

F. D. HAYNES & J. A. COCKER.

FENCE STRETCHER.

APPLICATION FILED SEPT. 2, 1908.

912,845.

Patented Feb. 16, 1909.

3 SHEETS—SHEET 1.

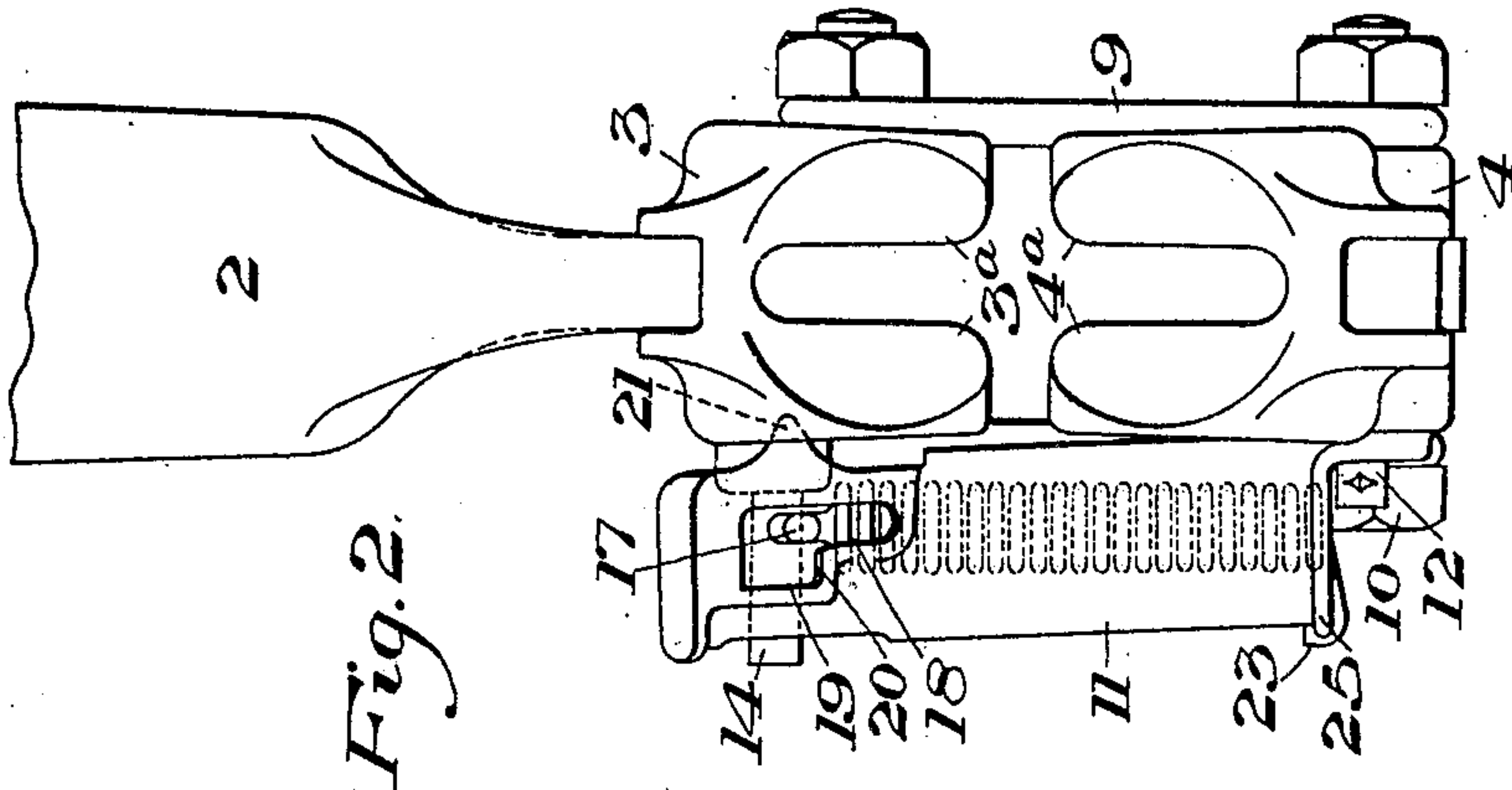


Fig. 2.

