I met Gale in person and throughout the years he always was quick to offer complimentary remarks regarding my efforts with this publication. Without such encouragement, the *ATF Newsletter* would have ceased publication long ago. I miss Gale's fine amateur journal, Silver & Gold, and I miss his encouragement.

Phil Cade

PHIL CADE was a typecaster. I believe at one time he had a pair of Thompsons and a 15x15 Composition Caster. More importantly, he used them. His journal, *Limited Edition,* always interesting, usually gave evidence of Phil's typecasting activities. I never met him face-to-face, but had correspondence with him for well over 20 years. He was one of those "renaissance men" with intense interests in several areas including antique cars. He began divesting himself of typecasting equipment around 1992, principally because his advanced age was interfering with his ability to use the equipment.

Leonard Spencer

LEONARD SPENCER's death caught us all by surprise, for he was already making plans to attend the Utah Conference when he passed away in January, 2001. The keen observer will see that Leonard had a hand in several items covered in this *Newsletter.* I believe I first became acquainted with Leonard at our Buena Park Conference in California. He was a professional printer who just couldn't turn things loose after retirement. He called himself "Doctor of Linotypes," and believe me, he knew the machines from top to bottom. Two of his publications for ATF quickly come to mind: *Linecasting Machine Maintenance Basics* is one, and the other shows the extent of his knowledge: *Linotype/Intertype Linecasting Machines & How They Differ.* Leonard was in "second heaven" during our ATF tour of Germany a few years ago. He was overwhelmed by the Linotype display at Darmstadt, and spent quite a bit of time with each machine. Though he had never been to Europe before, he had an extensive knowledge of virtually all the linecasters we came in contact with at Darmstadt and Leipzig excepting the Russian machines.

I have a fond memory of Leonard pulling up at Rindge with his wife Alma in their motor home. They'd traveled cross-country from California for the meeting. And of course, Leonard is sadly missed for his services in running linecasting technical sessions at Rindge, at Sunnyvale. He could explain and troubleshoot linecasters with depth and professionalism which are rarely found in the modern business world.

Ernie Lindner

ERNIE LINDNER was a solid fixture at ATF Conferences almost from the beginning, and his exploits as a lover of printing equipment of all kinds, as well as his extensive collection of equipment—well, they're legendary. Ernie grew up with Linotypes. His father's company was the first dealer on the West Coast, if my memory serves me. Though he might have been classified only as a "dealer," he very clearly knew the machines he sold and knew them well. And he loved them. That

was evident. Ernie had a passionate and joyful association with printing equipment and the people who ran it, and his enthusiasm always bubbled over at our ATF meetings.

Of course his proudest moment was the Buena Park Conference in 1994. The International Printing Museum was fully set up and what an absolutely marvelous display that was! There's no doubt Ernie Lindner was the driving force behind this wonderful museum, and I have had several wonderful moments listening to Mark Barbour, its director, speaking of long-distance jaunts he has made with Ernie in the quest of more rare and obscure printing devices. I believe Mark indicated that Ernie had brought still additional "choice items" for the Museum back from a trip to Europe just prior to his death. One of the most unique aspects of the Museum as we viewed it during that Conference was its absolute commitment to make sure all the devices on display were operational.

Ernie was selected to provide the keynote speech at the Buena Park meeting, and I'll never forget it! I found his far-reaching discussions of printing equipment exploits both here and across Europe spell-binding. I was among people "of the faith" that night, for I wasn't even aware his speech had extended far beyond the one hour planned. I enjoyed every moment of it. His enthusiasm was contagious, and his friendly demeanor always brightened our meetings and definitely will be missed.

