

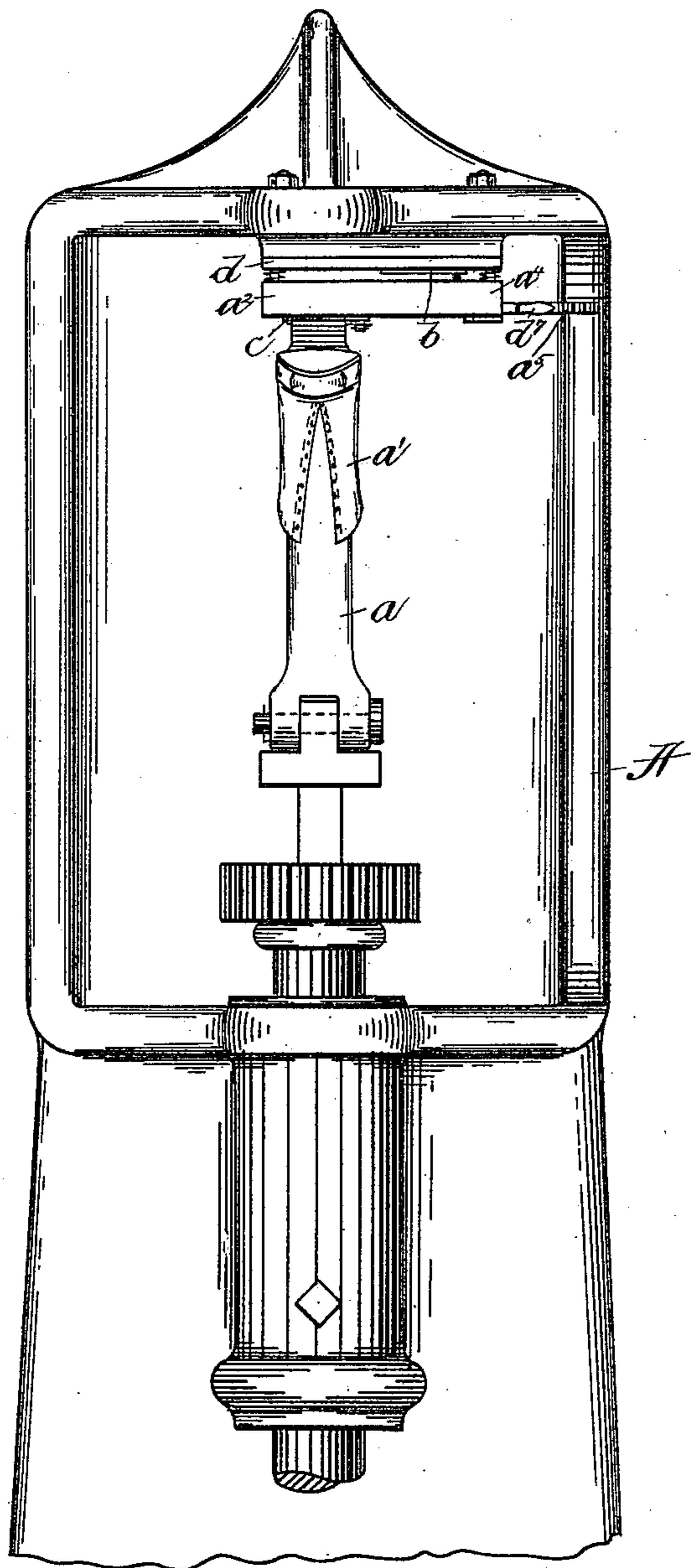
(No Model.)

4 Sheets—Sheet 1.

W. S. JONES.
HEEL NAILING MACHINE.

No. 441,420.

Patented Nov. 25, 1890.



WITNESSES:

Edgar A. Goddard
George C. Huntington

Fig. I.

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4 Sheets—Sheet 2.

No. 441,420.

