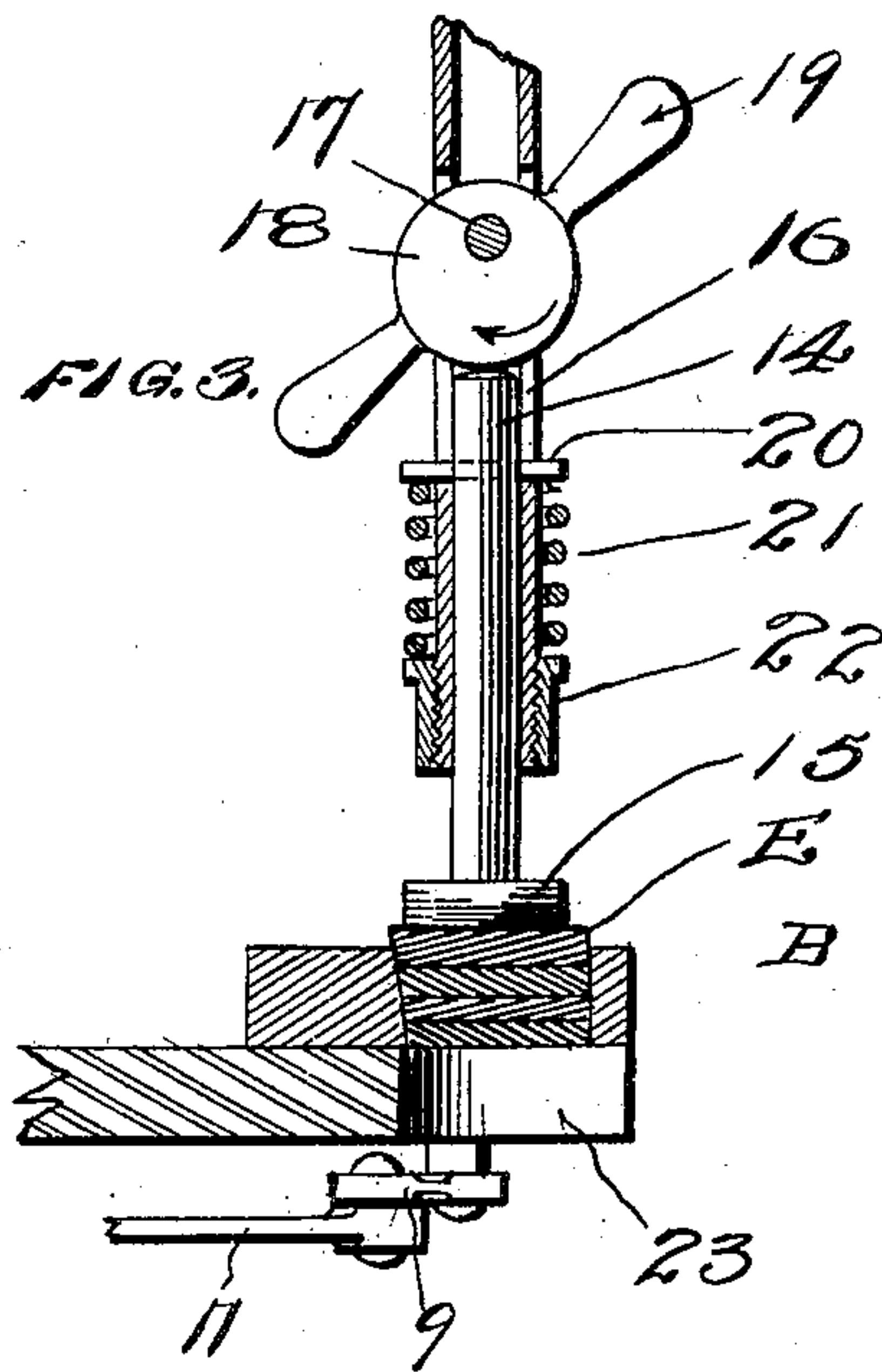
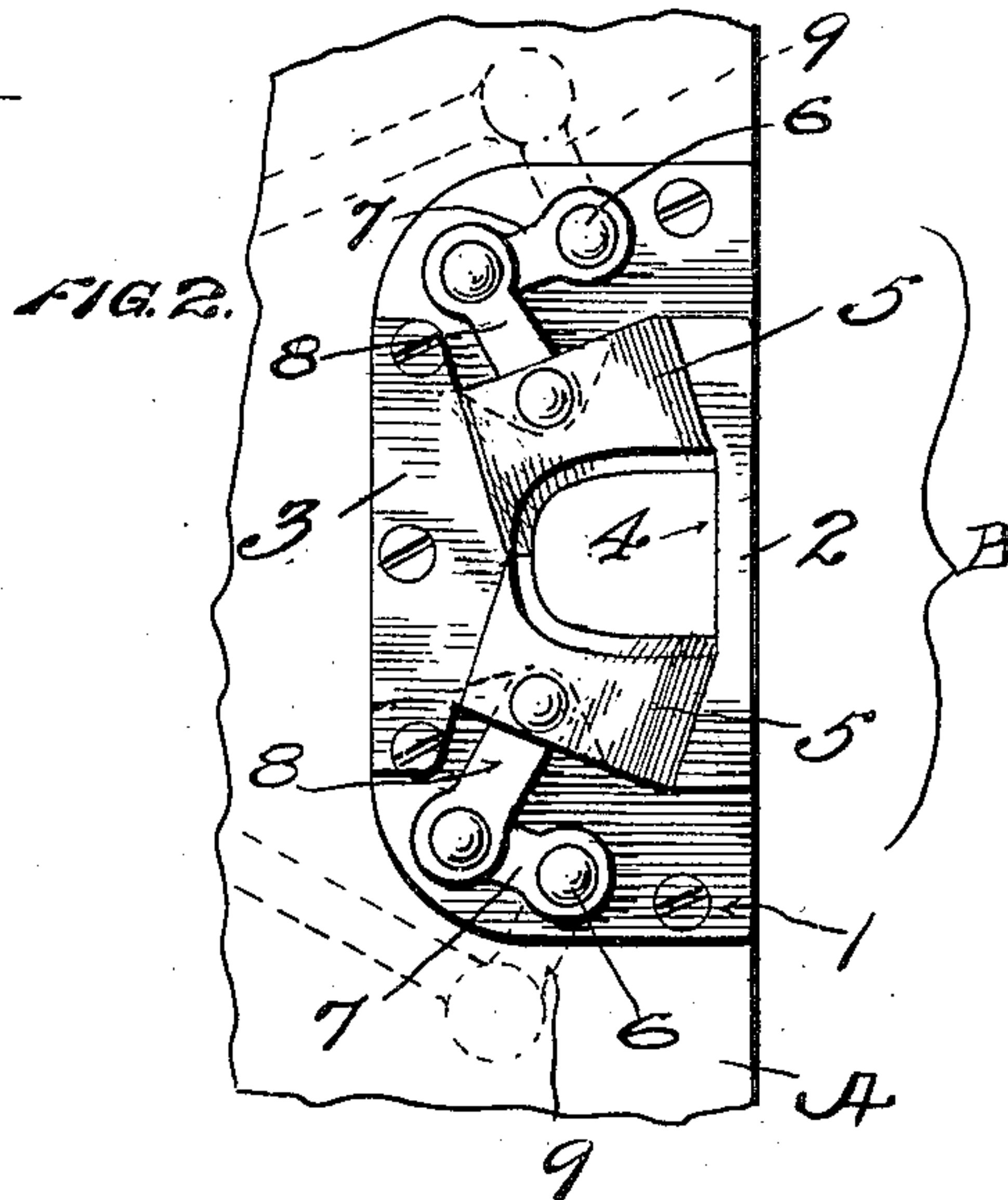
