

(No Model.)

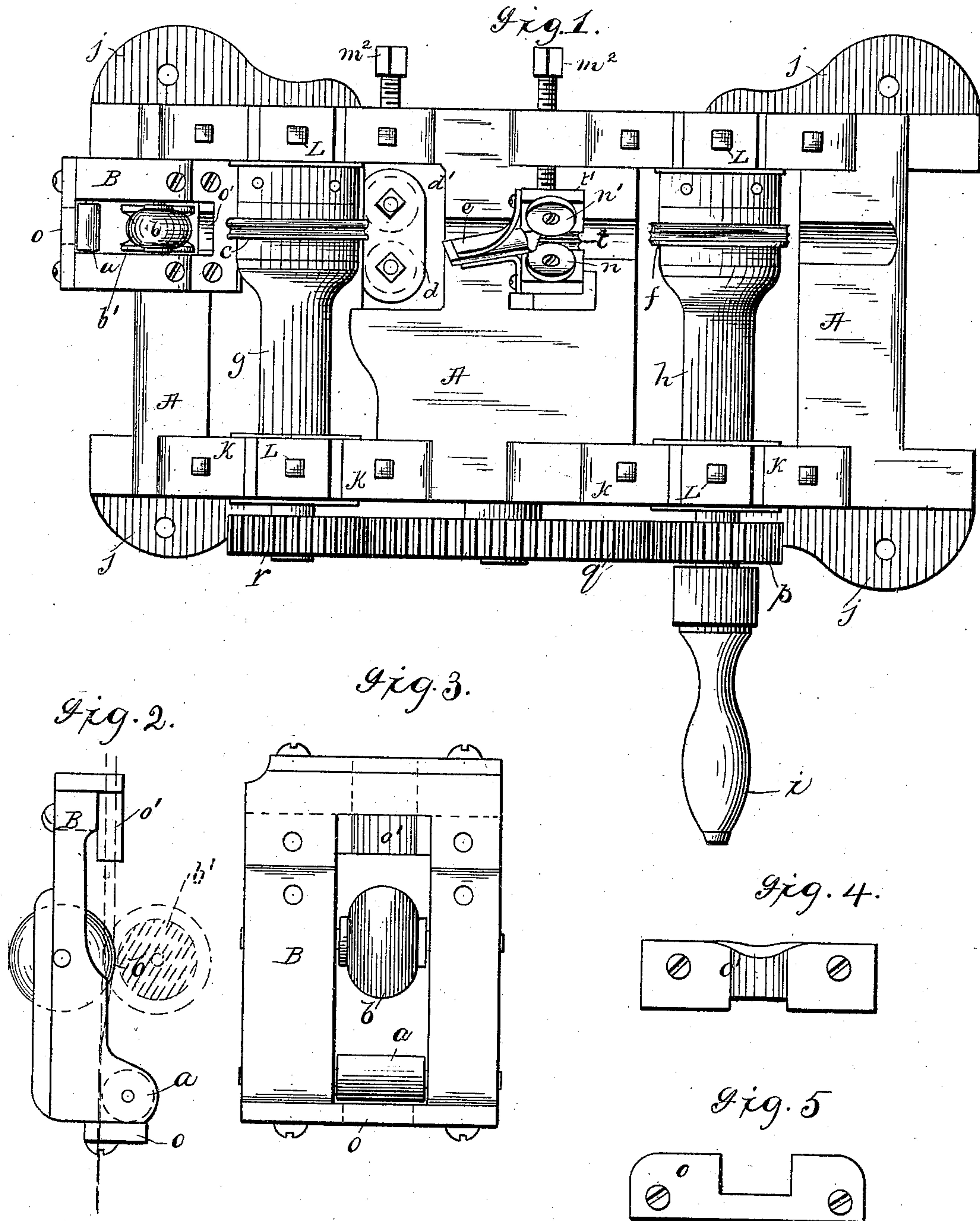
3 Sheets—Sheet 1.

J. POYTON.

MACHINE FOR MAKING WEATHER STRIPS.

No. 398,346.

