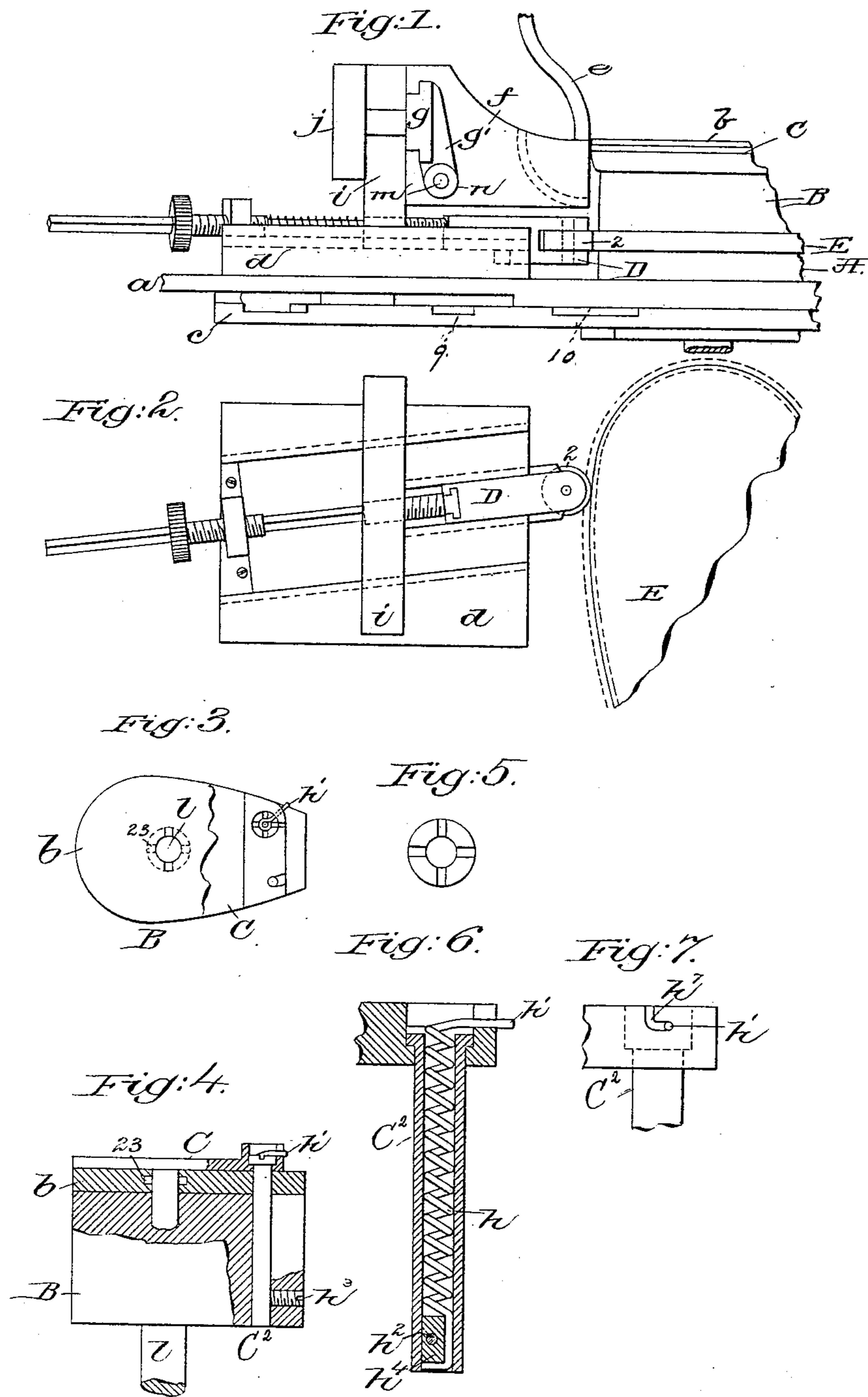


(No Model.)

C. W. GLIDDEN.  
HEEL TRIMMING MACHINE.

No. 377,302.

Patented Jan. 31, 1888.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

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## HEEL-TRIMMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 377,302, dated January 31, 1888.

