

No. 659,463.

Patented Oct. 9, 1900.

C. W. WOODS.  
HEEL ATTACHING MACHINE.

(Application filed Nov. 18, 1899.)

(No Model.)

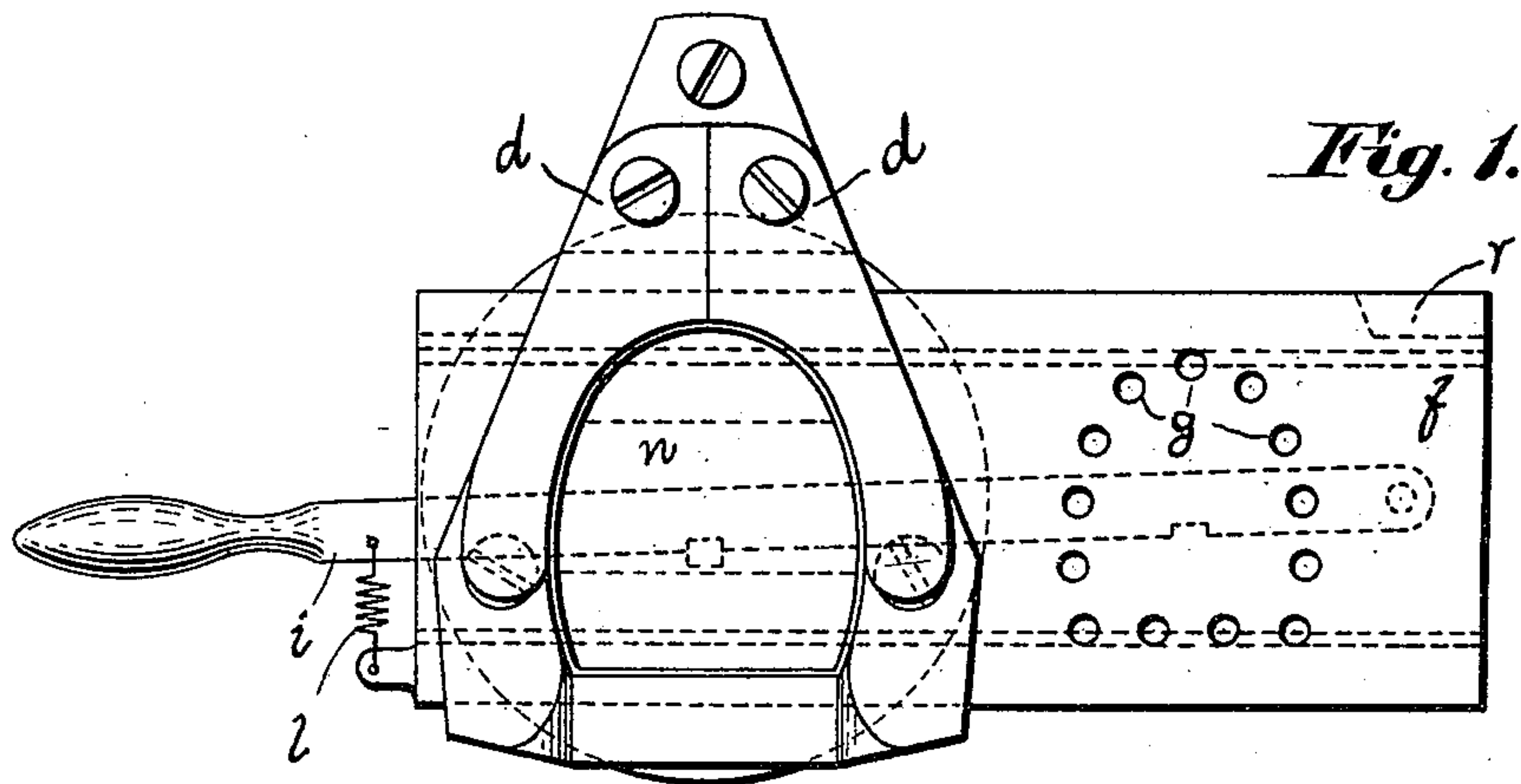


Fig. 1.