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INVENTORY

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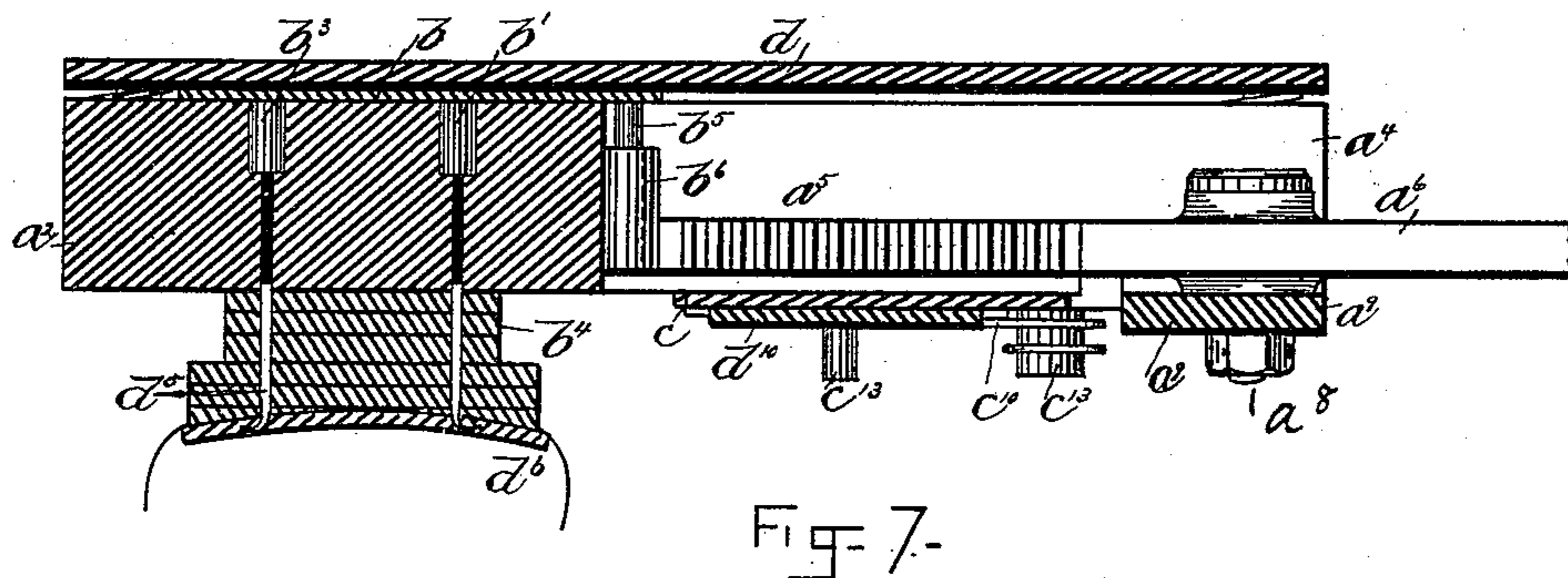
