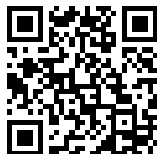

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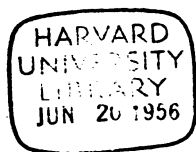
A PRIMER *of* INFORMATION ABOUT THE
CUSTOMARY METHODS AND MACHINES
FOR TAKING PRINTERS' PROOFS

BY
A. A. STEWART



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CONTENTS

	PAGE
INTRODUCTORY	5
METHODS OF TAKING PROOFS	7
THE PROOF PLANER	9
THE PROOF ROLLER	11
THE ROLLER PROOF PRESS	12
THE HAND PRESS	13
ENGRAVERS' PROOF PRESS	16
THE ROCKER PROOF PRESS	17
CYLINDER PROOF PRESSES	18
STATIONARY-BED CYLINDER PROOF PRESSES	19
CYLINDER PRESS WITH MOVING BED	21
SELF-INKING AND SELF-FEEDING PROOF PRESSES	22
ELECTRIC PROOF PRESSES	24
SPECIAL PROOF PRESSES	25
REVIEW QUESTIONS	27
GLOSSARY	30

INTRODUCTORY

THE taking of proofs is a necessity in every composing room and must be done in some manner or other. In many places the operation is not, unfortunately, given the careful attention that it should have. The attitude of many printers is that it is an unproductive process and therefore, since it cannot be wholly dispensed with, the least time and attention devoted to it the greater the gain for other operations. The investment in a proof press has usually been looked at as an unprofitable item. The need is too often met with the meanest facilities that can possibly serve.

This attitude is, however, being changed, especially in progressive workrooms, and it is seen that the taking of proofs in a careful, methodical manner by an apparatus adapted for clean, quick work has a distinct economic bearing on the ultimate product of the shop. A proof made with a careful impression saves wear on the printing face. A proof with the right amount of ink—neither too much nor too little—makes accurate proofreading easier and enables the proofreader to detect minor defects in the composition before it goes to the pressroom, where corrections are always more expensive than in the composing room. Proofs which show approximately the printing face as it will appear in the final result are required now more than ever.

As a consequence, to meet new demands and higher standards, several new machines have been introduced within the past few years. These embody ideas especially adapted for their work, and some of them surpass in thoroughness of design and finish many of the machines commonly used for printing.

PROOF PRESSES

Methods of Taking Proofs

WHEN types are first composed on a galley (and when engravings or other printing surfaces are first made) their correctness must be verified before they are ready to be printed. For this purpose a trial impression is taken, in order that the work may be examined and needed corrections made. This trial impression is the printer's proof, and the time and care given to it are matters of great importance in every printing room.

In order to be of the best service the means for making these proofs must be as simple as possible and usable with the least loss of time. As only one copy is needed (or usually not more than a very few copies), little or no special preparation should be necessary for proofing any particular composition or form. In composing rooms where only one proof press is used it is customary to follow one size or kind of form or galley matter with another of a different kind. It is often necessary to do this in rapid succession; speed is important.

By any of the usual methods employed in taking proofs, the first operation, after the type is secured so that it will stand squarely on its feet, is to roll ink on the type face; then a sheet of paper is laid on and impressed so as to take a transfer of the ink. This impression may be made by one of the following methods:

First—By pounding a sheet of paper laid on the inked type with a cloth-faced block called a proof planer and a mallet.

Second—By placing the galley of type on a proof press, where the impression is made by moving over it a heavy iron roller covered with thick cloth or felt.

Third—By placing the type or plate on a platen hand-press. Here the type is inked, the sheet laid on, then the tympan turned down, the bed run under the platen, and

the bar pulled over. To "pull a proof" is to take it by this last method, but the term is now commonly applied to taking a proof by any method.

In many cases a number of proofs may be taken from the same page of type at different times during its preparation for the final printing. In book-printing houses these several proofs may be taken at different stages by all three of the above methods; that is, a galley proof by the second method, a page proof by the third, and a "stone" proof by the first.

Until within the past few years the foregoing three methods were the only means used (outside of the large daily newspaper rooms) for taking proofs of type and relief printing plates. There are now, however, several new machines which have recently become popular because of their capacity for doing better and quicker work. Of these last there are two distinctive forms, the "rocker" press (Fig. 7, p. 17) and the small cylinder press (Figs. 9 and 10, pp. 20 and 21).

The regular printing machines, like the large cylinder press and the small job press, are not adapted for ordinary proofing, although they are frequently used for obtaining final press proofs to show the ultimate result of all the preparatory work. To make an impression with either of them involves considerable time and labor in making ready, even for one passable copy. The more or less elaborate mechanisms and attachments which make them so peculiarly fitted, when properly prepared, to produce superior results in quantity render them cumbersome and ill adapted for the simpler work. The size of the cylinder machine makes it impracticable even if it were economical to use it for such work in the time when

NOTE. Copperplate engravers and other intaglio makers use a method of taking proofs quite impracticable for the usual relief surfaces. This is to fill the lines or depressions in the plate with stiff ink, wipe the upper surface clean, place a sheet upon it, and rub a burnisher carefully over the back of the sheet, forcing the paper into the inked lines. When the sheet is taken off, the ink in the lines adheres and gives an exact image of the engraving. It will be observed that this is quite feasible on a flat surface with only slight depressions, but not on the face of a page of type.

it might not be occupied with actual printing. Its use for proofing would, except under very unusual conditions, seriously interfere with its real work. For a job press each form must be locked in a chase to hold it in place for the impression—an operation rarely warranted in the early stages of preparing matter for printing.

