

CHAPTER XII

THE VISE AND VISE JAWS JUSTIFICATION AND VISE-CLOSING VISE LOCKING SCREWS

How to Lower the Vise to Second Position

QUESTION: I lowered the vise to the second position and broke one of the eyebolts in the first elevator link. Our machine is a high-base Model 5. How do you explain this? — A.P.O., Washington, Pa.

HARDING: I think I can explain this. You lowered the vise to the second position without first dropping the elevator. This might happen on any machine, but especially on the high-base models.

Proper procedure: Let the elevator drop to the vise cap. Push in the clutch. Pull out the wing pin in the end of the vise-closing lever (at left side) and disengage the wedge or rod that runs up to the left-hand vise jaw. Disconnect the first elevator lever link. Take off the galley, either upright or inclined. Lower the vise to the first position. Holding the vise up slightly, reach down and pull out the stop pin at the lower right, and ease the vise down to the second position, at the same time pulling the first elevator up to avoid getting the first elevator lever caught in the crotch at the bottom.

Some later machines have the stop at the bottom arranged so you can work it with your foot.

LOOMIS: Caution: In raising the vise back to the first position, lift up the justification block so the first justification lever will go *under* the collar. At the Mergenthaler School in New Orleans, I once saw a budding m-o fail to do this. The first elevator lever broke off clean. Professor Churchill was highly disgusted, and said so. He sent the lever out to be welded. The b. m. o. installed the welded lever and turned on the machine. Sad to relate, he had again neglected this precaution, and the first elevator lever broke again — in a new place. It was a testimonial to the welding job — but Professor Churchill was, for once, completely speechless. It is not difficult to understand why.

Vise Sometimes Goes to Second Position Without Being Expected to

LOOMIS: On any machine there is a spring that holds the stop firmly against

the frame for the vise to rest on. If this spring becomes broken, or if the stop itself gets gummed up or corroded, it may not come all the way back, and when you turn loose of the vise, expecting it to come to rest, it falls on down, scaring you out of a day's growth and perhaps breaking or bending parts. Clean up, oil, and replace the spring. The knob screws off for removal of the stop.

What Keeps Bending the Vise Closing Wedge?

LOOMIS: Usually this comes from lowering the vise to second position without disconnecting the wedge.

Letters Hang Over at End of Line

QUESTION: On the enclosed slug you will note that the letters overhang on the right end. This happened once on the left end, and a traveling machinist fixed it, but I don't know how.—T.C.W., Brantford, Ontario.

HARDING: This is simple. (The left end may not be as easy.) The right-hand vise jaw banks against an adjusting screw which you can see as you sit in the chair, just under the line delivery channel plates. Turn this screw in until a capital O shows a tiny (.005" recommended) shelf at the end of the slug. However, if you use butted slugs, you'd better let the O come flush with the end.

Be sure to set the pump stop after making this one.

To adjust the left-hand vise jaw:

On an Intertype, the left-hand vise jaw is adjusted by a similar screw — except on quadders, where you have a knurled knob to turn.

On a Linotype, there is first the old style, that operates as a screw; the new style, that operates as a wedge; and there is the Intertype, that operates as a screw.

Oddly enough, the old style is not shown in Mergenthaler catalogs dated as far back as 1913, but appears in the catalog for Models 1-5, K, and L, dated 1934. This type has a pear-shaped lever with three holes in it, which fits against a collar with several holes. The adjustment is secured by fastening the two together in different combinations of hole, the inside piece being a threaded piece. The holes in one are not the same distance apart as those in the other, so very fine adjustment can be secured.

On the later style Linotype, loosen the set screw in the split bearing at the left end of the vise and turn the knurled knob in for shorter lengths, out for longer. Tighten carefully.

On quadder Intertypes, loosen the thumb screw at the left end, and turn the knurled knob clockwise to bring the jaw to the left. Tighten the thumb screw and set the zero marks to correspond.

If you have a screw and lock nut in the lower end of the wedge (the long piece sometimes called the vise closing lever link), adjust this screw to pull the wedge all the way down, but not far enough so the jaw starts moving back to the right.

On an Intertype, play may develop between the Vise Closing Block (U-217) and the Vise Closing Screw (U-640). Loosen the set screw at the left end of the vise closing bracket and turn the octagon-head bushing screw. Adjust until the vise closing lever link can be raised to its full upstroke without interference, allowing only enough play between the screw and the block for free movement. Hold the screw to the left and tighten the set screw.

Vise Jaws Should Not Accumulate Metal

LOOMIS: The vise jaws should not be allowed to accumulate metal, especially on the inside surface at casting point. Keep this scraped off; polish with mold polish, or, better, with graphite and oil. Simoniz wax helps to prevent the metal from sticking. Metal at the casting point will crush the side walls of mats and create hairlines.

On vise jaws in long use the face presented to the mats (the inside end) is usually worn down along each edge and high in the middle. Get new ones — they are not hard to install — or trade for a pair that has been ground. The new ones will have a relief in the middle, which is good.

