

(No Model.)

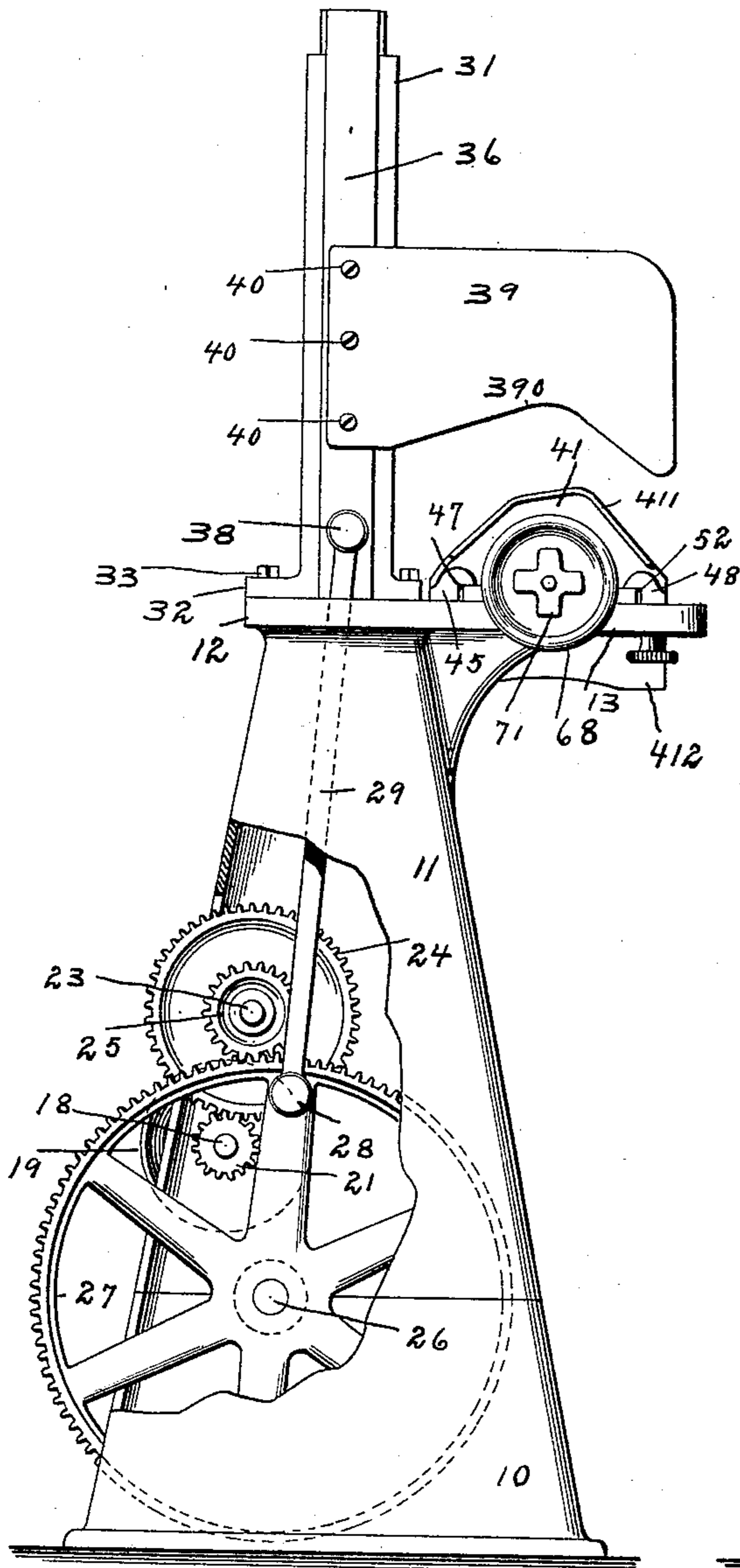
3 Sheets—Sheet 1.

J. N. HEALD.
CRIMPING MACHINE.

No. 500,128.

