

No. 731,399.

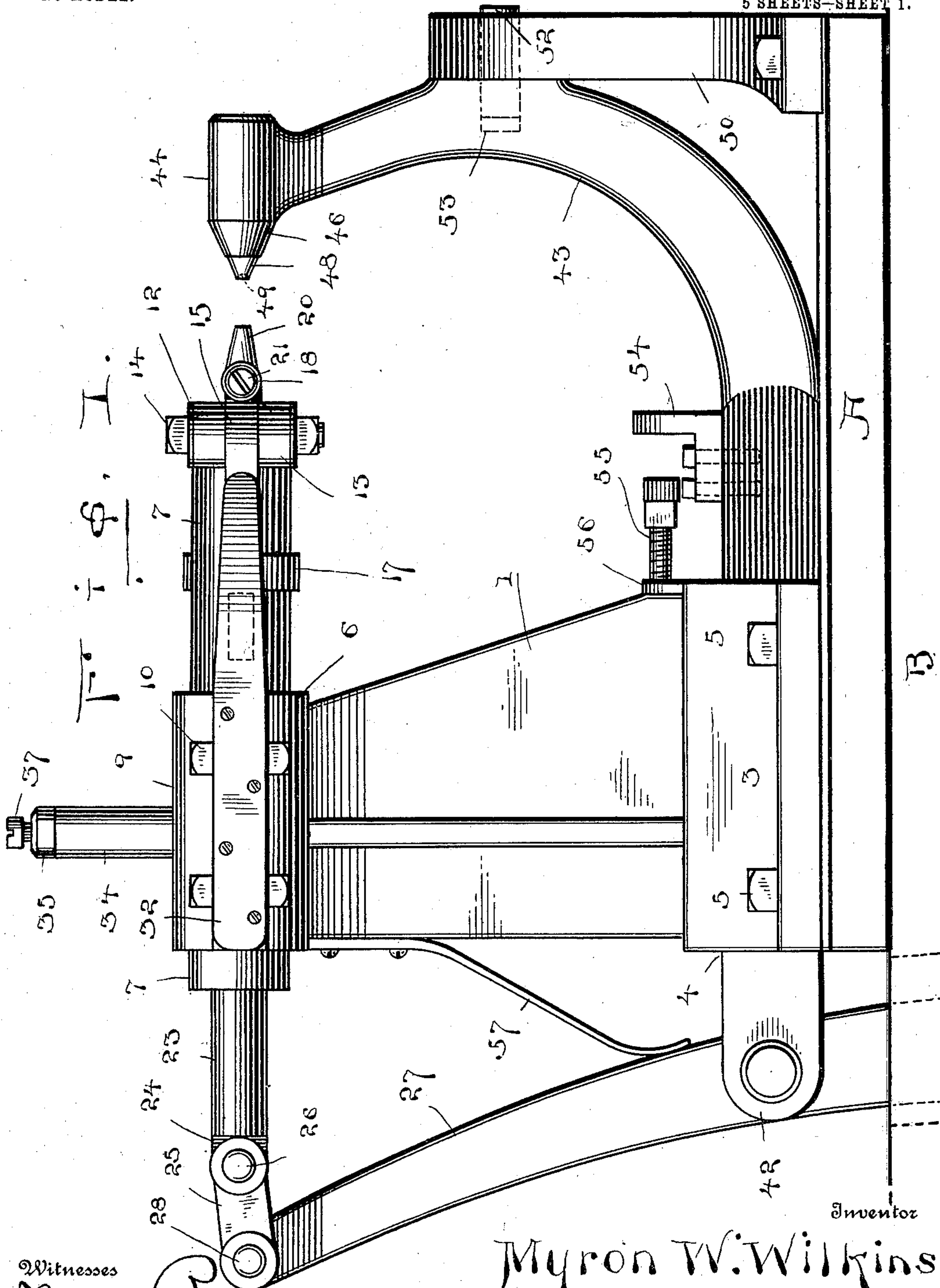
PATENTED JUNE 16, 1903.

M. W. WILKINS.
RIVETING MACHINE.

APPLICATION FILED MAY 28, 1902.

NO MODEL.

5 SHEETS—SHEET 1.



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Fig. 2.