Justification Springs Need Oiling

LOOMIS: There is not much maintenance on the justification levers and springs, but that little, as usual, is important. The cam rolls should be round and free from flats. They are easily replaced.

Turn over the machine until the *first justification* lever goes up. Back the machine just a trifle. Now you can reach the wing pin screw. Loosen it and have somebody (or do it yourself if you're dextrous) insert a bar over the lever and under the base of the column of the machine, and pry down on the lever so you can remove the cam roll. Replace both cam roll and pin. Poke out the oil holes or grooves.

For the *vise closing* lever, the screw is on the inside. Turn the machine until just before the first justification lever goes up for the second time, just before the cast. This probably will have to be done by hand and whoever works the clutch should also hold it, to prevent accidents, until you are through. You can now loosen the screw from the inside. Now, if the wingpin in the vise closing cam roll is opposite the deepest part of the first justification cam, you can pull out the pin, perhaps loosening it with a screwdriver blade under the wing. Clean the holes or grooves and put in new parts while somebody else holds down the vise closing lever at the end. Needless to say, the machine is locked up, so don't tarry. Get it unlocked as soon as practicable.

Now we come to the oiling of the springs. At the top of each spring rod, in the justification levers, is an oil hole. This usually is thoroughly clogged. Let's remove the springs. Turn the rod (that goes up through the center of the spring) with a pair of pliers until the hole lines up with the notch just below the collar at the bottom. This is a good job to do when you are tired, because you will have to lie down to see the hole. Sometimes you have to let the justification levers go up and then have somebody push them down to locate the holes. Insert heavy nails in the holes. There is also a fork you can buy to push down on the springs, or you can have one made by welding together a couple of pieces of $\frac{1}{2}$ " round steel about two feet long, and spreading one end in a U shape to fit around the nut.

Now, at the point in the cam where the lever rises highest, raise the lever and lift out the spring. You may find the top of the rod worn to a point. Grind it round and smooth. Clean out the oil hole carefully with a nail. Oil the top of the rod (not grease, because that will plug it up again), and replace with some-one lifting the lever. Oil occasionally after this.

Rust and a pointed shape will sometimes cause some odd troubles with justification.

Incidentally, did you notice those springs were different? The one made of the heaviest wire is the first justification spring and goes nearest the keyboard.

Why Do Lines Vary in Length on Left End?

QUESTION: We have had this trouble for a long time. My theory is that the justification springs are not strong enough. — P.N.W., Windsor, Conn.

LOOMIS: That isn't it. If it were, you'd get squirts on the left end. Presumably the variance is not more than a point or so. This indicates a malfunction of the equipment contained in the Vise Jaw Wedge Bracket, Assembled.

First, see that the knurled adjusting bushing is tight.

Lift out the adjusting rod locking pin that you use to change the length of line. Hold onto the block and withdraw the long adjusting rod after taking out the screw at the left end to disconnect the rod from the adjusting bars (the long flat pieces that run across the top of the vise cap). Hold onto the square wedge block, for there are a spring and a plunger in it. If there is not such spring and plunger, this can be the cause of variation in line length. If there is, and you don't hold it, you may find it out in the back yard.

If the wedge block is deeply scored, it should be ground smooth on a fine wheel — preferably replaced.

In particular there is one piece, the Wedge Guide, a round brass part, that may get grooves in it from the adjusting rod and make changes on the left end of the line very difficult. This wears rather fast.

See that the two felt wipers are held against the wedge, and oil them when you oil the machine.

Why Do Vise Locking Screws Break?

QUESTION: We have a Model C Intertype, No. 5519. The trouble is it breaks off the vise locking screws whenever you use the head-letter mold without the flipper. — I.A.C., Belle Fourche, S. D.

HARDING: It should. Older machines are not equipped with automatic mold slide safety devices.

This can also be caused by a double-blackface line. Sometimes the pot lever breaks instead.

LOOMIS: Sometimes one locking screw has a habit of working loose; then the other may break off under the strain of casting. There are only a few points to watch in connection with vise locking screws:

The lug on the end of the screw should be in fairly good shape, not chewed up and not half broken off.

Keep a little hard oil in the vise locking studs. See that they are tight. A long screwdriver or a $\frac{3}{4}$ " socket with a long extension and a universal joint will tighten the right-hand one from the rear.

See that the two screws pull up evenly. Tighten one, then tighten the other and watch to see if the vise moves in. Reverse the process. The one that pulls in needs fixing. Use the shims (Vise Locking Stud Washer, E-392; get about three each of .002", .005" and .010") from the Company. Shim until both screws come up evenly.

Observe carefully whether or not either screw (especially the right hand one) pulls the vise to one side as it is locked up. This indicates a badly worn screw; get a new one. If this doesn't do the job, you have also a worn stud, and that too should be replaced. This will cause erratic trim.

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