

T. F. TYLER.
MACHINE FOR SHAPING SHOE SHANKS.

No. 511,666.

Patented Dec. 26, 1893.

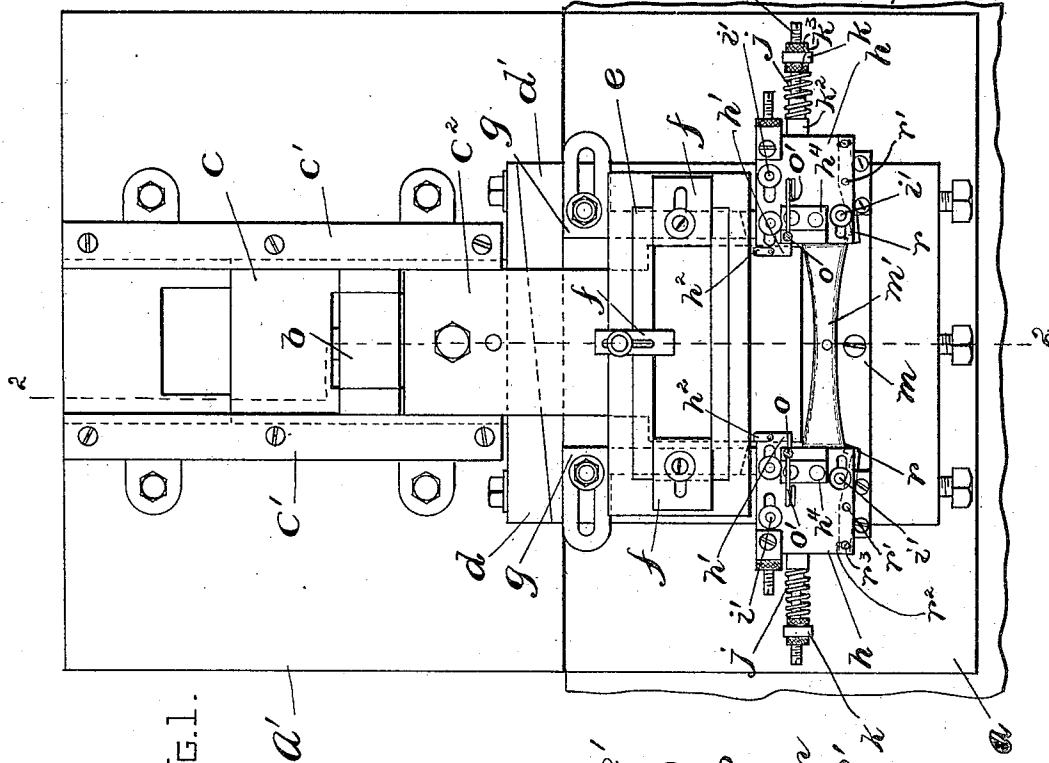


FIG. 1.

