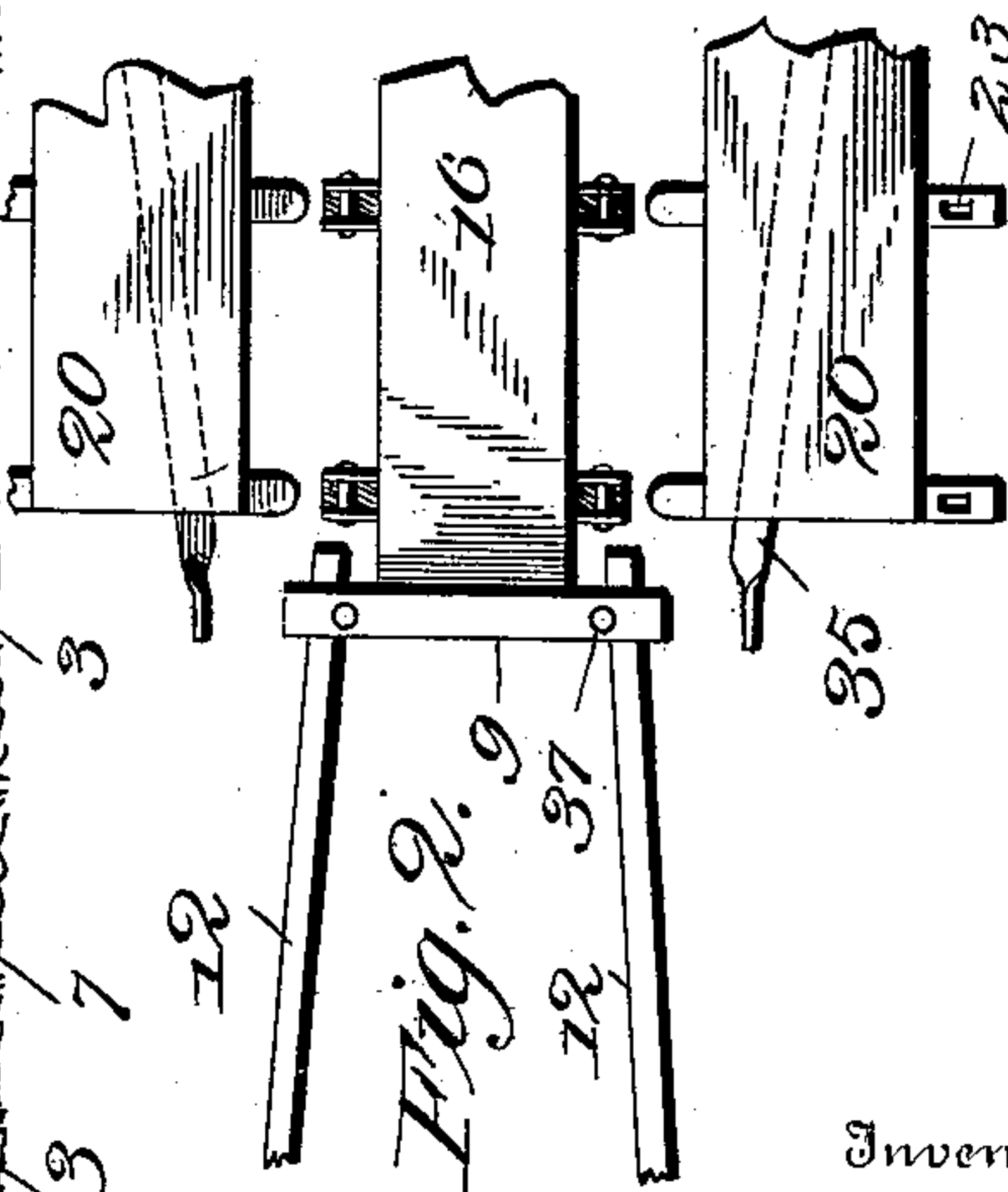
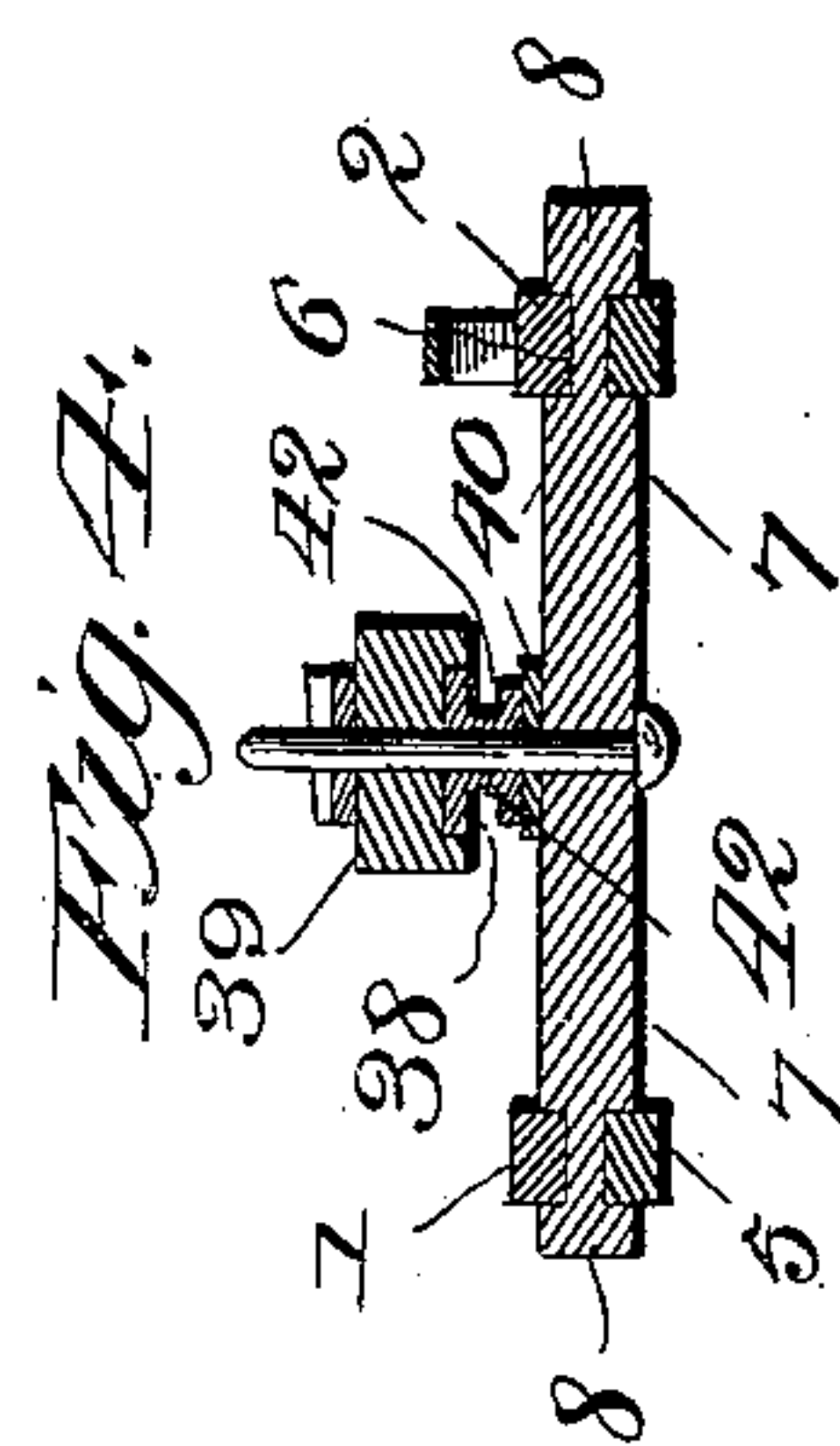