There are many places, however, where special proof presses of elaborate design are employed. These are in the metropolitan newspaper rooms and in the larger establishments doing magazine and periodical work on a large scale. In many of these places the proofing apparatus is especially adapted for certain classes of work. Some of these proofing machines have an automatic inking mechanism similar to, but very much simpler than, that of the larger printing presses. Others are self-inking and also self-feeding, using the paper from a roll. A number of these machines are described in their order later in these pages.

The Proof Planer

A proof planer is a block of hard wood, commonly 8 inches long and $3\frac{1}{4}$ inches wide, having its face covered with a piece of thick, closely woven cloth or felt. The back of the planer, where it is to be hit with the mallet, has a stout piece of leather to prevent splintering under the impact of repeated blows. (Fig. 1.)

The planer method of taking proofs requires special care and some experience in order to obtain satisfactory results and to prevent injury to the type. After the ink has been rolled on the type a sheet of common book paper is dampened evenly all over with a sponge, so that it is limp but not too wet. The side of the sheet that was not sponged is then carefully laid on the type. The proof planer is taken in the left hand and placed evenly upon the sheet at the top of the page, and with a mallet in the

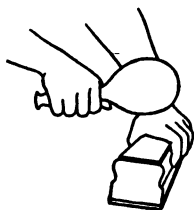


Fig. 1. Proof Planer and Mallet in Use

other hand the planer is quickly and firmly pounded until the indentation of the types is seen on the back of the sheet. If the planer does not cover the whole page, it is lifted carefully from the paper and moved to another part without disturbing the sheet, and other blows are struck in the same manner until an even impression is made on all parts of the form.

Planer proofs of type or blocks are practicable only when taken on the imposing stone, on the flat bed of a press, or on some equally solid surface. They cannot well be taken on a slender bench or table which will vibrate at each blow on the planer. A firm foundation and steady blow are necessary to secure a clear impression of small types. Besides the firmness with which the planer is held on the form, the steadiness with which the blow is struck on its back is an important factor in getting a good proof. The blow should hit straight and not glance sideways even slightly, as this is apt to produce a slurred impression of the face. The mallet with a flat face is not well adapted, though it is frequently used. It is difficult to hit the flat face exactly flat on the level back of the planer. To turn the head distinctly sideways and hit with the edge under the center of the blow gives a better result. Sometimes a heavy mallet may be used by holding the head up and hitting perpendicularly with the end of the handle. A better tool, however, is the mallet with a round or oval head.

This is the rudimentary method of making an impression of any kind. For first proofs on type matter and heavy plates it suffices, but not for fine lines or delicate plates which are easily battered by careless pounding. The method is not to be commended except for emergencies. There are times when other means of taking proofs may not be available and it is necessary to take one in this way. A large form on the imposing stone, made up in the chase, in which some final corrections or changes are necessary, may require a revise proof before it goes to the press. The form may be too large for the proof press; the page in which the correction was made may be difficult to lift out to prove by

itself; it may not be wise thus to disturb it. In this case the simplest way to get the proof is to ink the page, lay on a sheet of slightly damp paper, and use the proof planer. Every compositor and stoneman should know how to do this carefully and quickly so as to be able to meet any of these emergencies.

An old-time method, now discarded, for proofing forms of this kind on the stone was to use a stiff brush with coarse, closely set bristles and a long handle. This was used to pound the damp sheet on the inked page to make final proofs. It was adapted only for rough work and was not equal to the cloth-face planer.

The Proof Roller

The usual manner of inking forms for proof is with a hand roller or brayer. This is a simple arrangement, having an iron core covered with composition and held by one or two handles. It is used to distribute the ink first on an ink slab, to obtain the requisite quantity, and then to roll the form. Very often it is a neglected article, being allowed to accumulate a scaly coating of dried ink because of improper cleaning. A proof roller should be smooth and pliable, and seasoned somewhat firmer than the usual press rollers. A stout handle and firm frame are necessary, as well as a strong hook by which to hang it up over night or when not in use for some time. The slender frame customarily furnished for the smaller sizes is not always strong enough for the usage required of it, as it is frequently subjected to vigorous beating on the ink table when distributing cold or stiff ink.

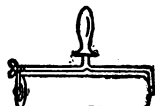


Fig. 2. Hand Inking Roller for Proofing

NOTE. An obsolete method of taking proofs was by means of a hand roller having a small cylinder covered with a smoothly stretched piece of felt. When the galley was inked and the thoroughly sponged sheet laid on, this roller was gently placed on the bottom of the column and firmly rolled over the matter to the top of the galley. It was capable of taking a fair proof of straight type composition when carefully handled.

