

CHAPTER XXVIII

THE DISTRIBUTOR

Stopping Bar Type Distributor

HARDING: This type of distributor was used on early Linotypes and is still used on Intertypes — even the big mixers. It is a simple mechanism. Most stops on this type come under one of the following heads:

1. Damaged mats.
2. Bent channel entrance partitions, either upper or lower.

There are many other causes, but these are the most frequent.

See that the *upper* parts of channel entrance partitions are in line with their fixed parts. The best way to align the *lower* ends is to climb up on top of the magazine with a light and a pair of long-nose pliers, and bend each partition to center over its equivalent partition in the magazine. The partitions should be straight up and down (from top to bottom of the magazine). Most of the partitions on old Linotypes, from lower case *e* to figure 0, are crimped except *m* and *w* and the em quads. The caps are usually all lugged partitions.

The stopping bar must be perfectly free in its three brackets. It must move with a partition, and immediately return. Lack of freedom here can cause trouble. So can too strong a spring on this bar.

The stopping bar may become sluggish through dirt, bent brackets, dowel pin lost from brackets, or nails used in place of the pins that go through the stopping bar.

The stopping bar should overlap the stopping bar plate, at the left, 1/16".

The Mats Must Clear the Partitions

Run in all your lower case *o*'s, *n*'s, and *h*'s. Throw off the belt and try them by hand, slowly. They should clear their partitions. Examine the partition in relation to those around it and see that it is properly spaced.

The mats should barely clear the partitions.

(LOOMIS: I have a little different idea about this. I have fixed a lot of machines in the country and have gotten into trouble over a close adjustment here, because often the distributor bar is worn and some mats drop off earlier than others. If you find one or two mats that drop earlier than others in the same channel, you can make scrap brass out of them, but unless you try every channel on the machine — and this takes a lot of time — you're safer to let these

mats clear about $1/16''$.) Mats lying flat on the partitions usually indicate too little clearance.)

Partitions Get Worn Out

LOOMIS: A large part of the trouble on many old machines comes from partitions that have been bent so many times they have lost resiliency. These are not too hard to replace. Take out the bar at the lower back of the channel entrance frame; take off the front guard and the wire; tap the partitions up from the bottom, and pull up and out from the top with pliers. New ones will need a little tapping to go in. Don't forget to replace the bar.

Adjustments of the Distributor

HARDING and LOOMIS: These adjustments are similar on all types of machines, and so will be treated together.

To Adjust the Distributor Beam

Linotypes since Model 5 have an lateral adjusting screw at the top of the beam, on the right front. With a $3/8''$ socket loosen the two bolts that hold the beam; move the beam the required amount; tighten the bolts; set the adjusting screw against the beam.

On old Linotypes — probably where the distributor bars become worn — it becomes difficult to move the beam far enough to the right (to your left as you are working on it) for the mats to clear the partitions. In this case you can take the bolts to a machine shop and have them altered. Starting just under the head, turn the shaft of the bolt to $7/16''$ for a distance of $2\frac{3}{4}''$. This will allow plenty of adjustment and also plenty of holding power — but don't lean on that $3/8''$ socket wrench.

The beam adjustment is made on the Intertype by two adjusting screws just above and in front of the distributor box; they bear on the frame. In adjusting, leave one tight; loosen the other and move the beam; then if you want to move it back, you have the original adjustment preserved.

Vertical Space Between Bottoms of Mats and Tops of Partitions

On old Linotypes and most Intertypes the space should be $1/16''$. On Intertypes having fast screws, this dimension is usually reduced; on Linotype fast screws, it is only 3 points. If too close, it causes mats to fall all over.

Old Intertype and Linotype magazines and cradles are adjusted to raise or lower the channel entrance by two screws that rest on the cradle supporting rod under the cradle.

On newer machines the adjustment is made in the beam by a screw at each end, in the top.

Lateral Adjustment of Intertype Channel Entrance

This is done by thin washers, a pin and set screw, or an adjusting screw in the channel entrance frame near the distributor box, but this adjustment is usually reserved to bring alignment of the partitions with the magazine partitions.

Space Between Channel Entrance and Magazine

All channel entrances bank against a screw at each end, which should be set to provide 1/32" between the channel entrance and the magazine.

Alignment of Floor of Channel Entrance With Floor of Magazine

The channel entrance should be slightly higher. The Intertype channel entrance is self-aligning. Older Linotypes have eccentric pins at the ends for this. Newer Linotype magazine cradles have locating cradle blocks which are doweled at the factory and need not be changed.