Patented Feb. 19, 1889.



Attest:

W. E. Bowen }
Francis Jones. }

Inventor

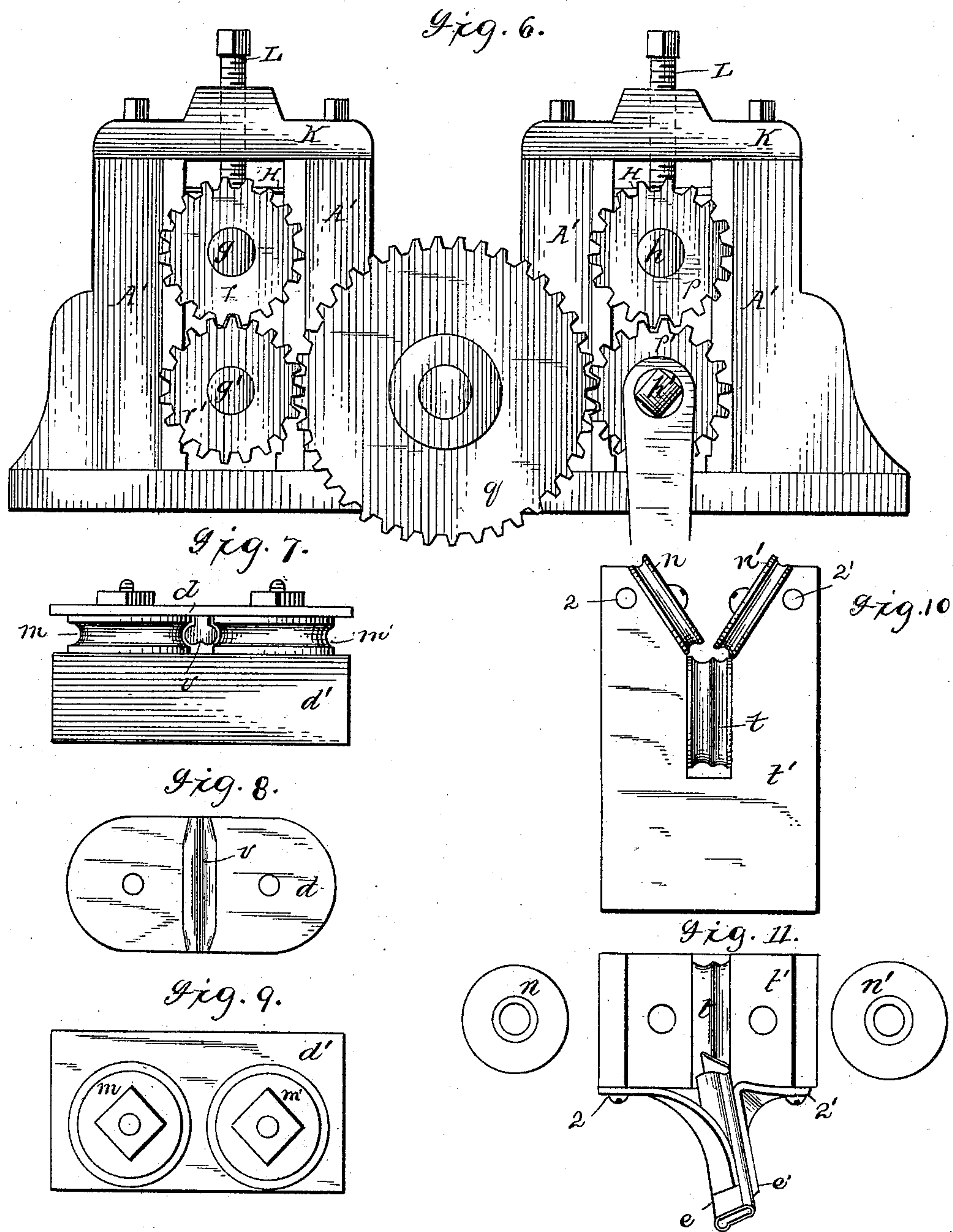
Josiah Poyton
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No. 398,346.