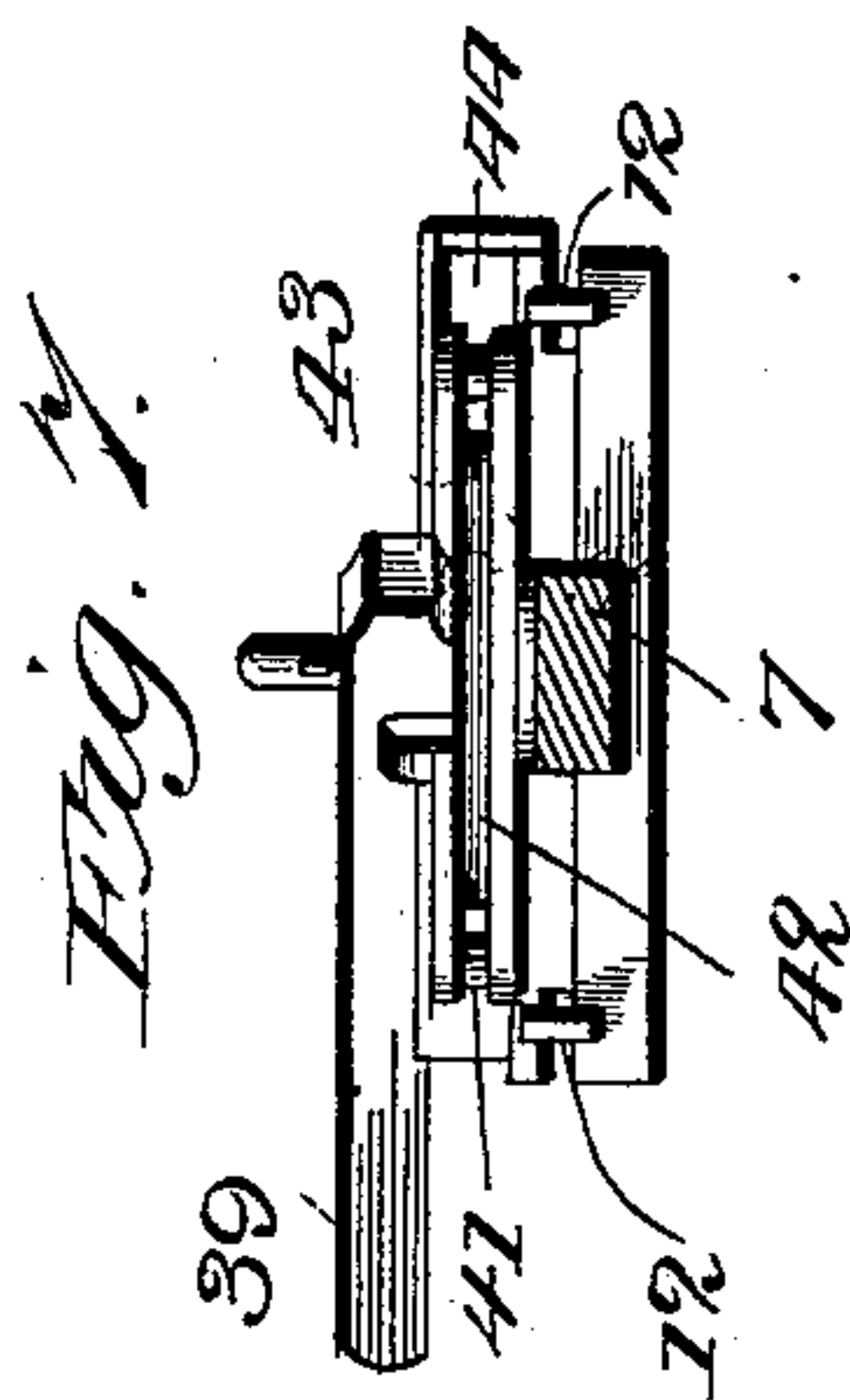