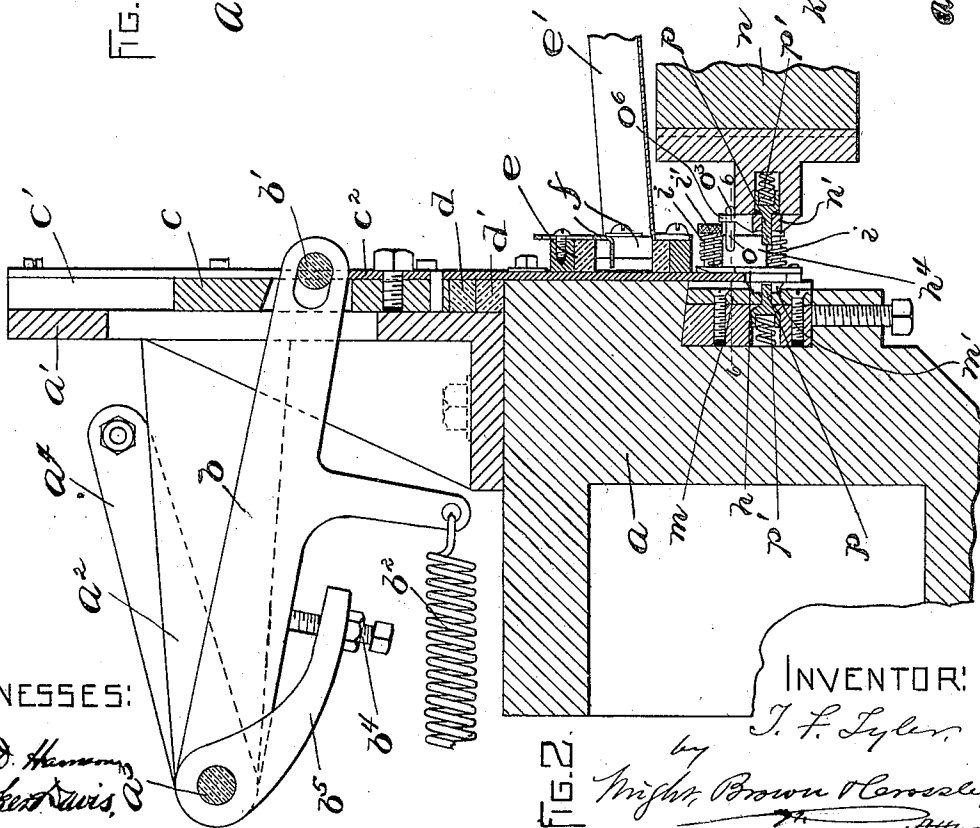


FIG. 2.

WITNESSES:

A. D. Hammon
Charles Davis

INVENTOR:

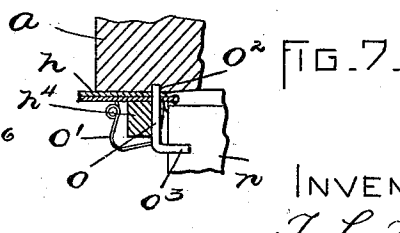
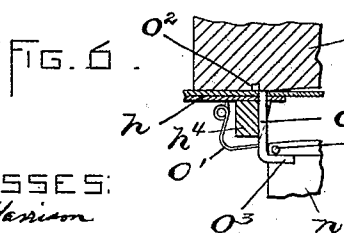
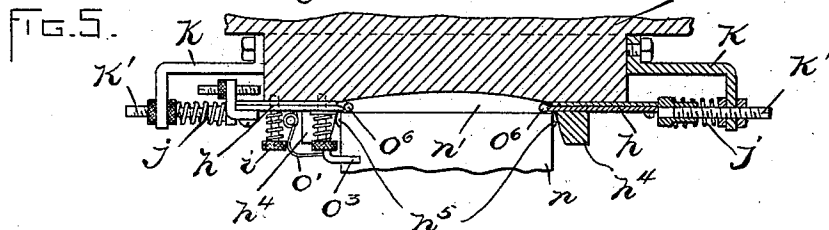
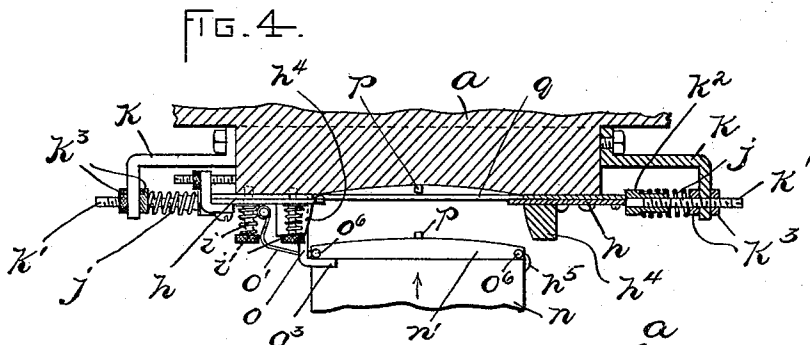
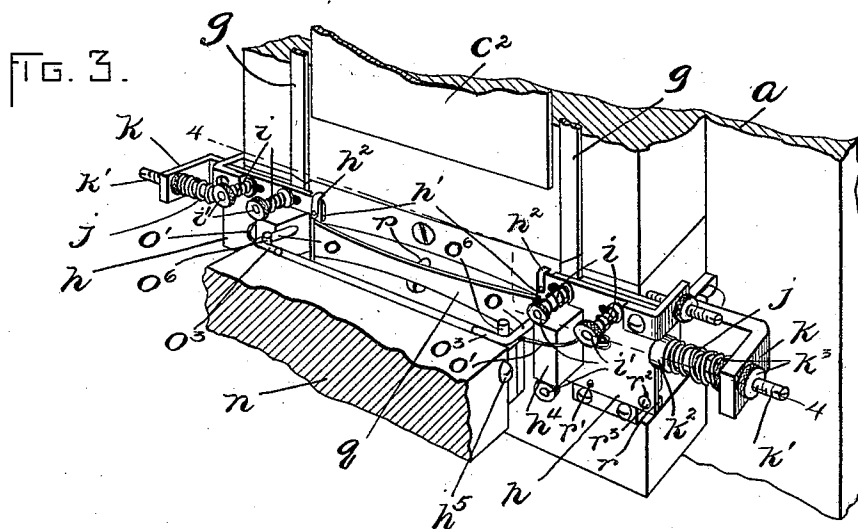
T. F. Tyler.