Patented Feb. 19, 1889.



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3 Sheets—Sheet 3.

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Fig. 12.

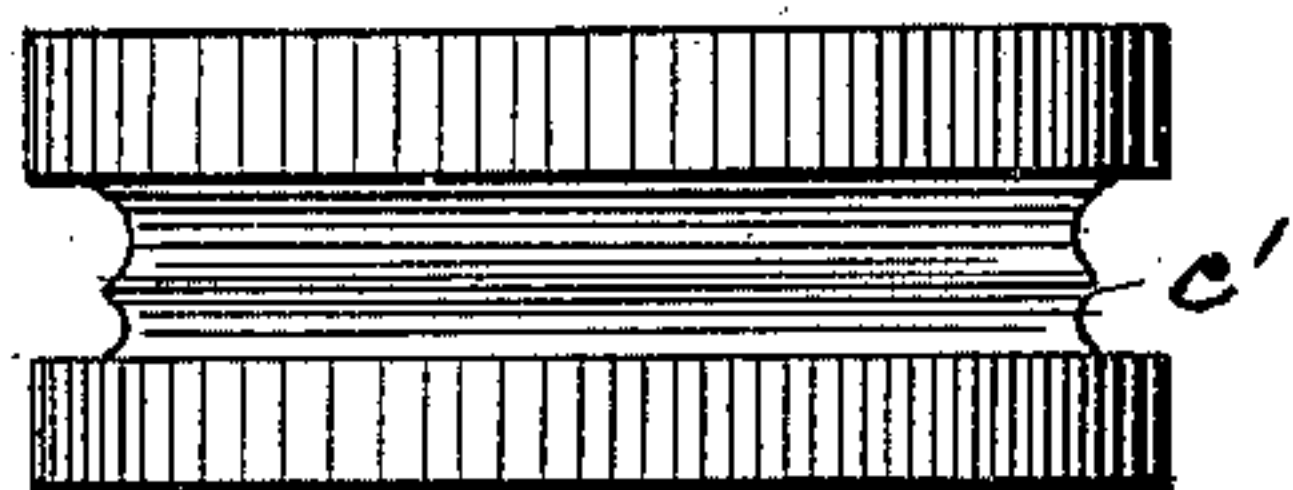


Fig. 13.

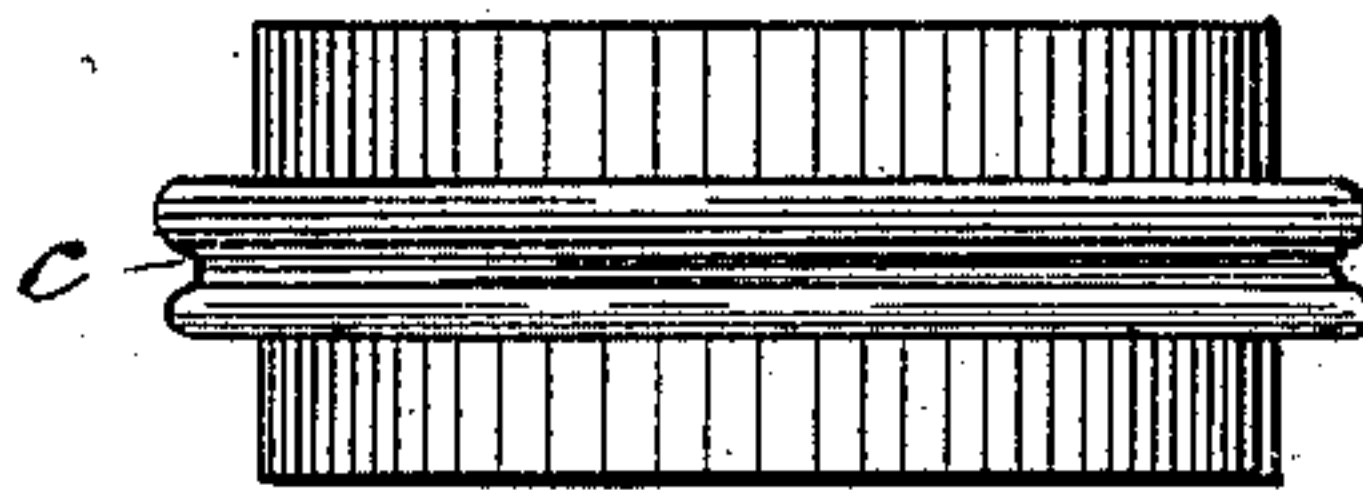


Fig. 14.