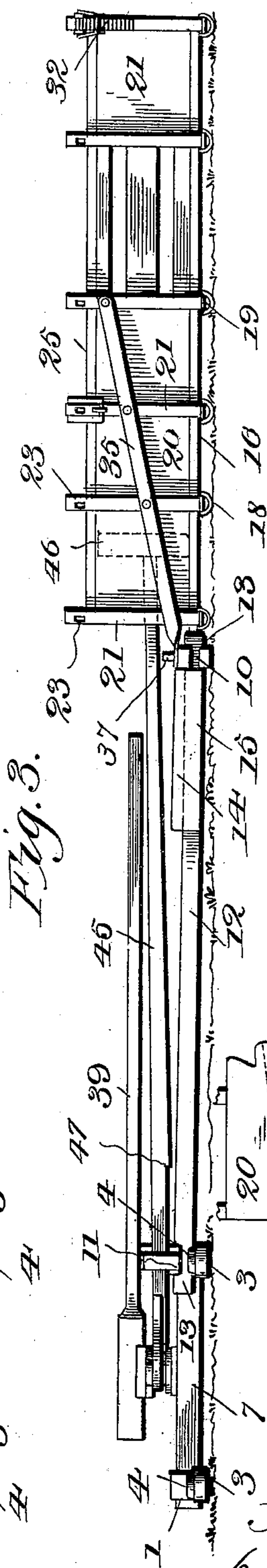
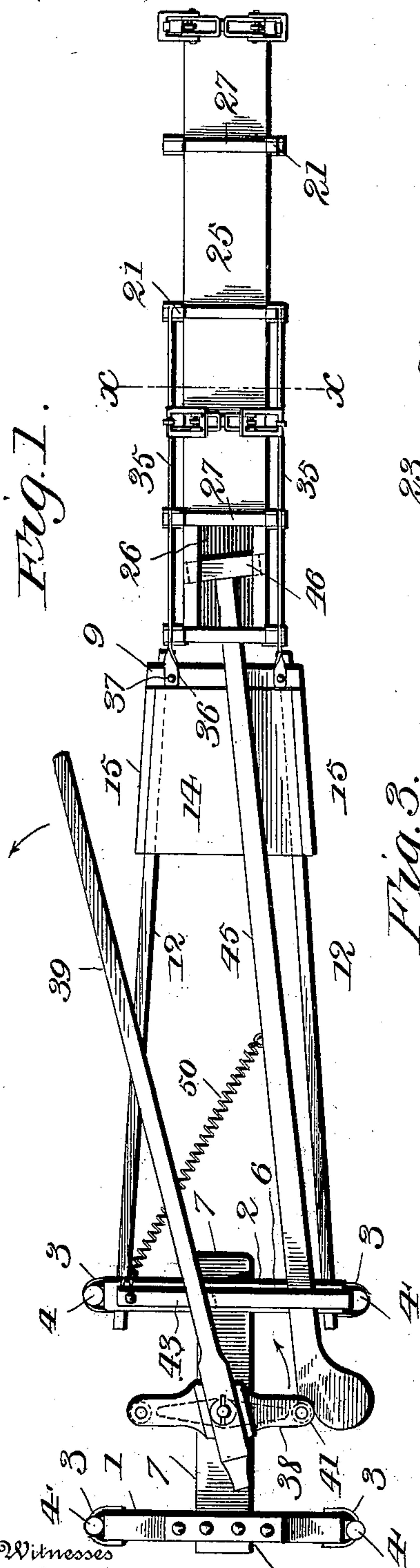