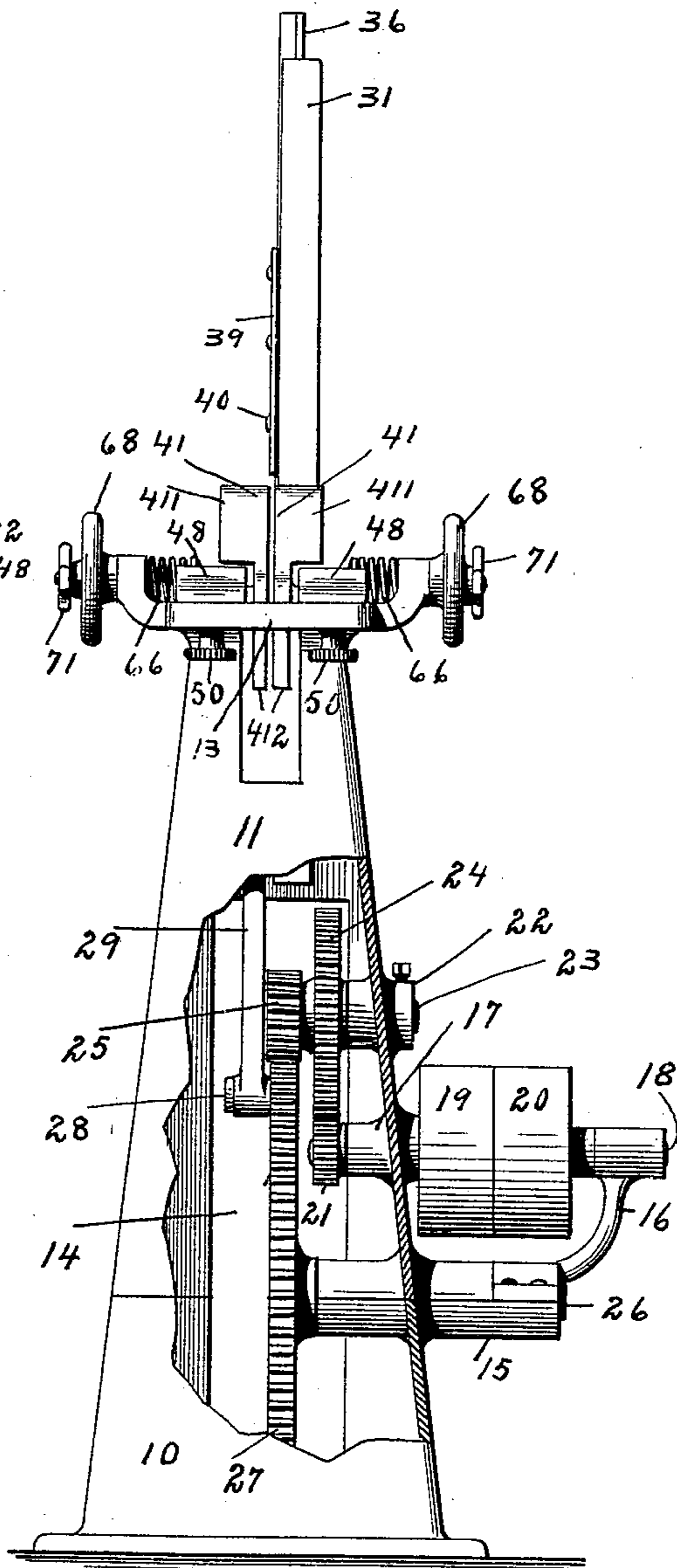
Patented June 27, 1893.

Fig. 2.



Witnesses
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Fig. 1.



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(No Model.)