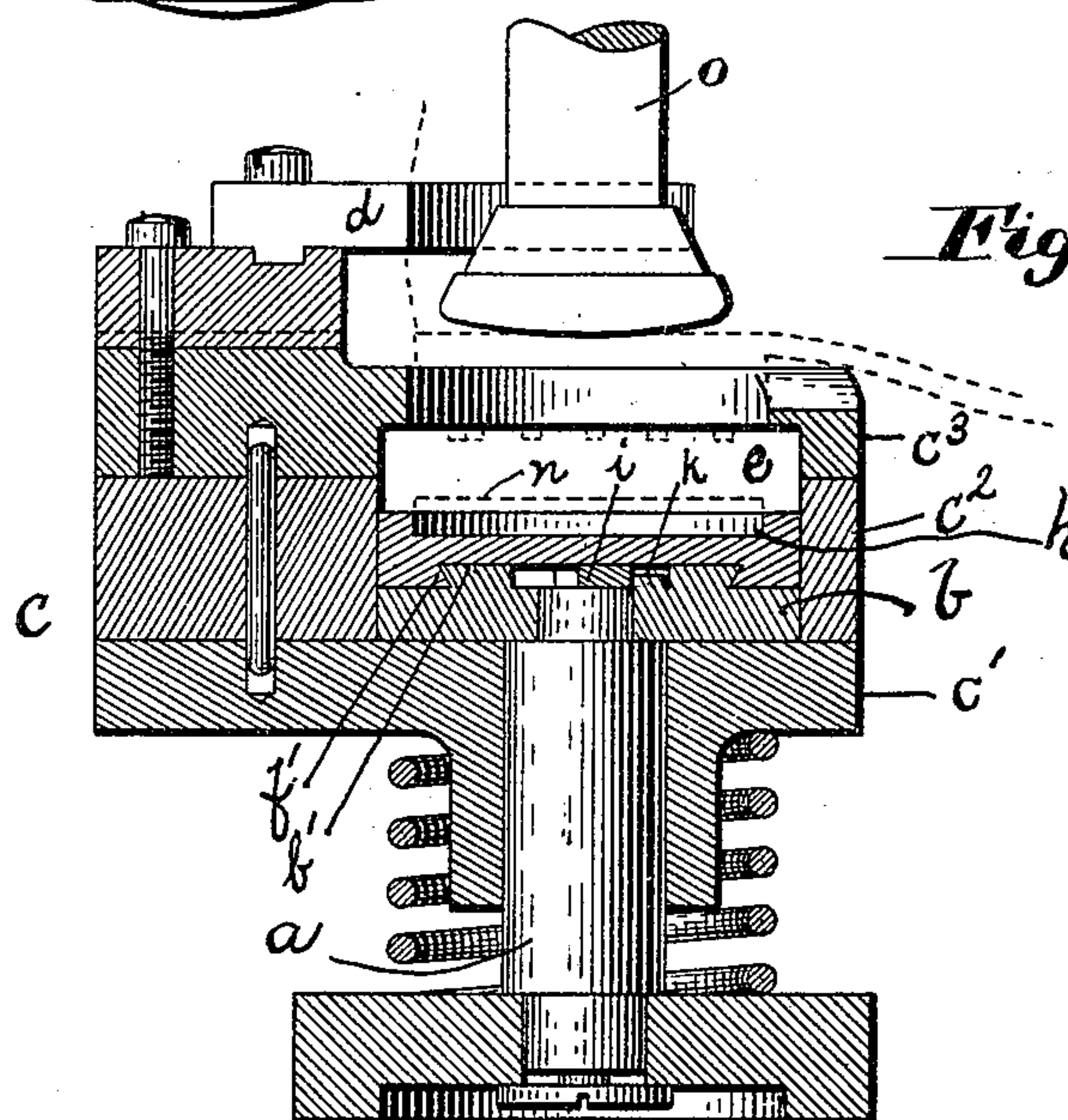
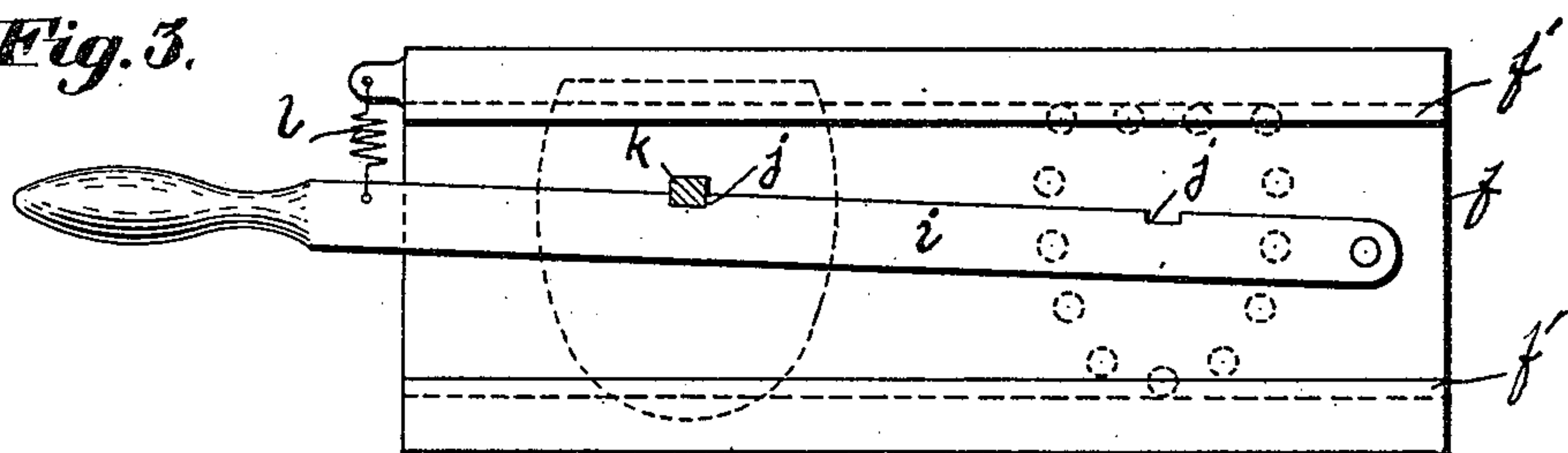