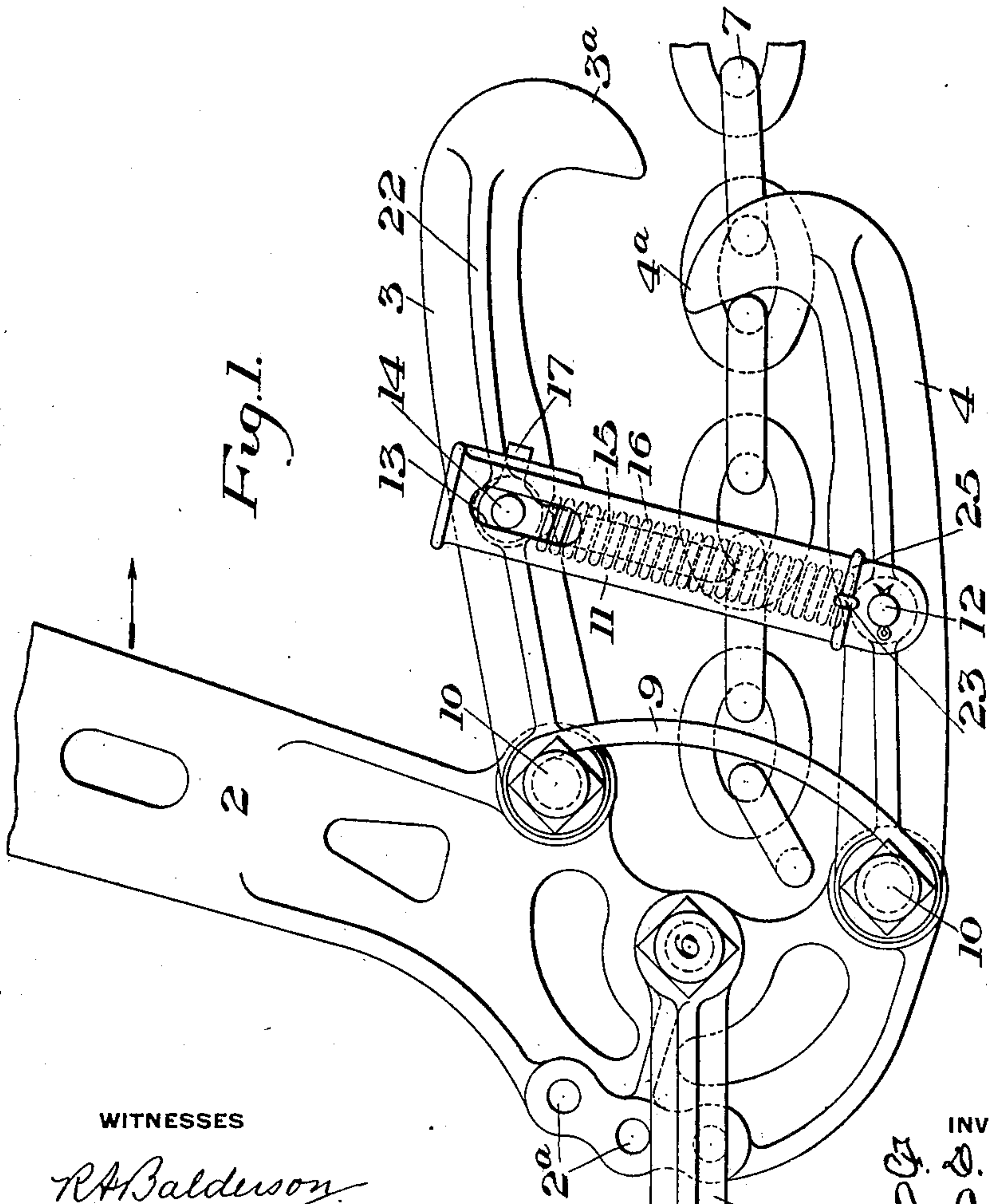


Fig. 1.

