

LETTERPRESS NOW

A DIY GUIDE TO
**NEW &
OLD** PRINTING
METHODS

BY JESSICA C. WHITE

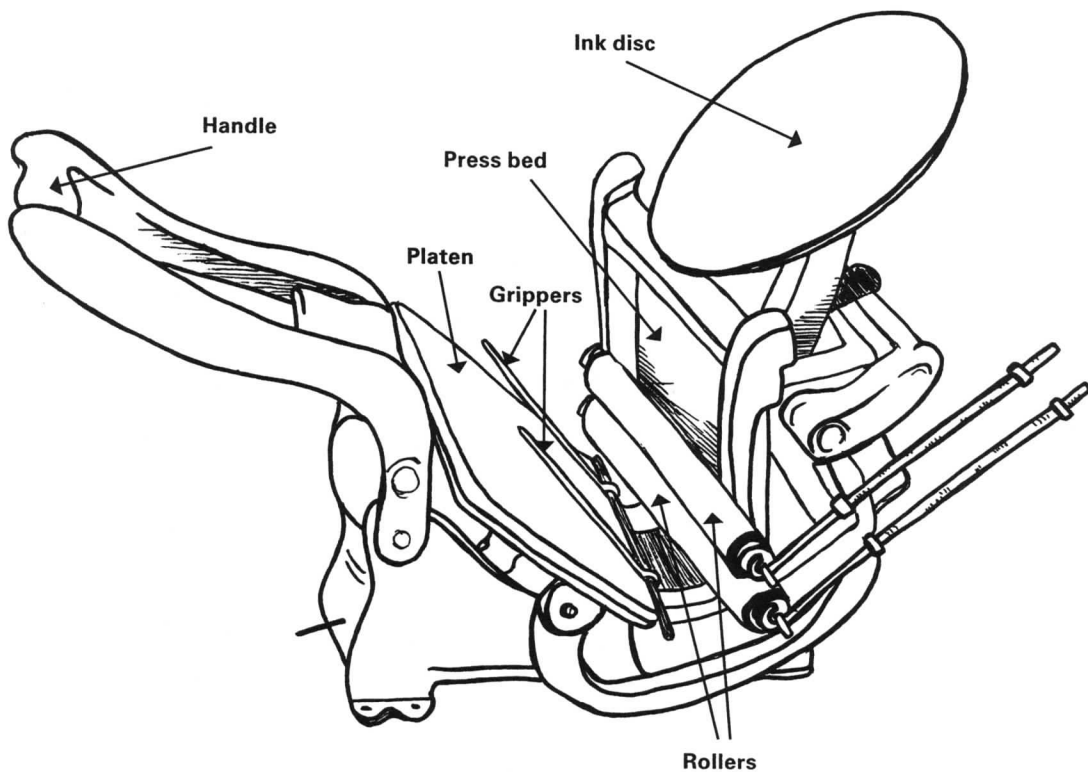
Platen Press

The platen press is often called a “clamshell” press because of the way it opens and closes. This type of press has two flat surfaces: one is the bed, where the form is locked up, and the other is the platen, the smooth surface where the paper is placed. A printed impression is made when the two sides meet. Platen presses have rollers that pick up ink on an inking disc. The rollers transfer the ink to the form as they travel over it on rails.

Tabletop Platen Press

The tabletop platen press was first produced in the early 1800s. It was popular with hobbyists and children in the late 1800s because of its simplicity and portability. Small but powerful, this press is ideal for little jobs such as invitations, business cards, and postcards. It's operated with a lever that cranks the platen and bed together to create an impression. This type of press varies in size, from

a small, business card-size model to a larger, heavy-duty version that's capable of professional work. It's the type of press you're most likely to find at a flea market, an antique shop, a printer's fair, or online. Tabletop platen presses are often reasonably priced. Examples: Kelsey, Baltimorean, Excelsior, Chandler & Price Pilot, Craftsmen, Golding Official, Sigwalt, and Hohner.