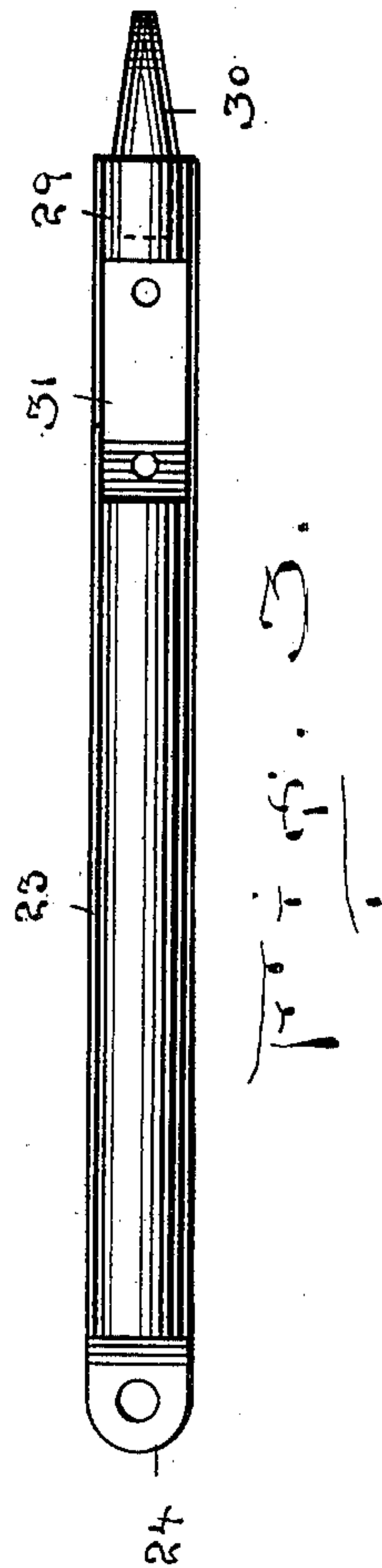
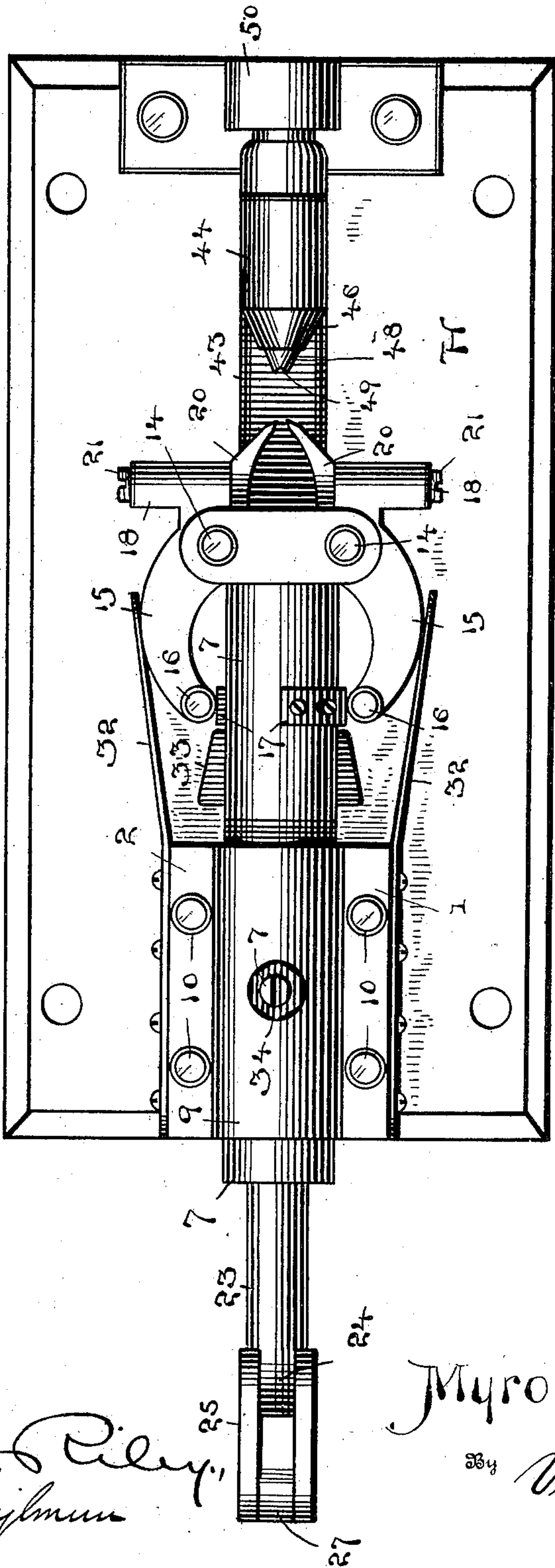


Fig. 3.