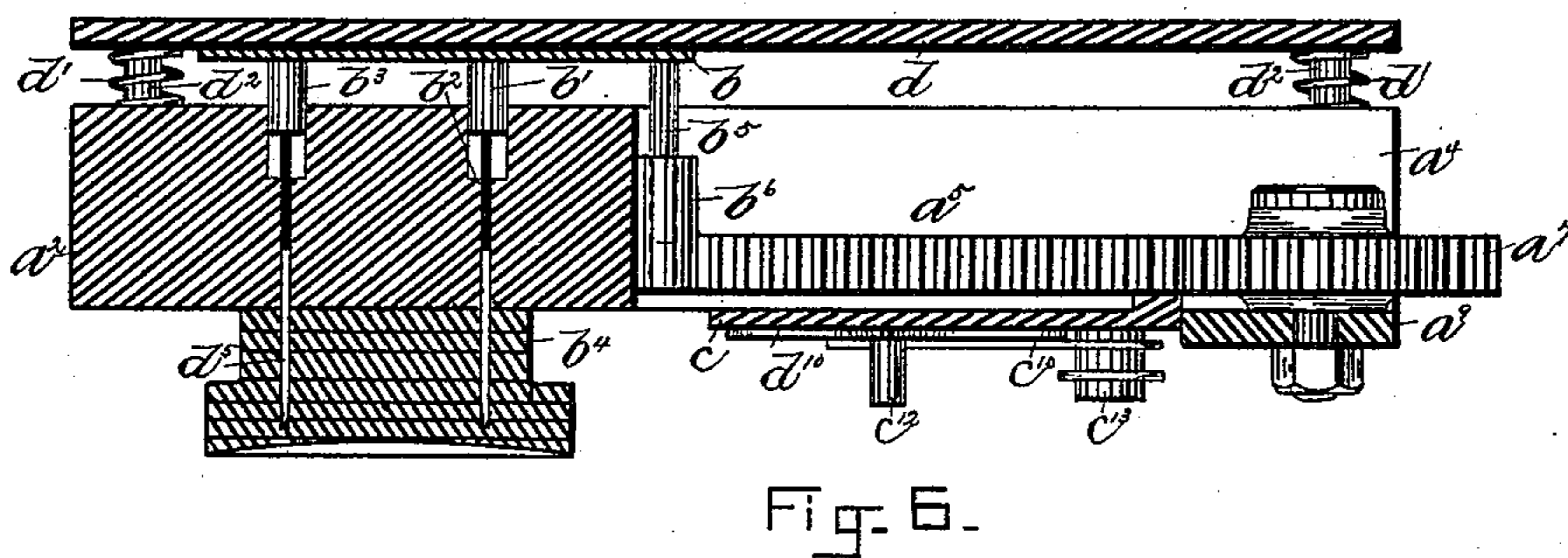
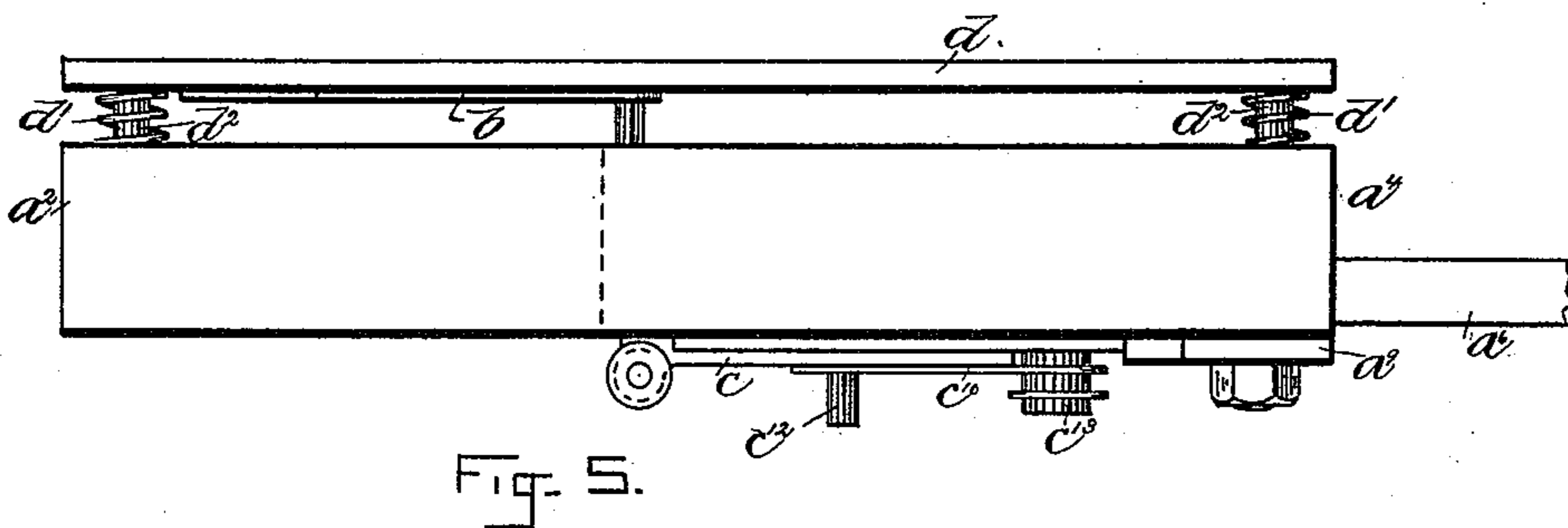
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Patented Nov. 25, 1890.



