

No. 682,993.

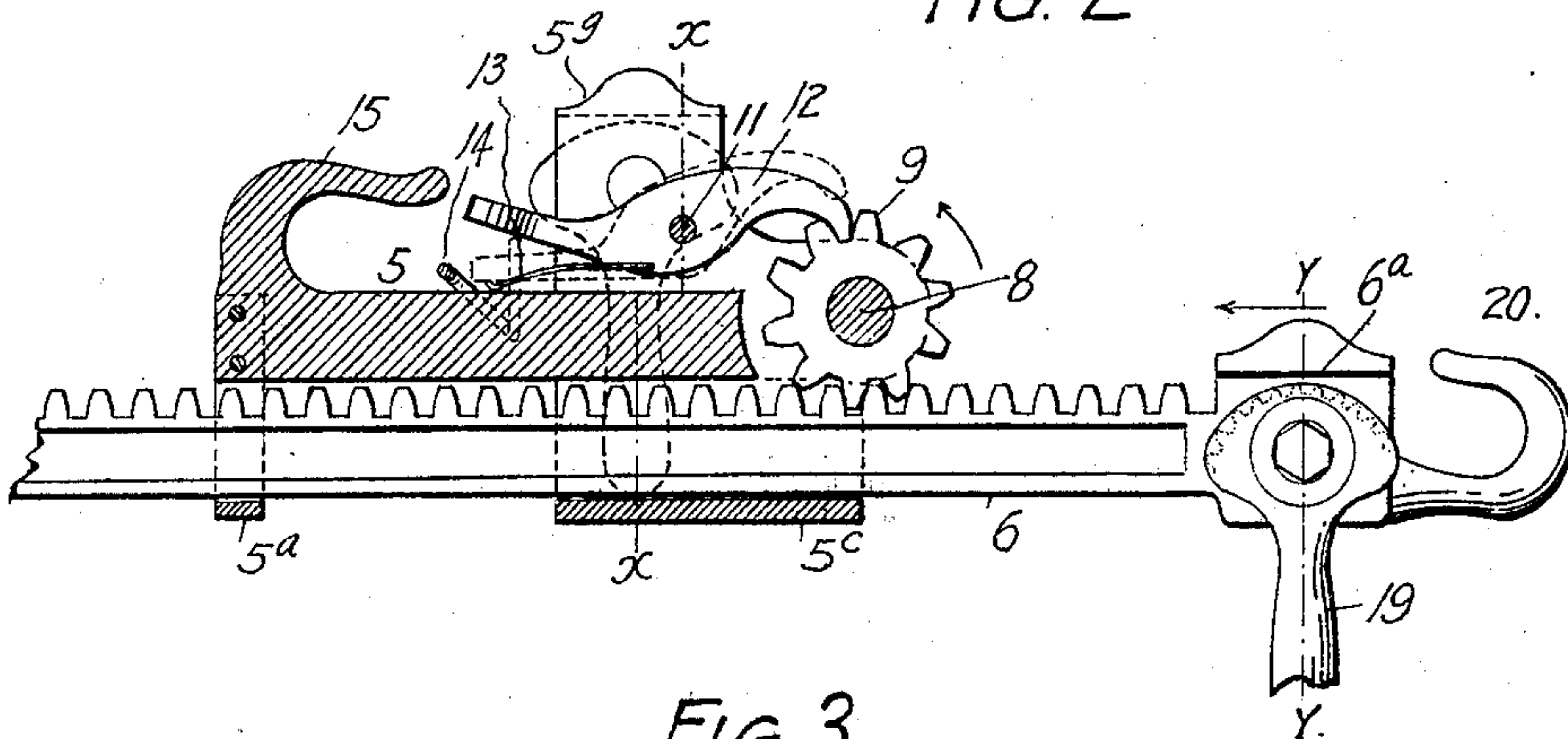
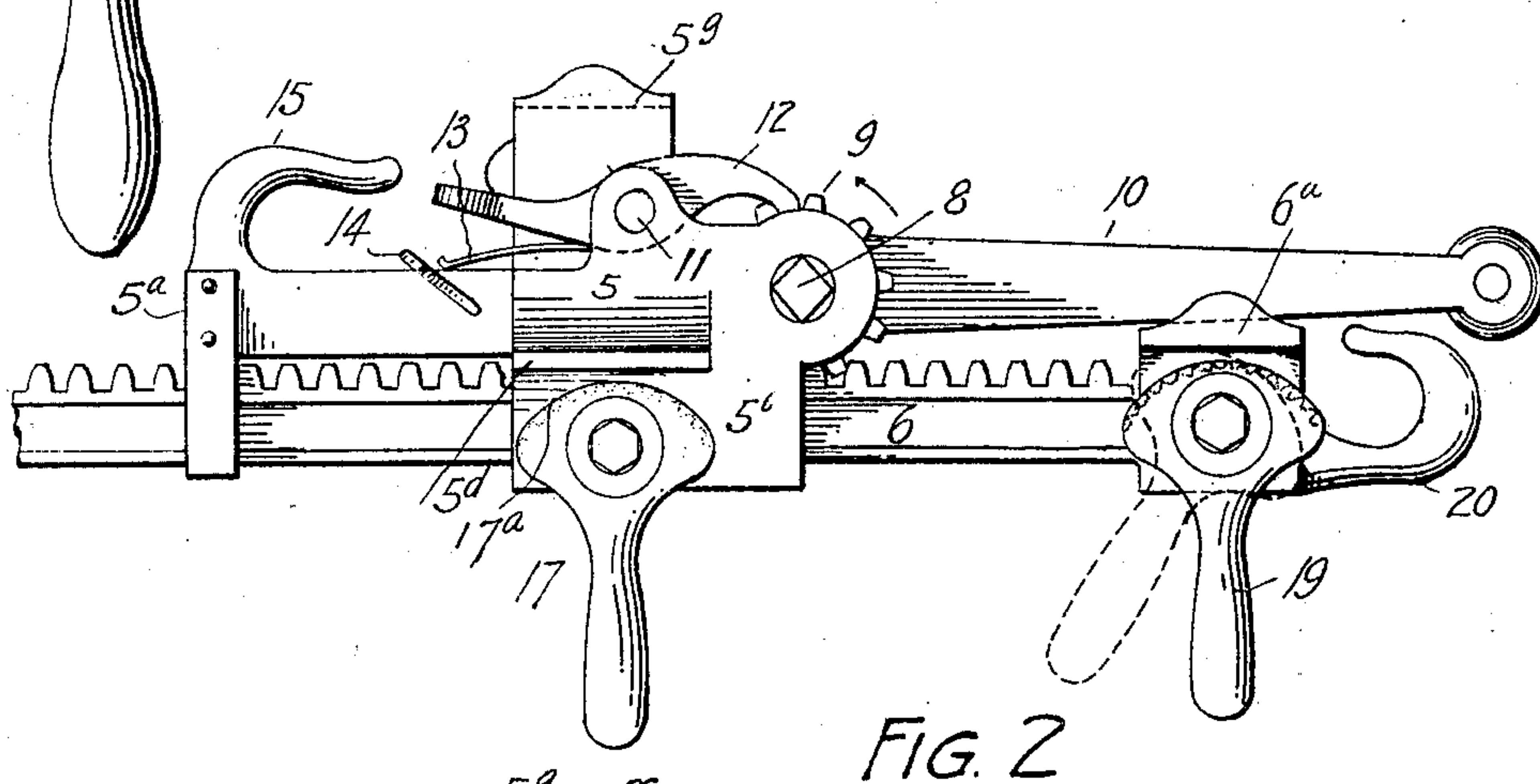