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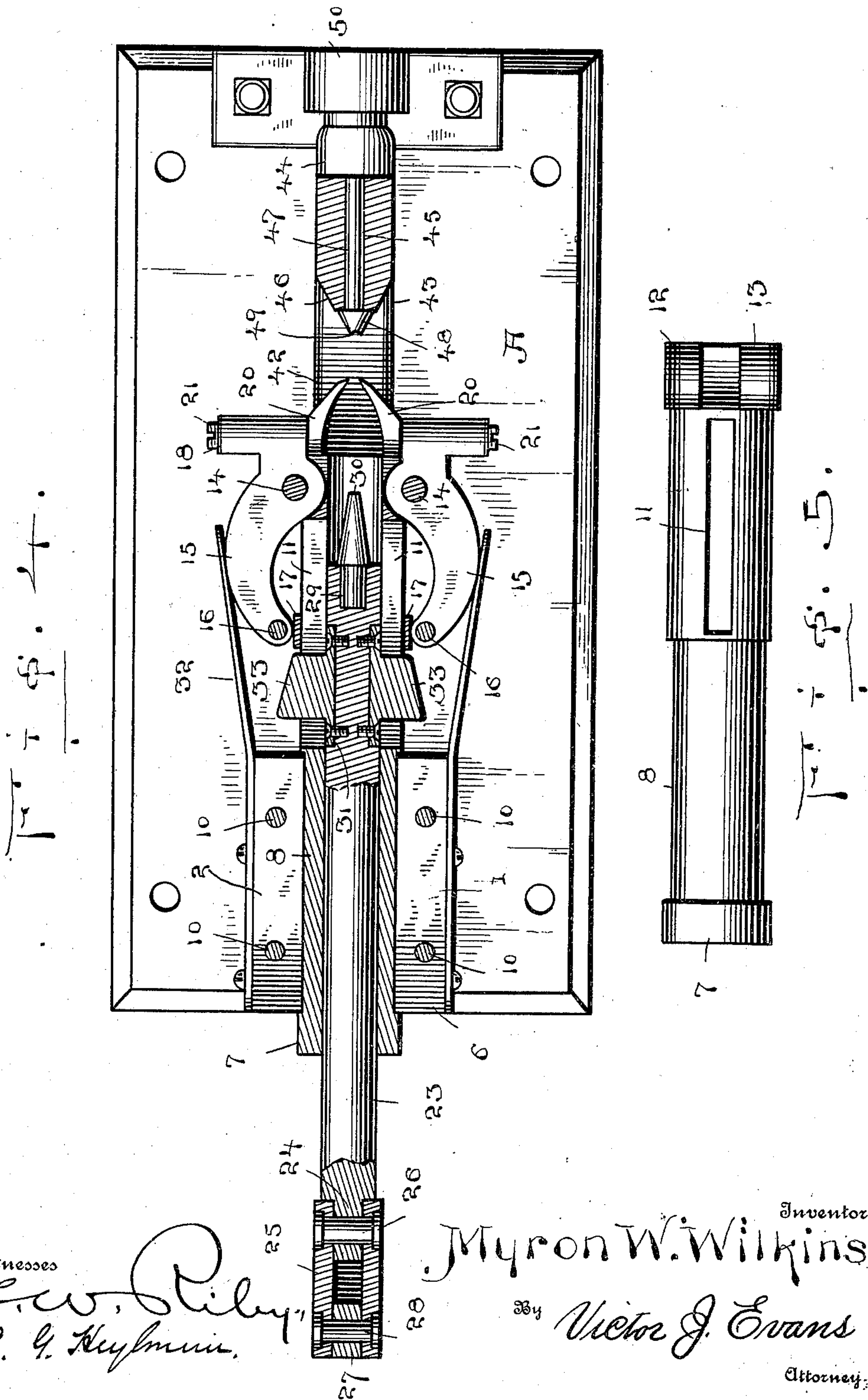
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