Patented Sept. 19, 1899.

Application filed June 30, 1898.,

(No Model.)

2 Sheets—Sheet 1.



Inventor

Johnson B. Smith,
by V. S. Shockbridge.
his Attorney.

Witnesses

L. C. Hills
H. L. Ames.

No. 633,395.

Patented Sept. 19, 1899.

J. B. SMITH.
BALING PRESS.

(Application filed June 30, 1898.)

(No Model.)

2 Sheets—Sheet 2.

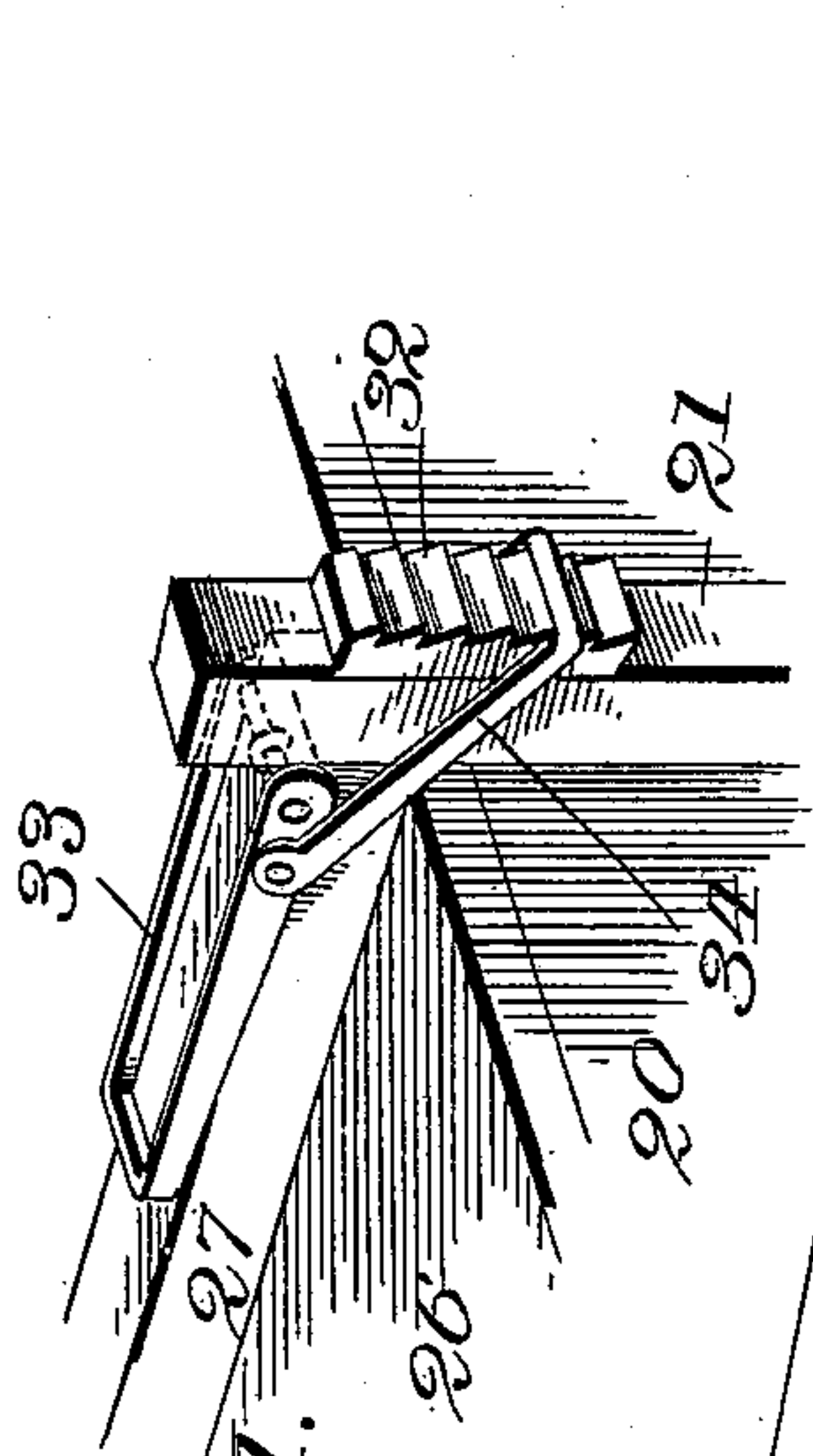


Fig. 11.

Fig. 5.

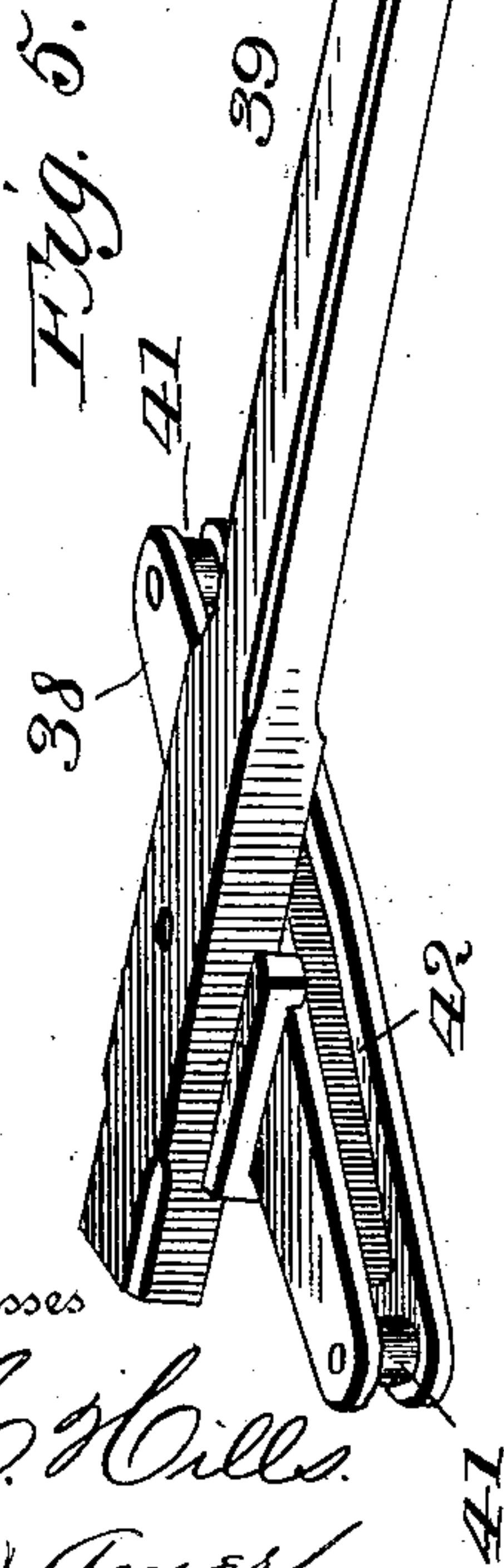


Fig. 6.