Application filed October 21, 1887. Serial No. 252,994. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES W. GLIDDEN, of Lynn, county of Essex, and State of Massachusetts, have invented an Improvement in Heel-Trimming Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention is an improvement on the apparatus described in United States Letters Patent No. 321,017, and has for its object to provide means whereby the edge of the knife may be presented to the heel to be trimmed at the proper or normal angle of presentation, notwithstanding variations in sizes of heel being trimmed on the same machine, it being customary to trim by one machine heels varying from one-fourth to one-half of an inch in diameter, or across the heel from edge to edge. The machine described in the said patent has a turn-table mounted upon a trimmer-lever, and the turn-table has at its under side two studs, which enter two grooves of a stationary plate, and the trimming-knife holder is made adjustable by means of a screw, so as to permit the edge of the knife to be so adjusted as to be exactly in line with the center on which the turn-table turns, in order that the cut made by the trimming-knife shall be smooth and not cut into the heel and leave it rough, as would be the case were the edge of the knife not presented to the heel at the proper angle, or, as I shall call it, "normally." To provide for heels of different sizes or of different diameter, or width across the bottom, the knife-holder is also made adjustable toward and from the nail-box in a line at right angles to the line of movement of the knife-holder on the ledge or tipping plate on which it is mounted.

In the practical use of the machine described in the said patent it has been ascertained that the normal angle of presentation for the knife is gained only when trimming a heel of one of the medium sizes which the machine is adapted to trim, and with the smaller and with the larger sizes of heels it has been ascertained that the knife is not presented normally; but with the smaller sizes of heels the edge of the knife is too much intumed to cut the heel smoothly and properly, while with

the larger sizes the edge of the knife is turned outwardly too much to do good work.

By experiment I have discovered that the normal or desired correct presentation of the edge of the knife to the heel and that the cutting-edge of the knife may always be maintained exactly in line with the center of rotation of the turn-table by mounting the bearing block or slide supporting the tipping plate on which the knife-holder is made adjustable so that the said slide may be adjusted diagonally in or on the turn-table with relation to the direction of movement of the knife-holder on the tipping plate carried by the said slide, such direction of movement of the slide causing the edge of the knife to be automatically carried forward and backward with relation to the turn-table and its center of rotation, according to the diameter of the heel being trimmed, the slide moving, it will be remembered, toward and from the nail-box and heel under the control of a pattern-plate and a spring.

My invention consists, essentially, in the combination, with a knife-holder and a plate in which it is made adjustable, of a bearing-block to support the plate on which the knife-holder is adjustable, and a turn-table, the said bearing-block being made movable diagonally in the said turn-table, substantially as will be described.

Another feature of my invention consists in a peculiar spring joint or connection between the nail-box and the top-lift plate.

Figure 1 in side elevation represents a sufficient portion of a heel-trimming machine to enable my invention to be understood; Fig. 2, a plan view of Fig. 1, with the nail-box, knife-holder, and the flanged plate on which it is adjusted removed, the pattern-plate shown by full lines being supposed to be of medium size, the dotted lines showing pattern-plates of the maximum and minimum sizes. Fig. 3 is a top or plan view of the nail-box, part of the top-lift plate being broken off. Fig. 4 is a side elevation, partially broken out, of the nail-box and top-lift plate; and Figs. 5, 6, and 7 are details, on an enlarged scale, of the devices instrumental in connecting the top-lift plate with the nail-box.

The stationary cam-plate *c*, having grooves

9 10, the trimmer-lever *a*, the turn-table *d*, the knife *e*, knife-holder *f*, ear *g*, the screw *m*, the nut *n*, to adjust the knife-holder, the flanged plate *g*, attached in usual manner to the arm  
5 *j*, free to tip in or on the slide *i*, the nail-box B, the driver-plate A, and pattern-plates E and *b*, are and may be all as in United States Patent No. 321,017, wherein like letters are employed to designate like parts.

10 United States Patent No. 166,795, dated August 17, 1875, shows and describes quite fully the construction and operation of the turn-table plate, the stationary plate having the two grooves to receive the usual rollers at  
15 the bottom of the turn-table, the knife-holder, and means for adjusting it to keep its edge at the center of rotation of the turn-table. In this present invention the groove or way in the top of the turn-table *d* for the reception of  
20 the foot of the bearing block or plate *i* is made diagonally through the said turn-table *d*, so that the said bearing-block is free to be moved diagonally in the said turn-table, according to the size of the pattern-plates being used, such  
25 movement of the bearing-block in the turn-table resulting in carrying the edge of the knife forward or backward with relation to the direction of the travel of the turn-table about the heel in such manner as to main-  
30 tain the edge of the knife practically at the center of rotation of the turn-table plate, thus insuring, with heels of every size which may be trimmed on the machine, that the edge of the knife is presented normally to the heel.  
35 The bearing-block *i*, or "cross-slide," as it has sometimes been called, is provided with a follower, D, having a roll, 2, which runs against the pattern-plate E, which, it will be understood, is exchangeable for heels of different  
40 sizes. This follower is made adjustable on the bearing-block by suitable screws, which operate substantially as do the follower-adjusting devices described in United States Patent No. 321,017, the adjusting devices herein shown  
45 being, however, somewhat different in construction; but such devices are not herein claimed, because they are the invention of Alvin D. Elliott.