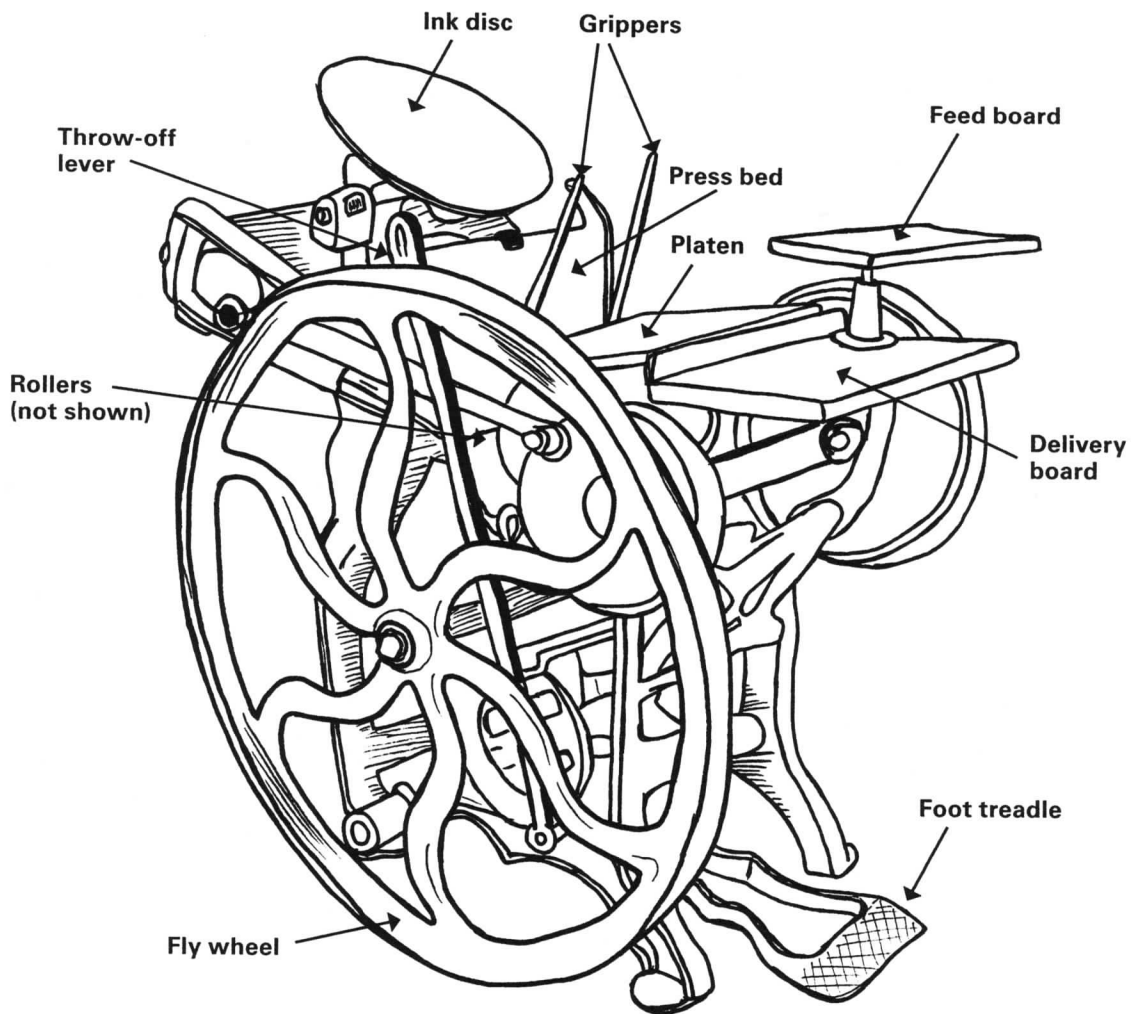


EXCELSIOR MODEL O

Full-Size Platen Press
(Also Called a Job or Jobbing Press)

This large, floor-standing platen model was the mainstay of the printing industry from the mid-1800s onward. It was initially operated by means of a foot-powered treadle instead of a lever, as on the tabletop version. In the early 1900s, the treadle was replaced by powered line shafts, which were eventually motorized. Full-size platen presses were incredibly popular. So many of them were manufactured that even after a rush to scrap and modernize them in the mid- to late 1900s, they still serve

as the primary presses for hobbyists and letterpress print shops. Some larger print shops retained them even as they modernized, using them primarily for die cutting, foiling, scoring, and perforating. Schools and community print shops often remove the motors and reattach the treadles for safety reasons. This model continues to be popular with contemporary boutique presses. Examples: Chandler & Price, Golding Jobber, Pearl, and Gordon Franklin.



CHANDLER & PRICE OLDSTYLE

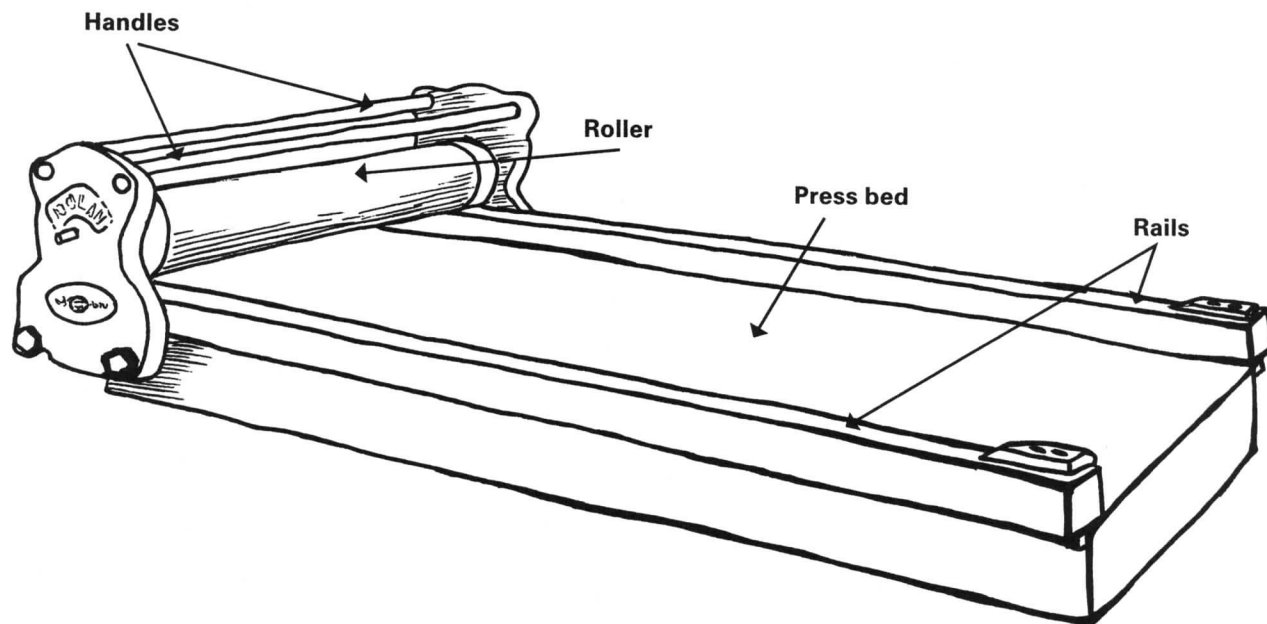
Cylinder Press

Also known as a proof press, this model was once used primarily to make proof prints of forms before they went to press on larger, faster machines. Because cylinder presses are simple to set up, safe to operate, and can easily print one sheet at a time, they're ideal for artists, schools, and community print shops.

Tabletop Cylinder Proof Press

The simplest type of letterpress press, a tabletop cylinder proof press has no motor and few mechanical parts. It's essentially a flat bed with a single roller that rides on two tracks. To use this kind of press, you lock up a form on the bed, ink the form with a small handheld roller (called a brayer), then lay a sheet of paper on top. To get an impression, you pull the roller across the form. At one time, tabletop cylinder proof presses could frequently be

found in the basements of department stores, where they were used to print sale signs quickly and cheaply. Useful for letterpress printing as well as general relief printing, this type of press is inexpensive, is (fairly) portable, and takes up little space. It's a good starter press. However, I wouldn't recommend it if you're printing delicate type or images, or need precise registration. Examples: Nolan, Triumph, Morgan LinoScribe, SignPress, Sirio, and Atlas.