WITNESSES

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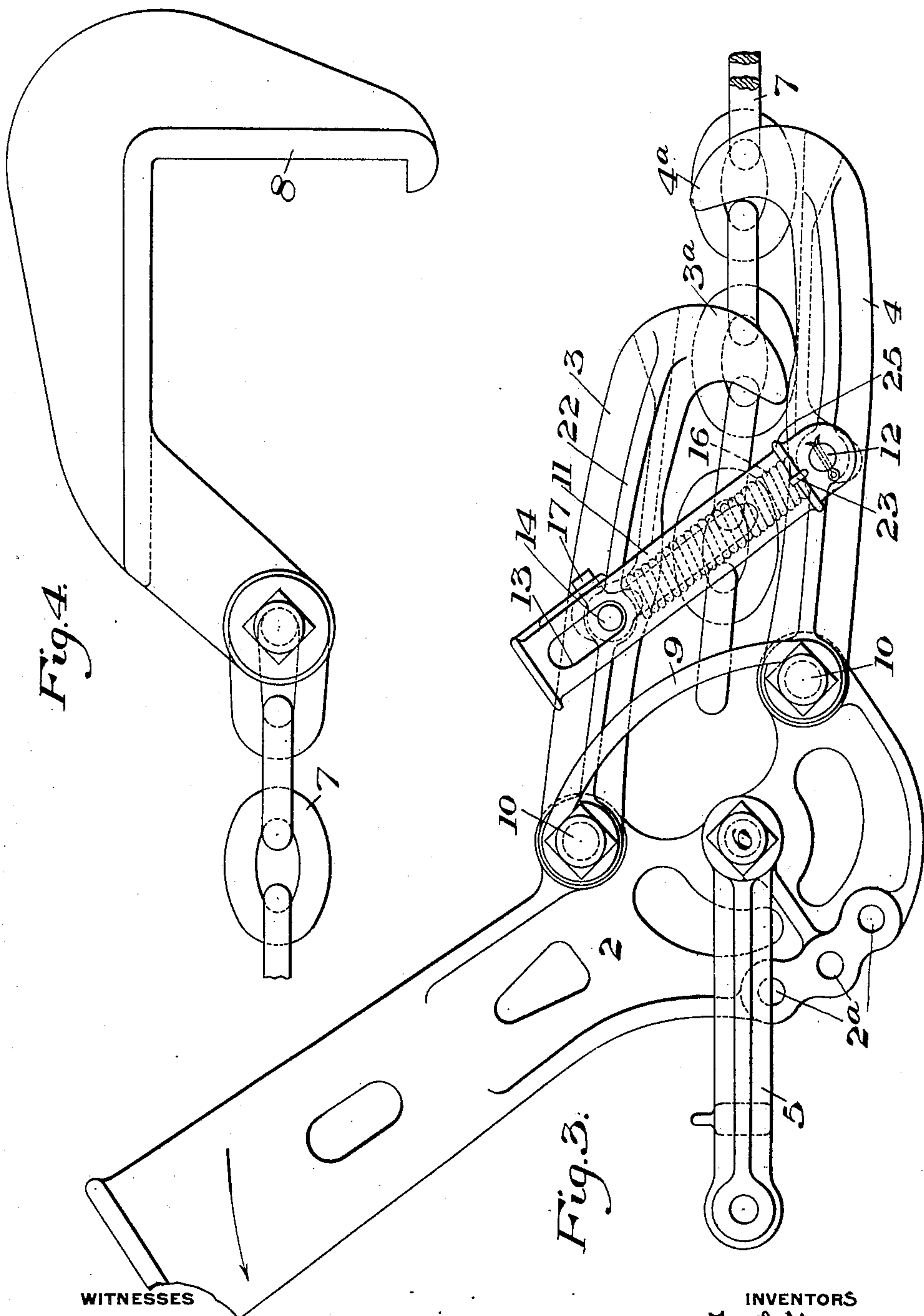
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3 SHEETS—SHEET 3.

