

(No Model.)

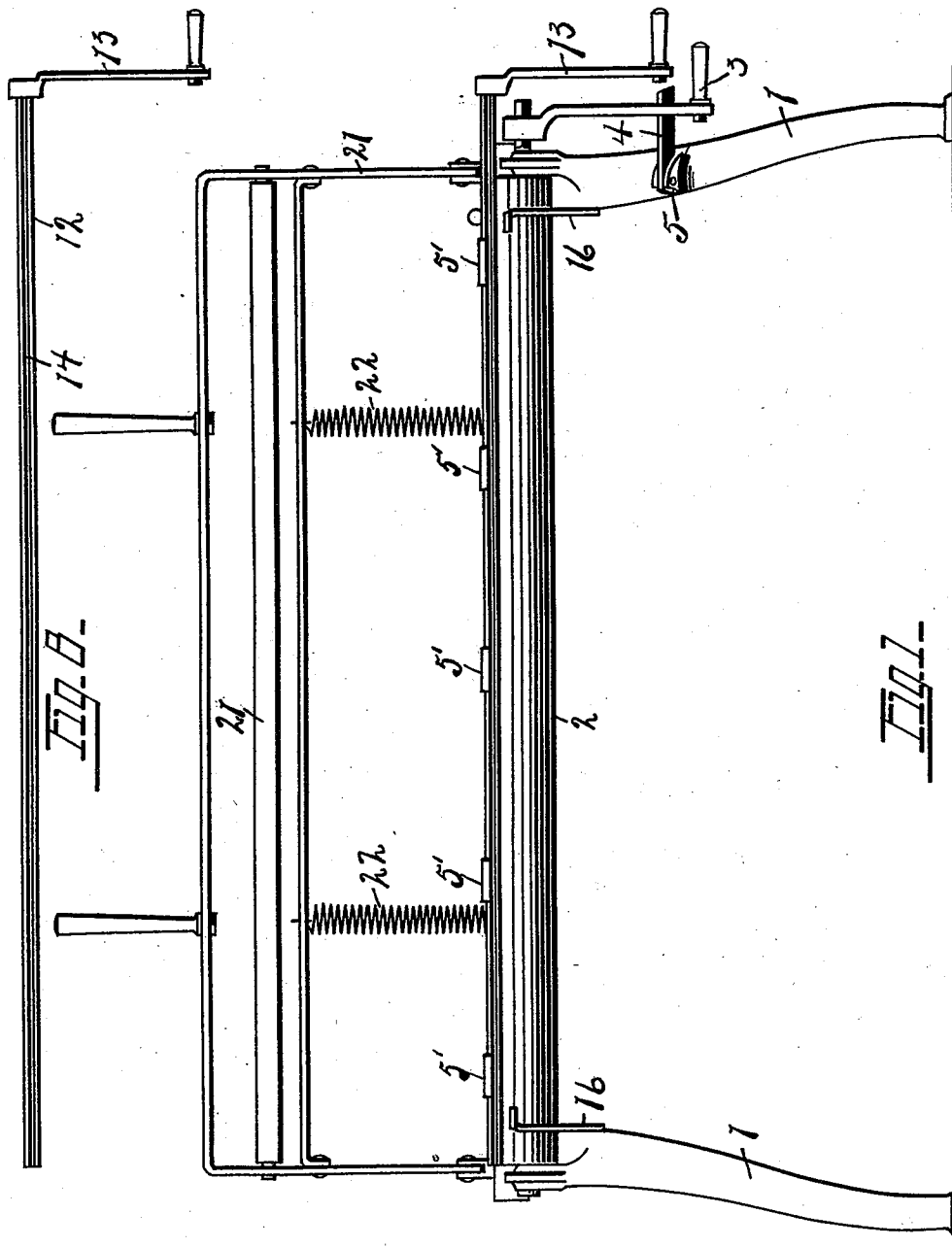
2 Sheets—Sheet 1.

C. F. THROM.

APPARATUS FOR FORMING EAVES TROUGHS.

No. 557,348.

Patented Mar. 31, 1896.



WITNESSES

Carl H. Keller.
Maud Schumacher

INVENTOR.