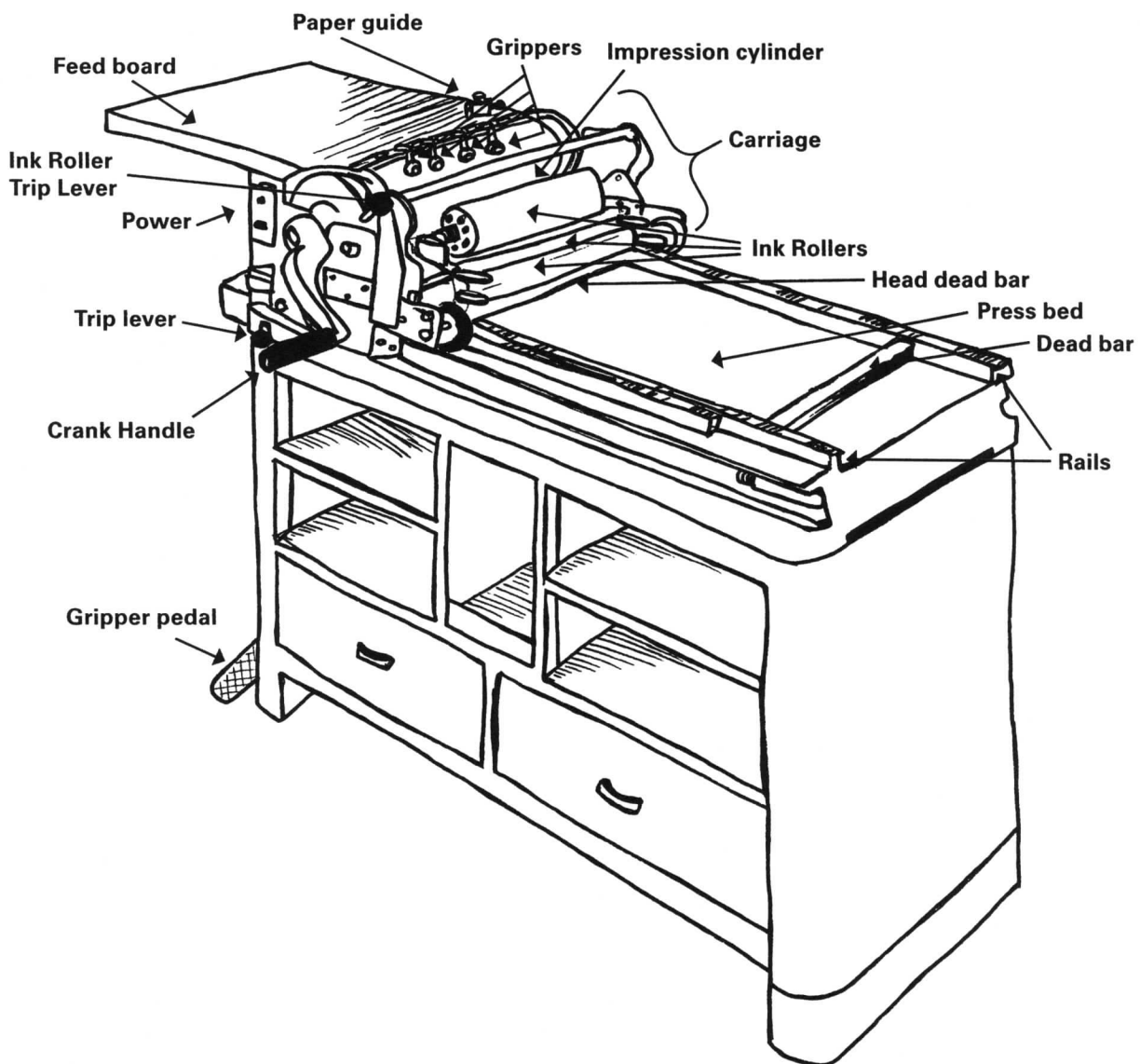


NOLAN STANDARD

Precision Cylinder Proof Press

This press is a step up from the tabletop cylinder proof press and is the kind most commonly used in classrooms and community print shops. The precision cylinder proof press often has motorized rollers. Once a form is locked up on the press bed, the motorized rollers apply an even and precise amount of ink to the form. Paper is then passed over it on a rotating cylinder. The pressure from the cylinder can be adjusted with packing, making

this a good press for a variety of papers. You can get tight registration, perform fine printing, and easily produce a large edition with a precision cylinder proof press. Because this type of press is considered the gold standard for high-quality, modern letterpress work, it's sought after and used by artists and private presses. Examples: Vandercook, Challenge, Asbern, Reprex, and Canuck.



VANDERCOOK SP-15



WHICH PRESS IS RIGHT FOR YOU?

If you plan to print at a commercial studio, chances are they will have a wide variety of presses. However, if you're thinking about buying a press, you should first consider what you want to print. That big concert poster you want to create from wood type just can't be produced on a tabletop platen press! Each type of press is best suited for a specific kind of work. Other factors to consider before purchasing a press include the price, the amount of space you have for the machine, and your own intentions. Will the press be used for hobby purposes only, or do you plan to start a printing business? Here's a handy chart to help guide you through the process of choosing a machine.

Basic Letterpress Printing Tool Kit

(for every project)

- ★ PROOF PAPER ★
- ★ DRAWING PAPER ★
- ★ PENCIL AND ERASER ★
- ★ INK ★
- ★ INKING PLATE/INKING TABLE ★
- ★ PANTONE FORMULA GUIDE (OPTIONAL) ★
- ★ PALETTE KNIFE ★
- ★ LINE GAUGE ★
- ★ GAUGE PINS ★
- ★ PACKING PAPER ★
- ★ TYMPAN PAPER ★
- ★ FURNITURE OR REGLETS ★
- ★ CHASE (FOR ALL PLATEN PRESSES) ★
- ★ IMPOSING STONE OR TABLE ★
 - ★ QUOINS ★
 - ★ QUOIN KEY ★
 - ★ CRAFT KNIFE ★
 - ★ PAINTER'S TAPE ★

TOOLS FOR LETTERPRESS

Every letterpress printer needs to be equipped with the right set of tools to get the job done. In addition to the press itself, make sure that your shop is outfitted with the following tools and materials.

Base An aluminum or magnetic block that's precisely engineered for printing with a photopolymer plate. A magnetic base is used with a steel-backed plate, while an aluminum base is used with an adhesive-backed plate.

Brayer A handheld roller that comes in a variety of sizes.