by
Wright, Brown & Crossley
ATTOR.

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WITNESSES:
A. D. Harrison
Patent Attys.

INVENTOR:
T. F. Tyler
by
Migley, Brown & Henssley,
Attys.

UNITED STATES PATENT OFFICE.

THADDEUS FRANK TYLER, OF LYNN, MASSACHUSETTS.

MACHINE FOR SHAPING SHOE-SHANKS.

SPECIFICATION forming part of Letters Patent No. 511,666, dated December 26, 1893.

Application filed March 30, 1893. Serial No. 468,267. (No model.)

To all whom it may concern:

Be it known that I, THADDEUS FRANK TYLER, of Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Machines for Shaping Shoe-Shanks, of which the following is a specification.

This invention relates to a machine for shaping leather-board shanks, such as employed in the manufacture of boots and shoes.

The object of the invention is to improve upon the present method of shaping the blanks, which consists in subjecting them to the action of rolls.

In carrying out my invention, I provide a machine which shall mold a blank into the desired shape at one operation; and by which the shanks can be produced at much less expense than in the old way, by reason of the large amount of time and labor saved.

The accompanying drawings illustrate a construction by which the invention may be carried out.

Figure 1 shows a front elevation of a machine, with the die-plunger removed. Fig. 2 shows a vertical section, taken on the line 2—2 of Fig. 1. Fig. 3 shows a perspective view of a portion of the machine. Fig. 4 shows a horizontal section, taken on the line 4—4 of Fig. 3, representing the die-plunger as withdrawn. Fig. 5 shows a similar section, representing the die-plunger advanced. Figs. 6 and 7 show detail sectional views to be referred to hereinafter.

The same letters of reference indicate the same parts in all the figures.

In the drawings, the reference letter *a* designates the stationary bed of the machine, upon the upper side of which is erected a rigid standard *a'*. This standard is slotted vertically, and provided with a rearwardly-extending arm *a²*, supporting a rock-shaft *a³*, on which is fixed an arm *a⁴*, connected at its outer end with a pitman, which is indicated in broken lines in Fig. 2 and will be connected with some suitable rotary machine element, such as a crank. An arm *b* is loosely mounted on the rock-shaft *a³*, and extends through the slot in the standard *a'*, and engages a pin *b'* of a follower *c* fitted to slide in guide-ways *c'* on the standard *a'*. A spring *b²* connects a projection on the arm *b* with a stationary part

of the machine, and acts to draw the follower downward. The stroke of the follower may be adjusted by means of a set-screw *b⁴*, which is supported in an arm *b⁵* fixed on the shaft *a³*, the arm *b* resting upon the said set-screw. It will be obvious that a reciprocating motion will be imparted to the follower by the mechanism described.