3 Sheets—Sheet 2.

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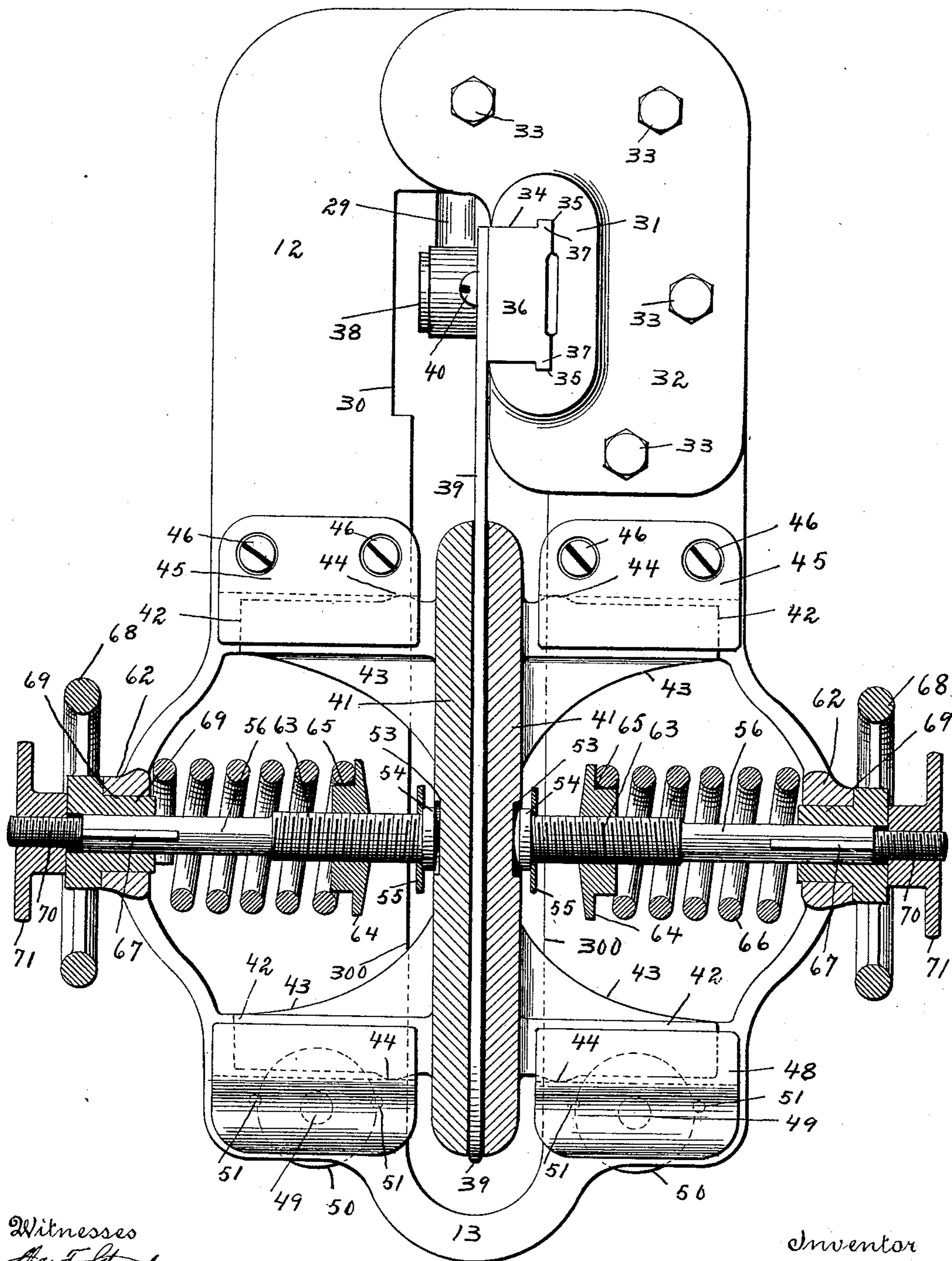


Fig. 3.