The Mat Guard

This should be set, by cautious bending of the brackets, so the guard will miss the mats by about .005" its entire length. If the long strip is bent, get a new one. The brackets can usually be bent with ease by tapping at the middle of the curve with a small hammer, or bent back up by prying with a screwdriver against the upper screw while it is protected by a linecasting slug.

Undoubtedly it is possible to bend the ends of the screw at this, but I have never done it.

The Spiral Automatic Distributor

HARDING: In 1909 the Mergenthaler Company brought out the spiral automatic distributor, a rather ingenious device which nevertheless is not complicated when it is understood. There is no stopping bar. The partitions are fixed, not flexible. When the bottom screw is retarded by a mat, the screws are thrown out of time and stopped.

Adjusting the Mat Guard on the Spiral Automatic

LOOMIS: The mat guard is set differently here. First, oil the two bearings through which runs the round rod that carries the mat guard. See that the spring that pulls it into place is functioning positively. Now the usual adjustment is made by bending the small cross-piece at the top end of the Distributor Screw Guard Lever (G-2084), which bears against the mat guard. Usually this lever is brass, but it is only a couple of years since I ran into one that was coppered on the

outside but cast iron on the inside. . . . We have some very good welders these days.

If yours is cast iron, the safest deal is to wrap a 1-point or 2-point lead around the screw that actuates the lever. For a permanent job, you can get a dab of metal welded on the screw and then grind it down.

Hooking the Spiral Automatic Spring

LOOMIS: Inside the spiral automatic clutch there is a free-floating gear, T-49, which impels the screw itself through a spring, G-1527 for a Model 8, G-3405 for a Model 14. (The spring for the 14 is heavier.) Occasionally this spring breaks a loop and falls off, and you cannot start the distributor to save your neck. If you look around on the floor you may find the spring. If not, dig out that case of 10-point and hunt up the bellows to blow the dust off.

But let's suppose you have the spring. Hook one end of it over the uppermost hook (you'll need a light), then turn the clutch a little. Loop a string through the hook on the free end of the spring. Now you can hook that end of the spring over the other hook, and away you go. (Some like to make a hook on the end of a paper clip, and use that. It is more maneuverable.)

The free gear must be free on the end of the screw at all times. If it is not, you will tear up some partitions.

The Clutch Stretches the Clutch Springs

LOOMIS: These two larger springs are easily gotten at. About the only trouble is that if the clutch leather sticks too hard to the clutch pulley, the springs will be stretched beyond recognition. Later models fixed this by tapping a hole in the flange, about $\frac{1}{2}$ " behind the small blocks, and putting in a screw so they cannot possibly go farther apart than that. Keep these blocks tight and keep a little hard oil on them. Here too a heavier spring is made for the Model 14, but it is not always on the machine.

Adjust the Spring Collar

LOOMIS: This is movable. Set it so that it stretches the springs about $\frac{1}{2}$ " when the blocks are together.

To Oil the Clutch

HARDING: Besides the obvious oil holes, there are two that require attention: one in the clutch pulley, under the belt (you have to remove a screw), and one in the clutch pulley washer flange (you find this one by separating the pulley washer flange from the clutch spring collar).

Why Doesn't the Distributor Stop When You Pull Down the Gate?

LOOMIS: It should, you know. There may be several reasons:

Spring gone from behind the distributor clutch lever; those with weighted U's often have to have springs anyway, though they aren't supposed to.

Distributor Clutch Lever Screw worn down.

Distributor Clutch Flange Collar (G-1061) may be set too far toward the distributor box. Generally it works best on the edge next to the cast iron bracket.

Occasionally a clutch leather seems to be reluctant to turn loose. Spread the flange away from the pulley and drop in a pinch of graphite.

Mats Strike Channel Entrance Partitions

LOOMIS: As suggested, this may be for lack of adjustment of the distributor beam sidewise, or worn distributor bar.

Does Leveling Affect Distribution?

LOOMIS: Absolutely. In fact, you take a machine where you can't seem to get a sidewise adjustment that will help, and you start experimenting a little with about 6 points at a time under the right legs or under the left legs. Quite often you can get it perfect this way.

Leveling is determined by setting a level on the long shaft to which is attached the back distributor screw. Usually we set the right end (the distributor clutch end) a little high for better distribution.