Fig. 2.

Fig. 3.



WITNESSES:  
Charles F. Logan.  
M. P. Boone.

INVENTOR.  
Calvin W. Woods  
BY  
Geo. N. Goddard.  
ATTORNEY.



# UNITED STATES PATENT OFFICE.

CALVIN W. WOODS, OF NORTH BROOKFIELD, MASSACHUSETTS, ASSIGNOR  
TO THE E. & A. H. BATCHELLER COMPANY, OF MASSACHUSETTS.

## HEEL-ATTACHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 659,463, dated October 9, 1900.

Application filed November 18, 1899. Serial No. 737,389. (No model.)

*To all whom it may concern:*

Be it known that I, CALVIN W. WOODS, a citizen of the United States, and a resident of North Brookfield, Massachusetts, have invented certain new and useful Improvements in Heel-Attaching Machines, of which the following is a specification.

My invention relates to means for attaching loaded heels and top lifts to the soles of shoes, and is particularly intended to provide a quick and simple means for attaching the heels and top lifts capable of use on a machine of the general type of the old "Bigelow" machine, an example of which is clearly illustrated in the patent to Pope, No. 588,936. In this type of machine the loaded heel is placed in a heel-cup, with the projecting nails resting upon a stationary nail-driving plate, while the shoe is placed upon a last, which is by the operation of the machine made to descend until the nails are forced into the sole of the shoe, thus attaching the heel. By this operation the heel is left with the ends of the nails projecting slightly beyond the heel. The top lift is afterward put into the cup upon the spanking-plate and the last carrying the shoe is made to descend again, thereby impaling the top lift upon the projecting ends of the nails, and thus attaching it to the heel. As this style of machine has been constructed heretofore it has been found more expeditious and economical to first nail on the heels of a lot of shoes in succession and then, after taking out the nail-driving plate, to put them successively back on the last in order to attach the top lift, thereby making two distinct sets of operations, involving the removal of the shoe and its subsequent replacement upon the last.

