2 Sheets—Sheet 1.

# J. M. WATSON.

## MACHINERY FOR MAKING SHANK-PIECES FOR BOOTS AND SHOES.

No. 185,879. Patented Jan. 2, 1877.

Fig. 3.

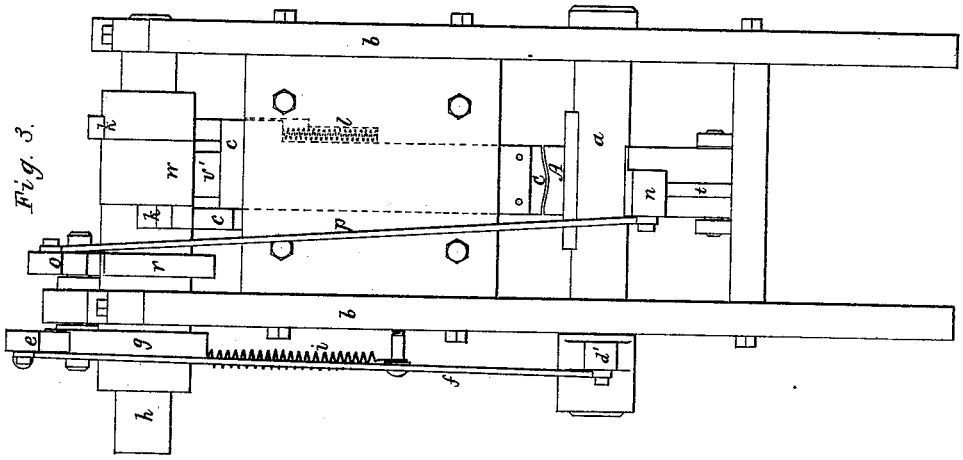


Fig. 2.

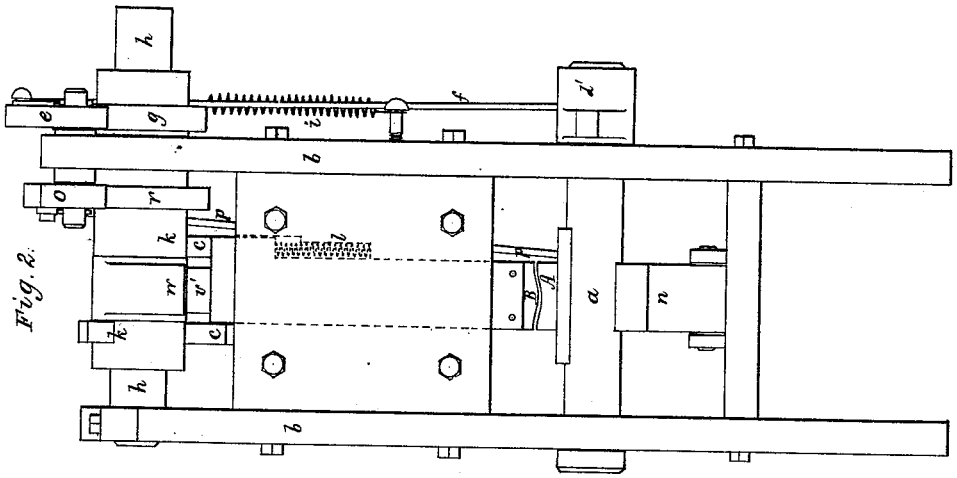
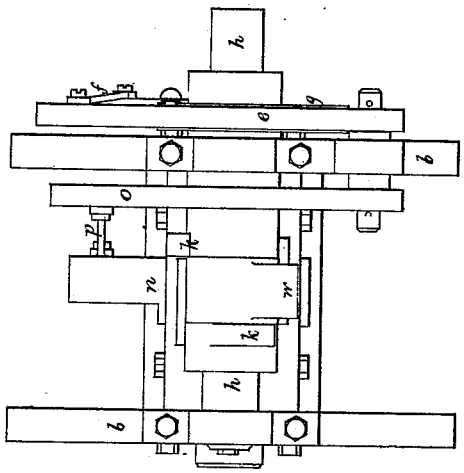


Fig. 1.