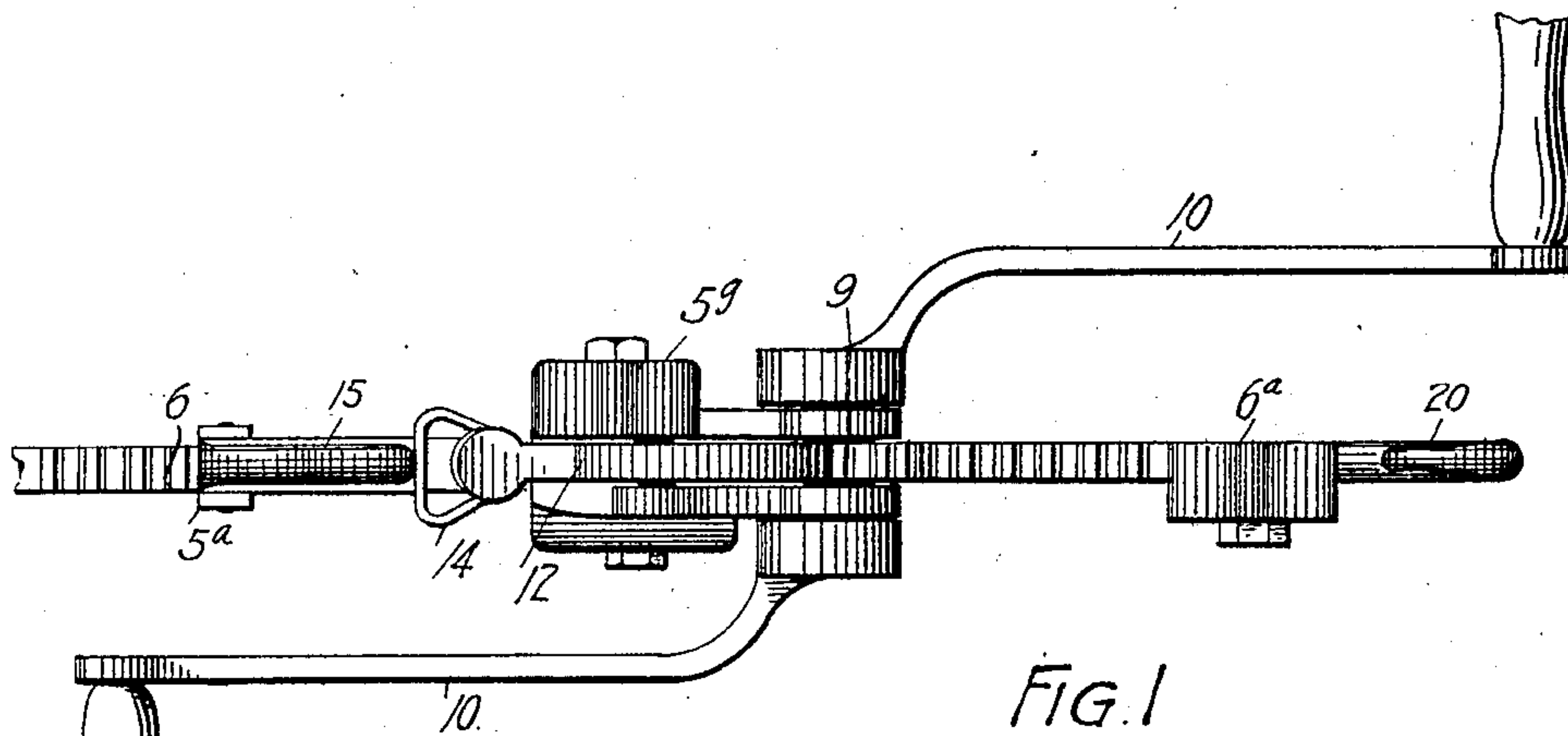
Patented Sept. 17, 1901.