Blaine Lewis

I just ran into BLAINE LEWIS again about two weeks ago, as I was viewing a videotape of a Monotype technical session conducted by Harry Wearn at the 1986 ATF Conference here at Terra Alta. (Howard Bratter and I were working on the Supercaster, and we decided to "Consult Harry," since I had the videotapes. Right there in our small group of enthusiasts was Blaine Lewis.) Blaine was intensely interested in all aspects of typecasting, though he never cast type himself. He attended most of our meetings with his wife Belle, though he never brought attention to himself. He attended technical sessions because he wanted to know more of the workings of the machines, so he could better appreciate the type he acquired from us and used at his private press in printing a long stream of amateur journals. In the "real world," Blaine was an accomplished surgeon, though he never flaunted this dimension of his life. My best memories of Blaine were quiet conversations and his constant encouragement to me.

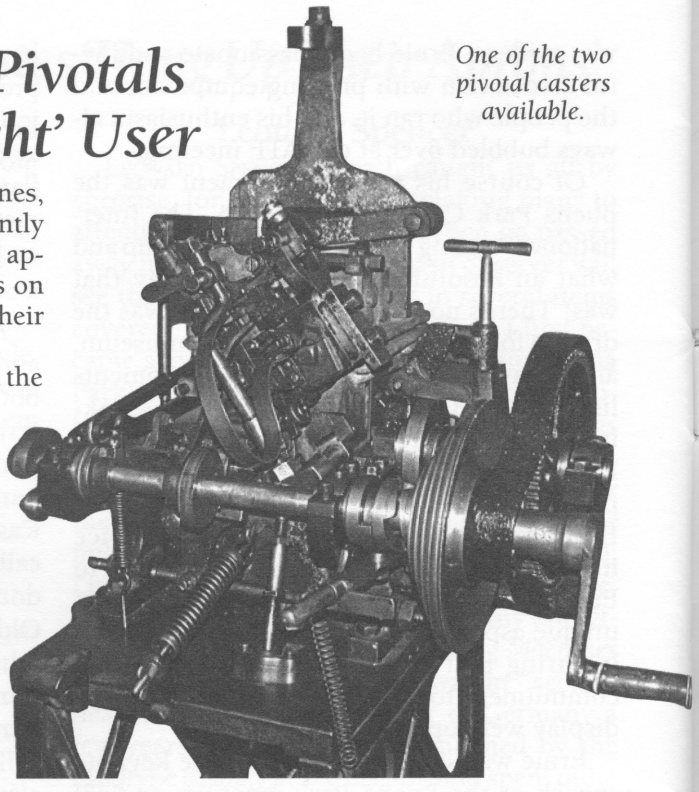
Fred Williams

And finally, I come to FRED WILLIAMS. He and I had a special camaraderie because we both put out journals for the letterpress fraternity—almost from the beginning of his journal. His 100 issues of *Type & Press* will be hard to match. How many discussions of Caslon did we have over the years? I can recall his never-ending search for the special double-letter matrices for Linotype Caslon Old Face, the one he preferred to use for his journal. We met for the first and only time during the Buena Park ATF Conference and I remember his telling me, "you know, I tried so hard to incorporate all those special characters into *Type & Press*, but rarely did anyone ever make any notice of them."

Fred made a very sincere effort to put out a publication that would be of practical use to letterpress printers no matter what their level of training. He accomplished this very well, and I can honestly say I always read *Type & Press* with great intensity. The fact that he also succeeded at putting the journal out quarterly puts me to shame. We knew he was tired and not in good health and those were his principal reasons for suspending publication. It's left a great void in our little world of letterpress.

That causes me to reflect on the effort necessary to put out a journal of this nature . . . and like *Type & Press*. Recently Bill Venrick wrote "(the *ATF Newsletter*) is a little like waking up in a historical moment, not unlike the Time Machine." It caused me to hesitate for I never before had considered the fact that my intense enthusiasm for things letterpress (read: things old and forgotten by the rest of the world) is just a little out of step with the 21st century. Well, it's been folks like all six persons named in this article that have helped keep me going, for they all shared my enthusiasm. They all will be sorely missed.

Two Vintage Bruce Pivotals Available to the 'Right' User



One of the two pivotal casters available.

Two vintage pivotal typecasting machines, along with many molds for same, have recently become available and Rich Hopkins, "self appointed typecasting guru," is seeking ideas on how and where these machines will find their best homes.