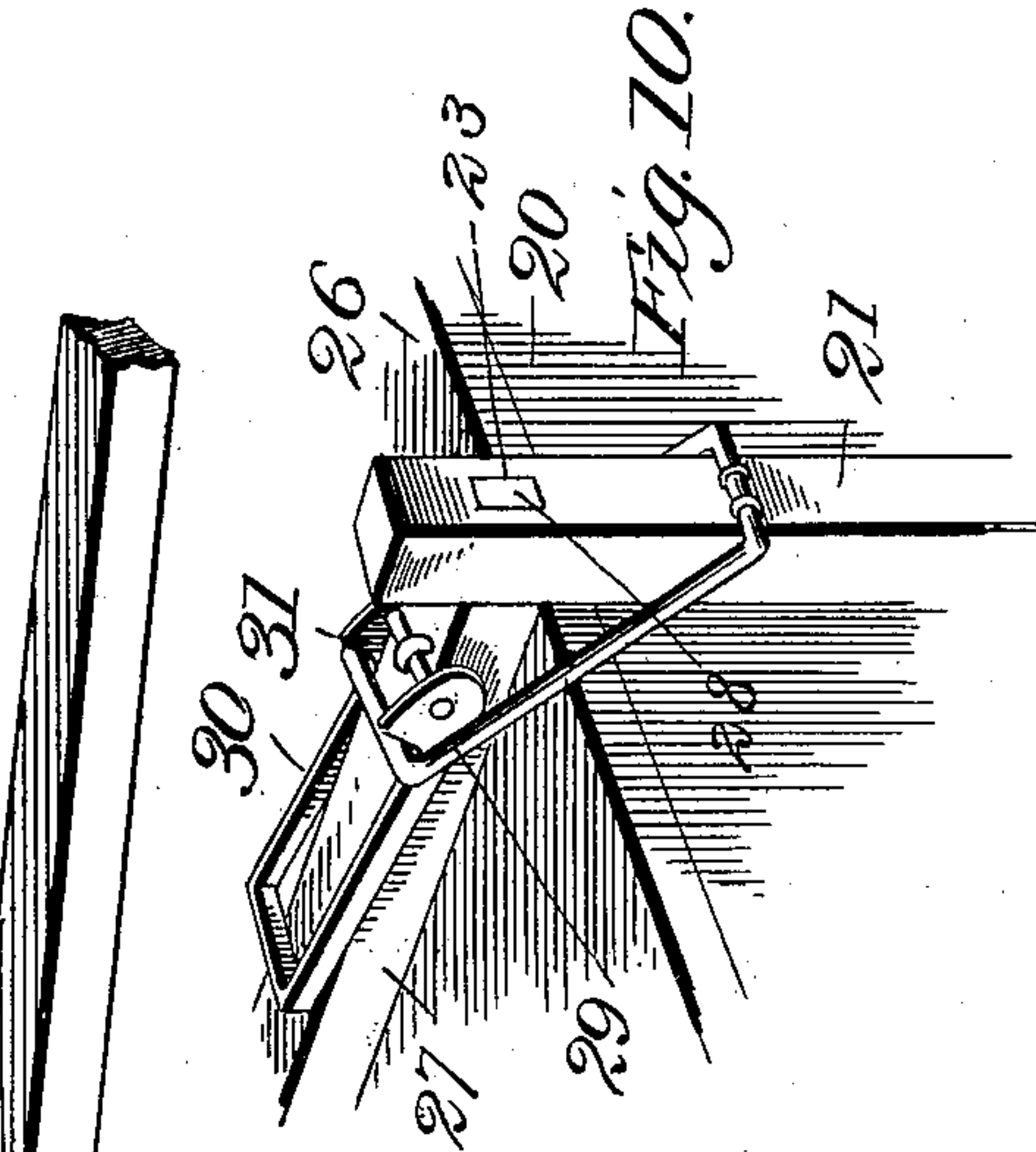
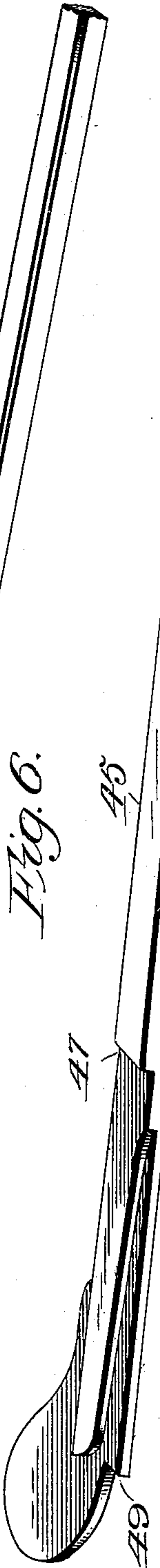


Fig. 10.