The Roller Proof Press

This is the apparatus most used for proofing galleys of type after composition is first done and for the revise proofs before the matter is made up into pages. (Fig. 3.)

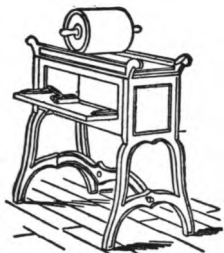


Fig. 3. Galley Roller Proof Press

The common style of roller proof press has an iron frame upon which is mounted an oblong flat bed, also of iron. On two sides of this bed are ledges upon which an iron roller, having its face covered with thick, strong cloth, or felt, may be turned back and forth. When the galley of type is placed on the bed and the face of the type inked with a hand roller, a strip of paper is laid on and the iron cylinder moved over it to give the impression. In order to make good proofs the paper should be slightly damp, so that it will lie somewhat limply on the type. This is especially important with large sheets.

The cylinder and the ledges upon which it rests are adjusted so that they give the right impression when the galley is under the type. In the absence of a galley, as when the page is made up and tied with a string, or locked in a small chase, a sheet of metal or thick mill-board is placed under the type to bring it to the required height. Differences in the height of type, caused by varying thicknesses of galley bottoms, may be regulated by adding sheets of paper or card on top of the proof sheet or under the type or galley. The bottom of the galley should be smooth and free from lumps of dirt or dents in the galley which will keep a few types higher than the rest of the matter. The extra hard impression thus given will soon spoil small types. Careful attention to the impression on a proof press of this style is necessary. Too often this work is left to careless boys, who habitually make the impression heavier than is needed, and thus invite the speedy ruin of type faces, electro-types, and engravings.

The simplest style of these roller proofing presses is made to be laid on a table, and consists of merely the bed plate and the felt-covered impression cylinder. The usual style, however, and one which is made by a number of manufacturers, is provided with a stand as shown in Fig. 3. The compartment under the bed is used for proof paper in convenient strips. Sometimes the door of the compartment, strongly hinged and with a supporting strap at the ends, is used for distributing ink on the hand roller. A sheet of thin metal or glass is fastened on the upper side of this door, which may be opened for use and closed up when not needed, the inking roller being hung on a hook underneath. This arrangement, however, is practicable only when the press is little used or where there is lack of room for a separate ink-plate stand. When there is proofing enough to keep it busy day by day, the ink-distributing table should be placed beside the press at a convenient height for a person when standing and it should be so situated as to have light enough to enable the ink and roller to be seen clearly. The ink stand usually has a place for the benzine can and a wiping rag to clean off the type after proof is taken.

The Hand Press

When the more expeditious cylinder press and job press gradually superseded the old hand press for turning off the great bulk of printed matter, the hand press was still retained for proofing purposes. Its construction especially adapted it for this use, and for some kinds of proofing it probably always will be employed. Simplified in some of its methods for raising and lowering the platen, and stripped of the frisket and a few features with which it was usually fitted for printing sheets in quantities, it has been made for

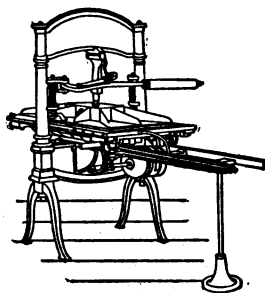


Fig. 4. Washington Hand Press

many years in sizes adapted for pulling proofs and for printing placards and handbills in small lots. (Fig. 4.)

Better proofs can be made on a hand press than by either the proof planer or the roller press, and with less liability of injury to the printing surface—a matter of great importance where fine printing is produced. There are, however, a few simple requirements to be observed in using the hand press, and care with regard to these must be intelligently practised to secure good results.

The type or plate should be in the middle of the bed in order to secure an even pressure all over. Type-high bearers of hard wood or metal should be placed so that they will help support the impression evenly and bear off any undue force on a small line or a light rule standing with open space around it. Sometimes these bearers may be blocks of type-high metal (old stereotypes or electros on solid base) placed at each corner of the bed, where they may remain for all the usual forms. In some cases strips of metal or wood, like extra-wide electrotypes guardlines, may be used to place near the form. These may be placed to serve also as guides upon which to lay the sheet of proof paper to keep it steady on the form till the impression is made.

The bed should be run under the platen with moderation and without jar or thumping. The form rests on the

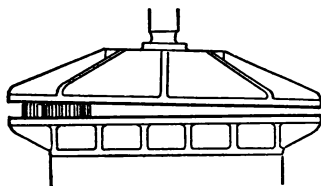


Fig. 5. Showing how an Uneven Impression is made on a Hand Press

smooth iron with nothing but its own weight to prevent it from moving. A sudden jerk will cause it to slide under the proof paper which is held by the tympan over it, thus producing a slur on the sheet before the impression is made.