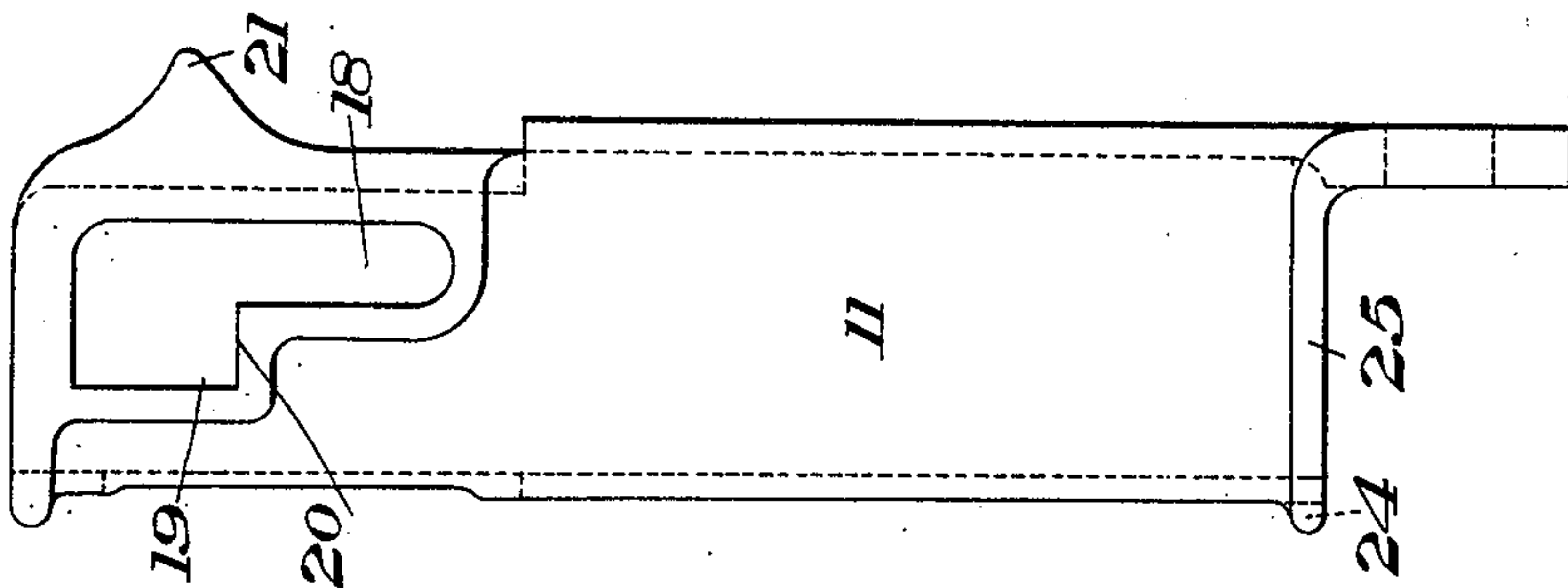


Fig. 6.