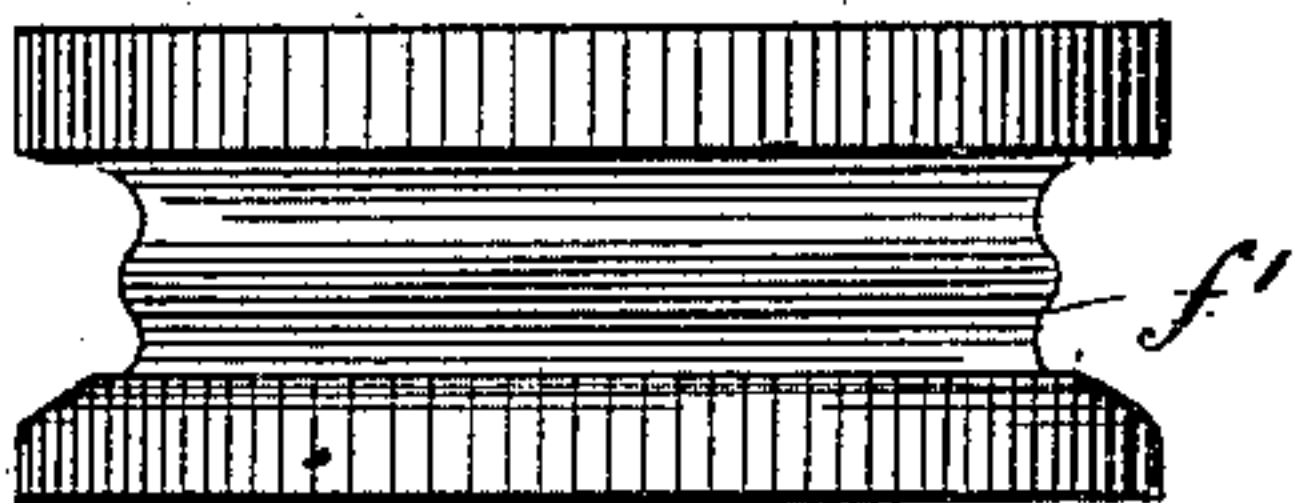
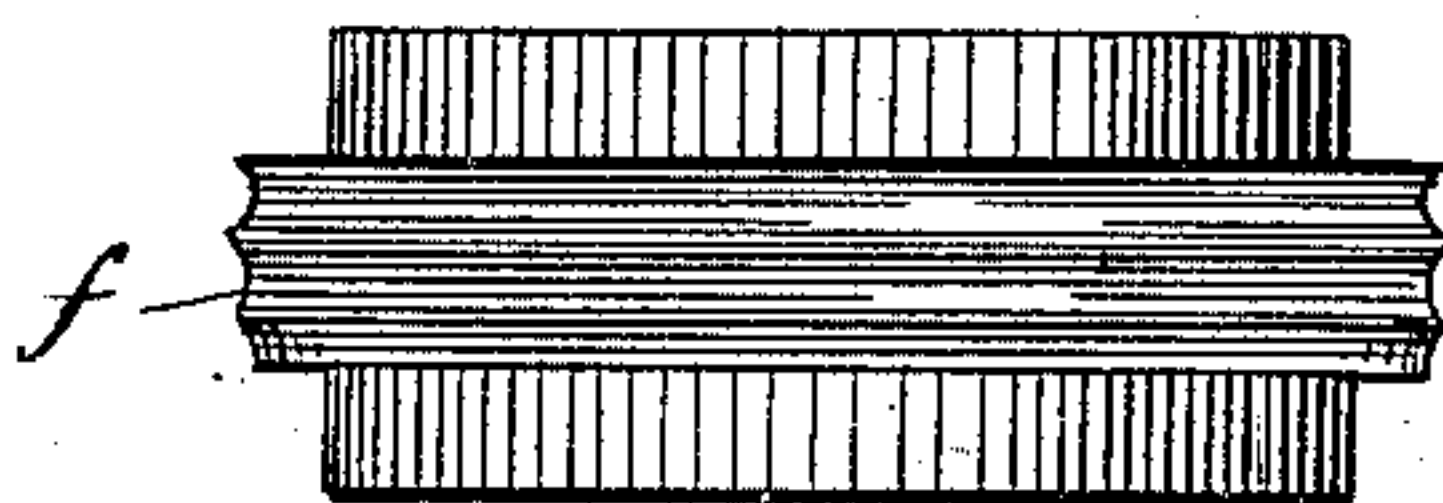