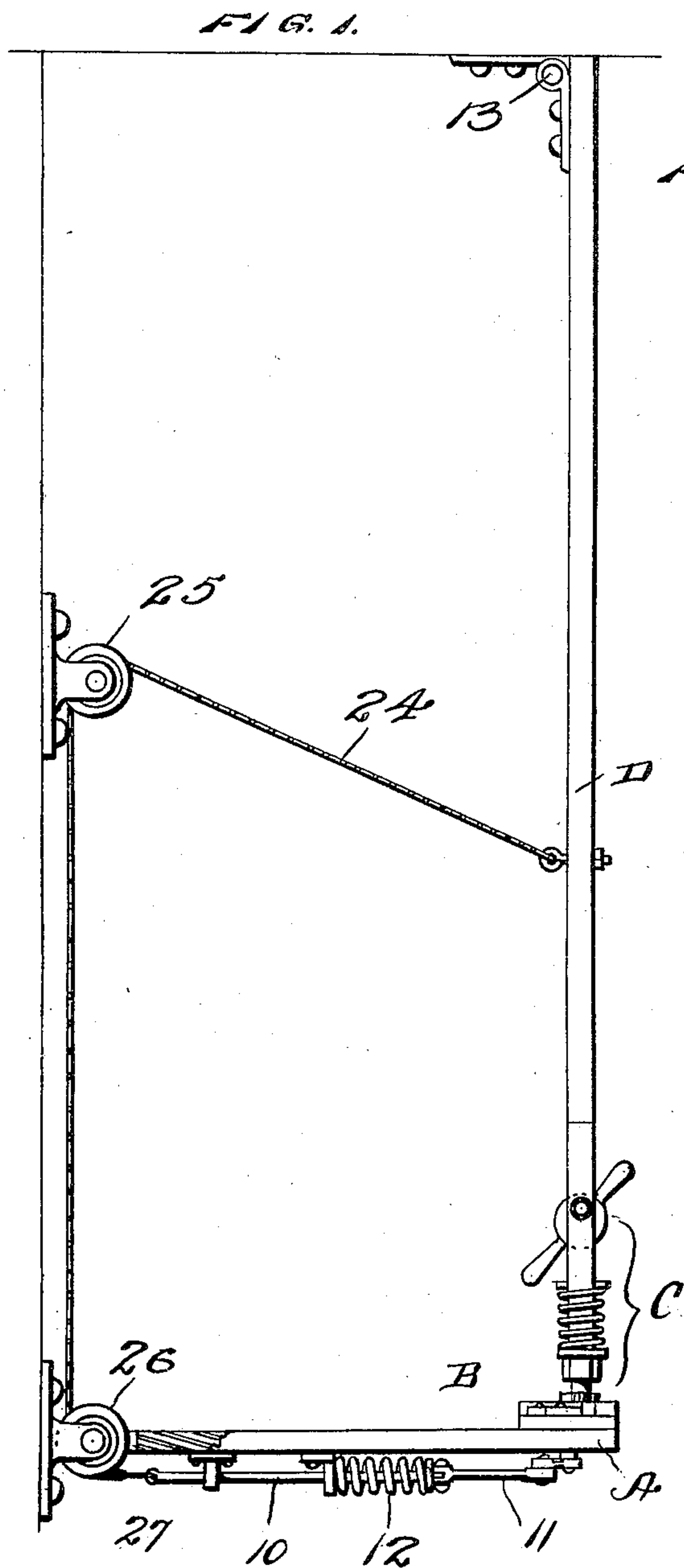