Chase The metal frame used for locking up a form and holding it in place on the press. Chases come in different sizes, based on the size of the press they're used with.

Composing stick (see page 34) A handheld tool that's used for setting metal type. I prefer the composing sticks made by H. B. Rouse and Company. They're easily adjustable and have measurements marked on them.

Craft knife Handy for cutting slits in tympan paper to insert gauge pins. This is also an all-around good tool to have for cutting string, cardstock, etc.

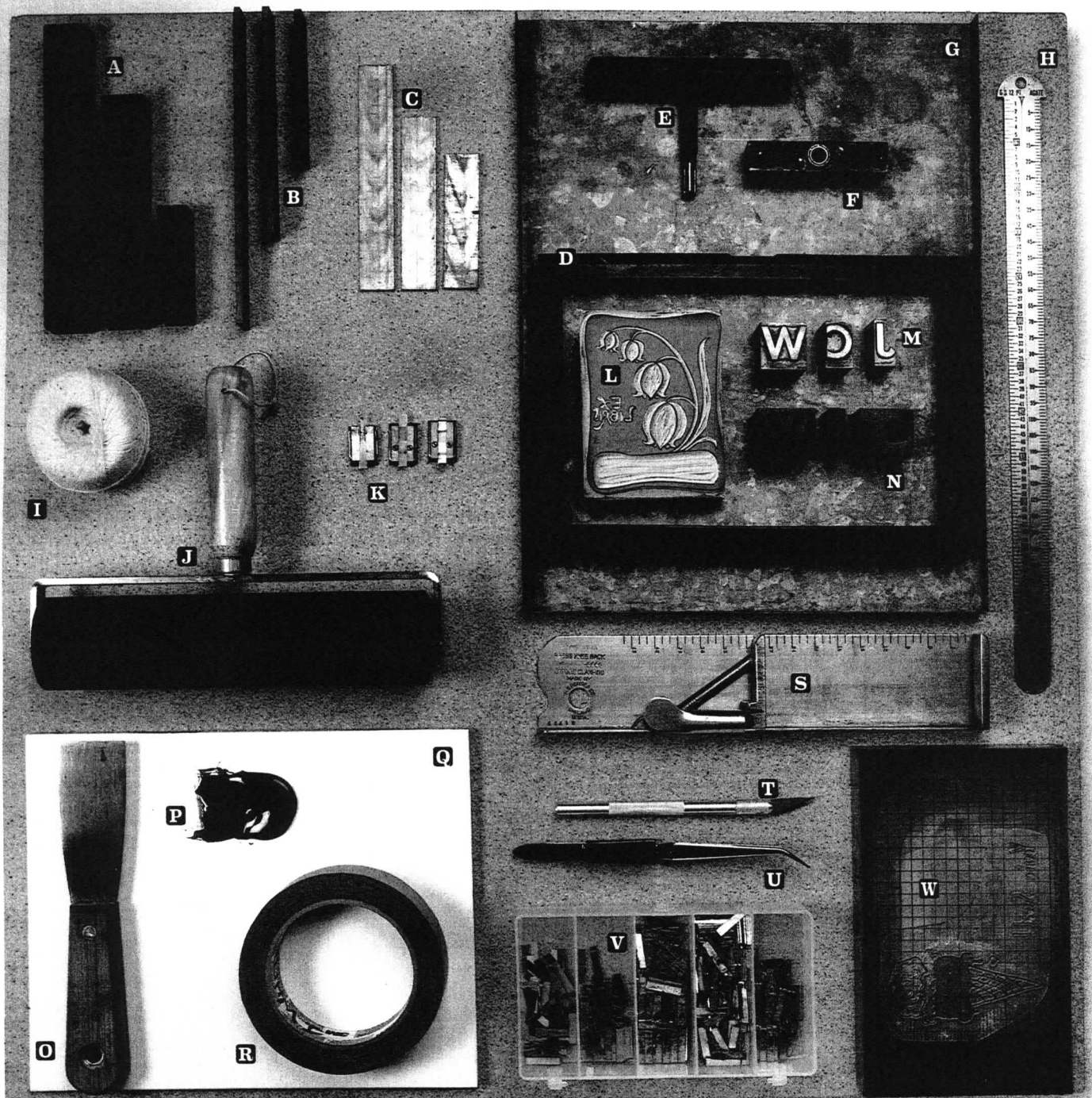
Form string Used to tie up type after it's been set and before it's locked up on a press. Tying up type prevents it from falling over and becoming "pied," or jumbled up in a confused heap.

Furniture Wooden blocks cut to specific sizes that hold a form in place by filling in the spaces around it.

Galley A metal tray that's used for temporarily storing set type. It's not absolutely necessary, but helpful to have on hand.

Gauge pins (see page 30) A variety of small gadgets that hold paper on the tympan during a print run.

Glue stick In this book, I use glue sticks for two purposes: making matrixes for pressure printing, and creating mock-ups (like the collages that I'll refer to as I make my final prints). For mock-ups, I use low-tack glue sticks that allow me to reposition text and imagery until I decide on a final design. For pressure printing, I use permanent glue sticks.



- | | | | |
|--------------------|-------------------------|-------------------------|--|
| A Furniture | G Galley | M Metal type | S Composing stick |
| B Reglet | H Line Gauge | N Wood type | T Craft knife |
| C Leading | I Form String | O Palette knife | U Tweezers |
| D Chase | J Brayer | P Ink | V Spacers |
| E Quoin key | K Guage pins | Q Inking plate | W Photopolymer plate
on a base |
| F Quoin | L Linoleum Block | R Painter's tape | |

Imposing stone A sturdy, smooth surface on which to lock up and plane a form, traditionally made from marble or steel.

Inking plate/inking table A smooth surface on which to work, or warm up, ink before applying it to the press. A piece of glass, firm plastic, or tile works well as an inking plate.

Leads or leading Pronounced “ledding.” Strips of metal in varying thicknesses and lengths used as spacing between lines of text when setting metal type.

Line gauge A ruler with measurements in points and picas, the standard units of measurement in letterpress printing. Twelve points equal one pica, and six picas equal approximately 1 inch (2.54 cm).

Packing paper A selection of papers in varying thicknesses that are added to the platen to adjust the amount of impression made during a print run.