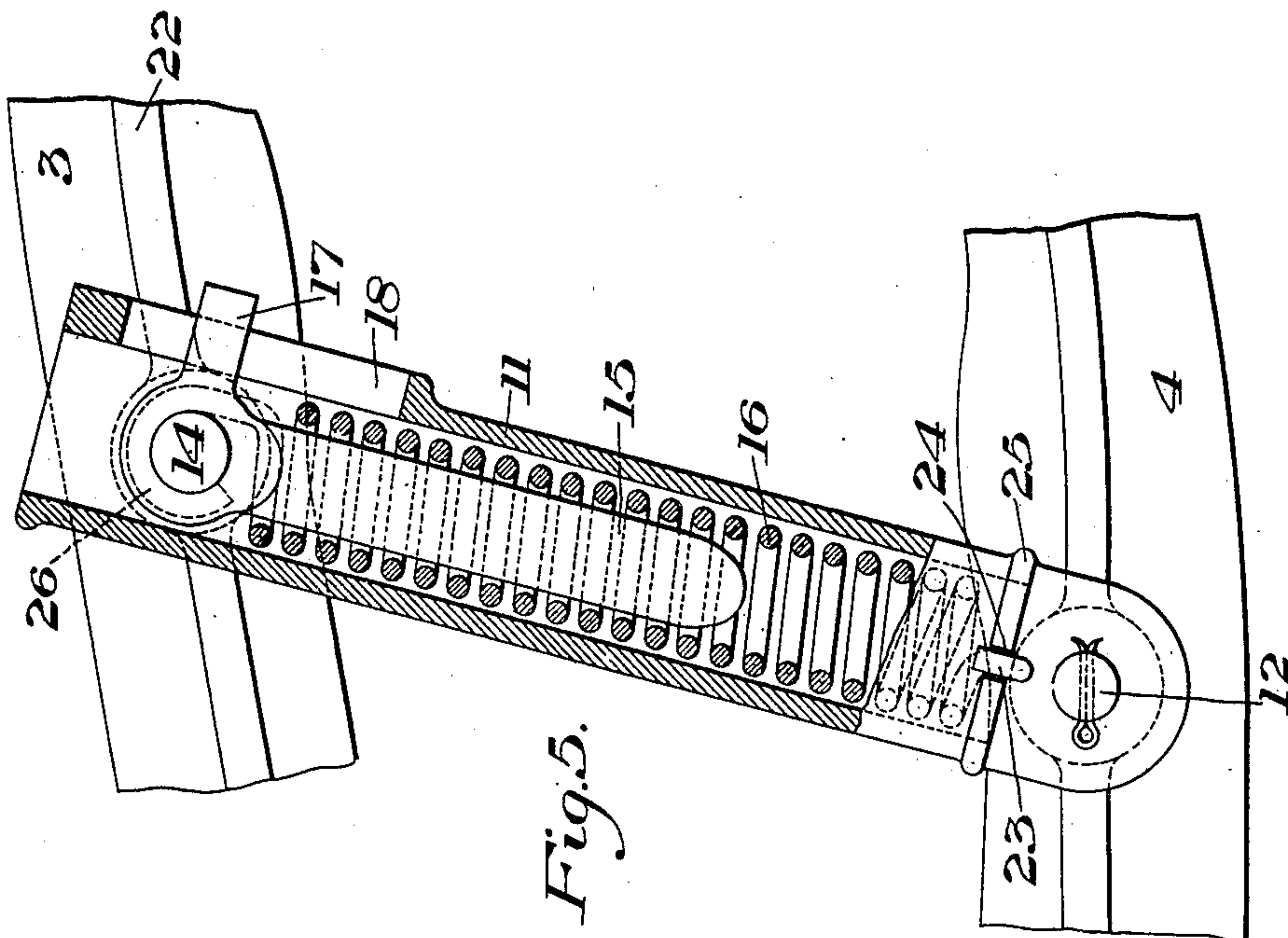


Fig. 5.

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UNITED STATES PATENT OFFICE.

FRANK D. HAYNES AND JOHN A. COCKER, OF JOLIET, ILLINOIS, ASSIGNORS TO AMERICAN STEEL & WIRE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF NEW JERSEY.

FENCE-STRETCHER.

No. 912,845.

Specification of Letters Patent.

Patented Feb. 16, 1909.

Application filed September 2, 1908. Serial No. 451,331.

To all whom it may concern:

Be it known that we, FRANK D. HAYNES and JOHN A. COCKER, both of Joliet, Will county, Illinois, have invented a new and useful Fence-Stretcher, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of a fence stretcher embodying our invention, showing the dogs in one position; Fig. 2 is a corresponding end view; Fig. 3 is a plan view showing the dogs in another position; Fig. 4 is a detail view showing a portion of the stretching chain and its attaching hook; Fig. 5 is a detail sectional view of the spring device; and Fig. 6 is a detail view of the spring casing.

Our invention has relation to the class of wire stretchers, and is designed to provide a simple and convenient device of this character which can be readily attached to the fence to be stretched, and which will be efficient in its operation.

The precise nature of our invention will be best understood by reference to the accompanying drawings, in which we have shown one embodiment thereof, it being premised, however, that various changes may be made in the details of construction and arrangement of the parts by those skilled in the art without departing from the spirit and scope of the invention as defined in the appended claims.

In these drawings, the numeral 2 designates a lever head or socket, adapted to receive a suitable operating bar or lever therein, and to which are pivotally attached the two stretching dogs 3 and 4.

5 is a clevis attached to the head by means of a pin or bolt 6, which forms the fulcrum for the head in operation. This clevis is designed to be connected to a fence post by means of the usual chain or other similar connection, not shown.