W. MAHER.
WIRE STRETCHER.

(Application filed June 22, 1901.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:
G. J. Rollandet
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FIG. 3.

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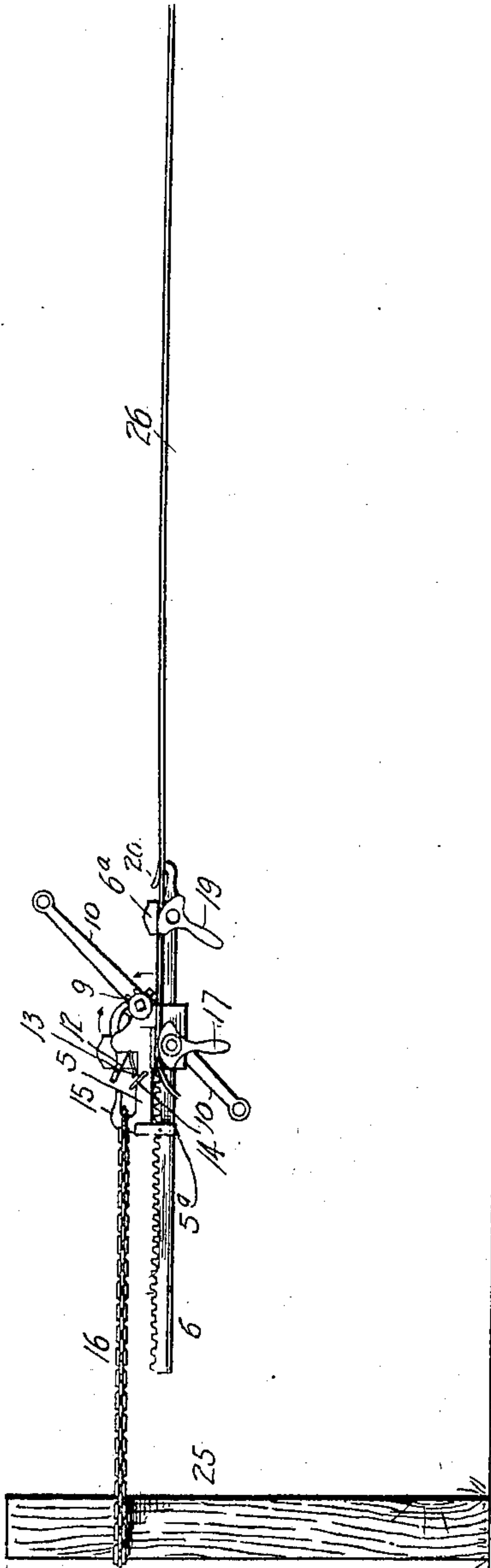