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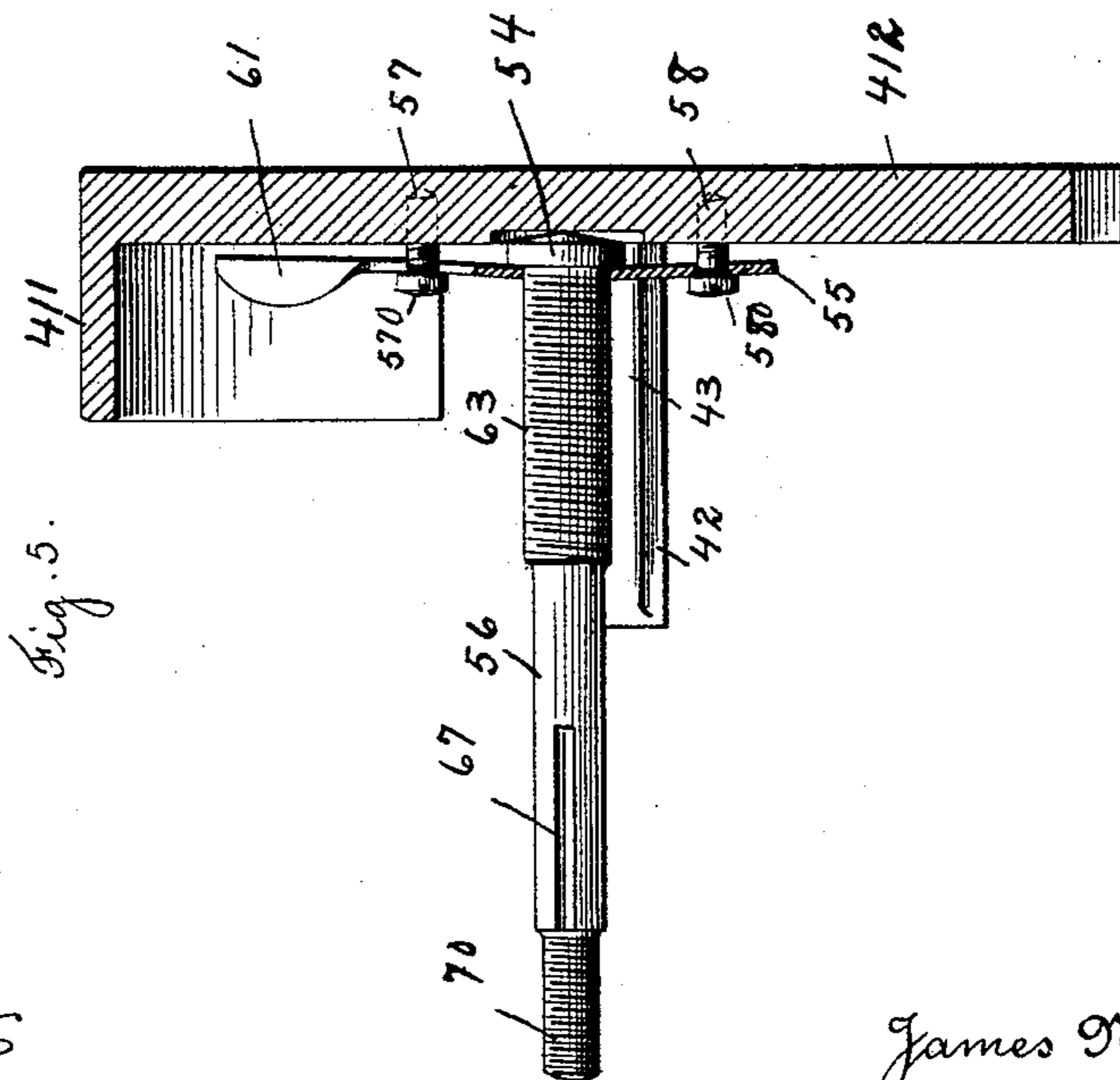