Fig. 15.



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UNITED STATES PATENT OFFICE.

JOSIAH POYTON, OF NEW YORK, N. Y., ASSIGNOR TO CHARLES R. VINCENT,
OF SAME PLACE.

MACHINE FOR MAKING WEATHER-STRIPS.

SPECIFICATION forming part of Letters Patent No. 398,346, dated February 19, 1889.

Application filed March 10, 1888. Serial No. 268,788. (No model.)

To all whom it may concern:

Be it known that I, JOSIAH POYTON, a citizen of the United States, and a resident of the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in machinery for making corrugated metallic strips for and securing the same to the flexible edges of the cushion of a weather-strip for doors, windows, &c., of which the following is a specification.

This invention relates to machines for making weather-strips; and it consists in the novel construction and combination of the parts, as hereinafter fully described and claimed, whereby a thin strip of sheet metal is beaded into the desired shape, and is clinched upon a hollow flexible cushion of rubber tube or other similar material.

In the drawings, Figure 1 is a plan view of the machine from above. Fig. 2 is a side view of the feed attachment. Fig. 3 is a plan view of the same from above. Figs. 4 and 5 are detail views of the feed-guide plates. Fig. 6 is a side view of the machine, showing the driving-gear. Fig. 7 is an end view of the horizontal former. Fig. 8 is a plan of the underside of the horizontal former-cap. Fig. 9 is a plan view of the horizontal former with the cap removed. Fig. 10 is an end view of the wrapping-rolls. Fig. 11 is a plan view of the guide for the rubber. Figs. 12, 13, 14, and 15 are end views of the upper and lower forming and clinching rolls.

A is the base-plate of the machine, provided with lugs *j* for securing it to any convenient support, and having side brackets, *A'*, for the roll-shafts. *K* are the caps for the said bearing-brackets. The shaft *h'* of the lower clinching-roll, *f'*, is journaled in brackets *A'*, and is provided with a crank-handle, *i*, for rotating it, and a toothed wheel, *p'*, gearing into the toothed wheel *p*, secured on the end of the shaft *h* of the upper clinching-roll, *f*. The upper clinching-roll is journaled in blocks *H*, sliding in brackets *A'*, and *L* are screws for setting up the said upper roll against the lower roll. The shaft *g'* of the lower forming-roll, *c'*, is similarly journaled in brackets *A'*, and has the toothed wheel *r'*

secured upon its end. A toothed wheel, *q*, is journaled upon a stud projecting from the side of the base-plate *A*, and gears into the wheels *p'* and *r'*, so that the motion of the crank is communicated to the forming-rolls. The shaft *g* of the upper forming-roll, *c*, is journaled in sliding blocks *H*, supported in brackets *A'*, and is provided with the toothed wheel *r*, gearing into wheel *r'*; and *L* are screws for setting up the upper forming-roll against the lower roll.

A frame, *B*, is secured to the front end of the base-plate *A*, and *a* is the entering-roll journaled in said frame *B*. Guide-plates *o o'* are secured to the ends of frame *B*, and *b* is the upper feed-roller journaled in said frame and engaging with the groove of the lower feed-roller, *b'*, journaled in the base-plate beneath it. The double-grooved forming-rolls *c c'* are journaled in line with the said feed-rollers and behind them.