A. M. SIMMONS.
HEEL BUILDING MACHINE.
APPLICATION FILED MAY 15, 1908.

914,462.

Patented Mar. 9, 1909.

2 SHEETS—SHEET 1.



WITNESSES
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FIG. 4.

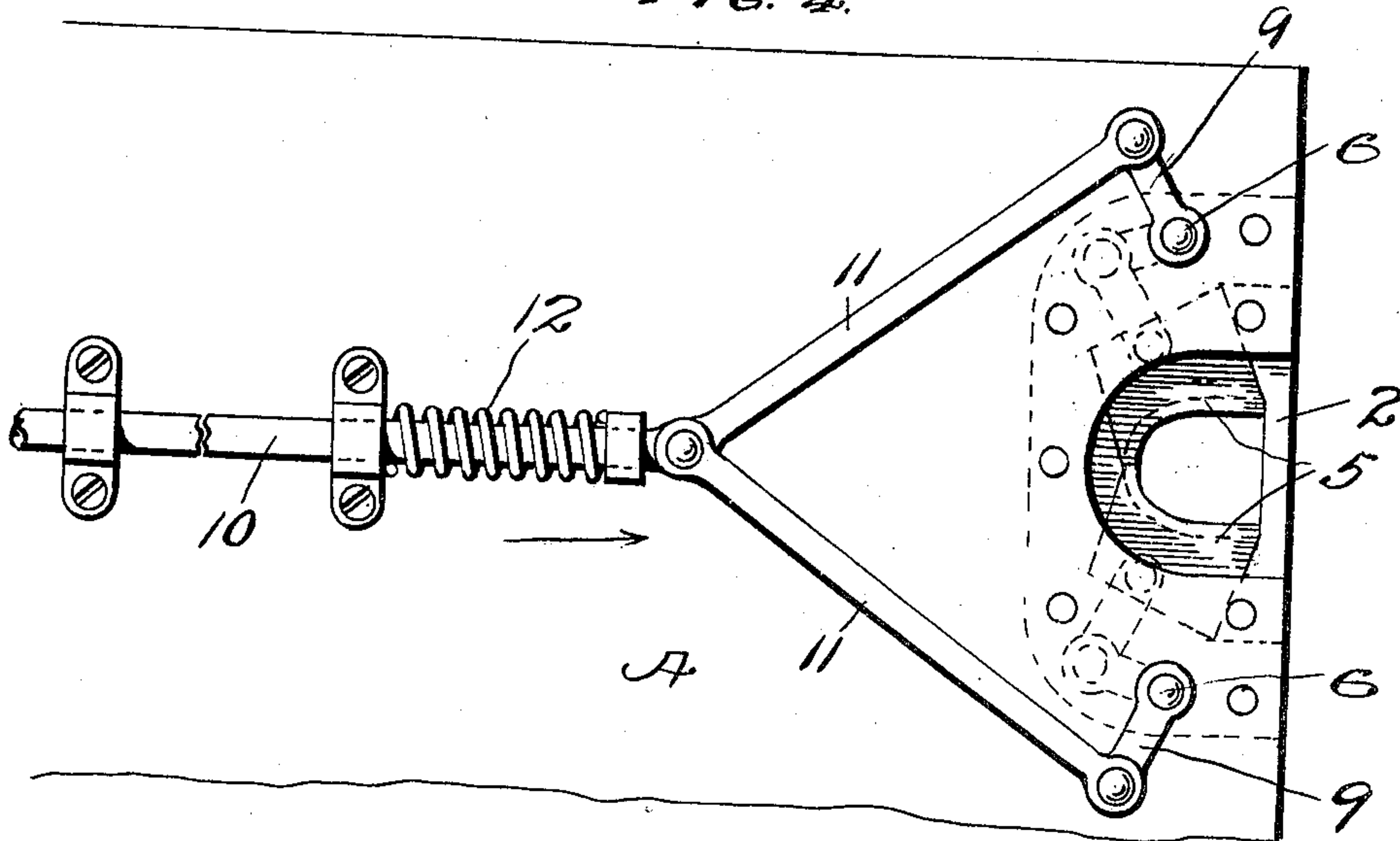
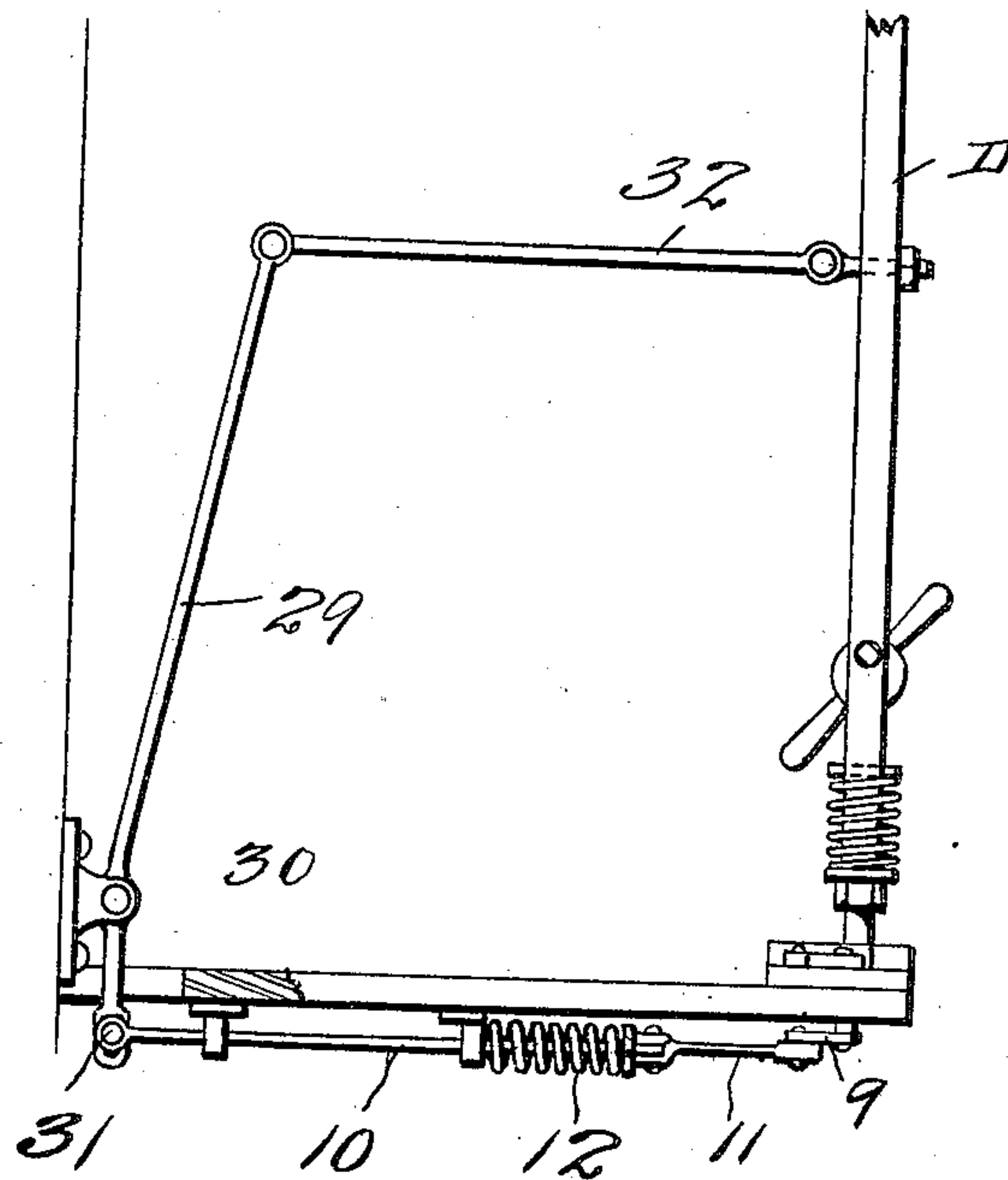


