No. 679,469. Patented July 30, 1901.

T. J. PRICE.

MACHINE FOR MAKING TUBING.

(Application filed May 15, 1901.)

(No Model.)

FIG. 1.

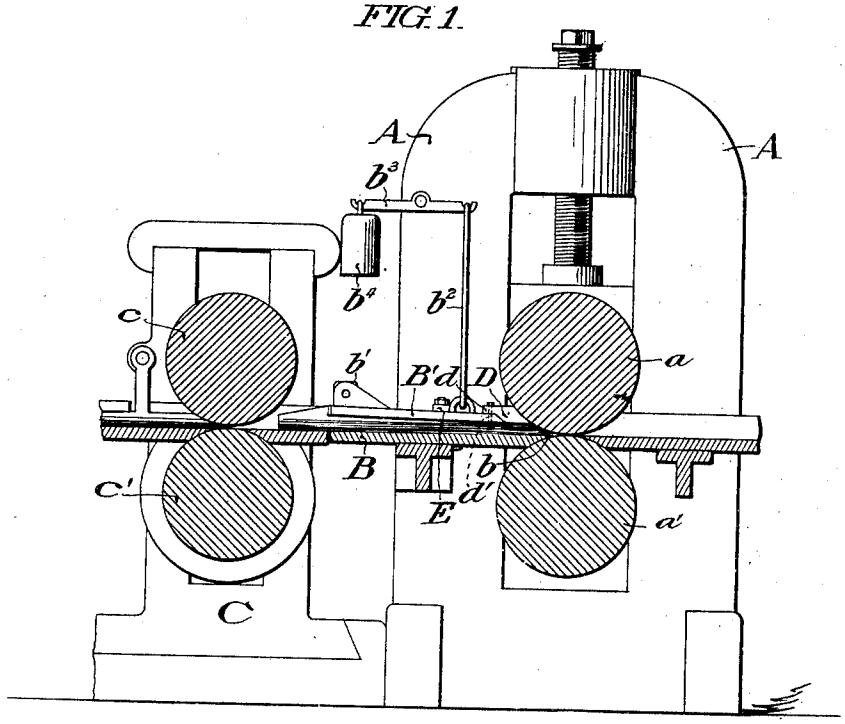


FIG. 2.

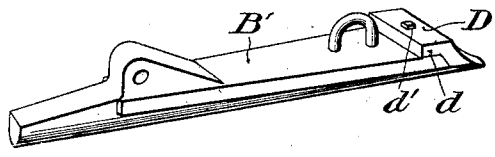
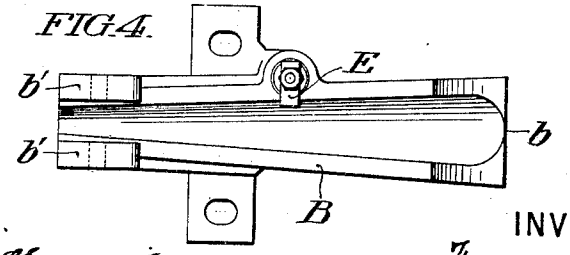


FIG. 3.



FIG. 4.



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UNITED STATES PATENT OFFICE.

THOMAS J. PRICE, OF DANVILLE, PENNSYLVANIA.

MACHINE FOR MAKING TUBING.

SPECIFICATION forming part of Letters Patent No. 679,469, dated July 30, 1901.

Application filed May 15, 1901. Serial No. 60,261. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. PRICE, a citizen of the United States, residing at Danville, Montour county, Pennsylvania, have invented certain new and useful Improvements in Machines for Making Tubing, of which the following is a specification, reference being had to the accompanying drawings.

My present invention relates to an improvement which is applicable to the machine for this purpose which in conjunction with William C. Frick I patented in Letters Patent of the United States No. 575,225, granted to us under date January 12, 1897.

The improvement relates to certain changes in the construction of the former and cover-plate described in the specification of that patent, whereby I obviate the danger of breakage to the machine when, as sometimes happens, a skelp which is in the machine becomes jammed.

In the accompanying drawings, Figure 1 is a longitudinal central section of my machine with the present improvements introduced therein, showing, however, only so much of the machine as is pertinent to the present invention. Fig. 2 is a perspective view of the cover-plate B′. Fig. 3 is an elevation of the same part. Fig. 4 is a plan view of the former.