Usually the bed must be run in until the platen is exactly over the middle of the bed or the printing surface, in order that the direct downward motion given by the spindle above may meet with an equal resistance all around from the center of the platen. A little study of the mechanical principle in-

volved will show that when a form is not in the exact impressional center the edge of the form nearest to that center will have a stronger impression than the edge away from it. The action of the platen when the form is not in the center is illustrated in Fig. 5.

The same principle is involved in forms with irregular or unequally open printing surfaces; one, for instance, which has a mass of boldface letters at the top and a line or two of small type at the bottom, with a large blank space between. In this case obviously any force imparted equally over the whole area would result in an excessive impression on the small type and a relatively weak pressure on the boldface lines because of the greater resistance of their larger surface. To equalize the impression over the sheet the form should be placed with the boldface lines nearer than the small lines to the impressional center, thus to take the larger share of the impression force. Just how much this variation from the geometric center of the bed such forms would require depends upon the nature of the particular form. A factor to take into account is the bearers on the bed outside of the form. In some cases these may be large and firm enough to keep the platen power fairly equalized at all four corners of the bed.

The pressure given to a form on a press of this kind must be regulated more or less according to the size of the face of the form. Where forms of greatly varying sizes are proved on one press the adjustment of the platen should be gaged for the smaller forms, and when large forms are proofed the additional impression required may be given with extra cards or paper laid on the proof sheet before the tympan is turned down. Much depends upon the intelligence of the proofboy in handling forms of varying kinds. A careful workman will, after a little experience, learn to gage the pressure on the form by the *feel* when he pulls the bar. On a small form the feeling of pressure will be scarcely perceptible, while on large forms, especially if rough paper is used, very strong pressure, sometimes to the capacity of a strong man, will be required.

The proof paper should be placed on the type as steadily as possible and not moved after it has touched the inked form. The slightest movement will produce a slurred impression. The same care must of course be observed with any cards or extra sheets laid on top of the proof sheet to give the required amount of impression for any particular form.

After the impression is pulled the sheet should be taken off the type easily and not ripped off; this is especially important if the ink is stiff or cold and the paper has a smooth coated surface. The sticky ink will be liable to pull off particles of the paper surface and leave them on the form if the paper is taken off quickly. Although the usual practice is to use dry paper in taking proofs on a machine, there are times when it is desirable to dampen the paper. Proof paper that has been dampened and is in consequence quite soft should also be taken off the form with care.

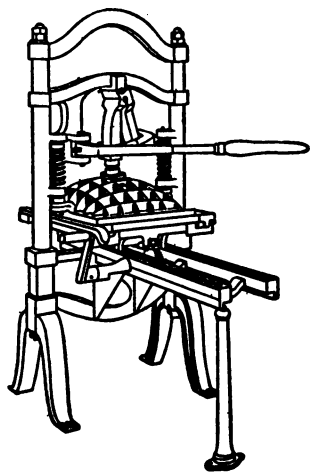


Fig. 6. Engravers' Proof Press

Engravers' Proof Press

Half-tone plates and line plates having large printing areas require a stronger impression than ordinary typographic forms, and therefore photoengravers use a specially strong press for taking proofs of their plates. The kind used is commonly the hand press made with an extra heavy frame, bed, and platen. (Fig. 6.) The plates are proofed before being mounted type high, and are laid on a metal block on the bed and rolled carefully with good stiff

ink. Special attention is given to proper bearers to keep the impression level and to prevent undue impression

on the edges of the plate. The tympan or impression surface is perfectly smooth and much harder than that ordinarily employed for type forms.

The Rocker Proof Press

This is a style of proof press which has become popular in the past few years. It consists of a frame supporting a very rigid, heavily ribbed bed upon which is mounted a heavy iron impression rocker. (Fig. 7.) The rocker is a part of a cylinder having a smooth curved face covered with a thick rubber sheet, cardboard, strong cloth, manila paper, or other material to make a good impression surface. It is held in place by the side frame, and is geared at the bed so that the pitch line of the racks and gears is the printing line of the press. A handle on the rocker is

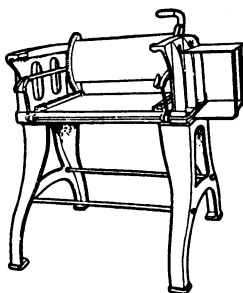


Fig. 7. Vandercook Rocker Proof Press

used to turn it over on the form to make the impression.

The amount of impression given on these presses does not depend alone upon the weight of the rocker, as is the case with the common roller galley press. The rocker rests on bearers and is held at both ends by wheels which bear upward against inverted tracks on the side frame. The rocker thus being held firmly at a uniform level over the entire bed, the position of the form does not affect the evenness of the impression, as it does on the hand press described on a preceding page. The positive, uniform motion of the rocker avoids any deflection during the impression and produces a clear print. A smooth tympan gives a sharp impression on the face only, without unnecessarily forcing the face into the paper. This makes it possible to obtain a proof showing the true printing condition of the form; broken types, imperfect rules, and other defects are noticeable and may be corrected before the form goes to the regular printing machine.