The top-lift plate C is recessed at its rear  
50 end to receive the head of a hollow bolt, C<sup>2</sup>, which is secured in the nail-box by a screw, *h*<sup>3</sup>, the said bolt serving as a fulcrum or pivot for the top-lift plate, the head of the bolt keeping the top-lift plate down upon the nail-box  
55 B. This hollow bolt receives in it a long spring, *h*, the lower end of which is fixed in the bolt by a plug, *h*<sup>4</sup>, and pin *h*<sup>2</sup>, the upper end of the spring, as *h*<sup>1</sup>, being bent at right angles and extended out through a slot, as *h*<sup>7</sup>,  
60 (see Fig. 7,) in the top-lift plate, the said spring acting normally to keep the top-lift plate in position to cover the top of the usual nail-box; yet the said spring permits the top-lift plate to be turned when the nail-box is to come  
65 against the end of the heel.

By employing a long spring, such as shown, and holding it very firmly, I am enabled to

obtain a strong and durable spring of sufficient power to correctly and quickly operate the top-lift plate, the length of the spring adding 70 to its durability, for it is less liable to cut and break than a shorter spring, such as heretofore used.

The pattern-plate *b*, constituting the top of the nail-box, is provided near its center with 75 an undercut annular groove, (see Figs. 3 and 4,) the upper flange of which, as in Fig. 3, is slotted at opposite points for the passage of a pin or stud, 23, extended through the upper end of the shank *l* of the nail-box, the said 80 shank being common to United States Patents Nos. 166,765 and 321,017. The pattern-plate *b* is applied to the upper end of the said shank when the said plate is first applied to the nail-box, and the said plate having been turned a 85 quarter-turn to place the ends of the stud 23 in the annular groove referred to, the bolt C<sup>2</sup> is inserted and the pattern-plate is firmly locked in position. The head of the bolt C<sup>2</sup> is slotted, as herein shown, at four places for the 90 reception of a forked screw-driver, by which to turn the bolt to wind the spring *h* to the proper tension.

I have herein referred to the plate *d* as a so-called "turn-table" plate; but I do not desire 95 to limit this my invention to a turn-table plate just such as shown, or as referred to in United States Patent No. 166,795.

I should consider as within the scope of my invention a machine having a plate *d* sup- 100 ported in any manner and having a movement about the heel to be trimmed in a heel-shaped path; and prior to this my invention I am not aware of any heel-trimming machine having mechanism or means, such as referred to, to 105 carry a knife or blade about the heel in a heel-shaped path to trim the same, wherein, besides its movement, as stated, about the heel, and its movement toward and from the center of the heel, has also had given to it an additional 110 movement or adjustment forward or backward with relation to the direction of travel of knife-carrying mechanism about the heel, to thus provide, as stated, for correctly presenting 115 the edge of the knife to heels of several different sizes; so I do not desire to limit my invention to the exact devices shown for moving the knife or blade, as stated, but desire to include as in the scope of my invention any equivalent mechanism for accomplishing the 120 same purpose.

I claim—

1. In a heel-trimming machine, a turn-table plate, a trimming-knife, a knife-holder, and a plate on which the said knife-holder is made 125 adjustable, combined with a bearing-plate or cross-slide, *i*, arranged and adapted to slide diagonally in or with relation to the turn-table, as and for the purpose described.

2. In a heel-trimming machine, a turn-table 130 plate, a trimming-knife, a knife-holder, and a plate on which the said knife-holder is made adjustable, combined with a bearing-plate or cross-slide, *i*, arranged and adapted to slide

diagonally in or with relation to the turn-table, and with a pattern-plate and nail-box, substantially as described.

3. The nail-box, its attached tubular bolt  
5 and inclosed spiral spring held therein at or near one end, the upper end of the spring extending laterally from the bolt, combined with the top-lift plate, substantially as and for the purpose described.
- 10 4. The nail-box, its shank having a stud or projection, 23, combined with the plate *b*, having an annular groove, as described, to be entered by the said stud or projection, substantially as described.
- 15 5. The nail-box, its shank having a stud or projection, 23, combined with the plate *b*, having an annular groove, as described, to be entered by the said stud or projection, and with  
20 said shank, substantially as described.

6. In a heel-trimming machine, a plate or device, as *d*, having a movement about the heel in a heel-shaped path, combined with a heel-trimming knife or blade, and support therefor, whereby the said knife or blade, be- 25 sides its movement toward and from the heel, has also a movement backward and forward with relation to the direction of movement of the blade about the heel, to, as described, provide for the normal presentation of the cut- 30 ting-edge of the knife or blade to heels of different sizes, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES W. GLIDDEN.

Witnesses:

BERNICE J. NOYES,  
F. L. EMERY.