Witnesses.
S. N. Piper
Lib. Wallace

Jeremiah M. Watson
by his attorney.
R. H. Eddy.

2 Sheets—Sheet 2.

# J. M. WATSON.

## MACHINERY FOR MAKING SHANK-PIECES FOR BOOTS AND SHOES.

No. 185,879. Patented Jan. 2, 1877.

Fig. 5.

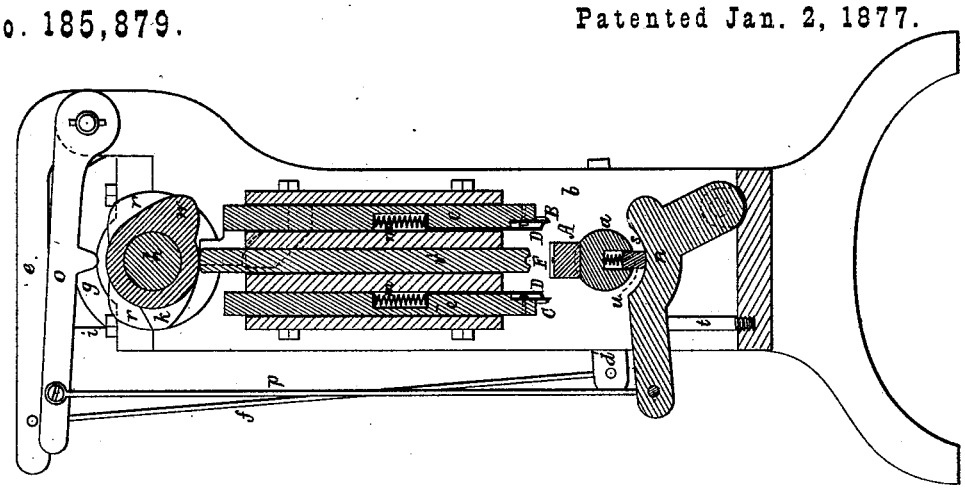


Fig. 6.

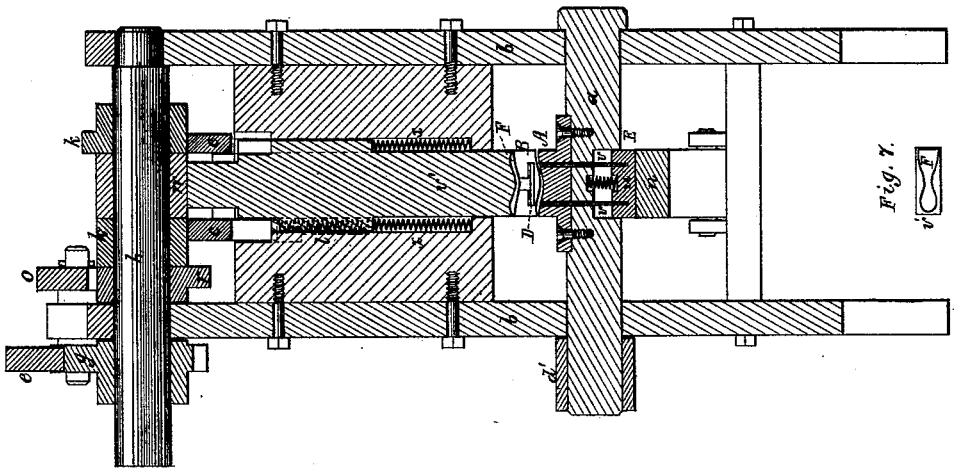


Fig. 7.



Fig. 4.

