

(No Model.)

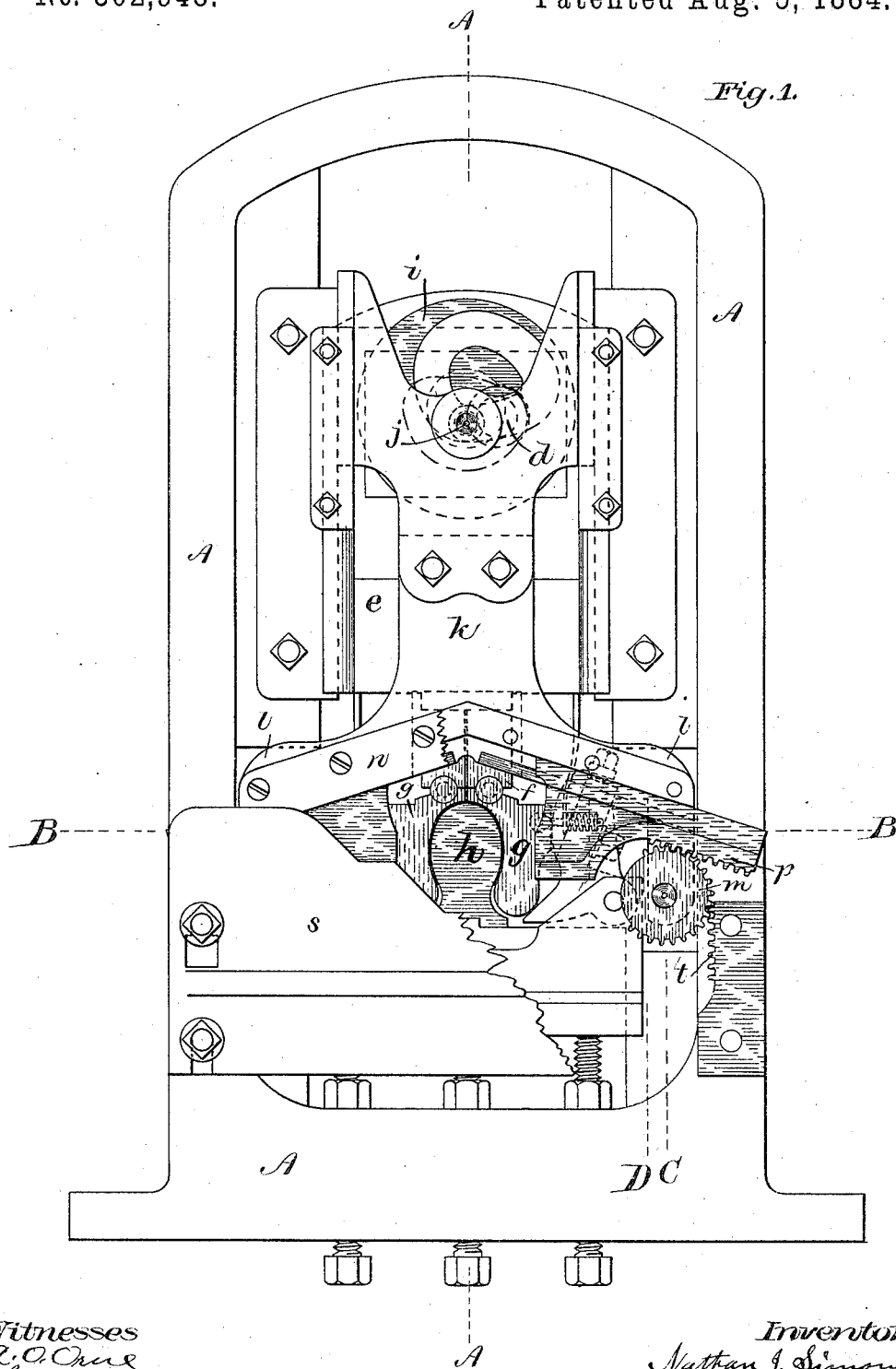
3 Sheets—Sheet 1.

N. J. SIMONDS.

MACHINE FOR MOLDING BOOT OR SHOE STIFFENERS.

No. 302,948.

Patented Aug. 5, 1884.



