

the case, continuing until all is distributed. Use your composing stick for this, if you have one. All rules, leads, reglet, furniture, etc. should also be distributed to their places.

### How to Oil Your Press

Oil sparingly but frequently, with machine, motor or sewing machine oil—preferably motor or a fairly heavy oil:



**IMPORTANT**—For best results in printing, and a long life for your press study this diagram.

**Gripper Bar Spring**, where it goes thru hole in body, underneath handle.

**Roller Hooks**, where they slide thru holes in roller carriage or on presses with saddles, the moving parts.

**Ink Roller Ends**, oil slightly where they fit in hooks or saddles.

**All Other Bearings and Joints**, that are subject to wear.

### Underlays and How They are Used

Underlays are used largely for raising cuts high enough so that they will print with type, and also to raise lines or words which do not print when a press proof is taken. Cuts, wood type, electrotypes, etc. are often lower in height than type and must be brought up

### UNDERLAYING

Fig. 1

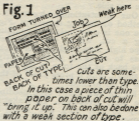


Fig. 2



Fig. 3



to type-high by pasting one or more thicknesses of paper on the bottom. Cuts that are low on one side must be leveled by underlaying, as the

process described above is called, the low side.

Our illustrations show the method of making underlays. Figure one is a typical form containing a cut, which, while blocked type high, may need a paper thickness to make it print properly. The back of the form in the chase is shown, with a press proof of the job to be printed.

Figure two shows type needing the same treatment. To make it easy to see, only one word is shown, but the form might contain any amount of type, cuts, or both, with certain parts needing underlay.

Figure three shows the application of an underlay to only a small portion of the cut. As in overlay, you can put one, two or more patches of various size on the same general location. Note that usually a smaller patch is needed than the size of the low spot, because the patch has a tendency to raise a larger spot than it covers.

Underlays and overlays are companion helps for you in getting good presswork. Don't rely entirely on impression screws. Part of your form will have too much impression if you do, and it will be harder work to operate the machine.

### **The Way to Make an Overlay**

While the impression screws on your press are there to enable you to increase the impression on any part of the work which does not show up properly, they should not be used indiscriminately. In some printing shops the instructions are to leave the impression screws

alone, but that is going too far. If one whole side is low, the impression screws will correct that. However, when some small portion of a form is low, the impression screws should not be used—in fact, many times they would affect so much more space than necessary that it would not be practicable to change them. Under such circumstances an overlay is best.

Print on a sheet of paper with the register as you want it. Gauge pins at the correct setting. Then, leaving sheet in the correct spot on the gauge pins, make three deep cuts at each of two upper corners as illustrated.

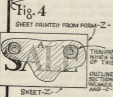
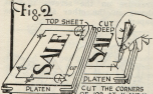
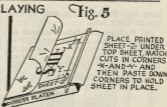
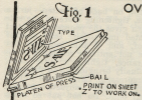
Take the sheet of printed paper from the press and paste it over or under spots where the impression is too light.

Lift bails, and the top sheet of the tympan paper (do not disturb gauge pins), and put the paper with makeready on it under the top sheet of the tympan paper, aligning cuts at corners with cuts in the second sheet of tympan paper. Cover with the top sheet of tympan paper, replacing bails.

The illustrations shown cover the method of procedure very thoroughly. For ease of demonstration, one large word is shown, but the system applies equally to a form of small type, cuts, or both—in fact any kind of printing. For convenience's sake the platen is shown as if it were not a part of the press, but it should be understood that no removal of the platen is implied.

As will be seen from the diagrams, several overlays of different sizes may be applied, one over the other, when necessary to bring

OVERLAYING



By drawing heavy lines, or with carbon, get these outlines onto the back of sheet, paste on piece-A- first then paste B-AND-C- in proper position.

up the impression properly. It is also important to see that the sheet with the overlays on is in the exact spot to produce the proper results, because if it is a little too much to one side or the other, the result will be over-impression in one place, and under-impression in another.

Very thin paper should be used for overlays. Tissue may be used, manifold, or what is known as French folio. The quality of your printing will be determined quite a little by the appearance of the impression, and if you use care with your overlays, you will be very much satisfied with the results.

If the Printed Impression is Muddy, It May Be

A (1) Too much ink. A surprisingly small quantity is all that is necessary.

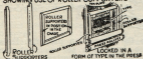
(2) Type form needs cleaning. Be sure that form is dried thoroughly before again running rollers over it, so that cleaning liquid will not dilute the ink and cause more trouble.