7 is a stretching chain provided at its end with a hook 8, which is designed to be engaged with the usual clamping bar (not shown), to which the fence wires to be stretched are attached.

9 designates chain guides, which are attached to the ends of the pins 10, which form the pivots for the dogs 3 and 4, which

act to guide the chain and keep it in line with the engaging ends of the dogs.

11 is a spring casing, which is pivotally secured at one end to the dog 4 by a pin 12, and which at its other end has an elongated slot 13, which is engaged by a pin 14 projecting from the dog 3. Mounted on the pin 14 within the spring casing is a spring pin having a longer arm 15 extending downwardly within the spring casing and forming a guide for a coiled spring 16, and a shorter arm 17 at approximately right angles to the longer arm, and which projects outwardly through an oblong slot 18 in one side of the spring casing. This slot 18 at its upper end has an offset portion 19 forming the shoulder 20. Opposite this slot the casing has a cam nose 21, which is designed to engage a longitudinally extending rib 22 on the upper face of the dog 3 in the manner hereinafter described.

The spring 16 is formed at its lower end with a hook 23, which is secured to the spring casing by engaging it with a slot 24 in a flange 25 thereof. At its upper end the spring has an eye 26, which is engaged with the pin 14. This hook and eye are on opposite sides of the center line of the spring, so that when the spring is in place within the spring box, the spring will have a cross pull which will tend to throw the upper end of the spring box downwardly toward the dog 3, said casing being sufficiently loose at its attachment to the pin 12 to permit of this movement.

The two dogs 3 and 4 are formed at their free ends with recessed claw portions 3^a and 4^a respectively, for engagement with the links of the stretching chain 7.

The lever head 2 is provided with a series of pin holes 2^a, through which a suitable pin may be inserted for locking the head in position after operation to hold the stretched wires in tension while they are being stapled or otherwise fastened.

The operation is as follows: It will be noted that the points of attachment of the two dogs 3 and 4 are at opposite sides of the fulcrum 6, so that as the lever is operated in one direction, the dog 3 will be pushed forwardly while the dog 4 is drawn backwardly, and in the other movement of the lever the dog 3 will be pulled backwardly while the dog 4 is pushed forwardly. Referring to Fig. 3,

the dog 4 is shown in the position necessary for the backward movement. The lever 2 being moved in the direction of the arrow, the claw of the dog at the point 4^a is forced against the chain link 7, and as the claw of the dog at the point is made tapering, any pressure there tends to force the dog out and away from the chain. Since the spring case 11 is attached to the dog 4 it will be moved with it. The lever 2 is moved until the dog 4 is forced out far enough to allow the spring case 11 to pass the pin 17 at the point 20, and when this is done the spring case and pin are latched together by the engagement of the shoulder 20 with said pin. This prevents the spring 16 from pulling the dog 4 into the chain again until it is released by the action of the cam nose 21 on the rib 22. This release of the latch does not take place until the dog 4 has moved backward to a position in which the claw or nose of the dog 4 is about opposite the claw or nose of the dog 3. After the dog 4 is released it is ready to engage the link and so complete the backward movement. In the climbing or forward movement the stretcher dogs 3 and 4 are pulled together by the spring 16, and the dog 3 slides along the chain 7 until the dog reaches the link, the edge of which is in line with the slot in the claw of the dog. When this point is reached the action of the spring 16 brings the dog into place. The spring case 11 and the spring pin 15 do not come into use during this movement.

It will be noted that the spring 16 has a double action, viz., that which normally acts to pull the two dogs toward each other during the climbing operation of the stretcher so as to cause them to engage with the chain links, while its other action due to this cross-pull is to pull the spring casing downwardly to disengage the latch arm 17 of the spring pin from the offset shoulder 20, the latter acting as described to hold the dogs away from the chain at the time the movement of the lever is reversed.

It will be seen from the drawings that the dogs engage with the end of a link, the recessed form of their claws enabling them to straddle the adjacent link in the manner shown.