Witnesses  
A. O. Chase  
Eugene Humphrey

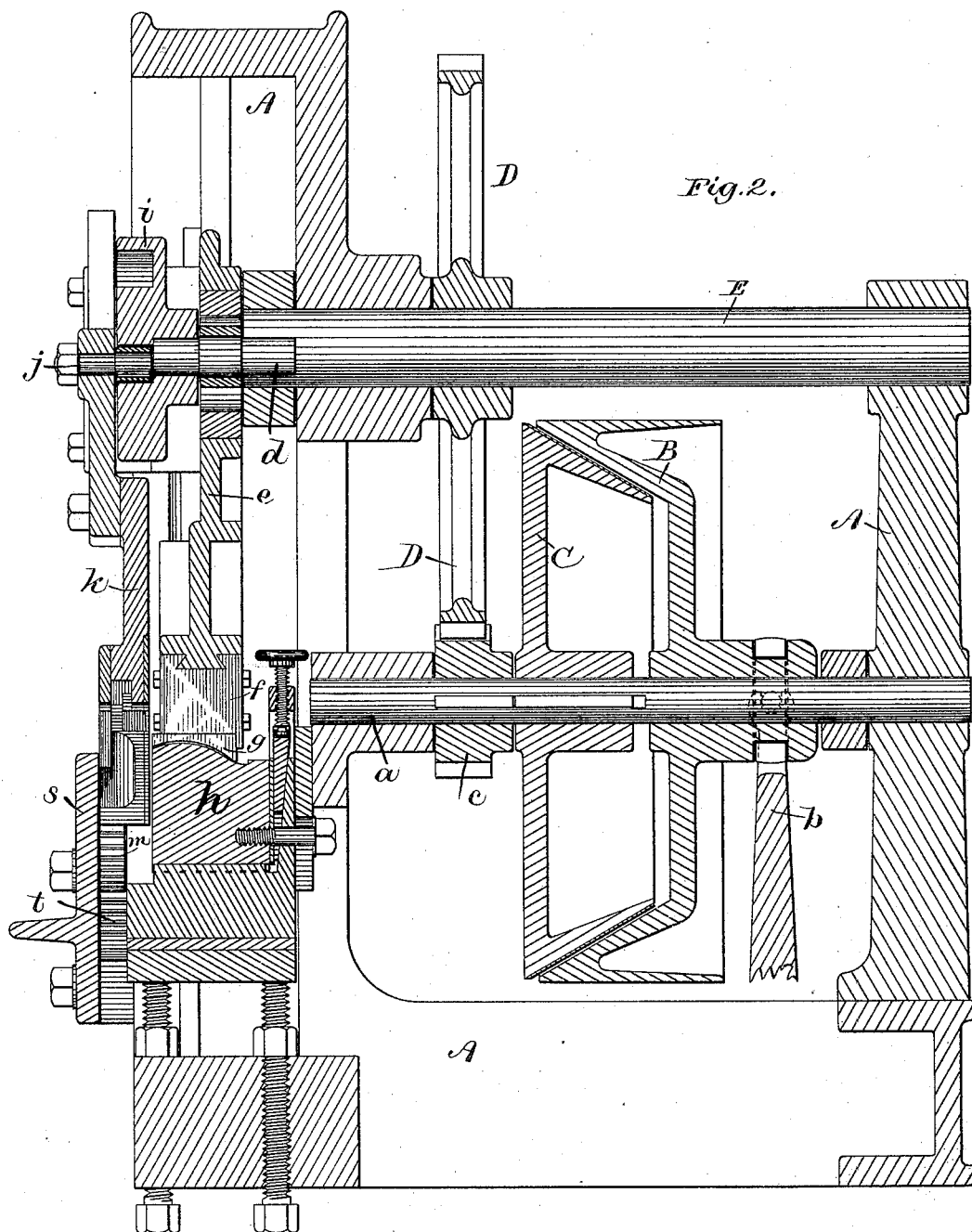
Inventor  
Nathan J. Simonds  
per Porter & Hutchinson