Charles F Throm
By William Webster
Atty

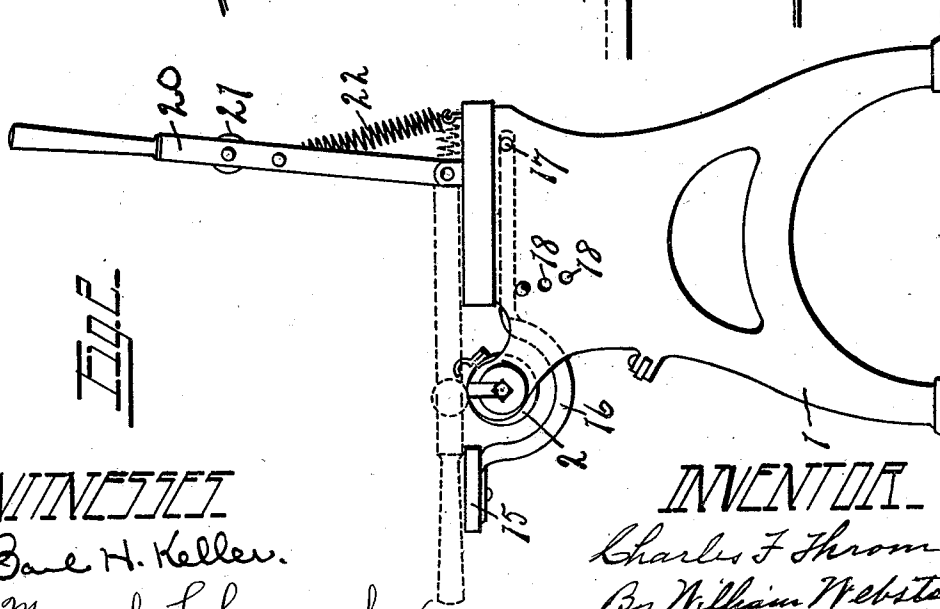
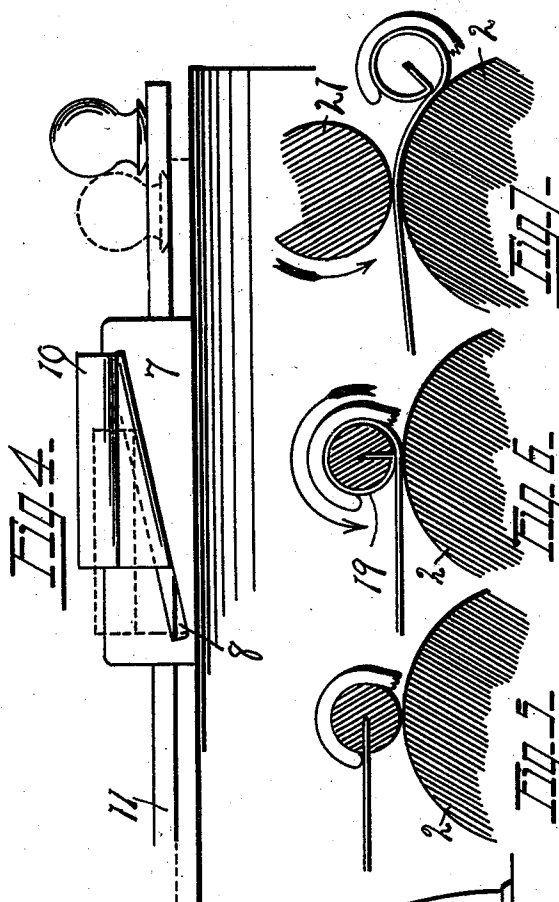
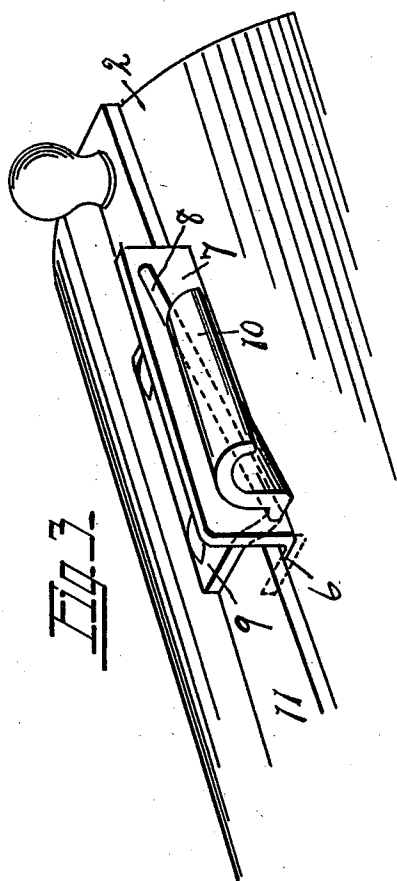
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UNITED STATES PATENT OFFICE.

CHARLES F. THROM, OF TOLEDO, OHIO.

APPARATUS FOR FORMING EAVES-TROUGHS.

SPECIFICATION forming part of Letters Patent No. 557,348, dated March 31, 1896.

Application filed April 29, 1895. Serial No. 547,480. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. THROM, of Toledo, county of Lucas, and State of Ohio, have invented certain new and useful Improvements in an Apparatus for Forming Eaves-Troughs; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form part of this specification.

My invention relates to an apparatus for forming eaves-troughs, and has for its object to simplify the manufacture and form the entire trough mechanically, thereby insuring uniformity in the product.

With these objects in view the invention consists, broadly, in a journaled roller, means for locking the same from revolution, a parallel removably-journaled roller having a longitudinal slit and adjustable formers, whereby the roll of the front edge is formed and a hinged frame in which is journaled a longitudinal roller to coact with the first-named roller when revolved and the slotted roller is removed to form the trough or body of the proper curvature.

