

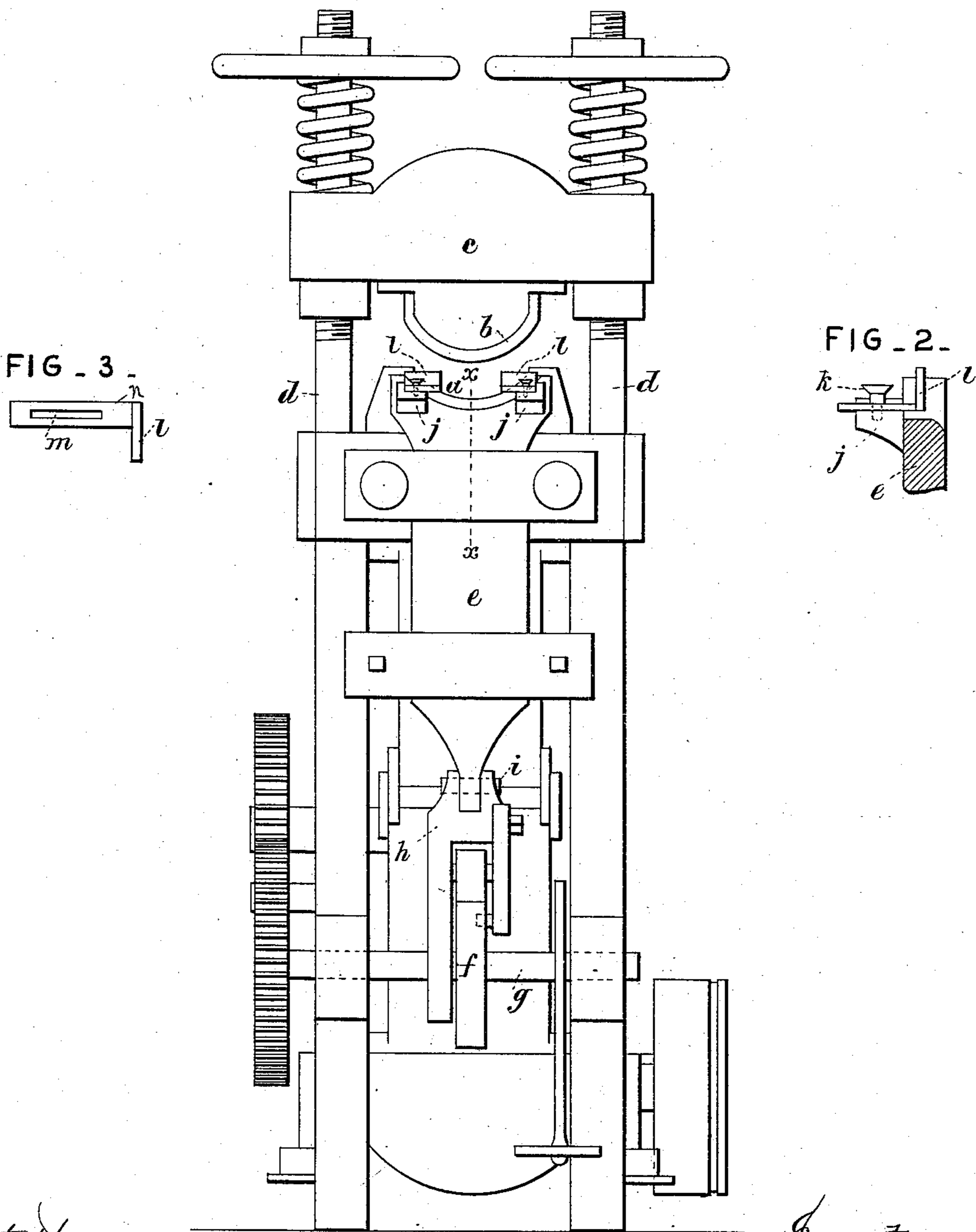
(No Model.)

G. A. KNOX.
MACHINE FOR MOLDING COUNTERS OR STIFFENERS FOR BOOTS
AND SHOES.

No. 375,494.

Patented Dec. 27, 1887.

FIG - 1 -



Attest:
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UNITED STATES PATENT OFFICE.

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MACHINE FOR MOLDING COUNTERS OR STIFFENERS FOR BOOTS AND SHOES.

SPECIFICATION forming part of Letters Patent No. 375,494, dated December 27, 1887,

Application filed April 14, 1887. Serial No. 234,858. (No model.)

To all whom it may concern:

Be it known that I, GEORGE ALFRED KNOX, of Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Machines for Effecting the Preliminary Molding of Counters or Stiffeners for Boots and Shoes, of which the following is a specification.

My invention relates to machines employed in the manufacture of counters or stiffeners for boots and shoes, and particularly to that class or kind of such machines as are employed to give the stiffener its initial form or shape, the final molding or shaping being accomplished by an additional operation in another machine.

The machines upon which my improvements have been wrought are sometimes termed "clam-shell" machines, from the fact that the shaping or molding imparted by them to the stiffener-blanks has some semblance to the form of a clam-shell.