It is claimed also that very little, if any, variation need be made in the thickness of the tympan because of the difference in heavy forms; a small form may be proofed with the right impression and the same adjustment will suffice for a large form immediately after. As the rocker is held up firmly on the side bearers and also held down by the inverted top bearers, it does not drop down on a small form nor ride up on a large form.

When the impression is made the rocker is turned back again without making another impression on the form by a trip action which raises the rocker to clear the form. This is accomplished by the elevation of the rocker on the side rails on the return motion.

These presses are made in sizes varying from 12 x 18 inches to 17 x 25 inches of printing surface, thus adapting them for miscellaneous forms within the limits of the press. The bed is several inches longer than the printing surface to allow for turning forms. The rocker moves across the short way of the bed, giving a relatively short stroke to make the impression. At the end of the stroke, either forward or back, the rocker rises till it slightly overbalances and is kept in an upright position ready for the next stroke. The inking of the form is done by a hand roller.

Cylinder Proof Presses

There are a number of styles of these machines, varying in design from the simple roller galley press (which is really a cylinder press, although not so classed) up to a machine that is practically a pony cylinder press operated by turning a crank, with automatic inking apparatus, gripper sheet-feed (to register if necessary), and a firm impression, capable of producing not merely proofs but small lots of printed matter, such as is often done on the regular printing machines.

These cylinder machines are divided into two classes, namely, those in which the impression cylinder travels over a stationary bed, and those which have a movable bed that passes under a rotating impression cylinder.

Stationary-Bed Cylinder Proof Presses

The first class is represented by the well-known Vandercook series, made in three or four designs and a variety of sizes. In each of these the inking of the form is done by means of rollers and distributors carried over the bed in a frame. The simplest of these presses is an improved form of the familiar roller galley press (Fig. 8), made in sizes adapted for long galley matter, with a printing surface 10 or 12 inches wide and 25 inches long. The impression cylinder is geared to travel on racks at the side of the bed and is held down to the bearers by rollers running on the under side of overhanging lips on the side frame. The circumference of the impression cylinder is longer than the bed, so that the entire surface is not required for an impression of any form that the bed will take. Therefore it is not a complete cylinder, but part of its surface is cut away, and it is geared to the bed in such a manner that the cut-out portion is underneath when the roller is at either end of the bed.

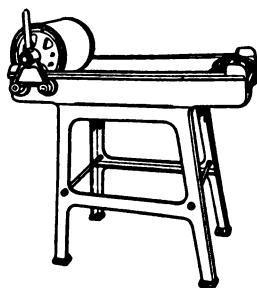


Fig 8. Vandercook Roller Galley Press; impression cylinder geared to side bearers

The inking is done by a pair of rollers surmounted by vibrating distributors which are arranged in a carriage moved back and forth by hand. There is an ink supply plate at each end of the bed. When the galley or form is in place, the roller carriage is pushed across the form and under the cut-away portion of the cylinder, the sheet of paper is laid on, and the cylinder is run to the other end of the bed.

This machine is adapted for proofing linotype matter, mailing lists, book pages, half-tones, and any work of a size within its printing capacity.

The composing-room cylinder is a machine of larger size than the roller series. (Fig. 9.) The impression members of the composing-room cylinder are of practically

the same design as the roller series press, namely, sheet-feed, register, and ink distribution. The cylinder of the machine has grippers to hold the paper which is fed from

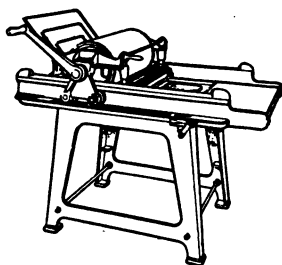


Fig. 9. Vandercook Composing Room Cylinder

an inclined frame which travels with the cylinder. The sheet may be fed at any point in the travel of the cylinder. The grippers pick the sheet off the supporting ledge at the bottom of the inclined frame at the moment the cylinder is started forward on the printing line. To prevent the danger of "nipping" a form the grippers are so constructed that they work inside the galley line of the cyl-

inder. If a form or galley of type should accidentally be placed where it extends into the space on the press near the ink table reserved for a chase head, there is no danger of injuring the form.

The cylinder is geared to the racks on the bed as on the simpler machine previously described and is also held firmly by a set of substantial rollers bearing upwards against downward facing impression rails which extend out from the bed of the press. The impression is made by turning a crank lever with the hand. All the moving parts of the machine are on the cylinder. The cylinder prints only one way of its travel. On the return stroke the cylinder rises from the printing line. This trip action is produced by the shifting of the wheels that hold the cylinder to the cylinder bearers. On the return stroke the impression wheels are automatically shifted by wedges so that the wheels come in line with the upward facing tracks on the side of the press. The wheels riding on these side tracks raise the cylinder from the printing line.

The inking system of the composing-room cylinder consists of a large ink plate, two form rollers, one vibrator with a four-inch lateral travel, and three small parallel riders. Each of the form rollers is direct gear-driven,

and their rotation does not depend upon contact with the form as they pass over it. This will ink a single unsupported letter without disturbing it or a full-size form without any change in adjustment.