(3) Temperature of room is too low. Best results are obtained at 70 degrees or more, at which tempera-

ture ink flows freely and rollers are at their best.

(4) **Rollers are sliding instead of rolling over form.** A roller supporter or bearer of wood furniture, locked in the chase at the far side, or one on both sides at **THE HEIGHT OF**

#### SHOWING USE OF ROLLER SUPPORTERS



**THE TYPE** will often provide a surface which will prevent rollers from sliding. See elsewhere for other causes of sliding.

(5) **Ink too thick.** A very small drop of ink reducer, reducing compound or even kerosene will help. Be sure to use only a drop.

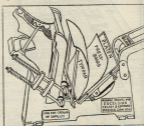
(6) **Ink has too much skin in it.** Ink when left in the container with top or cover off will "skin over," and if this skin is put on the ink table, it often causes trouble. Use only clear ink, free from skin.

(7) **Ink was put on immediately after cleaning and is diluted by cleaner.** Even a drop or so picked up from the crevices in the type form or cracks or cuts in the rollers will affect ink. Clean rollers and ink table bone-dry, then re-ink.

### Printed Impression Is Not Clear

**B (1) Not enough impression on platen.** Put a sheet of waste paper in press (to prevent type from marking tympan or padding) bring handle down so platen is against type and tighten up on

screws on back of platen—just a little, tightening more on the side which gives the poorest or lightest printed impression. Take another proof, and if this improves but does not entirely remedy the appearance, tighten a little more, gradually bringing up to the proper impression. Large forms will require a stiffer adjustment than small ones. Do not put so much pressure on the screws that it shows on the other side of the paper.



(2) **The wrong kind of tympan.** For small forms, cards, etc., the tympan and packing should be thin and hard, two or three sheets of thin, hard, smooth paper over a thin cardboard. For larger forms a few sheets may be added. For solid forms of small type a somewhat softer tympan, such as four or five sheets of soft, cheap white paper, may give the best results. Remember that the harder the tympan and the lighter the impression, the sharper and clearer the printing, and the less the wear on the type. After a little experience you will be able to quickly

choose the right tympan for any job.

(3) **Needs underlaying.** When type or cuts do not print when those surrounding them do, they are probably low. First make sure that the form is planed down level. If this does not overcome it, see article on underlays, pages 19-20.

(4) **Needs overlay.** See pages 20-21.

(5) **Rollers sliding on form.** This is fully treated elsewhere.

(6) **Not enough ink.** This is the least likely of all causes with the beginner, the tendency being to put too much on. You can test this by putting a little more on, and if this does not seem to improve the work, wiping the excess off again.

(7) **Temperature too low.** See "Muddy Impression."

(8) **Form not perfectly smooth and flat.** This is absolutely essential. If you have not an imposing surface, take chase bed and chase out of the press together, loosen chase screws, and tap the form down lightly with the planer and mallet. In the absence of a planer, use an absolutely smooth and flat piece of wood. Move planer from side to side, making sure to cover the whole form in this way. Tighten chase screws, each one a little at a time, so that the form will lock up straight, and that unequal pressure will not crack the chase. After tightening them a little, plane the form down again, and finish tightening of the chase screws.

(9) **Type is "off its feet"**—that is, does not set squarely on its base. Planing and relocking the form as described above will often remedy this. Sometimes it is caused by not spacing out the lines fully, so that

while the chase screws on one side will take hold, those on the other side do not get a chance to squeeze all the lines. Take out a line which is spaced properly, set your composing stick to exactly fit that line,

---

Standard pointed flaps will take the place of wallet and other special shapes for the duration. The envelope manufacturers cannot shift dies and maintain production so it's a case of take what we can get. We hope the necessity will soon be over.

Standard pointed flaps will take the place of wallet and other special shapes for the duration. The envelope manufacturers cannot shift dies and maintain production so it's a case of take what we can get. We hope the necessity will soon be over.

*Two examples of type off its feet*

---

and then one by one, take out the short lines and respace them as described in the directions. Sometimes two or three lines have been over-spaced, causing the form to tighten against these long lines, and leaving the other lines loose. In that case, take out the long lines and space them properly. Occasionally — quite often — if the form has a border around it, a lead or thin piece of furniture will become slightly misplaced in the locking up, causing the form to pinch in places, and twist out of shape. This will often cause type to appear off its feet. The use of corner quads will overcome this trouble. See "crooked type forms."

(10) **Wrong kind of ink.** Many Purpose ink will handle most work, but if you are printing shaded cuts or halftones we recommend Half-tone ink. Sometimes on very hard surfaced paper of high rag con-

tent, a stiffer ink is needed. Bond Black ink will be most satisfactory for such work.