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(No Model.)

4 Sheets—Sheet 4.

W. S. JONES.
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Patented Nov. 25, 1890.

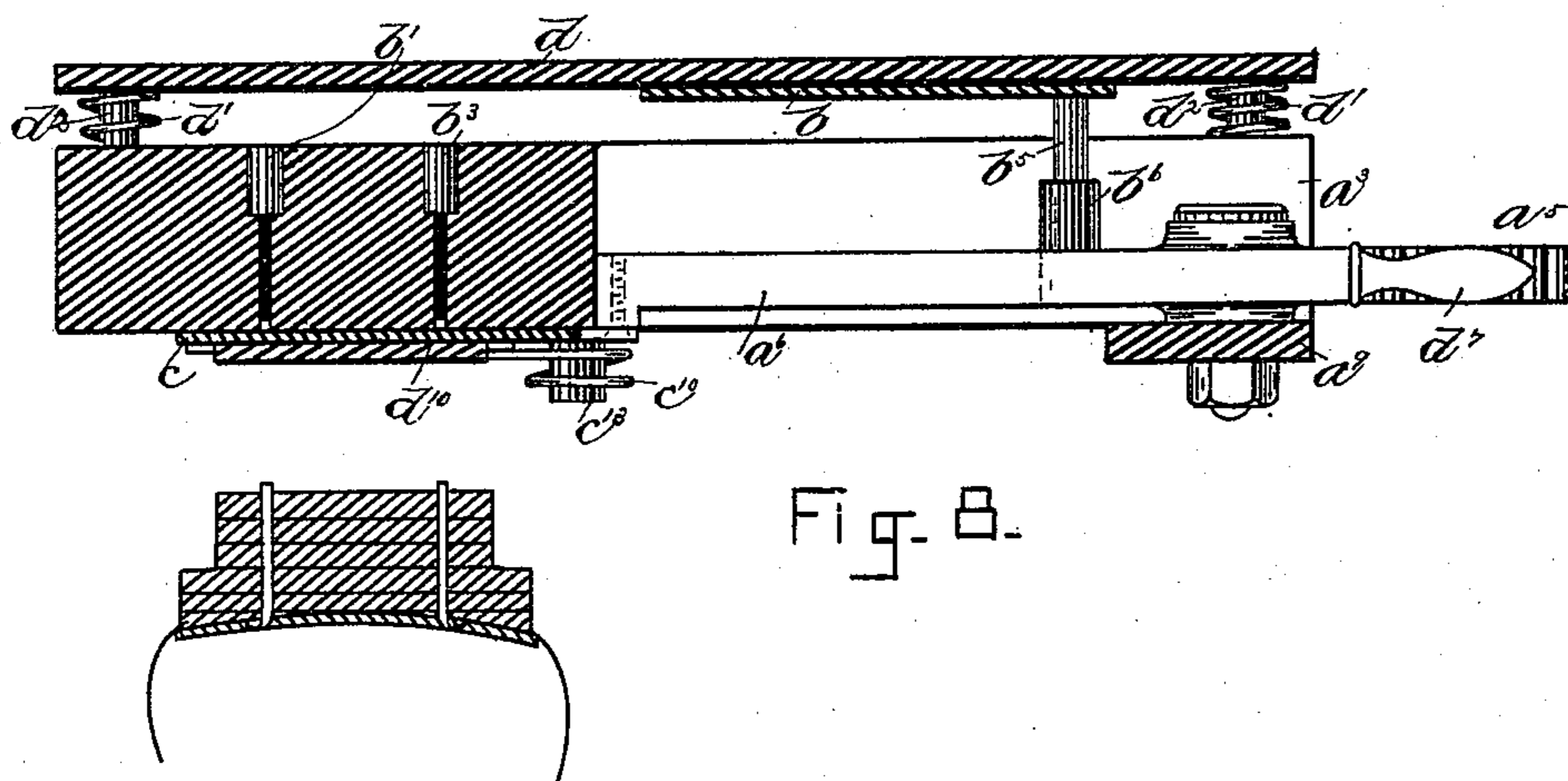


Fig. 8.

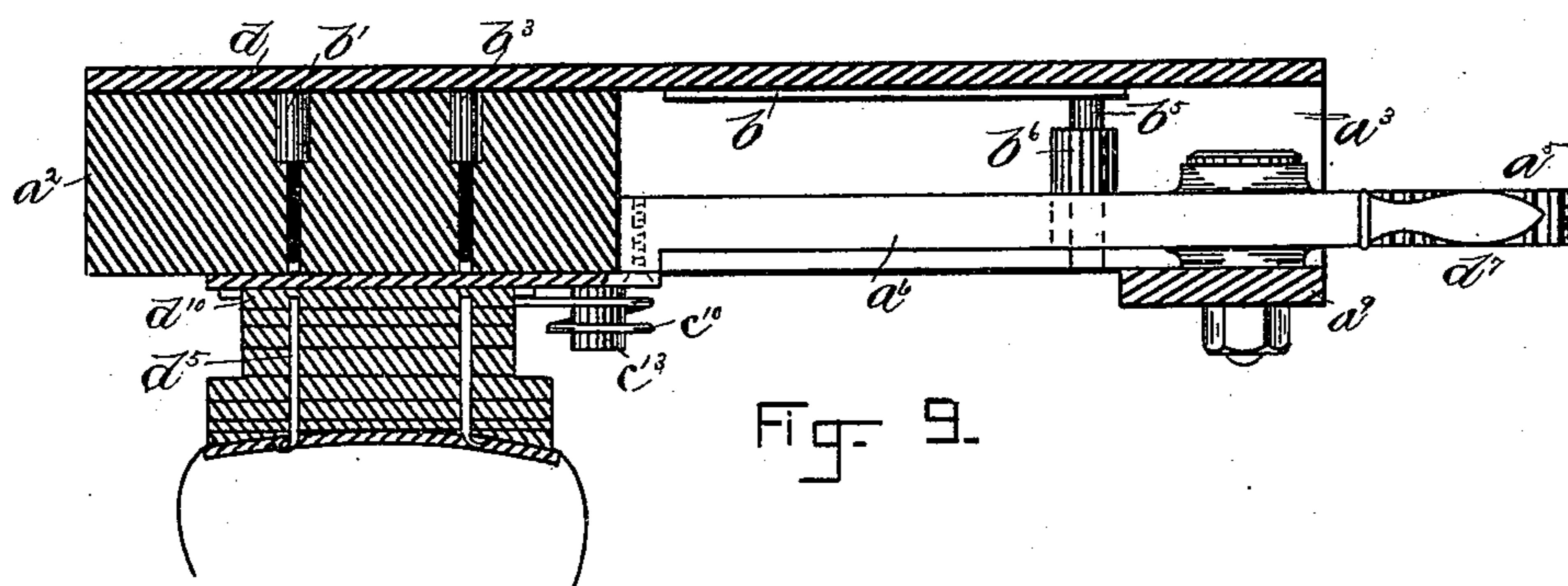


Fig. 9.