The follower is composed of two members, one of which, *c*, engages the slide-way *c'*, and, at the end of its downward stroke, abuts a block composed of two wedges *d* and *d'*, which may be adjusted to the stroke of the follower. The other member of the follower is in the form of a plate *c²*, which is fixedly secured to the first-named member, and extends over the front face of the machine-bed *a* and between the latter and a rectangular frame *e* fastened to the said bed. The plate *c²* is arranged to reciprocate across the opening of the frame *e*, and the blanks are fed from a chute *e'* into said opening and under the follower, one by one, when the latter is at the upper end of its stroke.

Adjustable plates *f* are fastened to the frame *e* at the sides and top thereof, and are provided with flanges which project into the opening of said frame. By means of these plates, the feeding opening may be adjusted to different-sized blanks.

Laterally-adjustable strips *g* are fastened on the front of the machine-bed, and serve as guides for the blank after it has been introduced under the follower.

Immediately below the frame *e* a lateral sliding plate *h* is mounted, at each side. Each of these sliding plates has a portion *h'*, which projects over the guide-way down which the blank passes, the plate having a double thickness to form this guide-way, as seen in Figs. 4 to 7. The projecting portions *h'* are beveled at their upper edges, to facilitate the entrance of the blanks behind them, and in order to prevent an upward movement of the blank after being carried down by the follower, a pair of light spring fingers *h²* are fastened to the projecting portions *h'*, and extend over the beveled edges thereof and partly over the guide-way, so that the blank will displace them, as it is moved down by the follower, and the said fingers, springing back into place after the blank has passed, will pre-

vent the latter from moving upward. The plates *h* are held yielding against the front of the machine by springs *i*, mounted on pins *i'*, which extend through slots in the plates 5 and are fastened in the machine-bed. The object of this construction is to permit the plates to adjust themselves to different thicknesses of blanks. The sliding plates are held in their positions, with the portions *h'* projecting over the guide-way, by springs *j*, inserted between the plates, and stationary brackets or arms *k* secured to the machine-bed, the tension of these springs being adjusted by means of screws *k'*, engaging heads 10 *k²* on the plates and against which the springs bear. Lock-nuts *k³* are employed to hold the adjusting-screws at any desired position.

A female die *m* is countersunk in the front face of the machine-bed, and its cavity *m'* is 20 curved in the direction of its length, and its sides and ends are beveled.

A die-plunger *n* is mounted in any suitable manner, so as to be reciprocated toward and away from the front of the machine, and this 25 plunger carries the male die *n'*, which is curved in the direction of its length to conform to the curvature of the female die, and is formed with a cavity similar to that of the female die, said cavity having beveled sides 30 and ends.

The sliding plates *h* carry blocks *h⁴*, whose inner sides are beveled, and projections on the sides of the die,—which, in the present instance, are screw-heads *h⁵*,—encounter the 35 beveled sides of the blocks *h⁴* as the die-plunger approaches the female die, and the plates *h* are thereby moved outward so as to permit the passage of the die-plunger. Means are provided for locking these plates in their 40 outer positions until the die-plunger is withdrawn, and, in the present instance, this is accomplished by means of sliding pins *o*, carried by the plates and actuated by springs *o'* which project them into depressions *o²* in the 45 machine-bed when the sliding plates are moved outward in the manner already described. Said sliding pins have lateral portions *o³*, extending over the upper side of the die-plunger, and the latter is provided with 50 projections shown in the present instance as studs *o⁴*, which encounter the lateral portions of the sliding pins upon the withdrawal of the plunger, and thereby disengage the sliding pins from the depressions *o²* and permit 55 the sliding plates to move inward again to their normal positions. The construction and operation of these sliding pins are best illustrated in Fig. 7.