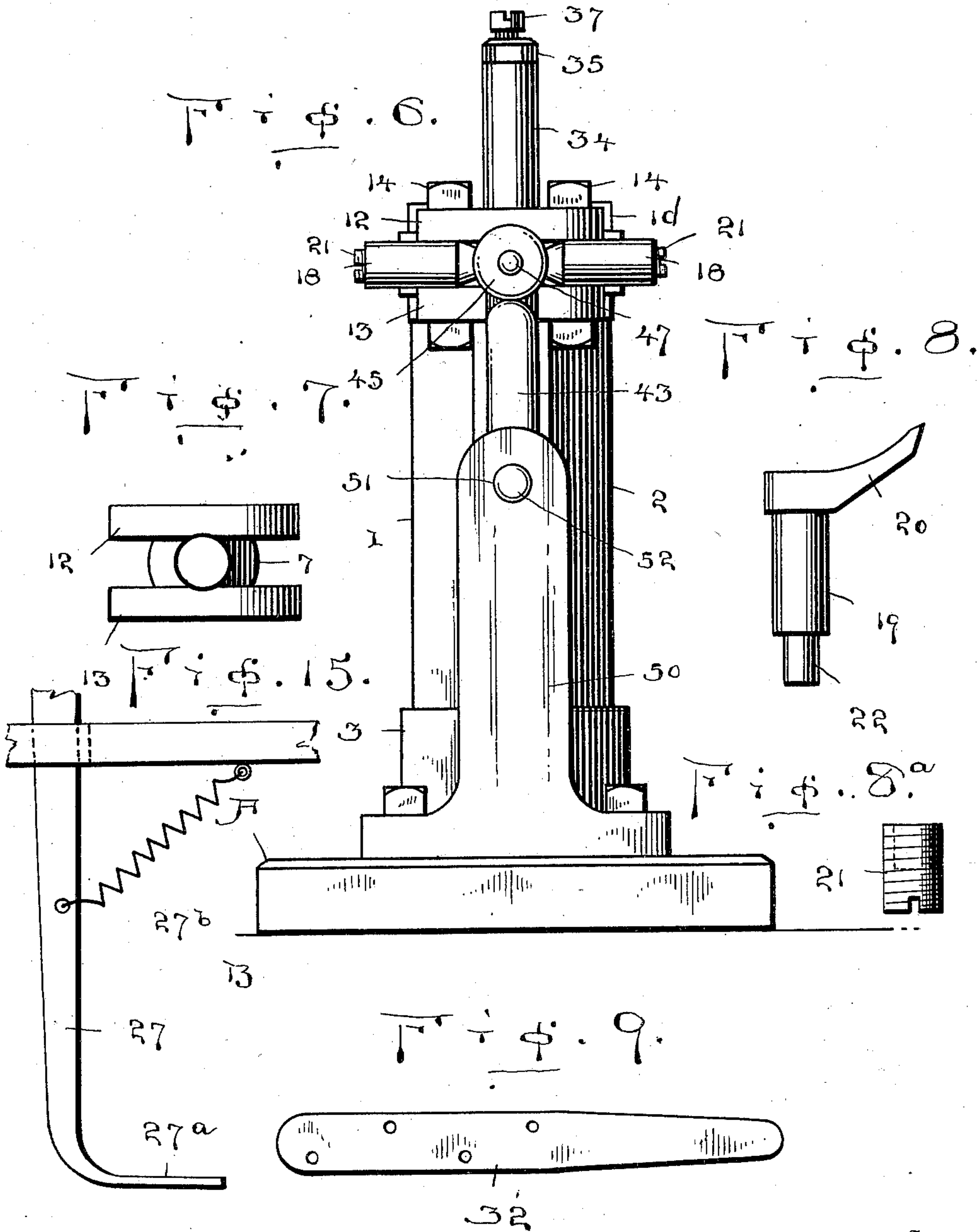
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6 SHEETS—SHEET 4.