Painter’s tape Like masking tape but not as sticky. Painter’s tape can easily be removed without leaving a gooey residue or tearing paper.

Palette knife A tool used to work ink and apply it to the press.

Photopolymer plate A light-sensitive plastic plate that’s used with a base for printing custom designs (I think it’s best for images and other digital designs). A steel-backed plate requires a magnetic base, while an unbacked plate is attached to an aluminum base with film adhesive. Premade, press-ready plates can be ordered from a plate-making service (see page 172).

Plane A small block of wood that’s used to make sure pieces of type are positioned properly and sitting squarely on their feet.

Quoin Pronounced “coin.” A device used to lock a form tightly in place. A quoin can be made to expand or contract by means of a tool called a quoin key.

Red pressboard A dense paper board that’s used for hard packing. Red pressboard is usually placed over all the other packing materials, underneath the tympan.

Reglet Used to fill in small spaces around a form. A reglet is similar to a piece of furniture but thinner—generally one pica or six points (1/2 pica).

Rollers The parts of a printing press that distribute ink evenly and lay a smooth and consistent layer of ink on the form that’s being printed. Along with the form rollers that ink the form, cylinder presses also have metal rollers that include the ink reservoir drum, oscillating roller (also called a vibrator roller), and rider rollers. Platen presses typically only have form rollers, but some also have metal rollers that help to evenly distribute or hold ink. Form rollers are usually made from one of these three materials: composite (a mixture of animal-hide glue, syrup, and glycerin), urethane, or rubber. See page 24 for more information on rollers.

Roller-setting gauge Used to determine the height of the rollers from the press bed.

Slug A piece of leading that is six points or thicker.

Spaces Small pieces of metal added while setting type to create space between words, to add white space to the end of a line of text, or to tighten up a line of text.

3-IN-ONE oil A multipurpose oil for lubricating the moving parts of a press. It can be used to clean a press and serves as a safeguard against rust.

Tweezers Very handy for changing out letters while setting type.

Tympan paper Stiff, oiled paper that comes in precise thicknesses and is used as a top sheet over packing paper. Hard tympan paper protects type from wearing down and gives crisp, sharp impressions.

Type The letters used in letterpress printing. Cast in metal or cut from wood, the letters are all manufactured at standard type height—0.918 inch (23.3 mm).

Type case A storage case that’s divided into compartments to keep pieces of type organized. A single case holds one font of type. A set of cases is stored in a type cabinet.

Type-high gauge A tool for measuring the height of printing blocks. The gauge can be used to determine whether or not a block is at type height.

SETTING METAL TYPE

As the name suggests, letterpress printing is a form of relief printmaking that's specific to printing letters, which are also known as type. The process developed over hundreds of years in different parts of the world for the purposes of sharing knowledge, spreading literacy, and providing entertainment. Because the equipment we use today developed from a need to print text, I think it's important to know how to print from type. It's a good way to get a true understanding of how the machinery works.

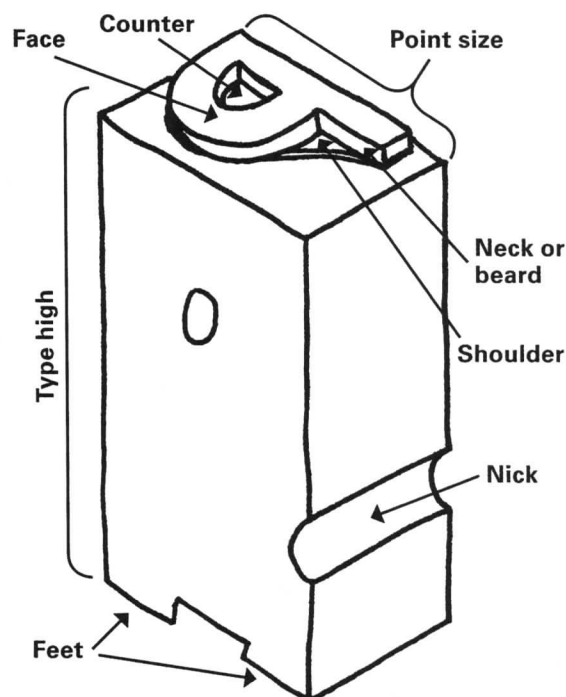
Tool Kit for Setting Type

- ★ COMPOSING STICK ★
- ★ LEADING ★
- ★ SPACING MATERIAL ★
- ★ GALLEY ★
- ★ IMPOSING STONE ★
- ★ CHASE ★
- ★ CHASE SCREWS OR QUOINS ★
- ★ TWEEZERS ★
- ★ FORM STRING ★
- ★ PLANER ★
- ★ CASE LAYOUT CHART (OPTIONAL) ★
- ★ LINE GAUGE ★



Parts of Type

Pick up a piece of metal type and take a look at it (use a piece that's large enough to make viewing easy). The parts of the type are named as follows:



Measurement

In letterpress printing, measurements are made in picas and points. The size of type is measured in points, and the sizes you've seen when typing on the computer correlate with sizes in metal type for letterpress printing.

This is an example of 8-point type.

This is an example of 10-point type.

This is an example of 12-point type.

This is an example of 14-point type.

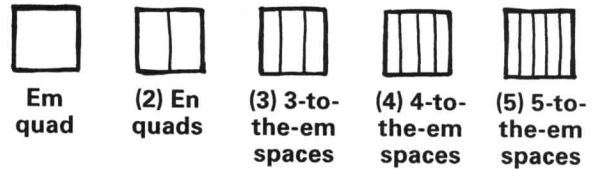
And so on, up to about 72-point type. Most type that's larger than 72 point is cut from wood (big metal type gets heavy and expensive!).

Twelve points are equivalent to one pica, and six picas add up to almost 1 inch (23.3 mm). In digital design, it's often assumed that six picas equal 1 inch (six picas are actually just a hair short of 1 inch).

Spacing Material

Spaces are pieces of type metal used to create white spaces between words. They're shorter than type, so they don't print when set along with letters. The thickness of a space is based on the em quad, which is based on the typical size and shape of the letter "m." Em quads are the same point size on all four sides, forming a perfect square. Spaces larger than the em quad include the 2-em quad, which is twice the width of the em quad, and the 3-em quad, which is three times the width of the em quad. The space that's one size smaller than the em quad is the en quad, which is half the size of an em quad, based on the typical size and shape of the letter "n."