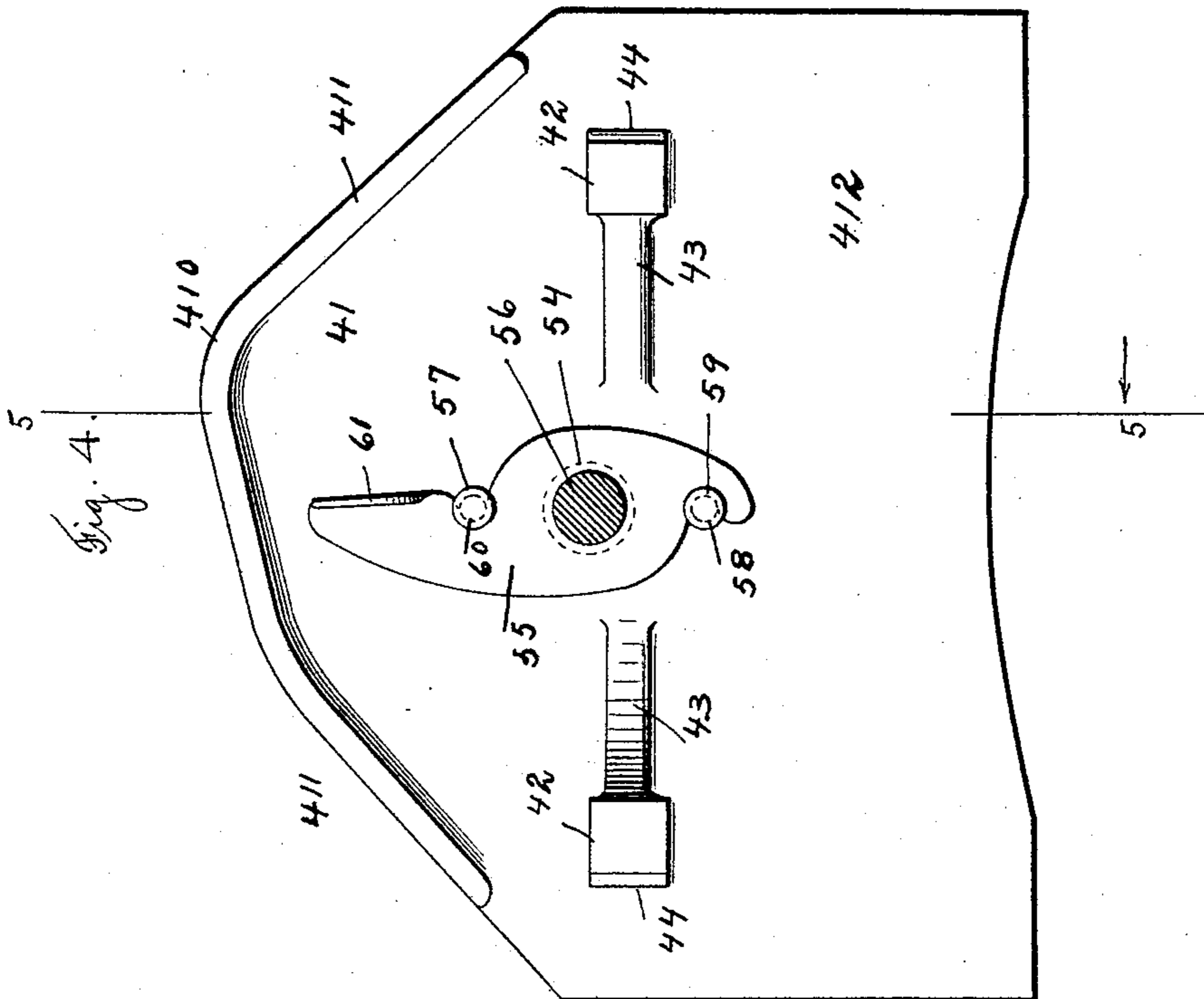
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3 Sheets—Sheet 3.