Witnesses

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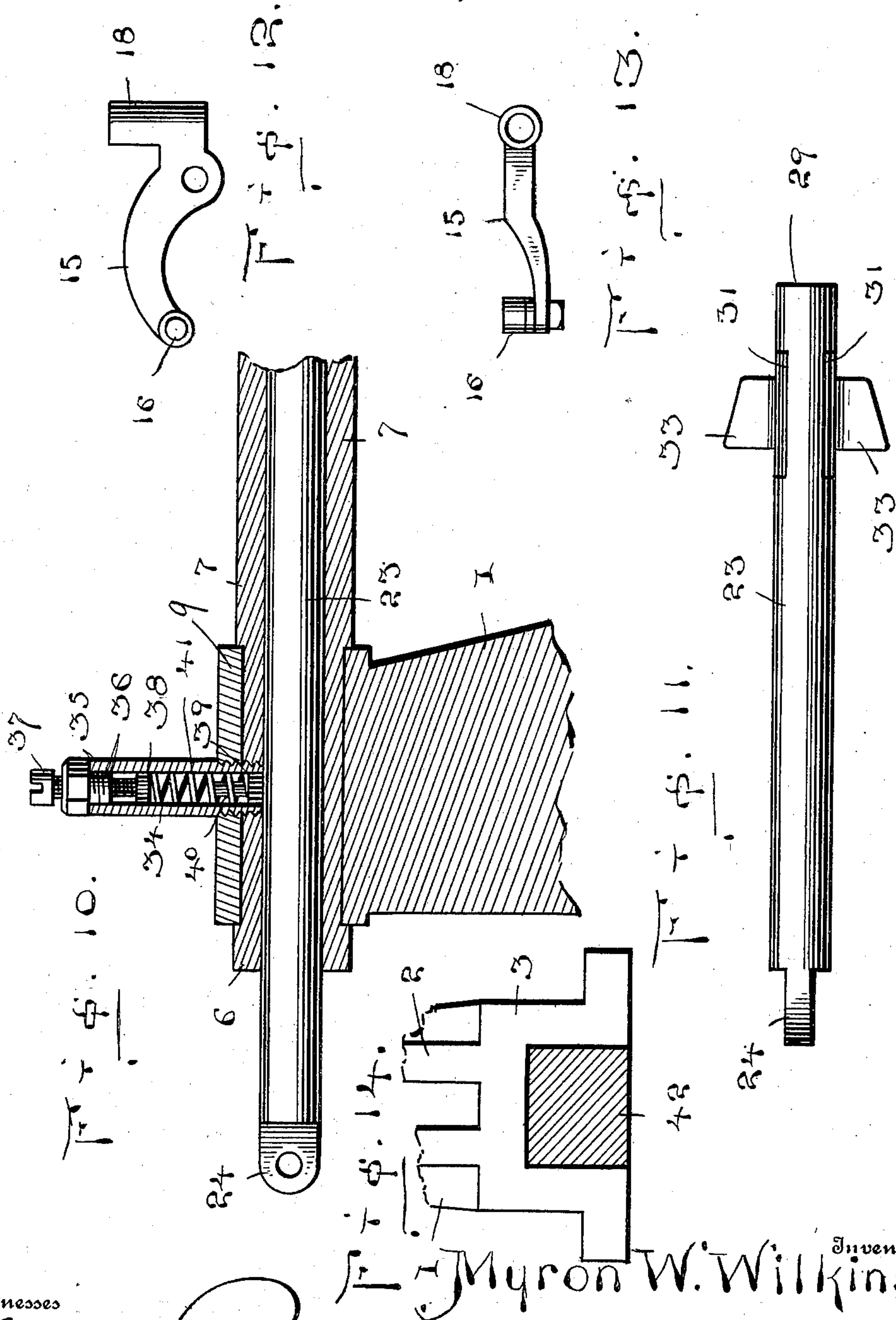
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5 SHEETS—SHEET 5



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UNITED STATES PATENT OFFICE.

MYRON W. WILKINS, OF GLOVERSVILLE, NEW YORK, ASSIGNOR TO E. J. WILKINS AND COMPANY, OF GLOVERSVILLE, NEW YORK, A FIRM.

RIVETING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 731,399, dated June 16, 1903.