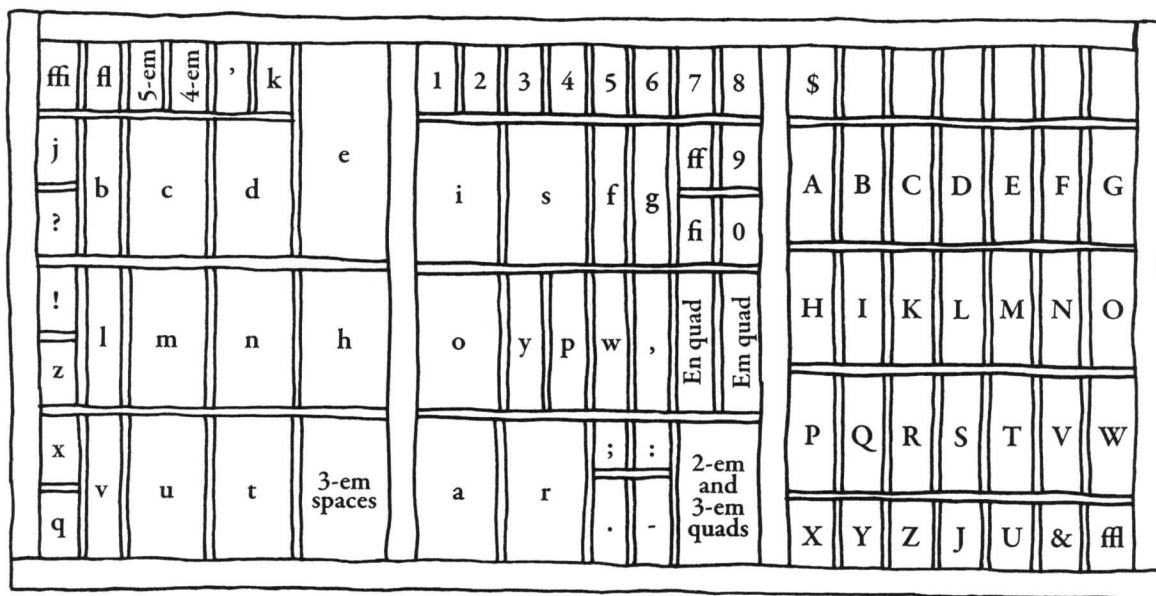
Following the en quad, there is a series of spaces that get continuously smaller, all based on the em quad: the 3-to-the-em space (one-third the width of one em quad, also called the 3-em space), the 4-to-the-em space (one-fourth the width of one em quad, also called the 4-em space), and the 5-to-the-em space (one-fifth the width of one em quad, also called the 5-em space). After the 5-em space, there are even thinner spaces called hair spaces or thins. Thins include strips of brass and copper (the thinnest), which are simply called brasses and coppers.



While spacing separates words, each line of text is separated by a strip of metal called leading (pronounced "ledding"). Leading is also shorter than the type; just like em quads, leading won't print. Leading is most commonly available at a 2-point thickness but can also be found at 1-point, 3-point, and 4-point thicknesses. Leading that's 6 points or thicker is called a slug.

The Type Case

The type case is a wooden tray divided into compartments that keep type organized. Each case contains one font of a typeface, meaning one size and style of a particular type design. For example, if the typeface is Gill Sans, a type case might hold a font such as Gill Sans 14 pt. Bold. Although they come in a variety of layouts, the California Job Case is one of the most common.



LAYOUT OF THE CALIFORNIA JOB CASE

How to Set Type in a Composing Stick

When you set type, the first thing you need to determine is line length. Line length is based on the length of the longest line you'll set or the size of your page. You don't want to set and print a line that's longer than the width of your paper! There are no hard and fast rules about determining line length; sometimes it just takes trial and error to determine the best line length for your project.

To start, select the type you want to use, find the longest line of your text, and set it on a composing stick to determine its length. A composing stick is a handheld tool that's used for setting metal type. If the line is too long or too short, you may have to change your typeface or type size and set the line again. Once you've determined the best line length for your project, proceed as follows.

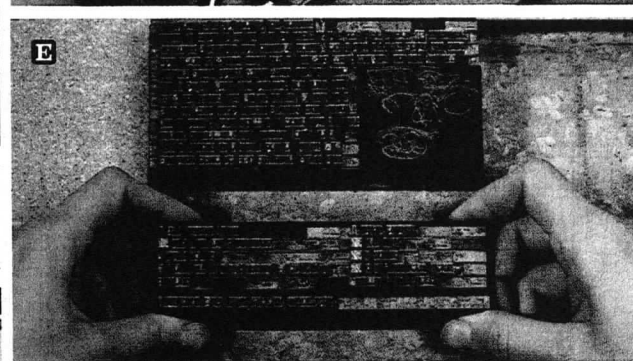
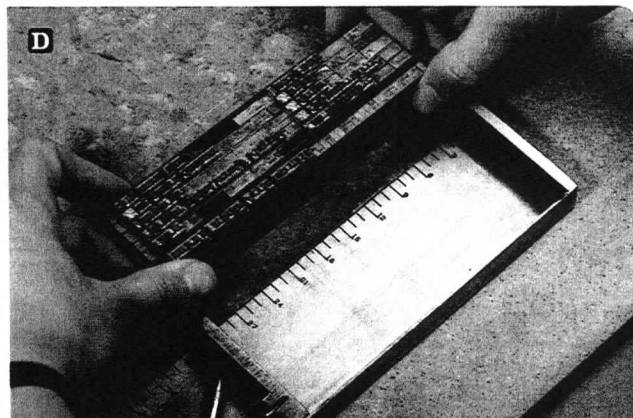
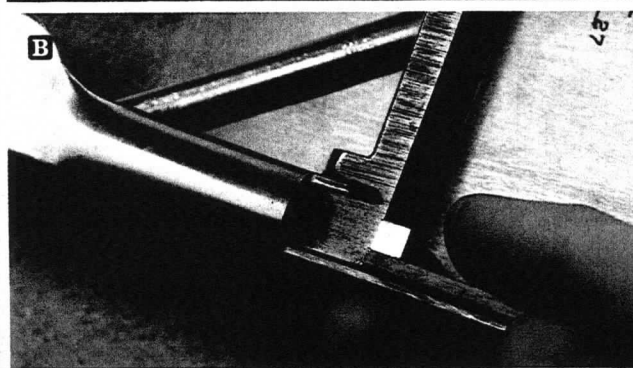
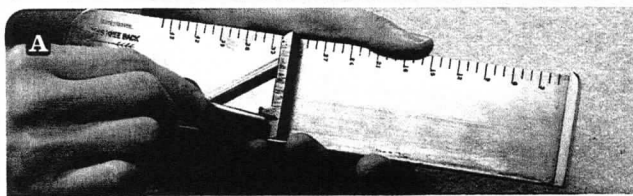
➔ **STEP 1** Set the composing stick to that length. On the composing stick, lift the clamp to release the knee (the adjustable arm), slide it along the stick to the correct measurement, fit the small row of projections into the corresponding slots, and clamp the knee down into place **A**.