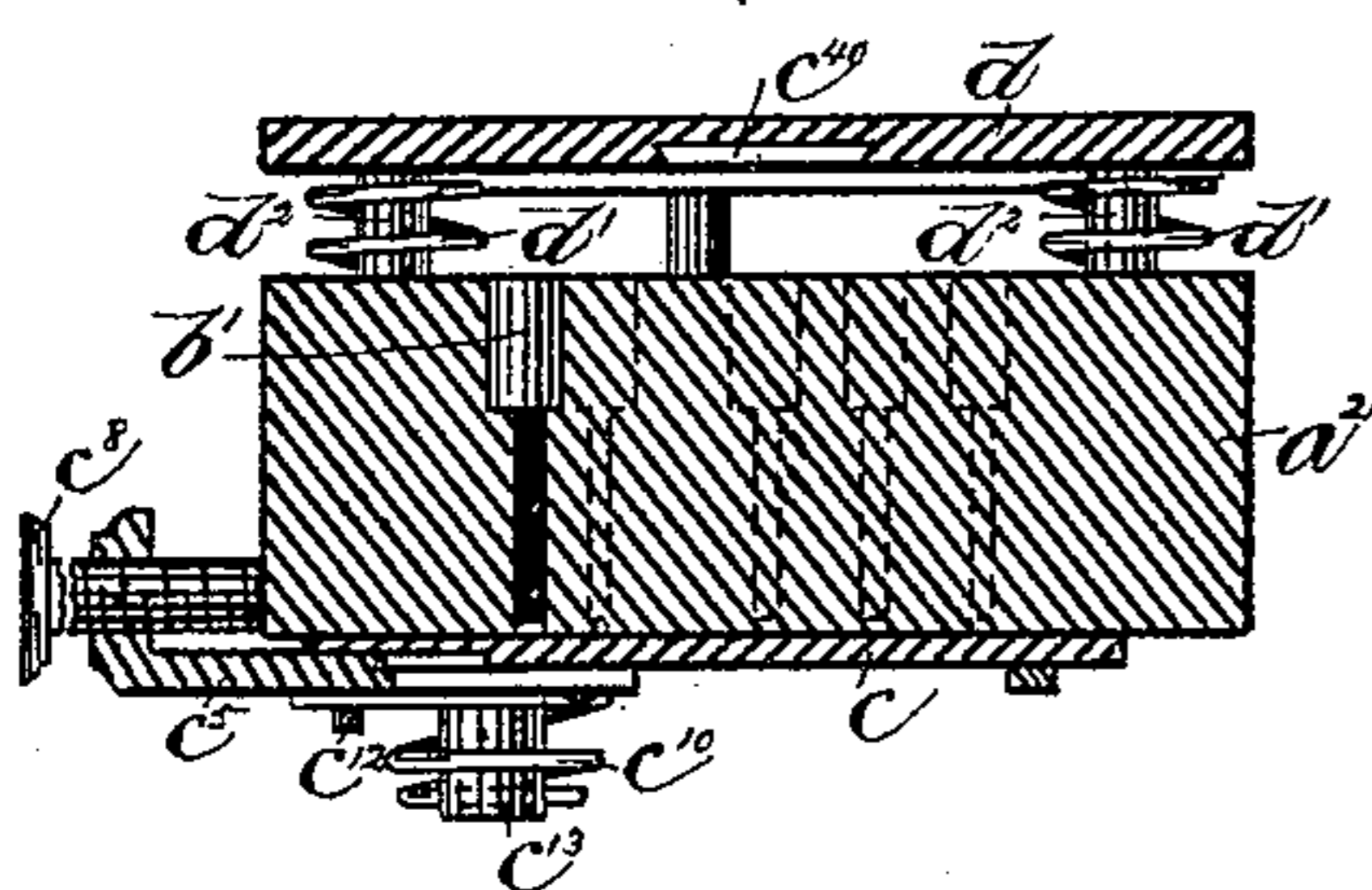


Fig. 10.