Application filed May 28, 1902. Serial No. 109,362. (No model.)

To all whom it may concern:

Be it known that I, MYRON W. WILKINS, a citizen of the United States, residing at Gloversville, in the county of Fulton and State of New York, have invented new and useful Improvements in Riveting-Machines, of which the following is a specification.

My invention has relation to improvements in riveting-machines of the kind and construction adapted to set rivets through leather and similar fabrics and especially designed for riveting a metal binding or clamp to leather, as in purses, chatelaines, and pocket-books or in any instance where such a protecting-clamp is desired or required.

The object is to simplify and improve the existing art by providing a machine which is of simplified construction, accurate and efficient in operation, and lasting in use.

I have fully and clearly illustrated the improvements in the accompanying drawings, to be taken as a part of this specification, and wherein—

Figure 1 is a side elevation of the complete machine, except that the lower portion of the operating-lever and the treadle which actuates it are not shown. Fig. 2 is a top plan view of the machine. Fig. 3 is a side view of the plunger with the riveting head or anvil connected in position. Fig. 4 is a top plan view of the machine, partly in horizontal section, to show the interior arrangement of the coacting parts. Fig. 5 is a side view of the stationary cylindrical sleeve wherein the plunger works, showing the slots in which cam-blocks work and the laterally-extending bearing-ears for the nippers. Fig. 6 is a front end elevation of the machine. Fig. 7 is a detail end view of the head of the stationary cylindrical sleeve. Fig. 8 is a detail view of one of the jaws of the nippers. Fig. 8^a is a detail view of one of the adjusting-nuts of the arms of the nippers. Fig. 9 is a detail view of one of the side plate-springs which bear upon the arms of the nippers. Fig. 10 is a sectional view of the supporting-standard, the stationary cylindrical sleeve, and the frictional pressure device. Fig. 11 is a detail plan view of the plunger, showing the laterally-extending cam-blocks. Fig. 12 is a detail plan view of one of the arms of the nip-

pers. Fig. 13 is a detail side view of one of the arms of the nippers, showing the roller which engages the cam-blocks. Fig. 14 is a detail section of the base of the standards, showing the stem of the rivet-carrier arranged therein. Fig. 15 is a view of the lower part of the treadle-lever.

Referring to the drawings, A designates a substantial rectangular plate of suitable material and of such dimensions as may be required to constitute a table or base on which the mechanism may be mounted, arranged, and secured. This base-plate may be secured to any suitable subbase, as B, as indicated in the drawings. At the rear portion of the bed-plate is mounted a strong head-block consisting of two standards 1 2, having an integral base 3, through which is formed a longitudinal passage 4, wherein the stem or straight bar of the rivet-carrier is slidably arranged. The head-block is secured to the base-plate by bolts 5, projected through lateral flanges extending from the base. The standards 1 2 are formed at the upper ends with an integral seat or plate 6, having a semicircular upper face in cross-section and constituting a seat and support for the stationary cylindrical sleeve 7. This sleeve is formed with an annular reduced portion 8, extending the length of the seat 6, wherein the sleeve is secured by a cap 9, fastened by bolts 10, projected through coincident flanges of the cap and seat. In that portion of the sleeve 7 which extends from its fastenings or bearings are formed horizontally-disposed slots 11, through which the cam blocks or pieces of the plunger project and reciprocate. At the front end or head of the sleeve 7, at each side thereof, are formed upper and lower laterally-extending bearing-ears 12 13, formed with apertures through which are passed bolts 14, constituting the bearings, on which the arms of the nippers are pivotally supported.

Between the ears 12 13 and pivotally supported on the bearing-bolts 14 are mounted the arms of the nippers, oppositely arranged and duplicates in construction. The nipper-arms 15 15 are curved, as shown in the drawings, and provided with bearing-studs on their free ends, on which are journaled rollers 16, which normally rest on plates 17, fixed to the face

of the sleeve 7, and are arranged with one end in alinement with the edge of one of the walls of the slot 11, so as to not interfere with the travel of the cam-pieces through the slots in the sleeve 7, but so as to prevent the ends of the nipper-arms from dropping into the slots and from abutting the front ends of the cam-pieces. At the front ends the arms are each formed with a laterally-projecting sleeve 18, standing at right angles to the stationary sleeve 7. In the sleeves 18 are adjustably disposed the stems 19 of the nipper-jaws 20. The stems 19 are adjusted in the sleeves 18 by a threaded plug or cap 21, engaging with coincident threads in the sleeves 18 and formed with a socket to fit over the shouldered end of the stems of the nippers. The arms of the nippers are held in engagement by plate-springs 32, bearing on the arches of the arms, as shown.