It is the object of my invention to provide improvements in machines of the kind mentioned whereby an initial step of forming the flange on the stiffener may be accomplished as well as that of the "heel-molding," and a uniform amount of the edge of each blank turned or ironed down to form such flange.

To this end my invention consists in combining with the molding or forming and stamping dies or molds a gage for securing the exactly proper position of the blank in the machine, and a slide for setting or ironing down the projecting edge of the blank as a flange while said blank is held clamped between the dies or molds.

By the means and mode of operation specified I am enabled to make the work of finally molding the stiffener and forming the flange thereon easier and more expeditious of accomplishment, and to secure uniformity in the width or extent of the flange formed on the stiffeners, as also a more nearly perfect "setting" of the flange.

I will now proceed to describe my invention, so that others may be enabled to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming a part of this specification, the same letters referring to the same parts wherever they occur.

Of the drawings, Figure 1 represents a front view of a machine embodying my improvements. Fig. 2 is a sectional detail view on the line *xx* of Fig. 1. Fig. 3 is a top plan view of the blank-gage hereinafter referred to.

In the drawings, *a* indicates the female die or mold mounted on the stationary bed of the machine, and *b* the male die or mold secured to the vertically-reciprocating cross-head *c*, the latter being actuated by the vertical rods *d*, having suitable bearings in the machine-frame.

e indicates a reciprocating flange-forming slide guided in suitable ways in front of the machine, and actuated by a cam, *f*, on rotary shaft *g*, operating through the medium of a connecting link or lever, *h*, pivoted to slide *e* at *i*.

The means for actuating the male die and the slide constitute no part of my present improvements, and hence need not be more fully described herein. Said means may be the same as those shown and described in my application for a patent filed in the United States Patent Office February 6, 1887, Serial No. 226,991, and reference may be had thereto.

As shown, the dies are constructed to give the initial or clam-shell-shaped mold or form only to the stiffener blanks interposed, pressed, and held for a few seconds between the dies by the descent of the male die in a manner well understood by those having a knowledge of the art of molding stiffeners.

After the interposed blank has been pressed, as described, and while it is being held between the dies, the slide *e* rises, engages the edge of the blank left projecting from the front face of the dies, and turns said edge over, irons the same down, and so crimps and sets the flange on the stiffener.

j j indicate brackets secured to or formed on the front side of the slide *e*, upon which brackets are adjustably secured by means of screws *k k* flange gage or guides *l l*, which project forward toward the dies or molds, so that the operator, in placing the blank in position on the lower or female die, can arrange the same with the edge out of which the flange is to be formed against the gages or guides *l l*, and so, without the exercise of special pains or care and without unnecessary consumption of time, secure uniformity in the width of the

flanges formed on the blanks. The slot *m* in the shanks *n* of the gages permits of the adjustment of the latter toward or from the molds or dies.

5 By forming the flanges on the blanks in the preliminary molding operation the blanks so treated can be more conveniently and expeditiously handled in their final treatment, and the flanging operation having been partially
10 accomplished, the work in that respect in the final step of the process can be more thoroughly effected and more neatly finished.

I do not confine myself to the exact form and arrangement of parts described, as these
15 may be varied within the limits of mechanical skill without departing from the nature or spirit of my improvements.

I am aware that it has been proposed to construct a heel-stiffener machine with a male and
20 female die, one of which is supported on springs, the machine being provided with a lip or flange turner affixed to or forming part of the frame in which the spring-supported die is adapted to slide vertically. In this construction, how-
25 ever, it is not practicable to make the springs supporting the vertically-movable die sufficiently strong to hold the stiffener with the requisite firmness when the flange is being turned, there being liability of the blank be-
30 ing pulled out from or crowded back between the dies in the operation of ironing down the flange. Again, the springs are very liable to be broken or disordered, causing considerable loss of time and expenditure of money in mak-
35 ing repairs. In my improved construction

none of the disadvantages mentioned are met with.

Having thus explained the construction and operation of my improvements, what I claim is—

1. In a machine for effecting the preliminary crimping or molding of counters or stiffeners for boots and shoes, a rigid stationary female die, *a*, a reciprocating male die, *b*, and the reciprocating flange-forming slide *c*, and
40 mechanism, substantially as described, for reciprocating said slide after the counter has been clamped and held between the dies, all constructed, combined, and operating substan-
45 tially as and for the purposes hereinbefore set forth.

2. In a machine for effecting the preliminary crimping or molding of counters or stiffeners for boots and shoes, a rigid stationary female die, *a*, a reciprocating male die, *b*, the
55 reciprocating flange-forming slide *c*, and independent adjustable gages or guides *l l*, against which the edge of the blank arranged in position between the dies may be placed, all constructed, combined, and operating substan-
60 tially as and for the purposes hereinbefore set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 12th day of April, A.
65 D. 1887.

GEORGE ALFRED KNOX.

Witnesses:

ARTHUR W. CROSSLEY,
C. F. BROWN.