Mats Jiggle on Distributor Bar

LOOMIS: This too can be fixed. If leveling or raising the outer end a little doesn't do it, you may need to re-time the screws so as to advance the lower screw, which will carry the mat at a slant, bottom end forward. Therefore it is not free to jiggle. Most distributors are now made this way. In any event, on old style distributors or on spiral automatics or on Intertypes, advance the bottom screw two or three teeth. If there are pins in the gears, you will have to remove them by sawing them down the middle and bending out the remainder. This is a very common practice — advancing the lower screw — and a very sound one. The beam will have to be re-set now.

But sometimes the mats will still jiggle, and sometimes there are inexplicable distributor stops in which a mat — only one — stops as if it had hit the partition. Maybe it has. On an old distributor bar you may find either unusually worn combinations or small burrs at the ends of combinations. Either of these may cause an occasional mat to fall crooked. It is rather hard to put your finger on, especially if the defects are on the front side of the bar. Get a dentist's mirror and raise the back screw and you can manipulate the light so that you can get a

good look. If there is trouble from unusual wear, you will have to get a new bar. If there are burrs, you can eliminate most of the trouble by filing them off very carefully. You will have to remove the bar for this job. Jiggling also is caused by burrs or nicks in the distributor screws.

Letters Drop Several Channels Late

LOOMIS: If this happens repeatedly on the same letters, it probably comes from too close a setting of the mat guard, which presses against the mat as it reaches its own channel and holds it on the bar until the mat has passed.

Mats Fly out on Floor

QUESTION: We are having an awful time with mats flying out of the distributor box to the floor. We'll get a dozen a day like that. — D.A.T., Holdenville, Okla.

HARDING in the *Graphic Arts Monthly*: It rather sounds to me as if your distributor box rails — one or both — are bent together so as to bind the mats. Then when they are released they might jump, and the first one or two might go past their channels. Watch the mats as they come out of the box. There should be no perceptible movement in connection with leaving the box rails.

Matrices Twist on Distributor Bar

QUESTION: We have quite a number of mats getting twisted on the distributor bar. Can you suggest a remedy? — T.R.S., Clarksburg, Tenn.

HARDING in the *Graphic Arts Monthly*: This sounds as if the mats are not coming out of the box right. See that the distributor box rails are spaced correctly apart (.003" on each side of a mat), level, at the right height (see *Adjustment of the Distributor Box*, page 239). If the same mats, you probably have some damaged combinations by now. Matrix toes reduced by wear as much as .020" will cause this too.

Trouble With 14-Point

QUESTION: We are using a font of 14-point Cheltenham Bold, and we have trouble. If we get some mats to go into the magazine, others won't. I am about to give up. — W.Y.H., Wausau, Wis.

LOOMIS: A heavy 14-point will always give trouble, although it can be made to run pretty well. These are big mats, and you may have to bend the fixed partitions a little to accommodate some of them. Then it often happens that the entrance channel is not parallel with the magazine (this, of course, on either end, for the channel entrances are straight, while the magazine is wedge-shaped. A very full mat will have trouble making the curve. Although the toes will follow the track, the body of the mat is stopped by the partition. Sometimes it is necessary to put a belly in those partitions to allow such mats to go through.

Too Many Mats in Channel Will Cause Stops

HARDING: This is one of the most mysterious of all. If you get more than 21 mats in a channel, you will have stops at the entrance of the magazine.

Troublesome Distributor Stops

E. M. KEATING in *The Inland Printer*: An Illinois m-o says he had sixty-eight stops on one of his three machines in one day. New mats and old work alike. The drive wheels are running 74 r.p.m. and there is some vibration of the machines.

On machines of this age, the speed should be cut down to 68 r.p.m. The floor appears unstable, and the only thing to cure it is a cement foundation. Determine if the machines are level; raise the keyboard side a little. Remove all defective or damaged mats, of which you will have a number by this time.

By this time, too, a lot of your thin mats will have bent toes and ears from the many distributor stops, wherein mats are sometimes dragged along by a too-strong distributor clutch. The thin mats being bent can cause a great many stops.

Sometimes the land at the entrance of the floor of the magazine, having been battered over by several thousand mats in the last thirty years, becomes an obstacle. A mat will hit it and pause, but by that time another one comes alongside, and you have a stop.

Bent thin mats can be caused by the fact that thin mats are lifted two at a time.

Burrs on the toes of certain letters, especially hyphens, usually indicate tight lines.

Auxiliary Trouble

If you are using large mats in a 28-channel auxiliary, it may take some maneuvering to make them distribute. Shift the distributor beam back and forth a little at a time until they seem to hit right. Changing the level of the machine will affect this adjustment much more than you might imagine. In fact, you can adjust the dropping-point of the mats with a few leads under the legs of the machine.

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