J. N. HEALD.
CRIMPING MACHINE.

No. 500,128.

Patented June 27, 1893.



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UNITED STATES PATENT OFFICE.

JAMES N. HEALD, OF BARRE, MASSACHUSETTS.

CRIMPING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 500,128, dated June 27, 1893.

Application filed March 6, 1893. Serial No. 464,739. (No model.)

To all whom it may concern:

Be it known that I, JAMES N. HEALD, a citizen of the United States, residing at Barre, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Boot or Shoe Crimping Machines, of which the following is a specification.

The aim of this invention is to improve the construction and arrangement of parts in leather-working machines, which are adapted to crimp the uppers of boots or shoes; and to this end, the invention consists of the device described and claimed in this specification, and illustrated in the accompanying three sheets of drawings, in which—

Figure 1 is a front elevation of a machine embodying my improvements, the framing being broken away to show the driving gearing. Fig. 2 is a side elevation, the framing in this figure, also, being broken away to show the driving gearing. Fig. 3 is a plan view of the leather manipulating parts of the machine, the jaws being shown in section on an enlarged scale. Fig. 4 is a side elevation of one of the jaws, and Fig. 5 is a sectional elevation of the jaw shown in Fig. 4, taken on the line 5—5, looking toward the left.

My improved machine consists of a reciprocating knife or blade, which is adapted to pass between two jaws, which, preferably are made yielding and adjustable, as hereinafter described, and the reciprocating blade or knife is adapted to take the upper, and draw or press the same down between the two jaws, and thus crimp, or give the upper the desired shape.

The machine herein shown is one which I have practically built for carrying out this operation, and I will now describe this machine.

Referring to the drawings and in detail 10 and 11 represent a suitable base or framing, upon which the operating parts of my machine are arranged. On the top of the framing 11 is arranged a suitable table 12, which has the extension 13 extending toward the front of the machine, as shown. The backs of the framings 10 and 11 are cut away as at 14, so that the gearing, hereinafter described, can, if desired, project out beyond the back of the machine. Formed between the fram-

ings 10 and 11 is a suitable bearing 15, and bolted on this bearing 15 is an extending bracket 16, which forms a bearing, which is set in line with a bearing 17 formed in the side of the framing 11, as shown. Mounted in these two bearings 16 and 17 is a shaft 18, which may carry tight and loose pulleys as 19 and 20, a friction clutch, or any other suitable means by which power can be intermittently applied to the machine; and, if desired, from this tight and loose pulley or friction clutch, a treadle can be extended to the front of the machine, so that the same can be controlled by the foot of the operator, in the usual manner, not necessary here to show, or describe at length.

On the inside end of the shaft 18, is mounted a pinion 21. A bearing 22 is, also, formed in the framing 11, above the bearing 17, and in this bearing 22 is fastened or secured a stud 23, and on this stud 23 revolves the compound gear 24 25, the large gear 24 of which meshes with, and engages the pinion 21.

In the bearing 15, before referred to, is journaled a shaft 26, on the inside end of which, is secured the large gear 27, into which gear 27, the pinion 25, before referred to, meshes. By this means, it will be seen, that the large gear 27 will be given a strong and powerful movement from the shaft 18. The gear 27 has a crank-pin 28 mounted in the side of the same, as shown, and on this crank-pin is pivoted the pitman or connecting rod 29, which extends up through a suitable hole 30 cut in the table 12, as shown. A bracket 31 having a large and strong base 32 is secured to the top of the table 12 by means of bolts 33, as shown. The bracket or standard 31 is cut or planed away as at 34 and 35, to form a guide-way, as shown, and fitting into this guide-way is the reciprocating slider 36, which has extending ears 37, which fit into the grooves 35, whereby the slider 36 is nicely held in place. To the lower end of the slider 36 is secured a crank-pin or stud 38, to which crank-pin or stud, the upper end of the pitman or connecting-rod 29 is secured, by which means, as the gear 27 is revolved, the slider 36 will be reciprocated up and down in the bracket or standard 31.

Secured to the side of the slider 36 is the knife or blade 39, which is held to the slider 36 by means of screws as 40. The under side

of this blade 39 is shaped or cut away as at 390 to any desired form, so that the same will crimp, or give the upper any desired shape.