It is the object to so improve the construction of this type of machine as to permit the loaded heel and the top lift to be successively attached to the shoe without removing the shoe from the last, while doing the work much more rapidly and economically than it can be done on these machines as heretofore constructed. Heretofore it has been proposed to accomplish a somewhat similar result by the use of a perforated templet or die-block with a coöperating gang of drivers, an example of which is to be found in the patent to McKay,

Fairfield, and Glidden, No. 166,795; but my invention is not only more simple in construction and less liable to get out of order, but it dispenses entirely with the necessity of stopping to hammer down the heel into place, which was often necessary when heels already loaded were placed upon the die-block to be attached, for, as is well known to the artisan, if one or more nails were slightly out of alignment with the holes in the templet or die-block the heel would not drop easily into place, but would need to be forced down by hammering.

My invention consists in the combination, with the heel-cup, of a movable plate having one portion constructed as a nail-driving plate to drive the nails partly into the heel, while the other portion serves as a top-lift-spanking plate to attach the top lift.

It further consists in such a construction and arrangement of parts as will secure the arrest of the plate in the exact positions proper to secure the accurate and uniform attachment of the heel and of the top lift.

Referring now to the drawings, in which I have illustrated one form of embodying the principle of my invention, Figure 1 is a plan view of the heel-cup with the movable plate in its top-lift-attaching position. Fig. 2 is a vertical sectional view of the same, taken on the middle plane of the heel-cup. Fig. 3 is a bottom plan view of the movable nail-driving and top-lift-spanking plate.

The heel-cup may be of any suitable construction, though I have shown the invention applied to an improved form of cup invented by me. The cup comprises, essentially, a stationary heel-post consisting of the standard *a* and the head *b* and the yieldingly-mounted cup *c*, which in the form herein shown comprises three separate sections *c'*, *c''*, and *c'''*, secured together rigidly by dowel-pins or other suitable means. The cup is also shown with an adjustable two-part counter-gage *d d'*, by the aid of which the shoe is properly positioned with reference to the heel to be attached. The interior recess of the cup is of the contour of the heel to be attached, as will be readily understood, and the head *b* is of the same contour. Each side of the cup is cut away, as indicated at *e*, to permit the nailing and spanking plate *f* to



slide through the cup from side to side thereof. To provide against vertical displacement of the plate, I may give a sliding engagement with the head *b* in any suitable manner, as  
 5 by the interlocking or dovetailed ribs *f'* *b'*. As indicated in Figs. 1 and 3, one portion of the plate is provided with countersunk holes *g* to receive the projecting ends of the nails in the loaded heels, the object of this being  
 10 to leave the ends of the nails projecting slightly beyond the lower face of the heel after the heel-attaching movement of the last. The other portion of the plate *f* is formed with a countersunk recess *h* of a size and  
 15 shape to receive the top lift.

Referring now to Fig. 1, suppose the plate *f* be drawn to the left until the countersunk holes lie inside the heel-cup in proper position to receive the projecting nails of the loaded  
 20 heel that is then dropped into the heel-cup. The downward movement of the last *O*, with the shoe upon it, will then force the heel downward, while the nails being held against such movement by the nailing-plate will be driven  
 25 through until they enter the sole or heel-seat of the shoe. As the last rises, carrying the attached heel away from the plate *f*, the operator's assistant will push the plate *f*, carrying a top lift *n*, previously placed in the re-  
 30 cess *h*, into position shown in Fig. 1, as indicated by dotted lines in Fig. 2. A second downward movement of the last serves to impale the top lift upon the projecting ends of the nails, and thus attaches it properly to  
 35 the heel. The plate *f* is then drawn back by the assistant, who places another heel and a top lift in their respective positions while the operator is removing the heeled shoe and placing another shoe upon the last, when the  
 40 operations are repeated.