FIG. 5.



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UNITED STATES PATENT OFFICE.

ALONZO M. SIMMONS, OF MARLBORO, MASSACHUSETTS.

HEEL-BUILDING MACHINE.

No. 914,462.

Specification of Letters Patent.

Patented March 9, 1909.

Application filed May 15, 1908. Serial No. 433,105.

To all whom it may concern:

Be it known that I, ALONZO M. SIMMONS, a citizen of the United States, and resident of the city of Marlboro, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Heel-Building Machines, of which the following is a specification.

My invention relates to shoe machinery and especially to machines for heel building.

In a certain class of heel building machines the heel is held in such a way that the bottom is accessible for nailing. The heel is clamped at the top. This clamping has generally been accomplished by means of a swinging bracket but it has been found that this bracket gets in the way of the operator and greatly interferes with his work. The apparatus is generally on a bench and for convenience the operator arranges the heel lifts in different sizes in small bins which are placed on the bench. The swinging bracket referred to occupies valuable bench space which could otherwise be used for the bins. If the bracket is dispensed with the bins can be placed all over the bench around the heel clamp and the operator can work with both hands, taking different lifts from the different bins and placing them in the clamp.

My invention therefore comprises a top clamp which may be gotten entirely out of the operator's way when it is released so that the bench is not encumbered and he may fill the side clamp with lifts to the best advantage. In the exemplification of the invention hereinafter described the top clamp is carried by a swinging carrier or post. This post is preferably hinged or otherwise mounted at a considerable height above the bench, conveniently on or near the ceiling so that when it is swung back it is entirely out of the operator's way.

The invention further comprises a side clamp on the bench and means actuated by movement of the post for tightening and loosening the side clamp.

The accompanying drawing shows the best exemplifying structure embodying the invention which I have up to the present time devised, but it is to be understood that wide changes in structure may be made without departing from the invention.

Figure 1 is an elevation looking from the end of a bench to which the invention is applied. Fig. 2 is a plan view of a part of

the front edge of the bench showing the side clamp. Fig. 3 is a vertical section in a plane transverse of the bench showing the side clamp and a portion of the post carrying the top clamp. Fig. 4 is a detail bottom view of the side clamp actuating means, and Fig. 5 is a detail view similar to Fig. 1 showing a modified form of the invention.

In the drawing, reference character A designates in general the bench, B the side clamp, C the top clamp, D the post and E the heel consisting as usual of several lifts.