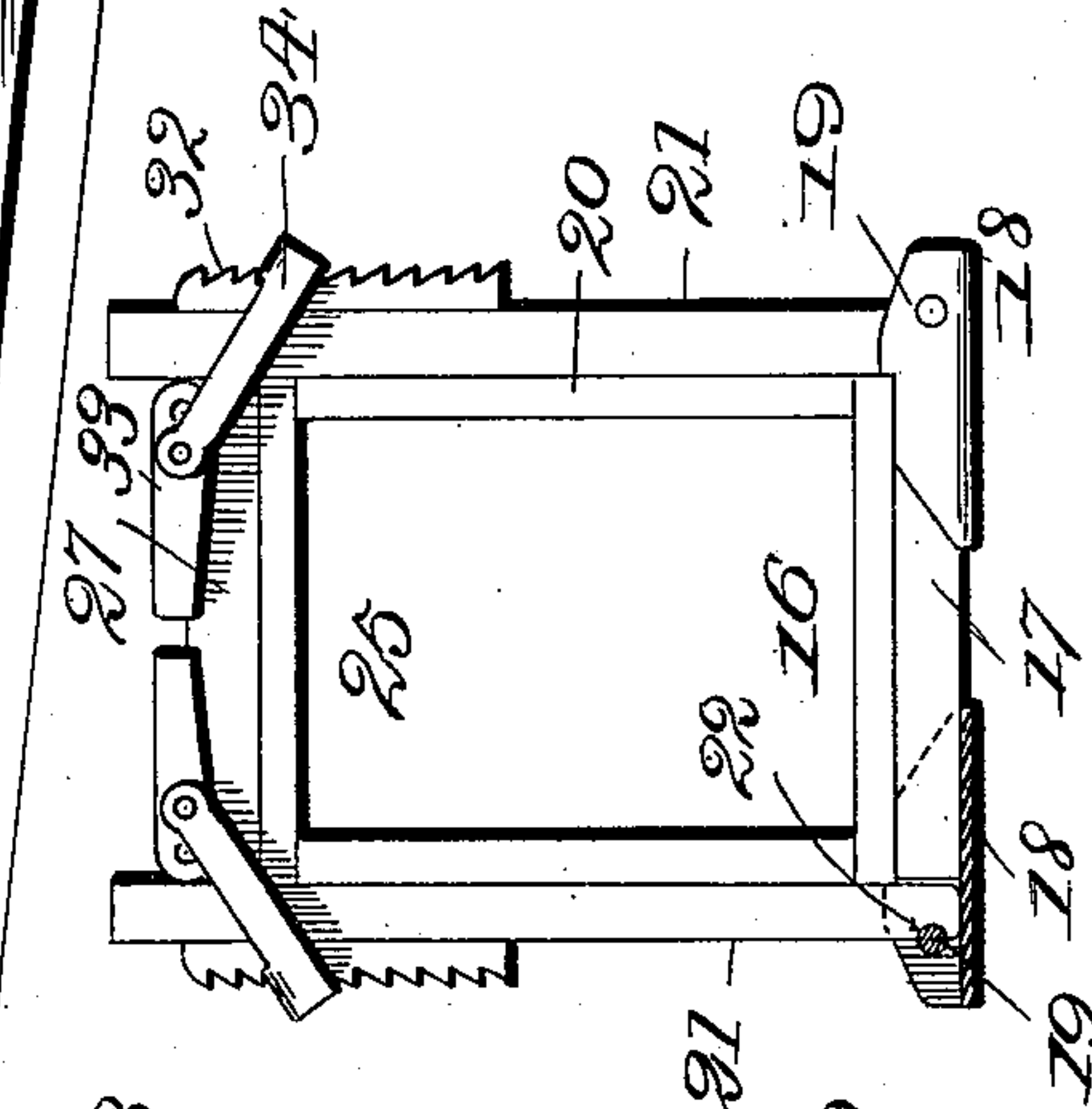


Fig. 9.