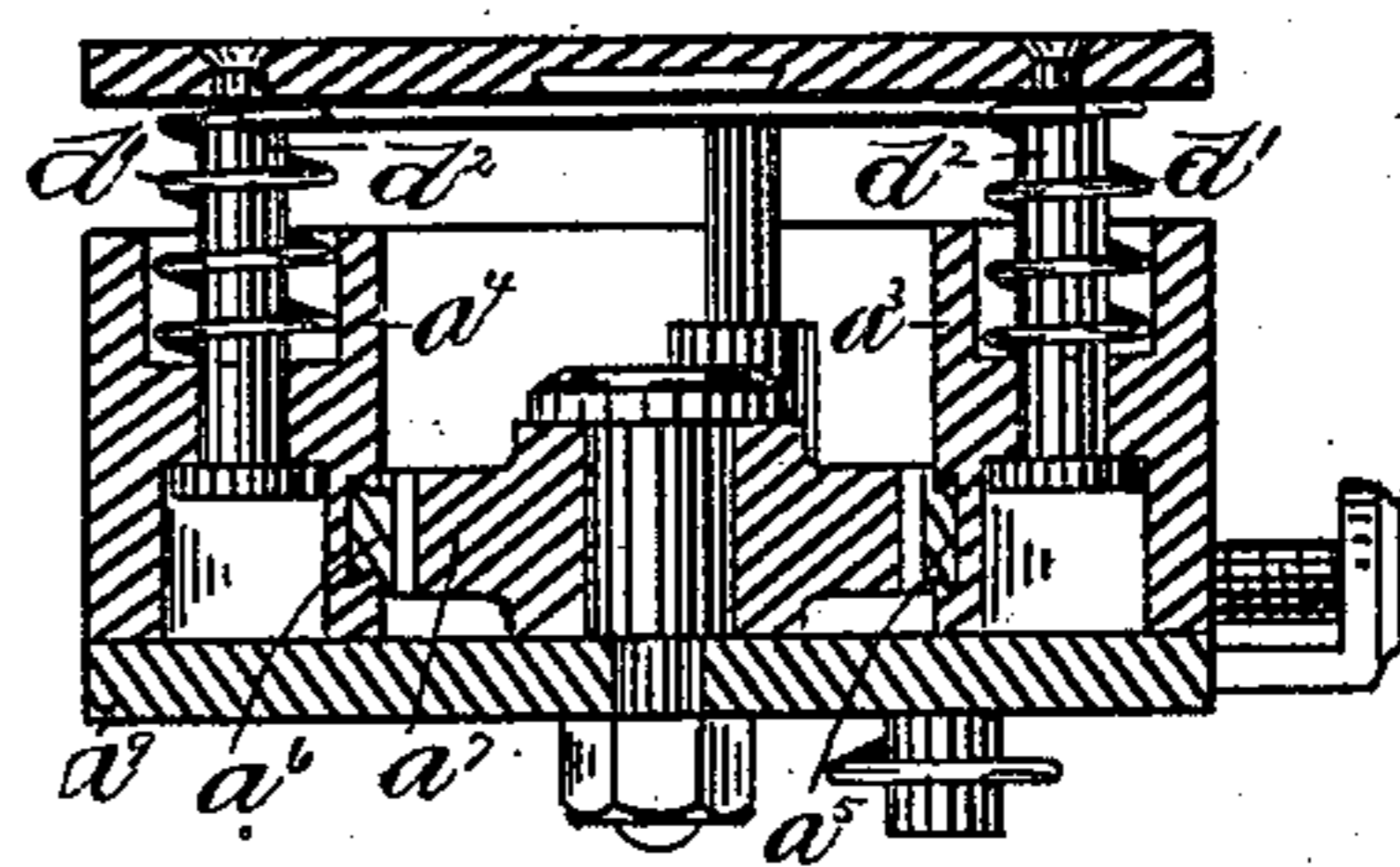


Fig-II.

WITNESSES

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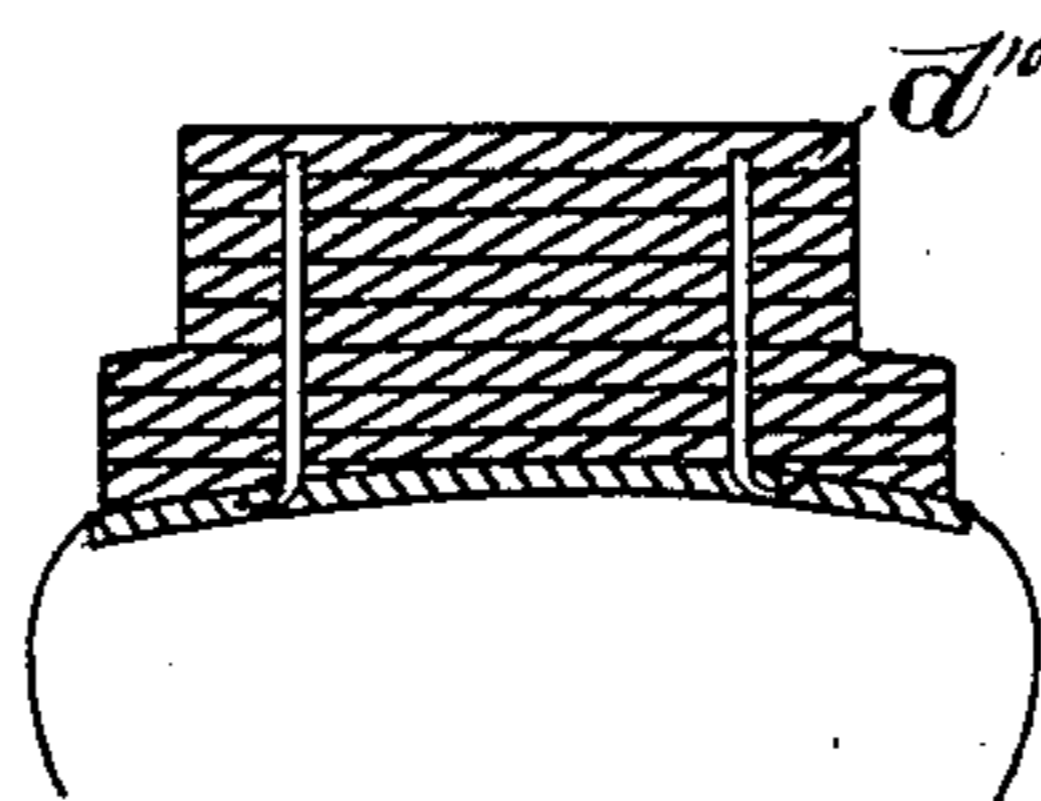