Mounted on the extension 13 of the table 12 are the two jaws 41, each of these jaws 41 having two extending ribs or supports 42, which are suitably braced by means of ribs 43, and these ribs or supports 42 have extending rounded portions or beads 44, as shown. The rear ribs 42 of the jaws are secured to the table 12 by means of clips 45, which are secured to the table 12 by means of screws 46, which clips are under-cut as at 47, and extend over and hold the ribs 42 in place. It will be seen that the beads 44 are the only portions of the ribs or supports 42 that bear on the vertical faces of the clips, and this is useful for a purpose hereinafter noted. The front ribs 42 of the jaws 41 are held in place by means of clips 48, which are under-cut as at 52, which clips 48 are secured to the table extension 13 by means of screws 49, which extend up through the under side of the table, as shown, and are tapped into the clips 48, and these screws 49 may have suitable handles or knobs 50, as shown. The clips 48, preferably have two pins 51, which fit into holes in the table extension 13, whereby the clips 48 may be accurately and nicely set in place. It will be seen, also that the beads 44 of the front ribs 42 are the only portions of the front ribs that bear on the vertical faces of the clips 48. By this means, it will be seen, that the jaws can yield or spring laterally to accommodate themselves automatically to the varying thickness of the leather to be crimped, as the jaws, being guided only by these two rounded ribs or projections 44, are free to yield or turn about any point.

When it is desired to remove one set of jaws to insert another, the same can be readily done by removing the front clips 48, when the jaws can be slid forward, and lifted out of the machine. The extension 13 of the table 12 is cut away nearly to its outermost limit, as at 300, so as to allow the blade to pass down through the jaws 41. The jaws 41 are extended down below the holding or retaining lips or ribs 42, and through the table extension 13, as at 412. The tops of these jaws are shaped as desired, so that the leather will be nicely crimped between the jaws and the blade, as at 410, and the jaws have ribs 411 extending outward from their upper faces as shown, so that the leather will be guided nicely down between the jaws, around the blade 39.

The jaws are adjusted and held as follows: The jaws have circular recesses 53 cut away in the sides of the same, into which recesses, the slightly crowning heads 54 of the screws 56 fit, and these heads 54 are held in place in the jaws 41 by means of the spring clips 55, which spring clips 55 are mounted on the threaded portion 63 of the screw 56. These spring clips 55 are adapted to engage screws

57 and 58, which are tapped into the jaws 41, as shown; and these screws have heads 570 and 580, as shown, under which the clips are adapted to fit. The clips have suitable recesses 59 and 60 that are adapted to fit in under the heads of the screws, and the clips may have a suitable finger piece as 61, by which they may be operated. Thus, by reference to Fig. 4, it will be seen that the clip is moved so as to engage the screws 57 and 58, whereby the jaw 41 will be nicely and securely held to the head 54 of the screw; but so that the screw can turn between the clip and the jaw. By taking hold of the finger piece 61 of the clip, and moving the same to the left, the clip will disengage the screws 57 and 58, whereby the jaw will be disengaged from the screw 56, and can be removed from the machine. The sides of the table extension 13 are extended up so as to form bearings 62, as shown, fitting into which bearings are the extending finished sleeves 69, of the hand-wheels 68, which hand-wheels 68 have key-ways, which engage the keys 67, secured in the screws 56.

Threaded on the screw-threaded portion 63 of the bolts 56 are the collars or nuts 64, which have the flanged portions 65, into which the springs 66 fit. These springs 66 are heavy ones, and bear on the bearings 62, and on the nuts 64. The outer ends of the screws 56 are screw-threaded as at 70, and tapped on these screw-threaded portions 70 are the star-wheels 71.

The operation of this adjusting mechanism is as follows: It will be seen that the spring 66 bearing on the fixed bearing 62 and the collar 64 tends to press the jaws 41 together, and that this movement of the jaws is limited by the hand-wheel 71 coming against the hand-wheel 68. Therefore, when it is desired to adjust either or both of the jaws relatively to each other or relatively to the reciprocating blade or knife 39, the star-wheel or star-wheels 71 are turned, which will move the jaw or jaws 41 in or out, as desired. The jaws are yieldingly pressed toward each other by the springs 66, and when it is desired to adjust the pressure between the jaws, the hand-wheel or hand-wheels 68 are turned. This will turn the screw or screws 56, and will move the nut or nuts 64 on the threaded portion 63 of the screw or screws 56, the nuts 64 not rotating on account of the pressure against the same from the springs 66. Thus, if it is desired to hold a jaw with more pressure toward the blade 39, the hand-wheel 68 is rotated so as to draw the nut 64 nearer to the bearing 62, when the spring 66 will be tighter compressed, and will thereby exert more pressure on the nut 64, and thereby more pressure on the jaw. By this simple and efficient adjusting mechanism, the jaws can be adjusted bodily, and the pressure that holds the jaws up to their work, can be nicely adjusted.