In order to secure the accurate positioning of the plate for the driving of the nails and the spanking of the top lift, I provide means for arresting the plate in its two operative  
 45 positions. The means for this purpose herein shown comprise a pivoted latch *i*, having notches *j* to engage with a pin or stud *k*, secured to the head *b*. A spring *l* may be provided to draw the latch normally toward the  
 50 locking-pin. For convenience the latch is provided with a handle adapted to be grasped by the assistant, by means of which he may move the plate to and fro and also release the latch from its locking engagement with  
 55 the pin. The stops or shoulders *r*, formed on the under face of the rib *f'* at each end thereof, adapted to abut against the outer faces of the cup, afford additional means for arresting the movement of the plate *f* at the  
 60 proper points and insure its proper positioning if through the carelessness of the operator the latch is not locked against the stop-pin. I do not, however, confine myself to any specific locking means and, indeed, it will be  
 65 understood that it is possible to vary the details of the construction herein shown without departing from the spirit of my inven-

tion. For example, while I have shown the nail-driving plate and the top-lift-spanking plate made in one piece it would yet fall  
 70 within the scope of my invention if they were made separate and independent.

Without attempting to set forth all the variations in form and arrangement of which my invention is capable or all the modes of  
 75 its use, what I claim is—

1. In a heel-attaching machine the combination of a heel-post, a heel-cup having open sides, a nailing and spanking plate movable over the top of said post through the open  
 80 sides of the heel-cup whereby a loaded heel and its top lift can be attached in rapid succession, substantially as described.

2. In a heel-attaching machine the combination of a heel-post, a heel-cup mounted  
 85 thereon, the sliding plate supported on said post and adapted to slide over said post transversely of the heel-cup, and a stop device for arresting the movement of said plate in proper position to attach a heel or to spank on a top  
 90 lift, substantially as described.

3. In a heel-attaching device the combination of a heel-post, a heel-cup, a nailing and spanking plate having a sliding engagement with the top or head of said heel-post, and a  
 95 pivoted latch for locking said plate in different positions for attaching the heel and the top lift respectively, substantially as described.

4. In a heel-attaching machine, the combination of the heel-post, the heel-cup, the plate  
 100 movable over and resting upon the head of the heel-post, said plate being provided with a series of countersunk recesses arranged to correspond with, and receive the ends of the  
 105 nails of a loaded heel, and being also provided with a recess to receive the top lift, substantially as described.

5. In a heel-attaching machine the combination of the heel-post, the heel-cup, the movable nailing and spanking plate, the head of  
 110 said heel-post and the under side of said plate being formed with interlocking ribs, whereby the upward movement of the plate from the post is prevented while permitting the horizontal  
 115 movement of the plate substantially as described.

6. A nailing and spanking plate for a heel-cup, comprising a single plate having formed on one side face a series of countersunk recesses arranged to receive the ends of the  
 120 nails of a loaded heel, without allowing them to project through the plate, and having also a countersunk recess formed to receive the top lift, substantially as described.

7. In a heel-attaching machine, the combination of the heel-post, the heel-cup, the sliding plate, the pivoted latch formed with the notches in its edge, the stud projecting from the heel-post, and the spring arranged to  
 125 move the latch normally toward the stud, substantially as described.

8. In a heel-attaching machine, the combination with a last having movements to at-



5 tach a loaded heel and spank on a top lift, of a nail-driving and top-lift-spanking device, the nail-driving part of which comprises a plate having a series of countersunk recesses arranged to receive and drive the nails without allowing them to project through the plate, and the spanker portion of which comprises a top-lift-holding plate movable into position to hold the top lift stationary be-

neath the heel, while the heel with its projecting nails is forced down upon it, substantially as described.

In witness whereof I have hereunto set my hand this 16th day of November, 1899.

CALVIN W. WOODS.

In presence of—

JOHN P. COOKE,

CHAS. E. BATCHELLER.