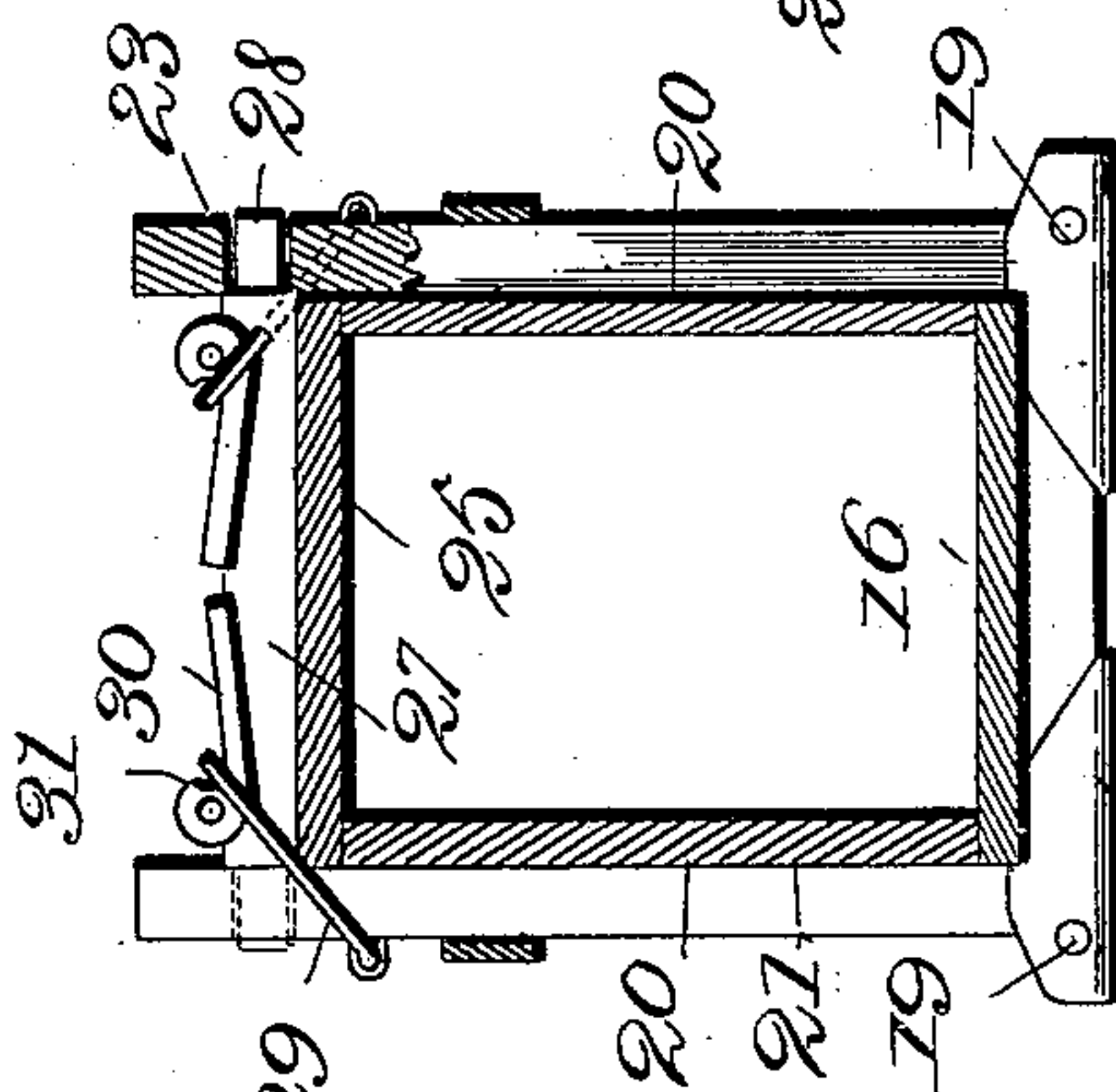


Fig. 8.

Witnesses
L. C. Mills.
H. L. Ames.

Inventor:
Johnson B. Smith,
by V. S. Stockbridge
his Attorney.

UNITED STATES PATENT OFFICE.

JOHNSON B. SMITH, OF WEST UNION, WEST VIRGINIA.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 633,395, dated September 19, 1899.

Application filed June 30, 1898. Serial No. 684,855. (No model.)

To all whom it may concern:

Be it known that I, JOHNSON B. SMITH, a citizen of the United States, residing at West Union, in the county of Doddridge and State of West Virginia, have invented certain new and useful Improvements in Baling-Presses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of my invention is to provide an improved construction of baling-press by means of which hay or other like material may be readily and quickly compressed within a suitable receptacle, all of the parts of the device being detachable or separable, so that the same may be packed up and transported from place to place in a wagon or other vehicle.

A further object of the invention is to provide an improved construction of plunger and sweep whereby upon one rotation of the sweep a double reciprocation of the plunger is effected.

Other objects and advantages of the invention will hereinafter appear.

The invention consists of the construction and arrangement of parts, which will be hereinafter more fully described and claimed.

In the drawings forming part of this specification, Figure 1 represents a plan view of my improved press in operative position. Fig. 2 is a similar view of one end of the same, showing the bridge removed and the sides of the casing disconnected. Fig. 3 is a side elevation of the device complete. Fig. 4 is a longitudinal section through the beam upon which the sweep is mounted and the parts connected thereto. Fig. 5 is a detail perspective view of the power-arm. Fig. 6 is a similar view of the plunger. Fig. 7 is a vertical transverse sectional view taken longitudinally of the cross-beam just in advance of the power-arm. Fig. 8 is a vertical transverse section through the casing on the line $x x$ of Fig. 1. Fig. 9 is an end view of the casing. Fig. 10 is a detail perspective view of one of the clamping devices employed, and Fig. 11 is a similar view of another of the clamping devices.

Like reference-numerals indicate like parts in the different views.

In carrying out my invention I employ two cross-beams 1 and 2, respectively, each provided with loops 3 at their opposite ends, by means of which they may be secured to the ground through the agency of pins or pegs 4 4, extending therethrough. The beam 1 is formed with a central opening 5 and the beam 2 with a similar opening 6. The said beams are connected by a longitudinal beam 7, which is provided with heads 8 8 at its opposite ends, which engage the outer surfaces of the beams 1 and 2 and prevent longitudinal movement thereof. In order that the beam 7 may be inserted through the openings 5 and 6 in the beams 1 and 2, said latter beams may be made in two parts. This, however, is a mere detail. At a point some distance in advance of the beam 2 is a cross-beam 9, parallel to the beams 1 and 2, provided with bifurcated ends or open slots 10 10, as shown. The outer ends of the beam 2 are likewise bifurcated or slotted, as shown at 11. Connecting the beams 2 and 9 are converging longitudinally-extending bars 12 12, whose ends are mortised or provided with oppositely-located notches, as shown at 13, and are adapted to fit removably within the bifurcations or slots in the ends of the beams 2 and 9. In this manner a rigid connection between the beams 1, 2, and 9, which constitute the plunger-frame, is provided. Outward lateral movement of the bars 12 12 is prevented by means of the bridge 14, which extends across the upper side of said bars and is provided with side flanges or cleats 15 15, as clearly shown, which extend downward and bear against the outer surfaces of the bars 12 to lock the latter in place. Extending outwardly from the beam 9 in the direction of the length of the plunger-frame is a horizontally-disposed plank 16, which is suitably braced and supported and is provided at intervals along its under side with cross-bars 17 17. The ends of said cross-bars have secured to them metallic clips 18 18, which are U-shaped in cross-section and have their two sides connected by transversely-extending pins or bolts 19 19. The plank 16 constitutes the bottom of the casing in which the hay or other material is pressed, and the sides