The machines, which have been stored at the Smithsonian Institution for over 20 years, are the property of the late Kelsey Company of Meriden, Conn., and were in use at that company for making foundry type from about 1893 until the early 1930s. Kelsey acquired the equipment either from the Conner or Farmer type foundry of New York, when both were merged into the newly formed American Type Founders conglomerate in 1892. The machines could well date to the 1850s.

This past summer, the Smithsonian decided to terminate the long-term loan of the equipment and sought to return it to Gene Mosher, former general manager/owner of Kelsey. Mosher, who no longer has storage facilities, opted to have the equipment sent to Hopkins, who is now in the process of finding a new home (and buyer) for the machines.

"Obviously Gene Mosher doesn't want to see the machines destroyed—not after surviving as long as they have," Hopkins reports. "But he and I both are somewhat adverse to the idea of a static, musty, dusty museum setting. We'd prefer to see the equipment in the hands of someone intending to use it in some way."

Toward that end, he also has volunteered to make a limited number of matrices available. Hopkins acquired a large number of foundry-style matrices from the Kelsey Company upon its closing in 1992. "These matrices match the 40 molds and two machines I now have, and were likely acquired at the same time the casters were acquired."

Although Hopkins has found ways of utilizing these matrices with his Monotype equipment, he is willing to share some of the fonts with the new owners of the pivotal casters.

"What I am seeking now are formal proposals from individuals and/or organizations with regard to (a) how they would intend to utilize the equipment once it was acquired, and (b) what sort of monetary offer they might make for the equipment. Gene Mosher has left this matter in my hands, but I am certain both issues will be weighed together in making any decision as to the relocation of the equipment," Hopkins explains.

The equipment presently is in storage at Terra Alta, W.Va.; shipping arrangements also would need to be arranged by the new owner.

The pivotal caster was the first successful machine developed to automate the process of casting individual type characters. It was invented by George Bruce around 1832, and was adopted by typefoundries world-wide within 10 years of its invention. To a large extent it mimics the motions of a person casting type from a hand mold, but it obviously was far more efficient than the hand mold.

After casting, however, type made by the pivotal caster still needed to have jets broken off, and the type plowed and dressed by hand.

Other devices also are with the machinery, including an ancient "pump pot," and a dressing bench. Complete details on everything included with the machines will be forwarded but only to parties genuinely interested in acquiring the machinery and able to come forth with a reasonable purchase price. Contact Rich Hopkins, P. O. Box 263, Terra Alta, WV 26764. (wvtypenut@aol.com).

Production Notes

The great bulk of this issue was done offset in my commercial shop, the Pioneer Press of W. Va., Inc. I did (on the PC mostly at home) all the composition, scanning, etc., using Pagemaker and Adobe Photoshop. The cover was letterpress printed on a Vandercook by Gale Mueller himself (see front page) and this side of the sheet is Vandercook printed by yours truly.

The center 15-page section was letterpressed direct from the metal type, which I keyboarded and cast on my Monotype Composition Caster. The appearance of pages 22 and 33 proves this *Newsletter* definitely is a "work in progress." I was attempting to do the work on my 10x15 Heidelberg windmill (as I have done before on several issues). Running a 10½x14½ sheet on that press taxes its limits. It does a great job printing, but paper handling is very difficult with a full type form because there is no room for friskets, fingers, or anything else to help keep the paper from bouncing against the form both before and after impression.

I was fighting this problem so intensely (trying to keep from getting a blurred, double image on the folios and the top lines of type) that I ended up over inking and thus, that one sheet is a big mess! I would have done it over but I ran out of time.

Rather than fight the Heidelberg further, I did all other letterpress pages on my trusty Vandercook No. 4 repro press. The 24-point Fairfield border on pages 19 through 34 was cast on my Thompson from Linotype matrices. I pulled a repro and I admit, we printed all the green ink via offset just to help speed up the entire process.