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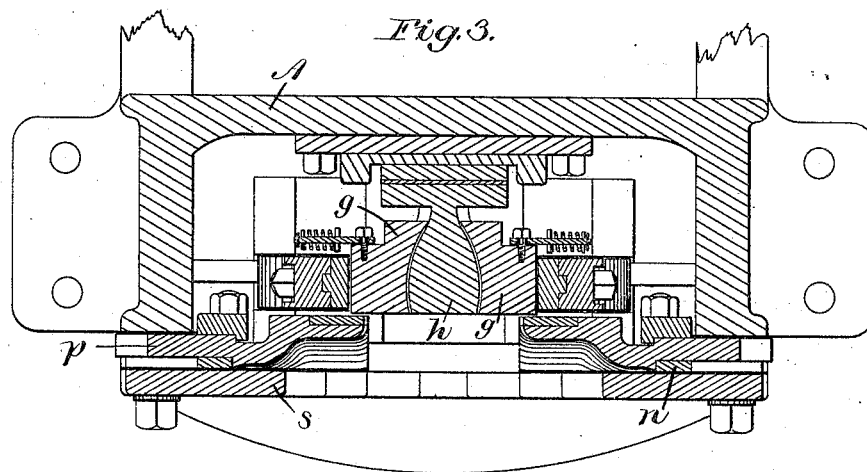
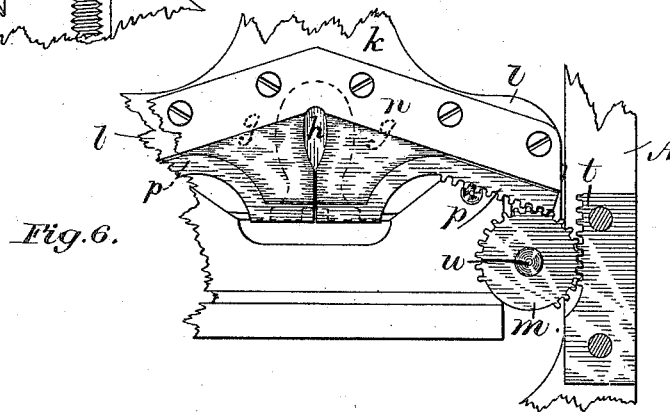
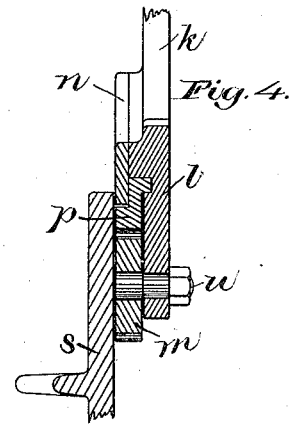
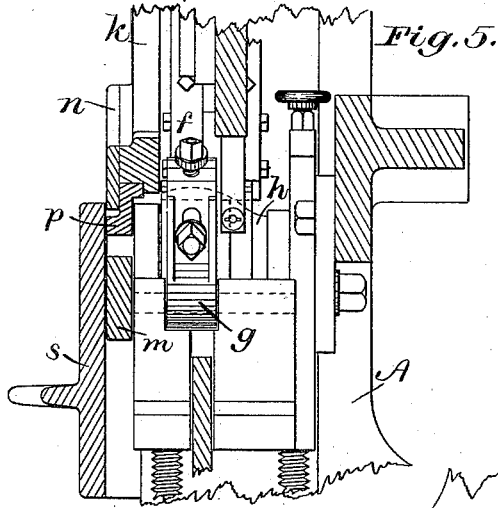
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# UNITED STATES PATENT OFFICE.

NATHAN J. SIMONDS, OF WOBURN, MASSACHUSETTS.

## MACHINE FOR MOLDING BOOT OR SHOE STIFFENERS.

SPECIFICATION forming part of Letters Patent No. 302,948, dated August 5, 1884.

Application filed February 9, 1884. (No model.)

### *To all whom it may concern:*

Be it known that I, NATHAN J. SIMONDS, of Woburn, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Machinery for Molding Boot and Shoe Stiffeners, which will, in connection with the accompanying drawings, be hereinafter fully described, and specifically defined in the appended claims.

This invention relates to that class of machines in which the heel-stiffeners of boots and shoes are subjected to pressure between a male former and a divided female mold, in order to permanently impart to them both a smooth and finished surface and a contour in all respects the same as that which they should possess when incorporated in a perfected boot or shoe; and the invention consists in the construction and combination of the divers devices embodied therein, as hereinafter more particularly and fully set forth and claimed.

In the accompanying drawings, Figure 1 is a front elevation of a machine embodying my invention, certain of the parts being partially broken away, the better to show the interior devices. Fig. 2 is a vertical section of the machine, taken as on line A A, Fig. 1. Fig. 3 is a horizontal section taken as on line B B, Fig. 1, and viewed as from above said line. Fig. 4 is a detached sectional elevation, the section being taken as on line C, Fig. 1, and the view being of the parts to the left of said line, as viewed from the right thereof. Fig. 5 is a section and view similar to Fig. 4, but taken as on line D in said Fig. 1. Fig. 6 is a detached elevation showing the central portion of the machine, (the upper and lower portions being broken away,) including the molding devices, the front stay-plate being removed, the better to show interior devices.