A block, *d'*, is clamped to the base-plate by a screw, *m²*, and *m m'* are the horizontal forming-rolls journaled on pins projecting from said block. A cap, *d*, is secured to the upper ends of the journal-pins, and carries the die *v*, against which the edges of the sheet-metal strip are beaded. A second block, *t'*, is clamped to the base-plate behind the block *d'* by a screw, *m²*, and in it are journaled the vertical wrapping-rolls *n n'*. A guide, *e*, for the rubber tube is formed of thin sheet metal, and is secured to the front of block *t'* by the brackets *e'* and screws *2 2'*. The vertical roll *t* is provided with two grooves to accommodate the double bead formed upon the strip of sheet metal by the rolls *c c'* and *m m'*.

The double-grooved clinching-rolls *f f'* are journaled behind the wrapping-rolls and in line with them upon the shafts *h* and *h'*, as before described.

The weather-strips made by this machine are formed with two beads or corrugations, and one of these beads is clinched about an india-rubber tube. The other bead presses against the base of the elastic tube when secured in position.

The operation of the machine is as follows: The thin sheet-metal strips of which the weather-strips are formed are fed into the

machine under guide-plate *o* and pass between the feed-rolls *b b'*, which curve them. They then pass over guide-plate *o'*, and are seized between the forming-rolls *c c'*, which
 5 are revolved by the crank. These rolls form a double bead on the curved strips and pass them onward between the horizontal rolls *m m'* and die *v*, which bend over the edges of the beads, forming two nearly circular channels of un-
 10 equal size. The rubber tube is fed through the guide *e*, and is inclosed in the larger of the two channels in the strips by the rolls *t*, *n*, and *n'*, which wrap the bead about the said elastic tube. The weather-strips now pass
 15 between the double-grooved clinching-rolls *f f'*, which are revolved by the crank, and the rubber tube is by them firmly secured in the metallic bead, and the weather-strips are turned out in their completely-finished form.

20 What I claim is—

1. In a weather-strip machine, the combination, with a set of rolls for beading the metallic strips, of a set of wrapping-rolls comprising a vertical double-grooved roll and two
 25 diagonal single-grooved rolls for inclosing an elastic cushion in one of the beads of the strips, and the clinching-rolls for finally securing the bead upon the said cushion, substantially as and for the purpose set forth.

30 2. In a weather-strip machine, the combination, with a pair of feed-rolls for bending the metallic strips, of the revolving forming-rolls provided with double grooves, the horizontal forming-rolls for turning over the edges
 35 of the beads, the wrapping-rolls for inclosing

an elastic cushion in one of the beads of the strips, and the revolving clinching-rolls for securing the cushion in said bead, substantially as and for the purpose set forth.

3. In a weather-strip machine, the combination, with a set of rolls for beading the
 40 metallic strips, of the vertical wrapping-roll *t* and diagonal wrapping-rolls *n n'*, the guide *e*, secured in front of the wrapping-rolls, whereby the elastic cushion is inserted in one of the
 45 beads of the strips, and the revolving clinching-rolls journaled behind said wrapping-rolls and securing the cushion in the bead, substantially as and for the purpose set forth.

4. In a weather-strip machine, the combination, with the supporting-frame, of the entering-roll *a* and feed-rolls *b b'*, journaled at
 50 the front end of the frame, the guide-plates *o* and *o'*, the forming-rolls *c* and *c'*, provided with toothed wheels for revolving them, the horizontal forming-rolls journaled behind the
 55 aforesaid forming-rolls, a set of wrapping-rolls for inclosing an elastic cushion in one of the beads of the strips, and the clinching-rolls journaled at the rear of the machine
 60 and provided with toothed wheels for rotating them, substantially as and for the purpose set forth.

Signed at the city of New York, in the county of New York and State of New York, this 20th day of February A. D. 1888.

JOSIAH POYTON.

Witnesses:

JAMES P. MCLEAN,
 CHAS. M. LUM.