The mechanism of the press provides that the inking roller may be instantly tripped so that sheets may be laid on the form and not fed to grippers when one or two copies are all that is required without close register. The feed mechanism and grippers are used where a number of copies and close register are wanted.

Cylinder Press with Moving Bed

This newest class of proof presses is represented by the Potter or Hacker series and the Brower press. These are practically simplified forms of the common cylinder and flat-bed printing machines.

In its simplest form, a machine called the "Poco," it is made to rest on a strong bench or other convenient place. It has a frame upon which a bed is made to move back and forth upon a set of rollers. This is surmounted by a cylinder held at each end in journal bearings and turned by means of a hand lever. The cylinder has a set of automatic grippers to hold the sheet for the impression, and is also provided with means for holding and keeping tight the tympan on its surface. A gear on one end of the cylinder and a rack on the side of the bed are fitted to engage each other and keep the cylinder and bed in uniform motion. The turning of the cylinder by the hand lever thus moves the bed in unison with the cylinder at all times. The inking is done by a hand brayer.

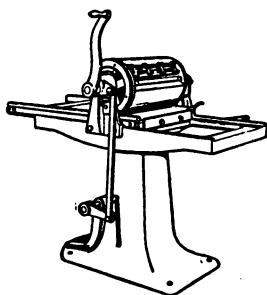


Fig. 10. Potter Proof Press

The more elaborate presses of this style, of which there are several sizes, are mounted on cast-iron stands. (Fig. 10.) The Potter presses are fitted with an impression-trip

by which the cylinder, after going in one direction to make the impression, is raised and allows the bed to return without making an impression on the form. On some machines this impression-trip is operated by the foot, in others by the hand, and in the more expensive machines the trip is automatic at the end of the impression stroke. On the Hacker press the impression is tripped by a slight lowering of the bed.

The inking is done by a hand roller on some presses, and on others there is an automatic inking apparatus and fountain. The more elaborate presses are also furnished with a feed board and delivery board, making them virtually pony cylinder presses operated by hand.

Self-inking and Self-feeding Proof Presses

In the composing rooms of city newspapers there are many proofs to be taken and they must be made systematically and quickly. It is the practice to detail some workmen, usually apprentices, to do this work, and after the typesetting for an edition has begun the proof press is kept busy. Expedition is important, and therefore many of the largest of these places have for years usually been supplied with special proofing machines. The machine shown in Fig. 11 is a style commonly used, although there are some others with minor variations.

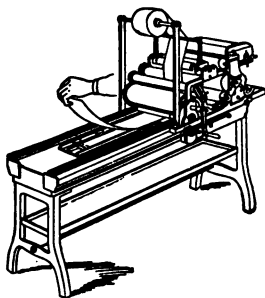


Fig. 11. Self-inking Self-feeding Newspaper Proof Press

The bed is a stationary table, wide enough to take any galley commonly used in the room. The impression cylinder is geared to a rack on the side of the press frame and is operated by a hand crank which runs it from one end of the bed to the other. The impression cylinder has an attachment for holding a roll of paper, which is unwound automatically as the carriage moves in making the impression. The proof sheet can be made

as long or as short as the galley matter calls for, at the option of the operator. The inking apparatus, including a fountain and distributors, is assembled on the carriage and is carried along in front of the impression cylinder.

After the galley has been laid in place, the inking is done, the paper is supplied, and the impression is made, all by the turning of a crank with a forward and back operation.

When the carriage goes forward the rollers are down in place and they ink the galley matter, the impression cylinder meantime being raised slightly above the printing surface. At the end of the stroke the carriage hits a stop on the end of the side frame. This pushes the roller frames up on a short inclined bearing sufficient to keep them from the form on the return stroke. At the same time the impression cylinder, which has passed over the form in an elevated position, drops down to rest on the bearers, and on the return stroke it makes the impression on the sheet, which unwinds as needed from the roll. When the carriage returns again to the starting point, another stop at this end of the side frame raises the impression cylinder and drops the inking rollers, ready for another proof.

Proof machines of this general style are made in several sizes, with or without the self-feeding paper roll, the smaller sizes not always having this attachment.

In many newspaper rooms it is customary to make duplicate first proofs of each galley, one on white paper and another on colored paper, the latter to be used for measuring up the composition. To provide these two colors two paper rolls are fixed on the press, side by side, and when the galley is proofed on one paper it is moved over opposite the other

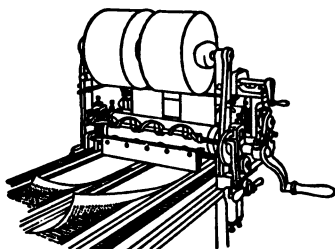


Fig. 12. Double Web Proof Press, proofing two galleys at each impression, or one only, each web acting independently

roll and another proof taken on colored paper. This style of press is also used for taking proofs of two galleys at one time.