Fig. 12.

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UNITED STATES PATENT OFFICE.

WALTER S. JONES, OF LYNN, ASSIGNOR TO JOHN Q. A. WHITEMORE, OF BOSTON, MASSACHUSETTS.

HEEL-NAILING MACHINE.

SPECIFICATION forming part of Letters Patent No. 441,420, dated November 25, 1890.

Application filed July 1, 1890. Serial No. 357,327. (No model.)

To all whom it may concern:

Be it known that I, WALTER S. JONES, of Lynn, county of Essex, State of Massachusetts, have invented an Improvement in Heel-Nailing 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 relates to heel-nailing machines, and is herein shown as embodied in an attachment adapted to be employed on heel-nailing machines of any usual or well-known construction.

My invention has for its object to provide simple and efficient mechanism whereby heels may be nailed to boots and shoes with greater rapidity.

In accordance with my invention the top-lift plate located below the driver-block provided with drivers is operatively connected, as will be described, to a driver-plate located above the said driver-block, so that when one plate, as the driver-plate, is moved into operative position above the driver-block the top-lift plate is moved out of position below the said driver-block, and vice versa, the movements of the said plates being simultaneous.

Another feature of my invention consists in a novel construction of driver-block and driver fitted therein, and also in a novel construction of top-lift holder and gage.

The particular features of my invention will be pointed out in the claims at the end of this specification.

Figure 1 is an end elevation of a sufficient portion of a heel-nailing machine embodying my invention to enable it to be understood. Fig. 2 is a plan view, on an enlarged scale, of the attachment, shown separately with the top plate removed. Fig. 3 is an under side view of the attachment shown in Fig. 2; Fig. 4, an under side view of the top plate, showing the driver-plate in its full and dotted line positions; Fig. 5, a side elevation of the attachment and the top plate; Fig. 6, a longitudinal section on line $x x$, Fig. 2, the gear being shown in elevation and the top plate being in its elevated position; Fig. 7, a longitudinal section on the line $x x$, Fig. 2, showing the top plate in its lowest position and the heel nailed to the outer sole. Fig. 8, a longitudinal sec-

tion on the line $x x$, Fig. 2, showing the driver-plate withdrawn into its dotted-line position, Fig. 4, and the top-lift plate in its forward position ready to have the top lift applied, the rack-bar being in elevation; Fig. 9, a section on the line $x x$, Fig. 2, showing the top plate in its lowest position and the top lift applied to the heel, the rack-bar being shown in elevation; Fig. 10, a transverse section on the line $x' x'$, Fig. 2; Fig. 11, a transverse section on the line $x'' x''$, Fig. 2; and Fig. 12, a sectional detail showing the completed heel.

Referring to Fig. 1, A represents the framework of a heeling-machine, which may be of any usual or well-known construction, it being provided, as herein shown, with the pivoted jack a , upon which is placed the boot or shoe a' to be heeled.

The frame A has secured to it above the jack a my improved heel-nailing attachment, (shown best in Figs. 2 to 11, inclusive,) it consisting, essentially, of a block a^2 , having extended from one end arms $a^3 a^4$, provided with preferably dovetailed slots on their inner sides, in which are fitted rack-bars $a^5 a^6$, (see Figs. 2, 3, and 11,) which mesh with an intermediate gear a^7 , pivoted on a stud or bolt a^8 , extended through a cross-bar a^9 , secured to the under side of the arms $a^3 a^4$ near their outer end.

The rack-bar a^5 has operatively secured to it a driver-plate b , preferably made of sufficient size to cover the holes or openings extended through the block a^2 , and into which are placed the drivers b' , the said holes or openings being made at their upper end of larger diameter to form a shoulder b^2 , against which strikes the enlarged head b^3 of the said driver when the latter is forced down through the hole or opening to drive the nails into the heel b^4 .