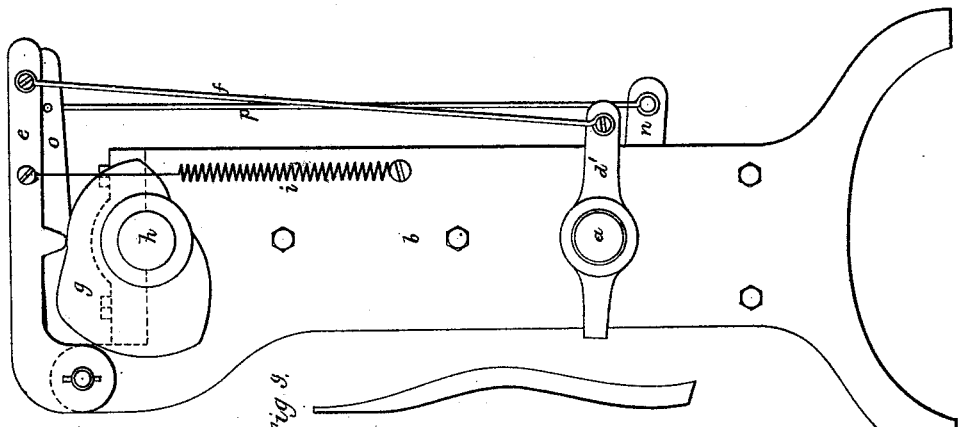


Fig. 9.

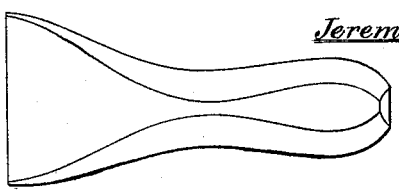


Fig. 8.

Witnesses.
S. N. Piper
L. M. Willard

Jeremiah M. Watson.
by his attorney.
R. H. Eddy.

# UNITED STATES PATENT OFFICE.

JEREMIAH M. WATSON, OF SHARON, MASSACHUSETTS.

## IMPROVEMENT IN MACHINERY FOR MAKING SHANK-PIECES FOR BOOTS AND SHOES.

Specification forming part of Letters Patent No. **185,879**, dated January 2, 1877; application filed December 11, 1876.

*To all whom it may concern:*

Be it known that I, JEREMIAH M. WATSON, of Sharon, of the county of Norfolk and State of Massachusetts, have invented a new and useful Machine for Making Shanks for Shoe or Boot Soles; and do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a top view. Fig. 2 a front elevation, Fig. 3 a rear elevation, Fig. 4 a side view, Fig. 5 a vertical and transverse section, and Fig. 6 a vertical and longitudinal section, of it. Fig. 7 is a view of the mold or die. Fig. 8 is a top view, and Fig. 9 a side view, of the shank as made by the said machine.

This machine, during its operation, cuts and bevels a shank-blank from a strip of material, such as leather or leather-board, and subsequently molds it; and such machine, as a whole, consists of a reciprocating rotary bed, two cutters, two pressers, a retainer, and a mold or die, together with mechanism for supporting and operating them, all being substantially as hereinafter explained, and as represented in the said drawings.

In the drawings, A denotes the reciprocating bed, which is fixed to and supported by a rock-shaft, *a*, arranged, as shown, in the frame *b* of the machine. The two curved knives are represented at B C as fixed to two vertical slides, *c c*, provided with springs *l l* for raising them upward. The bed, while in operation, has intermittent reciprocating movements—that is, it first moves toward one of the knives, and rests while such knife is caused to descend, after which it moves in an opposite direction, toward the other knife, and stops while that may descend.

To operate the bed, there is fixed on the shaft *a* an arm, *d'*, connected with a lever, *e*, by a rod, *f*. This lever rests on a cam, *g*, fixed on a driving-shaft, *h*, arranged, as shown, in the frame *b*. There is fixed to the lever and the frame a spring, *i*, for drawing the lever downward and keeping it in contact with the periphery of the cam. The slides or knife-carriers *c c* rest at their upper parts against two cams, *k k*, fixed on the driving-shaft, each of such slides being provided with a spring, *l*, for raising it or forcing it upward. These slides also carry and support two pressers, D D, each being provided with a spring, *m*, for depressing it. These pressers are to slide freely vertically within the slides.