➔ **STEP 2** Insert a slug of the same line length in the stick. Always start and end with a slug instead of thinner leading, because a slug's sturdiness will help hold the text block together when you move it from the stick. Place an em quad at both ends of the stick. I always start and end each line with em quads because they don't fall over like smaller spacers do when I'm moving a block of text around **B**.

➔ **STEP 3** Hold the composing stick in your left hand as shown in the photo. Set pieces of type one at a time from left to right, upside down, with the face of the type facing out. The nick should show across the top; use your left thumb to feel for the nick and to help slide each piece of type into place.

➔ **STEP 4** Use spacing material between each word. I prefer 3-to-the-em or 4-to-the-em.

➔ **STEP 5** When you're finished setting the line, use spacing to fill out the rest of the line length. The line will print left justified. To center justify a line, use the same amount of spacing on either side of the line. To fully justify a line, add more spaces between words.



➔ **STEP 6** Once you've filled out the extra space and the line is snug, you need to tighten it so that each line locks up and prints correctly. Add as many thins as you can and do the thumb test: push up on the line of type with your thumb. The entire line should start to lift up as one unit. If individual letters lift up, then the line isn't tight enough. Keep adding thins until the line passes the thumb test **C**.

➔ **STEP 7** Add leading on top of the line you've just set and continue setting each line. Once you've filled the composing stick halfway up, place a slug on top of the last line and slide the entire block onto a galley. Support the block of type by pressing the top and the bottom with your index fingers and thumbs. Press on the sides with your middle fingers. Pinch the block tight and slide it. Do not lift it **D**!

➔ **STEP 8** Slide the block of text to a corner where the walls of the galley will offer some support. Keep the top of the text at the top of the galley and use pieces of furniture on the other two sides to keep the type from falling over. Continue setting type on the composing stick and adding it to the type on the galley that's already set until you've set the entire block of text **E**. Replace slugs with the proper amount of leading between lines, but leave a slug on the top and bottom of the form.

Proofing

Each line of type can be proofed as you set it by using a tabletop proofing press. Proofing each line makes it easier to make changes before completing an entire block of text. In addition to the press, you'll need a piece of carbon paper, a piece of scrap paper, and a strong magnet. Place your composing stick directly on the press bed. Use the magnet or some furniture to hold the type in place. Place the carbon paper on top of the type with the carbon side facing up. Place the scrap paper on top of the carbon paper and run the roller across the press. Voilà! You should have an instant image of how your line will look when printed. If you don't have carbon paper, this step can be done with printing ink and a brayer.

How to Tie Up the Form

After you finish setting the type, you'll want to secure your block of text before moving it to be stored or locked up for printing. To tie up the form, you'll wrap it with a piece of string that should be tied with a small twist. You are (quite literally) tying up the form.

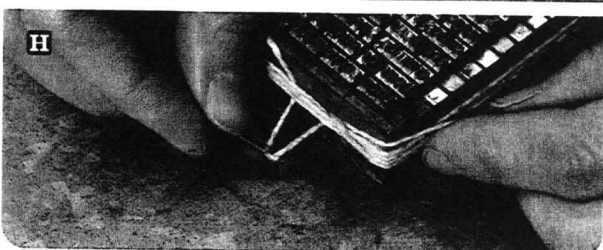
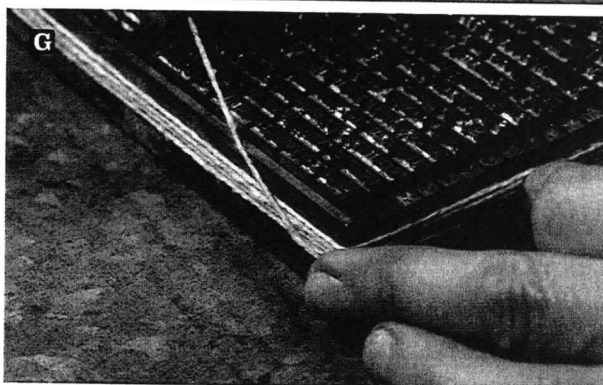
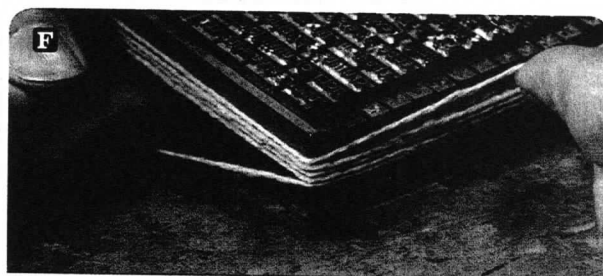
➔ **STEP 1** Place the loose end of a piece of string on the upper left corner of the form, leaving about a 4-inch (10.2-cm) "tail."

➔ **STEP 2** Wrap the string around the form four times, pulling the string nice and tight as you go around. Try to keep each strand placed flat against the form, directly above the previous strand **F**.

➔ **STEP 3** Holding the wrapped string tight with one hand, lift the tail up with the other hand and place it over the four wrapped strands **G**.

➔ **STEP 4** Using a brass or piece of leading, tuck the tail under the four wrapped strands and pull out the tail from underneath **H**.

➔ **STEP 5** Trim off the excess string and give both ends a slight tug. You should now be able to easily move the form around without worrying about pried type. Remember to slide the form. Don't lift it!