In said several views, A represents the frame of the machine, which is preferably formed as a unitary casting and of sufficient strength to resist the force which is exerted in actuating the molding devices, and with a supporting-base, as shown. An arbor, *a*, is journaled in suitable bearings in said frame, as shown, and on this arbor is loosely mounted the driving-pulley B, which is formed to engage clutch C, which is rigidly secured on said arbor. An arm, *b*, arranged to engage a concentric groove in

the hub of said pulley, is actuated by a treadle, and serves as the well-known means for moving the pulley into contact with the clutch, for the purpose of actuating the machine, while a spring suitably arranged disconnects the pulley from the clutch when the treadle is liberated. A pinion, *c*, also splined, as shown, upon arbor *a*, meshes with driving-gear D, which is secured upon an upper arbor, E, also journaled in frame A, as shown. A wrist-pin, *d*, is eccentrically secured in or formed upon arbor E, and the pitman *e*, mounted on said pin, carries the divided molds *g*, which are pivoted to the block *f*, which is removably attached to said pitman, as shown. The male mold *h* is clearly shown as adjustably seated in its bed, to co-operate with the divided mold *g* when the same is vertically reciprocated by the means described. A cam-disk, *i*, is rigidly secured on wrist-pin *d*, and revolves therewith, and a wrist-pin, *j*, secured in pitman *k*, is seated in the eccentric groove in said disk, and thereby vertically reciprocates said pitman as arbor E is rotated. The lower end of pitman *k* is formed with divergent arms *l*, upon which are supported the pinions *m*, which are journaled upon studs *n*, secured in said arms *l*, as is clearly shown in Fig. 4. A guide-bar, *n*, is secured to the front of pitman *k*, and between said bar and pitman are arranged the slides *p*, whose rack-like teeth mesh with pinions *m*, while the inner ends thereof are so formed that when brought together, as shown in Fig. 6, they equally overlie the line between the male mold *h* and divided mold *g*, which molds, as shown, are arranged with the bottom or flange-turning portion next to said slides *p*. Said pinions *m* also mesh with racks *t* rigidly secured to frame A, so that when pinions *m* are moved up and down with pitman *k* they will, by engaging rack *t*, be rotated upon their studs *n*, secured in arms *l* of pitman *k*.

The operation of my invention is described as follows: The stiffener-blank, whether partially molded or not, is placed on mold *h*, when both pitmen *e* and *k* are raised, the bottom edge of the stiffener being in front and projecting over or in front of mold *h* a distance equal to the required width of the base-flange of the stiffener when molded. When the blank is thus positioned on mold *h*, the machine is

set in motion by means described, and divided mold *g*, by the action of the eccentric that actuates it, through pitman *e*, is first firmly forced against the blank, and is followed by the descent of pitman *k*, which in its descent moves pinions *m* along racks *t*, thereby rotating said pinions, which in turn force the meshing slides *p* inwardly, thereby, through the compound movement resulting from their descending and inward motions, causing the inner ends of the slides (which, as described, are duly formed for the purpose) to turn the projecting edge of the stiffener over upon the front face, which is the bottom of form *h*, and firmly press it thereon, a stay-plate, *s*, secured to frame *A*, serving to hold slides *p* against the stiffeners, and in a true vertical line, a packing behind mold *h* allowing it to yield sufficiently in that direction to compensate for extra thickness of counter-blanks.

I make no claim to novelty in the various devices whereby a reciprocating motion is imparted to pitmen *e* and *k*; nor to mold *h* and the means for seating and adjusting the same; nor to the divided hinged mold *g*, arranged to co-operate with mold *h*; nor do I broadly claim devices which are adapted to turn the flange of the counter inwardly in a converging direction, as said divided mold *g* and solid mold *h*, with means to actuate the divided mold, have been heretofore patented by me, and devices for turning the stiffener-flange, which move lineally with a pitman and swing inwardly upon a pivot, are old and well-known; but

What I do claim is—

1. In a boot and shoe stiffener molding-machine, the combination of fixed racks *t*, pinions *m*, pivotally mounted on pitman *k*, and the racks *p*, mounted upon and arranged to slide in guiding-ways in said pitman, and formed at their inner ends to turn and mold the flange of the stiffener, substantially as specified.

2. In a boot and shoe stiffener molding-machine, the combination, with reciprocating pitman *k*, of slides *p*, mounted on said pitman, and formed at their inner ends to turn and mold the stiffener-flange over mold *h*, and devices adapted to move said slides inwardly as said pitman descends, substantially as specified.

3. In a boot and shoe stiffener molding-machine, the combination, with a solid male mold, *h*, and divided mold *g*, arranged to co-operate therewith, and mounted upon and actuated by a vertically-reciprocating slide or pitman, of slides *p*, also mounted upon and arranged to slide in said pitman transversely to its line of reciprocation, and formed at their inner ends to turn and set upon mold *h* the base-flange of the stiffener by the reciprocating action derived from said pitman and transverse motion imparted by devices, substantially as shown and described.

NATHAN J. SIMONDS.

Witnesses:

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ENOS T. LUCE.