(11) Rollers are too hard, old or worn. See "How To Take Care of Rollers", page 29.

(12) Rollers too crusted with old ink. See "Care of Rollers," mentioned above.

(13) Type old and worn, or letters mutilated. If your equipment is new, you will have no trouble about worn type, but if you have purchased old equipment, you may have some type whose face is so worn and rounded that perfect results are almost impossible. A very soft tympan will sometimes produce better work, although it is advisable to turn in the old type for new as soon as possible. We make a liberal allowance for old type metal in exchange for brand new faces. Be careful to keep the face of good type free from anything that might injure it. Anything left on the face of the type, while an impression is taken, will leave its mark. Be very careful that the grippers are never between the form and the platen, before you take an impression. The grippers must always be in a location which will prevent their marring the surface, as must the gauge pins.

### Lines or Entire Form Are Crooked

C (1) Chase screws not equally tight. Take chase out of press, loosen chase screws and follow directions under "Impression not clear," item 9.

(2) Lead or piece of furniture misplaced. In locking up a form, it

is very easy for a single two point lead or thin piece of furniture to be accidentally moved just enough to wedge the form entirely out of shape. Check over your form and look for something of this sort.

FORMS MUST BALANCE UP TO LOCK OR TIGHTEN PROPERLY

34 PTS	8 PT	12 PTS
	8 PT	
	8 PT	12 PTS

Example of correct makeup

28 PTS	8 PT	12 PTS
	8 PT	
	8 PT	12 PTS

2 PT LEADS

Example of incorrect makeup

(3) Too much furniture on one side of form. Remember that a single two point or even one point lead in one column of a form, if not balanced by an equal amount in the other column or columns, will make the form crooked. If you have a cut somewhere in the form, be very careful to balance it up with an exactly equal amount of type or furniture. Using border or rule around a form will also require careful use of spacing, leads and furniture to keep everything straight.

### Type Loose—Form Will Not Lock Up Tightly

D (1) Chase screws not equally tight. See "Crooked Form," Item 1.

(2) Lead or furniture misplaced. See "Crooked Form," Item 2.

(3) Too much furniture or leads on one side. See "Crooked Form," Item 3.

(4) Lines not equally spaced. See "Impression not clear," Item 9.

(5) If you are sure that your form is made up properly, that is, none of the furniture, leads or type are misplaced so as to make proper tightening impossible, locate the part of the form which seems to be loose, cut strips of thin paper, and place them between the lines which are loose, taking care not to put enough in any one line to make it appear noticeably spaced in the printed page. It is very seldom that this must be resorted to, one of the other suggestions mentioned usually being the cause.

### Rollers Slide Over Form or Refuse to Take Ink

E(1) A roller supporter, bearer or track locked in the form on one side or the other, or both sides, will often prevent sliding. Bearer must be locked in at EXACTLY TYPE HEIGHT, otherwise the rollers will either fail to touch the type, or they will not ride on the bearer. These bearers must be in a place where they will not touch the paper or card when the impression is made or must be shielded by a paper pasted to the gripper. See page 22.

(2) Rollers too hard or too worn. See "Care of Rollers."

(3) Rollers too crusted with ink. See "Care of Rollers."

(4) Springs on roller hooks not giving proper tension. On some models adjustable nuts are provided. On others springs may be

stretched out, or newer and stronger springs provided.

(5) Rollers bind in roller hooks. Use a little oil where rollers fit into hook.

(6) Rollers won't take ink. This is caused by excess moisture in the rollers, and sometimes occurs during damp, hot summer weather. See "Care of Rollers." Make sure that, after cleaning rollers with kerosene or any other cleaning substance, they dry well or are dried before again putting on ink.

### Light Streaks Across Face of Letters

F First line of type has light streaks in ink running horizontally across the face of letters.

(1) Rollers sliding. See Item E-1 and "Care of Rollers."

(2) Room too cold to start. See Item A-3.

(3) Ink too thin. This may come from dilution by cleaner. See A-7. If ink is very old, the oil may have separated enough from the pigment to give a thin solution, but not often and never with ink furnished with new equipment.

### How to Start a Stationery and Job Printing Business

It might almost be said that a business of this kind will start itself, so easy is it to obtain orders. Just let it be known among friends, relatives and acquaintances that you have a printing outfit, and you will have plenty of jobs offered you. Everybody you know is a prospect for stationery and cards at the very least. People have acquired