GLOSSARY OF TERMS

Bench-hook: A small wooden board with wooden attachments, one on top and one on the bottom. The wooden attachment on the bottom hooks to the edge of the table, securing the board so that pressure can be used against the wooden attachment on top while cutting wood or linoleum blocks.

Bone folder: A tool used to score and crease paper or other materials.

Carriage: On a cylinder press, this is the assembly that includes the impression cylinder and roller assembly. It travels down the press bed as you print.

Chase: A rectangular steel frame used to lock up a form to be printed on a platen press. It is occasionally used for lockup on a cylinder press.

Colophon: A brief description, usually located at the end of a book, about the book itself and how it was made. It often includes the typeface, paper, binding method, edition size, and its number in the edition.

Composing stick: A handheld tool used for setting type. It holds lines of type as they are being set.

Corking: See *ejection rubber*.

Deckled edge: The rough edge on a sheet of paper that's the natural result of hand papermaking using a mold and deckle.

Delivery board: The lower board that sits below the feed board on a platen press.



Die-cutting jacket: A thin sheet of steel that protects the platen from damage when die cutting.

Ejection rubber: Rubber strips along the sides of die-cutting or perforating rules that help release the paper from the rule once it is cut.

Em quad: Spacing material that is the same point size on all four sides, forming a perfect square.

Feed board/feed table: The area on a press that holds the stack of paper to be printed.

Font: A complete character set of a single typeface. For example, 12-point Bembo and 14-point Bembo are two fonts of the same typeface.

Form: A block of type (or images) that is ready for printing.

Form string: Strong string for tying up forms. It secures them for transport and keeps them from becoming pried when moved around the shop.

Furniture: Blocks of wood cut to specific lengths and widths used to fill the spaces around a form when locking up.

Galley: A metal tray used for temporary storage of set type.

Gauge pins: Small metal pieces that hold paper in place on the tympan on a platen press.

Gel medium: An acrylic paint modifier that's often used for texture and as a glue in collage arts.

Grippers: A part of the press that holds paper in place while printing. Usually grippers are flat metal discs on a cylinder press and metal bars on a platen press.

Head dead bar: The metal bar on the press bed nearest the carriage on a cylinder press. It prevents the grippers from hitting the form during printing. It can also be called a register bar.

Imposing stone/imposing table: A smooth, flat surface used as a tabletop when locking up a form in a chase. It is traditionally made from marble or steel.

Ink disc: The round disc at the top of a platen press that acts as an ink reservoir. The disc rotates while the press is running to keep the ink evenly distributed.

Inking table/inking plate: A smooth surface used for warming up and mixing ink.

Kerning: Adjusting the spacing between characters in a word or line of text to achieve visual balance.

Leading: Strips of metal used to add space between lines of text.

Line length: The length of a line of set type, usually measured in picas.

Linoleum block: A sheet of linoleum mounted on a block of wood. In this book it is used as a printing matrix.

Lockup: A form that has been tightened into place on a press bed or chase and prepared for printing. Lockup can also refer to the process of tightening the form.

Lockup bar: An adjustable metal bar placed on the press bed of a cylinder press opposite the head dead bar, forming the "fourth wall" when locking up. A lockup bar that's not adjustable is called a dead bar.

Matrix: In letterpress, the matrix is a mold for casting metal type. However, as a printmaking term it refers to the plate that is inked and ready for printing (*see form*).

Packing: Sheets of paper or board in a variety of weights and thicknesses placed under the tympan. Packing is used to prevent excessive wear on metal type and to adjust the impression.

Perforating rule: A strip of steel that cuts through paper with a row of sharp teeth, creating a row of small holes where the paper can easily be torn.

Photopolymer plate: A light-sensitive plastic plate that is mounted to an aluminum or a magnetic base, bringing it up to type-high for letterpress printing. Steel-backed polymer plates are used with magnetic bases, while an adhesive film is placed on the back of plastic plates, so they can be adhered to an aluminum base.

Pica: The standard unit of measure for letterpress printing. Twelve points make up one pica, while six picas are approximately equal to 1 inch (2.5 cm).

Pied: A spilled or mixed jumble of type.

Plane: To tap on a wooden block that's set on a form to make sure that all pieces of type are sitting squarely on their feet. It can also refer to a wooden block used for planing.

Platen: A flat, heavy metal plate on the platen press that presses the paper against the form to make an impression.

Press bed: The part of the press that holds the form while printing.

Printer: A person or company that makes prints. Even if you make letterpress prints, you are a printer (not a presser). A presser removes creases from a garment.

Proof print: A test print, often on scrap paper, made to test the print quality before making the final prints.

Quoin: An expandable tool that tightens the form and furniture in a lockup in preparation for printing.

Quoin key: The tool that activates the expansion system in a quoin.

Register bar: See *head dead bar*.

Registration: The process of printing on a sheet of paper in a specific place, and lining up each sheet so that it falls in the correct position each time. Also the process of printing on one sheet of paper multiple times, and lining up each sheet so that it falls in the correct position in correlation with the previous prints.

Reglet: Thin, wooden spacing material, either 6 points or 12 points thick, used to fill up gaps of space in a lockup.

Relief printing: A type of printmaking that involves applying ink to a raised surface, then using pressure to transfer that ink onto paper.

Slug: A piece of leading that's 6 points thick or more.

Spacing: Small pieces of metal used to separate words or letters in a line of type.

Steel rule die: A tool that's used to cut shapes in paper or board. It is usually a strip of hardened steel embedded in a wooden base. It is sharp along the exposed edge, with ejection rubber along the cutting edges.

Throw-off lever: The mechanism on a cylinder press used to control whether or not the form and the platen meet while the press is running. When the press is in "print" position, an impression is made. When the press is in "trip" position, no impression is made.

Tympan bales: The flat metal bars attached to the top and bottom of the platen that hold the tympan and packing in place.

Tympan paper: A smooth, sturdy, oil-treated paper used as the top sheet of packing. Special papers are made specifically to be used as tympan paper, but it can also be made of similar papers or Mylar. Tympan can also be called a drawsheet.

Type case: A shallow wooden drawer divided into compartments used to organize and store movable type.

Typeface: A style, or design, of the characters in an alphabet.

Type high: The height of type, 0.918 inch (23.3 mm).

UV exposure unit: A tool used to expose photopolymer plates to UV light.