Sliding studs *p* project from the faces of 60 the male and female dies, and are pressed outward by springs *p'*, inserted behind them. When the die-plunger approaches the female die, the studs engage opposite sides of the blank and hold it in position as it is com- 65 pressed in the dies.

The operation of the machine, briefly stated,

is as follows: The blanks, as *q* (see Fig. 3), are set up on edge in the chute *e'*, and are pressed forward by any suitable means, so that each time the follower ascends a blank 70 will be thrust into the guide-way below it, and, upon the follower descending, it will encounter the said blank and carry it down behind the projecting portions of the plates *h* and into a position directly in front of the cavity of the 75 female die. As the die-plunger *n* advances, the sliding plates *h* are pushed outward in a manner hereinbefore described, and the male die *n'* comes against the blank and presses it into the cavity of the female die, the spring- 80 pressed studs *p* preventing the blank from shifting. The curvature of the dies in the direction of their length imparts the desired curvature to the shank, and at the same time the edges of the blank are compressed by the 85 beveled sides of the die and a bevel thus imparted to the edges of the blank. The die-plunger is withdrawn, and the finished shank is removed in any suitable way. Adjustable gage-arms *r* are arranged at the lower end of 90 the feeding guide-way, for the blank to rest upon in its proper position in front of the cavity of the female die. In the present instance, these arms are pivoted at points *r'* to the plates *h*, and are adjusted by means of 95 slots *r²* in said plates and set-screws *r³* extending through said slots and engaging the arms *r*. It will be seen that, with a machine of this kind, leather-board shanks may be turned out with great rapidity and at a great 100 saving of time and labor, as compared with the old method.

It is evident that the invention may be embodied in different forms from that here shown. Therefore I am not limited to the par- 105 ticular form in which I have chosen to illustrate the invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters 110 Patent, is—

1. A molding machine, comprising in its construction a guide-way into which the blanks are fed one by one, a follower in said guide-way, laterally-movable guide-plates projecting over opposite sides of the guide-way and behind which the blank is carried by the fol- 115 lower, and a die-plunger reciprocating at right angles to the guide-way and adapted to spread the guide-plates as it advances upon the blank. 120

2. A molding machine, comprising in its construction a guide-way into which the blanks are fed one by one, a follower in said guide-way, laterally-movable guide-plates projecting over opposite sides of the guide-way and behind which the blank is carried by the fol- 125 lower, said guide-plates being yieldingly held against the surface at each side of the guide-way, and a die-plunger reciprocating at right angles to the guide-way and adapted to 130 spread the guide-plates as it advances upon the blanks.

3. A molding machine, comprising in its construction a guide-way for the blanks, a feeding follower in said guide-way, guide-plates yieldingly held in a position where they project over the guide-way and provided with beveled projections, and a die-plunger having lateral projections adapted to encounter the beveled projections on the guide-plates as said plunger approaches a blank, as and for the purpose described.

4. A molding machine, comprising in its construction a guide-way for the blanks, a feeding follower in said guide-way, guide-plates yieldingly held in a position where they project over the guide-way and carrying sliding spring-actuated pins adapted to engage depressions in a stationary part of the machine, and a die-plunger adapted to spread said guide-plates as it approaches a blank, and pro-

vided with projections to engage the sliding pins carried by the guide-plates in its movement away from the blank.

5. A molding machine, comprising in its construction a guide-way for the blanks, a feeding follower in said guide-way, and pivoted stop-arms projecting into the guide-way, and means for locking said arms at different adjustments to which they may be moved on their pivots.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 27th day of March, A. D. 1893.

THADDEUS FRANK TYLER.

Witnesses:

NELLIE HAMMOND,
IRA B. KEITH.