The operation of my machine is apparent from the foregoing description, and is, briefly

speaking, as follows: The operator places the upper on top of the jaws, and then starts the machine. If desired, the usual stops, by which the leather can be nicely set in place may be used, but, in general practice, after a time, the operator becomes so skilled in placing the leather, that the stops are not required. The knife 39 will now descend between the jaws, and will crimp or draw the upper down between the jaws, and will give the upper its desired shape. When the knife 39 has passed down between the jaws, the upper can be removed from the blade, or allowed to drop out of the machine. It will be seen that the knife 39 can be easily removed, and another one substituted, and that the jaws 41 can be readily changed, whereby the machine can be quickly adapted to different kinds and styles of work. Also, it will be seen that, by the mechanism before described, the jaws can be nicely set relatively to the blade, and the pressure that they exert on the upper, as the same is drawn between the jaws, can be nicely varied. Thus my machine is extremely efficient, simple, and accurate for the desired purpose, and the same may be used in other kinds of work, besides that of crimping uppers, as before described.

Modifications of the device herein shown and described, may be made by a skilled mechanic without departing from the scope of my invention, as expressed in the claims.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination in a crimping machine of the reciprocating blade or knife, of the two jaws between which said knife is adapted to move, of adjusting screws for said jaws, and spring clips as 55 mounted on the ends of said screws, adapted to detachably engage said jaws, substantially as described.

2. The combination in a crimping machine of the reciprocating knife or blade, of the two jaws between which said knife or blade is adapted to move, of adjusting screws for the said jaws, of the spring clips mounted on said adjusting screws, of the screws or pins 57 and 58 mounted in said jaws, said spring clips having recesses adapted to snap under the heads of said screws or pins whereby the adjusting screws may be detachably secured to the jaws, substantially as described.

3. The combination in a crimping machine of a reciprocating knife or blade, of the two

jaws between which said blade is adapted to move, of the screws for adjusting said jaws, of the nuts tapped on said screws, of springs arranged between said nuts and a fixed part, of means for moving said screws longitudinally, and means for rotating said screws, whereby the jaws may be adjusted, and the pressure that the springs exert on the jaws, adjusted, substantially as described.

4. The combination in a crimping machine of the reciprocating blade or knife, of the two jaws between which said knife or blade is adapted to pass, of the screws 56 connected to adjust said jaws, said screws having the threaded portions 63 and 70, of the nut 64 tapped on the threaded portion 63, of the fixed bearings 62, and the nut 64 of the hand-wheel 68 keyed to said screw, and of the hand-wheel 71 tapped on the threaded portion 70 of the screws, substantially as described.

5. The combination in a crimping machine of the reciprocating blade or knife, of the jaws between which said knife or blade is adapted to pass, said jaws having laterally extending ribs or supports, and clips secured to the frame of the machine engaging said ribs, and thus holding the jaws in place, substantially as described.

6. The combination in a crimping machine of the reciprocating blade or knife, of the two jaws between which said knife is adapted to move, said jaws having extending ribs or supports, of the fixed clips holding said jaws at the rear, and removable front clips holding said jaws at their front positions, substantially as described.

7. The combination in a crimping machine of the reciprocating blade or knife, of the two jaws between which said knife is adapted to pass, each of said jaws having two extending ribs or supports as 42, and beads or heads 44 on said extending ribs or supports, of the clips 45 adapted to engage the rear ribs 42, and of the clips 48 adapted to engage the front of said ribs, the heads or beads 44, engaging the vertical faces of said clips, whereby said jaws are adapted to automatically adjust themselves, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JAMES N. HEALD.

Witnesses:

L. T. HEALD,
FRED. JOHNSON.