Newspaper rooms now often employ, in addition to the proof press for the regular news matter, one or more of the previously described modern machines used in commercial shops. These are for proofing large advertisements, whole pages, and special forms. A number of proofs of some particular advertisement is frequently called for at short notice, so that these newer semi-automatic machines are found desirable for this and various other printing purposes.

Electric Proof Presses

The larger sizes of the semi-automatic newspaper proofing machines described under the previous heading are

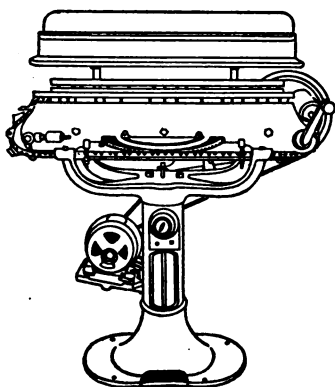


Fig. 13. Electric Proof Press

sometimes operated by electric motors, instead of the hand crank. This is done by fitting the motor to a shaft which actuates an endless chain under the bed the entire length of the machine. Toothed pulleys between the two lines of the chain operate the proofing mechanism carriage over the bed, and are made to run the carriage forward or backward in accordance with the direction of the side of the chain with which

they engage. The direction of the carriage is changed automatically when it travels to the end of the bearers and stops when it comes back to the starting point. The carriage is also controlled by a hand lever, by which it can be stopped at any point, and reversed or started in the same direction again at the will of the operator.

Another style of electric proof press in use in many newspaper composing rooms is of a quite different form. This consists of a galley bed, varying in different sizes from 10 to 25 inches wide and 24 to 32 inches long. This is mounted on a strong iron pedestal and supported by braces at each corner of the bed. At both sides of the bed, running from end to end, both above and below, endless chains are fitted. (Fig. 13.) To these endless chains, across the bed at the proper height, is attached a small impression cylinder covered with a rubber surface. At another point far in advance of the impression cylinder two inking rollers are attached to the chains. The electric motor operating these endless chains keeps the impression cylinder and the inking rollers moving in one direction, inking the galley and making the impression on the upper surface and then returning below the bed.

The ink supply and distribution are maintained by a revolving ink disk in an inverted position under the bed, and against which the rollers run as they travel around on the endless chain.

The sheet of proof paper is laid on by hand and the speed with which copies can be made depends on the operator. The machine is started and stopped and the speed is controlled by a pedal operating a friction clutch.

Special Proof Presses

There are in addition to the styles of proof presses described in the foregoing pages a number of other machines made for special purposes.

One kind is used in connection with rotary presses, and is a hand-operated rotary machine having an impression cylinder for the paper and another upon which to fasten the curved plate, just as in the regular rotary printing machines. These are used not for proofreading purposes, but for preliminary make-ready of individual plates for the larger machines. Although they are termed proof presses, these do not properly belong with the kinds of apparatus we have been considering, but to a newer class of makeready or plate-testing machines.

SUGGESTIONS TO STUDENTS AND INSTRUCTORS

THE following questions, based on the contents of this pamphlet, are intended to serve (1) as a guide to the study of the text, (2) as an aid to the student in putting the information contained into definite statements without actually memorizing the text, (3) as a means of securing from the student a reproduction of the information in his own words.

A careful following of the questions by the reader will insure full acquaintance with every part of the text, avoiding the accidental omission of what might be of value. These primers are so condensed that nothing should be omitted.

In teaching from these books it is very important that these questions and such others as may occur to the teacher should be made the basis of frequent written work and of final examinations.

The importance of written work cannot be overstated. It not only assures knowledge of material but the power to express that knowledge correctly and in good form.

If this written work can be submitted to the teacher in printed form it will be doubly useful.

REVIEW QUESTIONS

1. What is a proof?
2. What is the wrong way to look at the matter of taking proofs, and what the right?
3. Give three methods of taking a proof.
4. What is the origin of the expression "pulling a proof" and how is it now used?
5. How is a proof taken from an intaglio surface?
6. Is it the custom in printing offices to use one of the above-named methods exclusively?
7. What other method of taking proofs is now in common use?
8. Is a regular press suitable for taking proofs, and why?
9. What is a proof planer?
10. Describe the process of taking a proof with a planer and mallet.
11. Where must a form be placed for taking a planer proof?
12. What part of the process requires skill?
13. When is this method desirable?
14. What method was formerly used for proofing forms on the stone?

15. What is a proof roller, how is it used, and how should it be cared for?
16. Describe the process of taking a proof with a roller.
17. Describe a common roller proof press.
18. What points require attention in order to get a good proof by this method?
19. Of what does the simplest style consist?
20. How is the stand utilized?
21. Where the proof press is much used what is a good arrangement for distributing ink by hand roller?
22. What is the present use of the hand press in modern offices?
23. What points require care in taking proofs on a hand press, (1) in placing the form on the bed, (2) in moving the bed in place, (3) in equalizing the pressure on form with irregular or unequally open faces, (4) in regulating the pressure, (5) in laying in the paper, (6) in removing the paper?
24. Describe the materials and processes used in taking engravers' proofs.
25. Describe the rocker proof press.
26. What are its advantages?
27. How does it work?
28. What, in general, is a cylinder proof press?
29. Describe the simplest form of stationary-bed cylinder proof press, including inking mechanism.
30. Describe the composing room cylinder, specifying feeding mechanism, cylinder action, and inking mechanism.
31. Describe the simplest form of the moving-bed cylinder press.
32. Describe a more elaborate form of the same machine.
33. How is the inking done?
34. What other appliances are sometimes attached to the more elaborate of these presses?
35. What is the special need of newspaper offices?
36. Describe a machine to meet this need.
37. Describe the process of taking a proof on such a machine.