23 designates the reciprocable plunger, disposed in the base of the stationary sleeve 7 and at its rear end formed with a connecting-lug 24, adapted to be pivotally connected to the plates of a link 25 by a pivot-bolt 26. The outer end of the link-plates are pivotally connected to the head or upper end of the actuating-lever 27 by a pivot-bolt 28. In the front end of the plunger 23 is formed a socket 29, in which the stem of the anvil 30 is detachably fitted. The head of the anvil is tapered, as shown, terminating at its end with a surface sufficient to upset the end of the rivet. At a determined point in the plunger, as at 31, the opposite sides are recessed, in which recesses oppositely-extending cam-pieces 33 are secured, substantially as shown in the drawings. The outer edges of the cam-pieces incline downward toward their front ends, as shown, and are rounded at their ends in order that the nipper-arms make easy engagement when they mount the inclines from either direction of movement of the plunger.

Through the cap 9 and the stationary sleeve 7 is let the lower threaded end of a vertical tube 34, the cap 35 of which has a threaded extension 36, which engages interior threads in the tube. The cap has a threaded aperture passing vertically through it, in which an adjusting-screw 37 engages, the stem of the screw being formed with a flange 38 at its lower end made to fit the bore of the tube. In the lower end of the tube 34 is arranged a disk 39, having a vertical extension 40, on which the lower end of an expansive spring 41 is arranged, the upper end of which abuts against the end of the adjusting-screw 37, as shown. The purpose of this device is to provide a frictional contact with the reciprocating plunger in order that its movements may meet with the proper resistance and so that it will be held in retracted position while the horizontal bar of the rivet-carrying member may receive the initial force of the lever.

In the longitudinal passage through the base of the standards is slidably disposed the stem or bar 42 of the rivet-carrier, which con-

sists of a strong metal bar rectangular in cross-section and fitted to the passage through which it passes. At the rear end this bar is pivotally connected to the lever 27, so that rearward movement begins in advance of the forward movement of the plunger. From the front termination of the rivet-carrying stem it is carried upward, preferably in a curved arm 43, and formed or provided on its upper end with a sleeve 44, having a central round passage 45 through it and a conical end 46. The actuating-lever 27 is extended below the table, as shown in Fig. 15 of the drawings, and terminates at its lower end with a foot-piece 27^a, a retractile spring 27^b being connected thereto to aid in the restoration of the parts to normal position. It will be perceived that owing to the resistance produced on the plunger by the friction device the pressure on the foot-piece of the lever 27 will first actuate the lever to draw up the rivet-holder, and the bar 42 being moved to its inward limit then the pivotal connection of the lever thereto becomes a fulcrum, and the upper end of the lever will consequently be moved inward and force the plunger forward with the nippers to cut the rivets and concurrently moving the anvil to upset the end of the rivet after such severance.

In the passage 45 is lodged the stem 47 of the conical-shaped rivet-carrier 48, in the end of which is formed a small socket 49, in which the head of the rivet is held, the shank extending therefrom in alinement with the end of the anvil in order that the rivet may receive the impact in a direct line at both ends. Holding the rivet in this manner assists the operator to guide the rivet and shows him exactly the direction of the pin in relation to the anvil.

At the front end of the bed-plate is secured a strong standard 50, through which, adjacent to its upper end, is made an aperture 51, in which is fixed a strong pin 52, which projects into a socket 53, formed in the bent arm or extension 43, whereby the arm is guided in its reciprocations and maintained against lateral vibration and movement.