Fig. 3 shows the parts near the extreme limit of the backward movement of the lever, with the pin 17 at the bottom of the slot 18. In this position the cam nose 21 of the spring casing is below the rib 22. When the lever is reversed and starts on its forward movement, the nose of the cam rides against the rib 22, so that during the further forward movement of the lever to the position shown in Fig. 1, the dog 3 will be raised.

While we have shown and described the device as being used with the operating lever to move in a horizontal plane, it will be ob-

vious that it may be so applied that the lever arm will move through a vertical plane.

The device described enables a powerful stretching action to be exerted, since one or the other of the dogs is acting during both movements of the lever. The parts are all of simple and strong construction, and a powerful stretching effort may be obtained without any danger of breaking them.

It will be obvious, that instead of the clevis, any other suitable fulcrum may be provided for the lever head and socket; that the stretching chain can be connected to the wires to be stretched in any suitable manner; that the form of the dogs can be changed, and that various other changes can be made in the details without departing from our invention.

We claim:

1. A wire stretcher having a lever, a fulcrum device for said lever, stretching dogs pivotally attached to the lever at opposite sides of the fulcrum point, a spring device connecting the dogs and normally tending to pull them together and means for preventing the action of the spring at certain times; substantially as described.

2. A wire stretcher comprising a lever, a fulcrum device for the lever, stretching dogs pivoted to the lever at opposite sides of its fulcrum point, and a spring device pivotally connected to one of the dogs and having a lost motion connection with the other dog, said spring device normally tending to pull the dogs together, together with a latch device for overcoming the action of the spring at certain times; substantially as described.

3. A wire stretcher having a lever head, a fulcrum device for said head, stretching dogs pivoted to the head at opposite sides of the fulcrum point, a spring casing pivotally connected to one of the dogs and having a lost motion connection with the other dog, a spring connected to said casing at one end and to the other dog at its opposite end, a latch device, and cam means cooperating with said spring to operate the latch device; substantially as described.

4. In a wire stretcher, a pivoted lever head, a pair of stretching dogs pivotally connected with the head at opposite sides of its fulcrum, a spring casing pivotally connected to one of the dogs and having a pin and slot engagement with the other dog, a spring within said casing secured to the casing at one end and to the opposite dog at its other end, and a latch device carried by the last-named dog, said spring casing and the last-named dog having cam means cooperating with the spring to operate the latch device; substantially as described.

5. A wire stretcher having a pivoted lever head, stretching dogs pivoted to said head at

opposite sides of its fulcrum, a spring casing pivoted to one of said dogs and having a slot at its opposite end engaged by a pin on the other dog, a spring within said casing connected to the casing at one end and to the pin at the other end, a latch device mounted on said pin, said casing having an offset slot through which an arm of the latch device projects, and cooperating cam means on the last named dog on the spring casing, which, together with the spring, effect the operation of the latch device; substantially as described.

6. In a wire stretcher, a pivoted lever head, a pair of stretching dogs pivoted thereto at opposite sides of the fulcrum of the head, a spring casing pivoted to one of the dogs and having a slot at its opposite end portion engaged by a projection on the other dog, a coiled spring within said casing having one end secured to said pin and the other end secured to the casing, said spring being arranged to effect a cross-pull on the casing and also to pull the dogs towards each other, and a latch mounted on said pin and having an arm projecting outwardly through an offset slot in one side of the spring casing, said casing having a cam projection, and the dog

having a cooperating projection; substantially as described.

7. In a wire stretcher, a lever head, a clevis connected thereto and having its attaching pin forming a fulcrum for the head, a pair of stretching dogs pivoted to said head at opposite sides of the fulcrum point, spring and cam means for controlling the action of the dogs as the lever head is operated, and a hooked stretching chain arranged to be engaged by the dogs, together with means for guiding the chain; substantially as described.

8. In a stretching device of the character described, the combination with two oppositely acting stretching dogs, and lever means for actuating the dogs, of a spring device normally acting to pull the dogs toward each other, and latch means for holding the dogs open at certain times in their movement; substantially as described.

In testimony whereof, we have hereunto set our hands.

FRANK D. HAYNES.
JOHN A. COCKER.

Witnesses:

FLORENCE E. POSTLETHWAITE,
FRED T. JENKINS.