In the drawings, Figure 1 is a front elevation of a complete machine. Fig. 2 is an end view showing the frame in full lines as raised and in dotted lines as lowered. Fig. 3 is a sectional detail on an enlarged scale showing a portion of the lower roller and the movable bar carrying the formers. Fig. 4 is a side elevation of the same, showing sliding bar in its two positions, the full lines showing the bar moved to its forward limit and the former elevated to allow of removal of the roll of the trough when completed and in dotted lines as advanced to clamp the former tightly over the metal as it is formed upon the forming-roller. Fig. 5 is a sectional end view showing the metal inserted in the forming-roller and beneath one of the formers. Fig. 6 is a like view showing the metal rolled to form the roll of the eaves-trough. Fig. 7 is a sectional end view of the lower roller with the body-shaping roller lowered to form

the trough, and Fig. 8 is an elevation of the longitudinally-slotted forming-roller.

1 designates the frame in which is journaled a bed-roller 2, provided with a crank 3 and a hinged stop 4 pivoted in ears 5 to hold the roller from revolution when desired. Upon roller 2 is secured a plurality of right-angled keepers 5', the lower wing 6 of the angle being preferably let into the roller so that the upper surface is flush with the upper surface of the roller. Each vertical wing 7 of the keepers is formed with an inclined slot 8, through which the base-plate 9 of a former-iron 10 is passed and secured to a movable bar 11, whereby as the bar is moved toward the crank end of the machine the formers ride up the incline and are removed a maximum distance from the roller, and as the bar 11 is pushed in an opposite direction the former is forced in close proximity to the roller.

In order that the surface of the former shall be parallel with the face of the roller, the curved portion of the former is at an angle to that of the flat portion equal to the angle of the slot, but in inverse order.

Removably journaled in the formers is a forming-roller 12, having a crank 13 by which to revolve the same, and having a longitudinal slot 14 extending the entire length of the roller 2 and entirely through the rear end.

15 designates a table adjustably secured as to height by means of arms 16 pivotally secured to the frame at their inner ends at 17, with the outer ends, upon which the table is, securely held to any height by means of pins or bolts passed into holes 18 in the frame.

The mechanism so far described pertains to forming the roll upon the front edge of the eaves-trough. In this operation the base-roller is revolved until the bar 11 is upon the top of the roller. The forming-roller 12 is then passed through the formers 10, and the edge of the sheet of metal is inserted into the longitudinal slot 14, and the bar 11 is now moved to cause the formers to closely seat upon the roller, when the roller is given a turn, thereby forming the roll 19 of the trough, as seen in Fig. 6, after which the roller 12 is withdrawn by pulling the same longitudinally

from the formers and out of the roll or bead. The bar 11 is now moved toward the end of the frame, thereby causing the formers to ride up the incline and release the roll. After the roll is completed the stop 4 is raised and the roller 2 is turned to draw the sheet metal toward the rear of the machine, and at the same time a swinging frame 20 having a roller 21 journaled longitudinally thereof is lowered, and as roller 2 is further revolved the trough is formed by these two rollers, thereby presenting a complete eaves-trough constructed entirely by mechanical means.

Frame 20 is pivotally attached to the machine-frame to swing slightly back of a vertical line, the operation being assisted in raising the frame by a plurality of coil-springs 22.

In forming different sizes of eaves-troughs the roller 2 of the desired diameter is placed in the frame and the table 15 is adjusted accordingly, it being desirable that the top of the table coincides with the slot in the roller.

What I claim is—

1. In an apparatus for forming eaves-troughs, a base-roller, adjustable formers secured thereon, and a longitudinally-slotted roller journaled in the formers.

2. In an apparatus for forming eaves-troughs, a base-roller, angle-irons secured thereon having an inclined slot in the vertical

wing, formers having plates passed through the slots, a bar connected with the plates, and a slotted roller revolving in the formers.

3. In an apparatus for forming eaves-troughs, a base-roller, means for locking the same from revolution, a plurality of formers adjustably secured upon the roller, a slotted roller removably journaled in the formers and a table adjustably secured upon the frame.

4. In an apparatus for forming eaves-troughs, in combination with a base-roller and independent means carried thereby for forming the bead, a swinging frame having a roller journaled thereon for coaction with the base-roller for forming the trough.

5. In an apparatus for forming eaves-troughs, a base-roller, means for locking the same from revolution, a slotted forming-roller carried thereby to coact therewith to form the roll or bead when the base-roller is in a locked position, a swinging frame, a roller journaled thereon coacting with the base-roller to form the trough by the revolution of the base-roller.

In testimony that I claim the foregoing as my own I hereby affix my signature in presence of two witnesses.

CHARLES F. THROM.

Witnesses:

PETER J. METTLER,
WILLIAM WEBSTER.