On the horizontal bar 42, at a point in advance of the head-block 2, is secured a buffer block or stop 54, which abuts against the head of an adjusting-screw 55, let through a plate or nut-piece 56 on the base of the standards 1 2. This device serves to make adjustment of the rearward movement of the bar and prevents it from being moved too far back by the lever, and of course adjusts the conical rivet-carrier in its relation to the anvil, and also adjusts the parts affected for riveting purses and similar articles of different thickness and, further, so that the pin constituting the rivet-blank can be cut a little shorter or a little longer, as may be required.

A spring 57 is secured to the head-block, which bears with its free end against the lever 27, as shown, and serves to restore it to its normal position.

The utilization and operation of the machine may be stated as follows: The purse or chatelaine having been cut and sewed and the upper end shaped to the contour of the clasp-frame, the clamping-plates may be laid on the flange of the jaws of the clasp, with the edges of the purse between them, and the operator may proceed with the riveting process. This is accomplished by first arranging the pin or rivet in the short socket in the rivet-carrier 48, then by actuating the lever, which by reason of its pivotal connections moves the bar 42 back in advance of the movement of the plunger and draws the rivet-carrier in the direction of the nipper-jaws. Then by continuing the movement of the lever the plunger is moved forward, carrying with it the anvil 30. In the progress of the plunger the cams encounter the arms of the nippers, which ride up the inclines, and close the nipper-jaws to sever the rivet. When the arms reach the rear ends of the cams, they are moved inward behind the cams by the springs 32, and thus open the jaws of the nippers. The article in the meantime having been placed between the points of the anvil and the rivet-carrier, with the rivet, passed through the holes in the clasp and then continuing the movement to its extent, the riveting is accomplished. The return movements are effected by the force of the springs on the lever and the mechanism moved into position to repeat the operation.

Having described my invention, what I claim is—

1. In a riveting-machine, the combination of a horizontally-reciprocating plunger, an anvil carried by the plunger, a horizontally-reciprocating rivet-carrying bar having an upward-extending arm, a rivet-carrier in the head of the arm, and a lever connected to the plunger and the rivet-carrying bar and arranged to move these members in opposite directions and the bar in advance of the plunger.

2. In a riveting-machine, the combination of a reciprocating plunger, an anvil carried by the plunger, a reciprocating rivet-carrying bar, a rivet-carrier in the head of the bar, means to adjust and limit the movements of the bar, a pivoted lever connected to the plunger and to the said bar, to move the bar rearward in advance of the forward movement of the plunger, and a friction device to hold the plunger until the bar has moved rearward.

3. In a riveting-machine, the combination of a vertical support formed with a passage through its base, a rivet-carrying bar arranged slidably in the passage, and formed with an upwardly-extending arm at its front end, and a head-piece on the end of the arm formed with a longitudinal passage, a rivet-carrier disposed in the passage, a plunger arranged in alinement with the rivet-carrier, an anvil in the plunger, and a lever connected to both the plunger and the rivet-carrying bar to move them toward each other.

4. In a riveting-machine, the combination of a support having a horizontal passage therethrough, a horizontally-disposed rivet-carrying bar in said passage, having an upward-extending arm formed with a socket in its outer face, a standard adjacent to the arm of the bar, and a pin through the standard and extending into the socket in the arm, whereby the arm is held against lateral vibration.

5. In a riveting-machine, the combination with a vertical support formed with a horizontal seat at its upper end, a sleeve secured in said seat and formed with parallel side slots, a reciprocating rivet-carrying bar, slidably and horizontally arranged in the base of the support and formed with an upwardly-extending arm at its front end, a rivet-carrier in the head of the arm, of a plunger slidably mounted in the sleeve, cam-pieces secured to the plunger and projecting through the slots in the sleeve, an anvil in the end of the plunger, and nippers actuated by the cam-pieces and interposed between the rivet-carrier and the anvil.

6. In a riveting-machine, the combination with a stationary sleeve formed with parallel slots, and a reciprocating rivet-carrier, of a plunger slidably arranged in the sleeve, oppositely-placed cam-pieces secured to the plunger and projecting through the slots in the stationary sleeve, oppositely-disposed arms pivotally secured to the end of the sleeve and formed with sleeves on their outer ends, nipper-jaws formed with stems disposed in the sleeves of the nipper-arms, and springs to press the arms inward.

In testimony whereof I affix my signature in presence of two witnesses.

MYRON W. WILKINS.

Witnesses:

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FREDERICK L. STEWART.