The driver-plate is herein shown as secured to the rack-bar a^5 by means of a pin or stud b^5 , secured to its under side and extended into a socket or hole in an upright post b^6 on an arm b^7 , (see Fig. 2,) secured to or forming part of the rack-bar. The rack-bar a^6 has secured to it, as by screws c , the top-lift plate c' , (see Fig. 3,) having secured to it a top-lift holder, shown as a plate c^2 , provided with diverging arms c^3 to embrace the rounded portion of

the top-lift c^4 . The top-lift holder c^2 is fastened by a pin c^{12} to an adjusting-bar c^5 , preferably dovetailed in a slot c^6 in the top-lift plate. (See dotted lines, Fig. 3.) The bar c^5 is adjusted in its slot c^6 by a set-screw c^8 . The top-lift plate c' is also preferably provided with a bar c^9 on its side opposite to the holder c^2 , the said bar being secured, as herein shown, to a lug or ear c^{20} by a set-screw c^{21} , the said bar constituting a gage against which bears the substantially straight edge or side of the top lift to obtain the desired pitch of the heel. The top-lift holder c^2 is normally pressed forward, as herein shown, by a spring c^{10} , one end of which acts against the pin c^{12} and the other end of which is wound about and fastened to a stud or post c^{13} on the top-lift plate.

My improved attachment has co-operating with it a movable cover or top plate d , normally held elevated from the block a^2 by springs d' , encircling guide rods or posts d^2 , one at each corner of the plate, which are extended into suitable holes in the block a^2 and its arms a^3 a^4 . The top plate d is herein shown as provided with a longitudinal dovetailed slot c^{40} , (see Fig. 4,) in which is fitted the driver-plate b .

In operation the parts normally occupy the position shown in Figs. 5 and 6, the top plate d being elevated, the driver-plate b being in its forward position, the drivers being elevated by the nails d^5 , and the top-lift plate being withdrawn from below the block a^2 , the rack-bar a^5 being in its forward position and the rack-bar a^6 in its backward position. With the parts in this position the top plate d is moved down in any suitable manner, as by a foot-treadle, (not shown,) until the driver-plate b is brought in contact with the upper surface of the block a^2 , at which time the nails d^5 have been driven through the heel and into the outer sole d^6 and clinched, as clearly shown in Fig. 7. The operator removes the pressure upon the top plate, and the latter is restored to its normal or elevated position, as shown in Fig. 6, by the springs d' . The operator then pushes upon the handle d^7 , secured as herein shown to the rack-bar a^6 , and rotates the gear to withdraw the driver-plate from above the block a^2 into its dotted-line position, Fig. 3, and full line position, Fig. 8. As the rack-bar a^5 is moved outward to place the driver-plate in its inoperative position, the rack-bar a^6 is moved in the opposite direction, and the top-lift plate c , to which the top lift d^{15} has been previously secured, is placed above the heel in position to be spanked thereon. The top plate d is again lowered and brought into the position shown in Fig. 9 in engagement with the block a^2 , thus spanking or firmly securing the top lift on the heel and forming the completed heel. (Shown in Fig. 12.) As soon as the heel has been nailed the pressure is removed and the top plate d restored to its normal position,

and thereafter the boot or shoe is removed from the jack and a new one placed thereon and as soon as it is in position the operator pulls upon the handle to move the rack-bar a^5 forward and bring the driver-plate into its operative position. (Shown in Fig. 5.) It will thus be seen that heels may be nailed to boots and shoes with substantially great rapidity, thus increasing the output of the machine, besides effecting a very considerable saving in time and labor.

I claim—

1. In a heel-nailing machine, the combination, with a driver-block, of a driver-plate and a top-lift plate located at the opposite sides of the said block, and means, substantially as described, to connect and simultaneously move said plates in opposite directions to place them alternately in operative position with relation to the said block, substantially as described.

2. In a heel-nailing machine, the combination, with a driver-block, of a driver-plate and a top-lift plate located above and below said block, respectively, and means to alternately move the said plates in and out of line with the top and bottom, respectively, of said block, and a movable top plate above, and in which said driver-plate is moved, and springs to normally move the top plate away from the driver-block, substantially as described.

3. In a heel-nailing machine, the combination, with a driver-block, of a driver-plate and a top-lift plate located above and below said block, respectively, rack-bars to which said plates are respectively connected, and a gear in mesh with said rack-bars to move them in opposite directions simultaneously, substantially as described.

4. In a heel-nailing machine, the combination, with a driver-block, of a driver-plate located above said block, a rack-bar to which said plate is connected, a top-lift plate located below said driver-block and provided with an adjustable top-lift holder, a rack-bar to which the said top-lift plate is secured, and a gear in mesh with said rack-bars, substantially as described.

5. In a heel-nailing machine, the combination, with a driver-block, of a driver-plate located above said block, a rack-bar to which said plate is connected, a top-lift plate located below said driver-block and provided with an adjustable top-lift holder and with an adjustable gage, a rack-bar to which the said top-lift plate is secured, and a gear in mesh with said rack-bars, substantially as described.

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

WALTER S. JONES.

Witnesses:

JAS. H. CHURCHILL,
EMMA J. BENNETT.