A A are the housings, in which are mounted the reducing and feeding rolls *a a′*. Suitably mounted on the frame beyond the rolls is a former B. The thin end *b* of this former is adapted to rest against the lower roll *a′*. The former has a wide mouth at the thin end and a groove which is gradually contracted interiorly into a U shape, as seen in Fig. 4.

b′ b′ are upright journal-lugs, within which the cover-plate B′ is pivoted. This cover-plate has a tongue which projects within the groove of the former and is contracted or tapered to correspond with it, there being sufficient space left between the two for the passage of the skelp. Connected to the cover-plate by a rod b^2 and a lever b^3 is a weight b^4, which holds the thin end of the pivoted cover-plate always in contact with the upper roll *a*, so that the passage of the skelp between the plate and the former is insured.

c′ c′ represent a second pair of rolls mounted in housings C, the pass between which is U-shaped, the upper roll having a U-shaped tongue and the lower roll a U-shaped groove, and the position of the rolls being such that they will receive the U-shaped tube, into which the former B has converted the flat skelp, fed to it by the reducing-rolls *a a′*.

Thus far I have described parts already shown and described in my previous patent. The rest of the machine, whereby the U-shaped tube is further bent and converted into a perfect tube, is not here shown or described.

My present invention consists in dividing cover-plate B′ across its length so as to form a detachable end piece D. This end piece is made fast to the cover-plate B′, so as to constitute normally the thin end, which is in contact with the upper roll *a*. The shape of the end piece will be seen best in Fig. 2 of the drawings, from which it will be observed that it has an overlapping lip *d* at the top, by which it is made fast to the cover-plate by a vertical bolt *d′*, the head of which is countersunk in the lower side of the cover-plate. In other respects the shape of the end piece is similar to the normal shape of the cover-plate at this end. The cut or severance between the end piece and the cover-plate proper is an oblique one, preferably inclined about forty-five degrees from the horizontal, as seen in Fig. 3, thus giving the cover-plate a beveled end when the end piece is removed.

E is a short overhanging button bolted to the former at one side and the projecting end of which holds the cover-plate against the action of the weight b^4 from rising out of place when its end piece is removed.

The operation of my device is as follows: The flat skelps are fed into the reducing-rolls, and under the influence of the former and its opposing cover-plate are bent into a U shape before reaching the rolls *c c′*, to which shape the pass of these rolls is adapted. Thence the partially-formed tube proceeds through the rest of the machine; but if for any reason the strip sticks or jams in the machine the continued feeding of the strip at the reducing-rolls, which might otherwise cause expensive breakage of the machinery, brings into play the device which I have described in this application and prevents damage, for the strip which is being fed doubles

underneath the end piece and breaks the bolt d', whereupon the end piece falls out and the balance of the strip passes up and out of the machine through the aperture thus occasioned.

It will be observed that the end piece D is held to the cover-plate B′ by the comparatively small bolt d', strong enough to hold it in place under normal use, but weak enough to yield to any undue pressure. The beveled end of the cover-plate, which is exposed by the breakage and removal of the end piece, immediately deflects the advancing skelp and causes it to pass up over the cover-plate and run harmlessly out of the machine without doing any other injury.

The button E in the contingency described holds the cover-plate in its position, notwithstanding the breakage of the bolt d', so as to present its inclined edge in proper relation to strip the second skelp out of the former.

Having thus described my invention, I claim—

1. In a machine for rolling tubes, a forming-die consisting of former and cover-plate, one member of which is divided transversely so as to form a separable end piece, in combination with means for securing this end piece to the rest of the member, said means being strong enough to unite the two against normal pressure, but weak enough to yield to undue pressure and allow the dislocation of the end piece, substantially as described.

2. In a machine for rolling tubes, a forming-die consisting of former and cover-plate, the latter of which is divided transversely by an oblique cut so as to form a separable end piece, in combination with means for securing this end piece to the rest of the member, said means being strong enough to unite the two against normal pressure, but weak enough to yield to undue pressure and allow the dislocation of the end piece, substantially as described.

3. In a machine for rolling tubes, a forming-die consisting of former and cover-plate, the latter of which is divided transversely by an oblique cut so as to form a separable end piece, in combination with a bolt passing through the cover-plate and end piece of sufficient strength to hold the two together under normal conditions and weak enough to yield and allow the dislocation of the end piece under the influence of undue pressure, substantially as described.

4. In a machine for rolling tubes, a forming-die consisting of former and cover-plate, the latter of which is divided transversely by an oblique cut so as to form a separable end piece, in combination with means for holding the rest of the cover-plate in position notwithstanding the detachment of its end piece, substantially as described.

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