20 thereof are each provided at intervals throughout their length with uprights or stanchions 21 21, whose lower ends are pointed and are formed with notches 22 in their outer surfaces. The pointed lower ends of said stanchions are adapted to fit within the clips 18 18 and the pins 19 are adapted to engage or fit within the notches 22 when the sides are in position. The stanchions 21 extend up above the upper edge of the sides 20 and are provided with slots 23. The top 25 is formed with an enlarged opening 26 at a point near its forward end, through which the material to be pressed and baled is fed. The said top is further provided at intervals throughout its length with cross-bars 27 27, having pointed outer ends 28, which project beyond the side edges of said top and are adapted to fit within the slots 23 in the stanchions 21. In connection with these parts I employ upon the upper end of one of the stanchions 21 and the cross-bars 27 locking devices. (Illustrated in Figs. 8, 9, 10, and 11 of the drawings.) That shown in Figs. 8 and 10 consists of a rectangular plate 29, pivoted to the stanchions 21, and a bail-shaped member 30, pivoted to the cross-bar 27 and having a hook 31 thereon, which is adapted to fit within the slotted plate 29 and when turned down, as shown in the drawings, will hold the sides and top in locked position. In connection with the locking device shown in Fig. 11 of the drawings I provide upon the end stanchions 21 on opposite sides of the casing rack-bars 32 32. Said locking device consists of a bail-shaped member 33, pivoted to the end cross-bar 27 on the top 26, and a second bail-shaped member 34, pivoted to the member 33 and provided with an engaging portion adapted to fit within the notches between the teeth on the rack-bar 32. By this construction it will be seen that when the member 33 is turned down in contact with the cross-bar 27, as shown in the drawings, the pivotal points of the two members 33 and 34 will be out of line one with the other and disconnection of the member 34 from the rack 32 will be effectually prevented.

From the foregoing description it will be seen that the parts of the baling-casing may be readily disconnected one from the other for purposes of shipment or transportation and when desired may be quickly and conveniently set up into operative position. It should be stated in this connection that upon opposite sides of the casing secured to the stanchions 21 are longitudinally-extending stay-bars 35 35, provided with openings 36 in their rear ends, which are adapted to fit upon bolts or pins 37, projecting upwardly from the cross-bar 9.

Mounted to rotate in the longitudinal beam 7 is a cross-head 38, which is secured to the rear end of the sweep 39. A wear-plate 40 is interposed between the cross-head 38 and the beam 7 for an obvious purpose. The said sweep 39 is connected to the cross-head at an

oblique angle for a purpose which will presently appear, and the cross-head itself is provided at its opposite end with rollers 41 and upon opposite sides with guide-grooves 42 42 and flanges 42' for a purpose which will also presently appear.

Secured to the upper side of the beam 2 is a guide-beam 43, having an elongated slot 44 in one end thereof, through which extends the plunger 45, the said plunger being provided with a head 46 upon its forward end which fits and moves within the baling-casing heretofore described. The under side of the plunger 45 at a point near its rear end is cut away, as shown, forming a depending shoulder 47, which is adapted to abut against the beam 2 upon its rear stroke. The lower surface of the rear end of the plunger is cut away, as shown in Fig. 6, to form a shoulder 47', which extends longitudinally of the plunger and at a slightly oblique angle. In the backward movement of the plunger the shoulder 47' rides against and coöperates with the lower flanges 42' on the cross-head, this coaction causing the rear end of the plunger to be directed in its backward movement and brought into proper position to insure subsequent coöperation between the lateral shoulder 49 and the end of the cross-head. The extreme rear end of said plunger is curved, as shown at 48, and is cut away at one point, forming a lateral shoulder 49. Connecting the plunger at a point intermediate of its ends with the cross-beam 2 is an obliquely-disposed retractile spring 50, the function of which is to normally urge said plunger rearwardly and at the same time laterally for causing it to keep in contact and engagement with the cross-head 38.

In the operation of the device the sweep 39 is rotated in the usual manner by horsepower, the action of which is to turn the cross-head 38. In doing so the rollers 41 in the opposite ends thereof are successively brought into contact with the shoulder 49 on the plunger 45. The plunger is thereby forced forwardly into the baling-casing, and when the roller 41, which has been in engagement with the shoulder 49, passes therefrom the spring 50 forces the plunger rearwardly, and the shoulder 49, fitting within one of the grooves 42 in the cross-head, is guided, as hereinabove described, to the other roller 41 in the opposite end of said cross-head. A repetition of this operation will cause the plunger to be successively forced into the baling-casing and the material therein compressed. By reason of the fact that the cross-head is provided with two engaging portions at its opposite ends two reciprocations of the plunger 45 will be effected during each rotation of the sweep. Furthermore, by reason of the fact that the sweep is located at an obtuse angle to the cross-head, no power will be exerted or be necessary to be exerted while the draft-animals are passing over the bridge.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. In a baling-press, a sweep or power lever, in combination with a cross-head secured
5 to said lever in oblique relation thereto with its arm which follows the lever over the plunger-rod arranged to act on said rod only after the passage of the lever over said rod, said cross-head being grooved or channeled on its
10 sides intermediate its plunger-actuating rollers, and a rebounding plunger having its rear end adapted to engage the grooves or channels in the cross-head and provided in advance of said end with an oblique longitudi-
15 nally-extending shoulder adapted to engage the lower wall of said grooves or channels in the backward movement of the plunger.

2. In a baling-press, a rebounding plunger-rod provided at its rear end with a lateral
20 shoulder and in advance thereof with an oblique longitudinally-extending shoulder, in combination with a sweep or power lever and a grooved or channeled cross-head secured in oblique relation to said lever with its arm
25 which follows the sweep-lever set at an ob-

lique angle thereto whereby said sweep-lever is made to pass over the plunger-rod in advance of any action of the cross-head on the plunger-rod, substantially as described.

3. In a baling-press, a knockdown plunger- 30 frame intermediate the sweep-frame and the press-frame proper, said knockdown frame comprising two longitudinal bars having notched ends, the cross-bar 9, the latter having its ends bifurcated to receive said notched 35 ends of the longitudinal bars, and a keeper plate or bridge provided with and held in place by pendent rigid side flanges engaging said longitudinal bars for holding them in en-
40 gagement with the cross-bar, said keeper-plate forming also the bridge for the passage of the draft-animal over the plunger-frame, substantially as described.

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

JOHNSON B. SMITH.

Witnesses:

ALEX. W. SMITH,
E. E. BEE.