The side clamp consists of a plate 1 carrying front guide 2 and back guide 3. The straight central portion 4 of the front guide receives the breast of the heel. Clamping jaws 5 are arranged to reciprocate between the guides and their inner faces are shaped properly to conform to the sides and back of the heel. The ways in which the jaws move, as will be noted, are angularly arranged so that when the jaws approach each other and clamp the heel, the breast of the heel is forced against the breast of the front guide and the whole heel is securely held in respect to movement in a horizontal plane. Plate 1 carries short shafts 6 which extend through the bench. At their upper ends the shafts are provided with arms 7 and each of these arms is connected by a link 8 with the adjacent jaw 5. Below the bench shafts 6 are provided with other arms. Arms 7 and 9 of each of the short shafts constitute together with the shaft a bell crank. Below the bench also is reciprocably mounted a rod 10 which is connected by links 11 with arms 9 of the bell cranks. A spring 12 compressed between a collar on rod 10 and a fixed abutment urges the rod in the direction shown by the arrow, Fig. 4. If rod 10 is moved to the left, as seen in Fig. 4, links 11 move with it, rotating shafts 6 by means of their arms 9. Arms 7 thereupon move links 8 in such a direction that jaws 5 approach each other, clamping the heel between them and against the front clamp. When rod 10 is released spring 12 moves the rod in the opposite direction and releases the heel.

Post D is hinged, as shown in Fig. 1, at 13 at a considerable elevation above the bench so that it may swing in a transverse plane. Or the post may be provided with a ball and socket mounting or other form of support so that it may swing toward and away from the side clamp. The post con-

veniently takes the form of a tube in the lower end of which is a plunger 14, the lower end of which carries a cap 15 adapted to engage the top of the heel. In the post 5 is a slot 16 within which is mounted on a pin 17 an eccentric cam 18, the edge of which engages the upper end of plunger 14. The cam is rotated by suitable handles 19. A pin 20 passes through plunger 14 and ex- 10 tends through the slot and a spring 21 compressed between the pin and a fixed abutment 22 of the post serves to urge the plunger upward. To clamp the top of the heel the post is swung into position so that 15 cap 15 is directly over the heel and cam 18 is rotated to the position shown in Fig. 3, thus forcing down plunger 14 against the action of spring 21. The top and side clamps being in closed position, the heel 20 may be nailed from below, the bench being cut away at 23 to permit this operation. After the heel is nailed the top clamp may be released by rotating cam 18 in the direc- 25 tion shown by the arrow, permitting plunger 14 and cap 15 to rise under the influence of spring 21 and the post with the clamp is then swung back against the wall entirely out of the way of the operator. The side clamp then being released the completed 30 heel is removed and another inserted and so on.

It is desirable to provide means by which the movement of post D to active position tightens the side clamp. I have provided 35 such means as a part of my invention. A chain 24 connected at one end to the post passes over pulleys 25, 26, so arranged as to be out of the way at the back of the bench, and at its other end is connected at 27 to 40 the end of rod 10. When post D is moved forward chain 24 runs over the pulleys and pulls rod 10 toward the left, as seen in Figs. 1 and 4, and tightens the side clamp as has been described. The clamping of the heel 45 after it has been put in position is therefore limited to two movements,—the swing-

ing forward of post D and the rotation of cam 18.

Fig. 5 shows a modification of the connection between post D and rod 10, con- 50 sisting of the substitution of a lever 29 fulcrumed at 30 and connected to rod 10 at 31 for the chain and pulleys of Fig. 1. Lever 29 is connected to post D by a link 32. If this link is rigid it tends to limit the back- 55 ward movement of the post. The link may, therefore, consist of a flexible member such as a chain or cord so that the rearward movement of the post is not interfered with.

It will be noted that the side clamp is ar- 60 ranged so that the breast of the heel is presented toward the operator. This arrangement is an improvement over previous machines in which the heel is arranged with the breast away from the operator. The 65 heel can be more advantageously worked upon in the position in which it is shown in my invention.

I claim:

1. The combination of a side clamp, a top 70 clamp carrier pivotally supported substantially above the side clamp, a top clamp mounted on the carrier, means for engaging the top clamp, a connection intermediate the carrier and the side clamp serving to 75 cause engagement of the side clamp when the carrier is moved to operative position and means constantly tending to disengage the side clamp and to retract the carrier from operative position. 80

2. The combination of a bench having a portion cut away, a plate thereon, guides on the plate, jaws pivotally mounted in the guide, jaw operating means, a post pivoted 85 substantially above the plate, a top clamp carried by the post and a connection between the post and the jaw operating means.

ALONZO M. SIMMONS.

Witnesses:

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