The ink I used in the letterpress section excites me. It's a new "Infinity" acrylic ink by Van Son which seems to be a win-win situation. It releases from the type very well, it doesn't migrate off onto the shoulders and thus, spread the image, it stays open on the press overnight, it dries very well, and even when it sets up on the press, it still is quite easy to wash off.

All printing is done on 70-pound Mohawk Superfine paper except for the 67-pound cover, which Gale Mueller graciously supplied. Finally, one person has asked who "authored" the unsigned articles in the various issues of the *ATF Newsletter*. I admit to being the person behind everything which I have not attributed to someone else.

As a trained journalist, I know using the first person isn't the preferred route, but since this is an intimate publication between you and me, long ago I consciously opted to go "first person" anyhow. If you would like to see less of Rich and more from other authors, it's time now for you to offer to do an article yourself. Those with expertise in linecasters are especially encouraged to help me with articles for future issues. You may contact me by mail at Post Office Box 263, Terra Alta, W. Va. 26764. Or if you are into e-mail, address wvtypenut@aol.com.

Classified Ads

WANTED. Proofing press with mortised inking. Hand type mold (not necessarily in working order). Small treadle platen. John Eickhoff, Bristol, England. Telephone 0117 967 7903.

CASTING EQUIPMENT AND PRESSES FOR SALE. We have had several spare machines in a storage building which we now must empty. The following casters are available: a "combination" caster (display and composition), an Elrod, one Thompson, a Material Maker, two older American comp casters, some American keyboards for parts. Also presses including two Vandercooks, one 12x18 C&P, two Meihle V36 presses (probably for parts) and a Kelly B in good condition. Contact Dan Carr or Julia Ferrari at Golgonooza Letter Foundry and Press, Box 111, Ashuelot, N. H. 03441. Phone (603) 239-6830.

TYPE SPECIMEN BOOK FACSIMILES FOR SALE

1829 Kinsley Type Foundry, 145 pp.. . . . . $20.00
1848 Bruce Type Foundry, 48 pp. . . . . $ 4.00
1856 Bruce Type Foundry, 20 pp. . . . . $ 5.00
1856 Boston Type Foundry, 36 pp. $10.00
1857 Cincinnati Type Foundry, 72 pp. $20.00
1869 MacKellar, Smiths & Jordan, 56 pp. $20.00
1888 Conner Type Foundry, 124 pp. $20.00

A 20 per cent discount is offered if any two items are ordered at same time. Many other items also available. U. S. postage paid. Contact David W. Peat, 1225 Carroll White Drive, Indianapolis, Ind. 46219. Phone (317) 357-6895.

ATF NEWSLETTER—set of back issues available. I have issues 1 through 10, and 13 through 22 (missing 11 and 12). Also many other books on all phases of letterpress. Richard Harrington, 209 Grand Street, Winona, Minn. 55987.

ATF NEWSLETTER back issues still in print. Some are very short supply. Price (postage paid) indirectly reflects the number of pages and extent of content of issue.

No. 4—Discussion of Thompson Caster $4.00
No. 6*—Featuring Tour of American Type Founders . . . $6.00
No. 12*—What Is ATF? On Buying a Ludlow $4.00
No. 14—What Was Happening 100 Years Ago? $4.00
No. 15*—Featuring Nevada City Conference $4.00
No. 16—Discussing Williamsburg Conference Plans . . . $2.00
No. 19*—Caslon Hot Metal in Many Variations $6.00
No. 20—Plans for Charlotte Conference $2.00
No. 21*—Charlotte Review, Several Articles. $6.00
No. 22*—Featuring Bulmer, Process Color Cover $6.00
No. 23—Full Color ATF Trip to Germany. $6.00
No. 24*—Featuring Scotch Roman $6.00
No. 25—Announcing Rindge Conference $2.00
No. 26 with Superb Letterpress Cover, Insert $6.00
Aspects (History) of Monotype (England) $1.00

* Indicates letterpress production. Inquire of the editor regarding acquiring these editions.