Under the rock-shaft is a lever, *n*, which is pivoted to the frame, and shaped as shown, such lever being connected with another lever, *o*, by a rod, *p*, all being as represented. The last-named lever, pivoted to the frame at its upper part, rests on a cam, *r*, fixed on the driving-shaft. In the upper part of the lever *n* there is an arcal notch, *s*, which, when the lever is at its lowest position or resting on a standard, *t*, is concentric with the rock-shaft. Resting on the bottom of the said notch is a slide, *u*, provided with pointed wires or teeth *v v*, extending up from it, as shown, the said slide *u* and wires constituting what I term the "retainer" E, which is applied to the rock-shaft so as to be capable of sliding freely up and down therein, in a manner to cause the teeth to press it through and above the bed A, or be drawn within the same, as occasion may require.

Over the bed, and between the cutter-slides, is the mold or die F, which is a concavity formed in the lower end of a bar, *v'*, adapted to slide vertically in the frame, and resting at its upper end against a cam, *w*, fixed on the driving-shaft. A spring, *x*, applied to the slide *v'* and the frame, serves to raise or force upward the mold, slide, or bar, the cam *w* being to force it downward.

The operation of the machine may be thus described: An attendant, having in hand a piece of leather or other suitable material of proper width, first introduces it endwise under one of the cutters and upon the bed, while the latter may be advancing toward such cutter. Next, the said cutter, with its presser, will be caused to descend upon the piece. The presser will hold the said piece or force it down on the bed, and the knife, owing to the inclination of the bed to the horizon, will pass through the piece obliquely. In the meantime the retainer will have been forced upward, so as to drive its points into the blank. Next, the knife or cutter, with its presser, will rise upward, and the bed, with the blank held on it, will be moved over to the other knife,

which, with its presser, will next descend upon the blank, the knife cutting through it obliquely. After this the knife and presser will rise upward, and the bed will move and stop directly under the die or mold, which next will be caused to descend upon the blank, and finish, mold, or die it into shape. Next, the retainer drops downward, (or is drawn down by a spring suitably applied to it,) so as to draw the points out of the blank, to enable the latter to be discharged from the bed. This discharge may be effected automatically or by the attendant.

In the above-described machine, I claim as my invention as follows:

1. The combination of the reciprocating rotary bed A and the two knives B C, arranged and provided with mechanisms for supporting and operating them, substantially as set forth.

2. The combination of the reciprocating rotary bed A, the two knives B C, and the pressers D D, arranged and provided with mechanisms for supporting and operating them, substantially as set forth.

3. The combination of the reciprocating rotary bed A, the two knives B C, the two pressers D D, and the retainer E, arranged and provided with mechanisms for supporting and operating them, substantially as set forth.

4. The combination of the reciprocating rotary bed A, the two knives B C, the two pressers D D, the retainer E, and the mold or die F, arranged and provided with mechanisms for supporting and operating them, substantially as set forth.

5. The combination of the reciprocating rotary bed A, the two knives B C, and the retainer E, arranged and provided with mechanisms for supporting and operating them, substantially as set forth.

6. The combination of the reciprocating rotary bed A, the two knives B C, the retainer E, and the mold or die F, arranged and provided with mechanisms for supporting and operating them, substantially as set forth.

7. The combination of the reciprocating rotary bed A, the two knives B C, and the mold or die F, arranged and provided with mechanisms for supporting and operating them, substantially as set forth.

8. The combination of the reciprocating rotary bed A, the two knives B C, the pressers D D, and the mold or die F, arranged and provided with mechanisms for supporting and operating them, substantially as set forth.

JEREMIAH M. WATSON.

Witnesses:
R. H. EDDY,
J. R. SNOW.