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38. What peculiar usage prevails in taking newspaper proofs, and how is it done?
 39. What other practice is often found in newspaper offices, and why?
 40. Describe two types of electric proof presses, including ink distribution.
 41. Describe a special proof press used with rotary presses, and tell what it is used for.

30 GLOSSARY OF TECHNICAL TERMS

ARTIST'S PROOF—An early impression, with or without the artist's name, made before the etching or engraving is printed for general sale.

AUTHOR'S PROOF—A proof sent to the author after the compositor's errors have been corrected; or a marked proof returned by the author.

BEARER—A type-high strip of wood or metal to bear off excessive impression, etc.

BEATEN PROOF—A proof made with a mallet and proof planer. See Stone Proof.

BRAYER ROLLER—A small hand roller for distributing ink.

CHANDLER & PRICE PROOF PRESS—These are made on the plan of the usual galley proof press, similar to that shown on page 12.

CLEAN PROOF—When a compositor sets type without errors or with very few, he sets a clean proof.

ENGRAVER'S PROOF PRESS—An extra heavy and strong hand press for taking proofs of engraved plates. See page 16.

FIRST PROOF—The first taken after the type has been set or the engraving made; in distinction from a second or succeeding one. An early impression of an engraving.

FRISKET—A light iron frame covered with paper, originally attached by hinges to the tympan of a hand press, to hold the sheet in place and to protect it while the impression is being made. Friskets are often used on platen job presses, usually attached to the gripper fingers. In a general sense, any frame or partial covering to protect a sheet while the impression is being made.

GALLEY PRESS—A proof press suitable for holding a galley of type for proofing.

HACKER PRESS—A proof press having a cylinder and bed similar to the Potter machine.

HAND INKER—An inking roller or dabber to be held in the hand while using.

HAND PRESS—A platen press built on the plan of the early wooden press. There are other presses quite different in construction and operated by hand, but they are called by some more specific name. See page 13.

HERALD PROOF PRESS—A style of self-inking, self-feeding proof press used in large newspaper composing rooms.

INK BALLS—The early pads or cushions by which ink was applied to type forms.

ITS OWN STOCK—Said when a proof is taken on the particular stock to be used in the final printing; in distinction from ordinary proof paper.

PLANER PROOF—An impression made by pounding a damp sheet on to the form by means of a cloth-faced block. See page 9.

PLATEN—The flat surface of a press by means of which the sheet is pressed on the form.

POCO PRESS—A small size of the Potter proof press. It is placed on a bench of convenient height and consists of a movable bed and impression cylinder only.

POTTER PROOF PRESS—A small machine in which the bed moves back and forth under a revolving cylinder. See page 21.

PRESS PROOF—A proof made with care by making ready on a press in one or more colors, in distinction from an ordinary proof made in the routine manner. The final proof of a form made ready on the press for approval before the printing is done.

PROOF—A trial sheet showing the contents or condition of composed type, engraving, or electrotpe, for marking corrections or changes. In a general sense, a special impression.

PROOF PLANER—See page 9.

PROOFING—This form of the verb *to prove*, as applied to the taking of impressions for reading and correction, is sometimes used in a technical sense, and has been employed occasionally in these text books.

PROOF PULLER—A workman whose duty it is to take proofs, as in newspaper and book rooms, or other large composing rooms.

PROOFREADER—One who reads proofs and marks them for correction.

PROOF SHEET—A printer's proof.

PULL A PROOF—To take a proof. See page 8.

REVISE—A second or later proof taken after corrections have been made, for the purpose of comparison with the first marked proof to see that errors have been corrected. According to their number, the first revise, second revise, etc.

ROCKER PRESS—A style of proof press in which the impression is made by means of a segment of a cylinder which is turned over the form for the impression and is then turned back in readiness for the next impression.

ROLL UP—To ink up a form or plate with the proper amount of ink for the impression.

ROLLER PRESS—A style of proof press which takes an impression by rolling a heavy cloth-covered cylinder over the form. See page 19.

ROUGH PROOF—A proof made in the crudest, quickest manner and with little attention to a nice impression.

SLIP PROOF—Galley proof made in a long strip.

STONE PROOF—A proof made from a form while it is on the imposing stone, either locked or tied up; made usually with a proof planer and mallet.

VANDERCOOK PRESS—One of several styles of proof presses. The three distinctive kinds are the roller galley press, the rocker press, and the small cylinder press.

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