FIG. 4

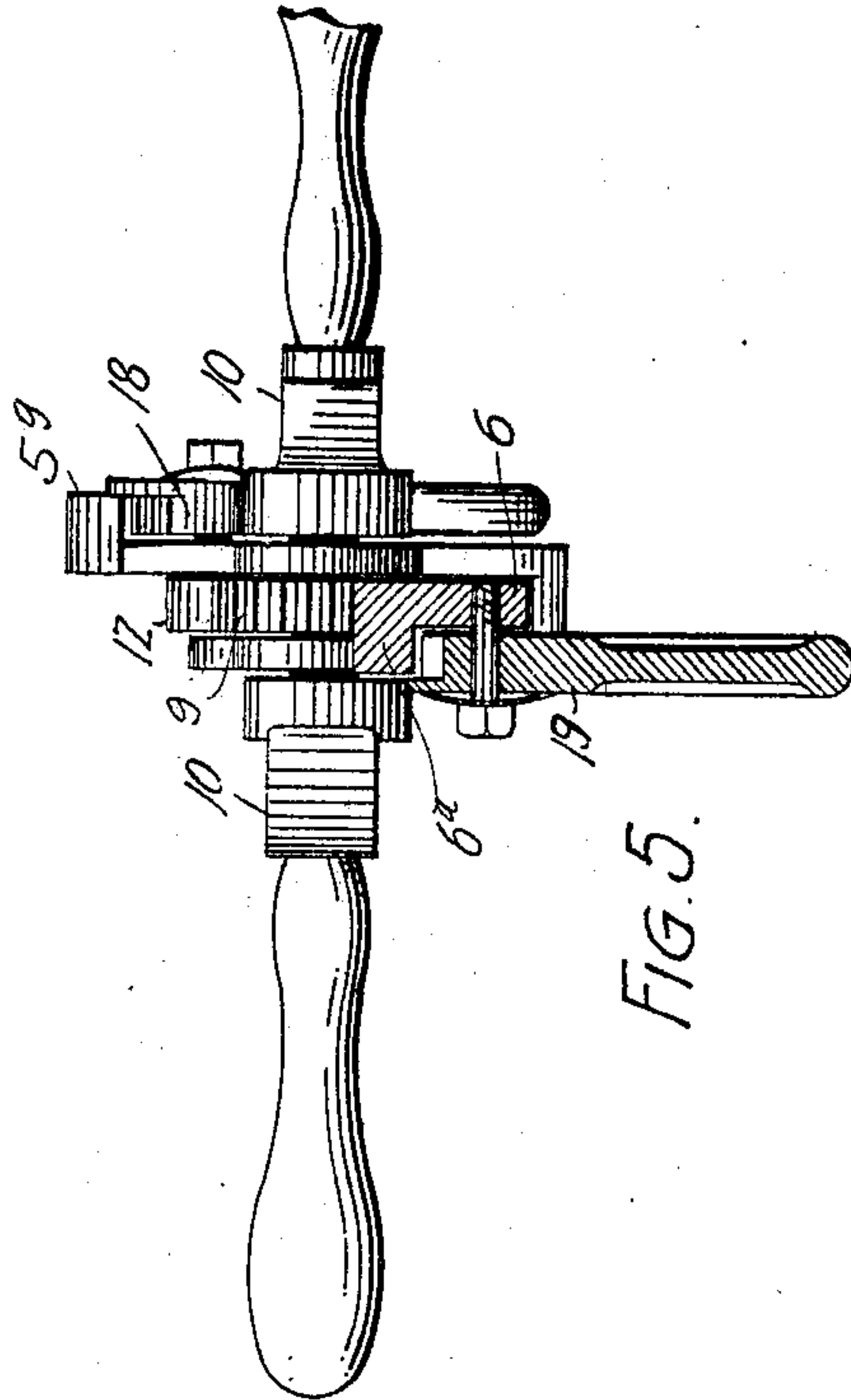


FIG. 5.

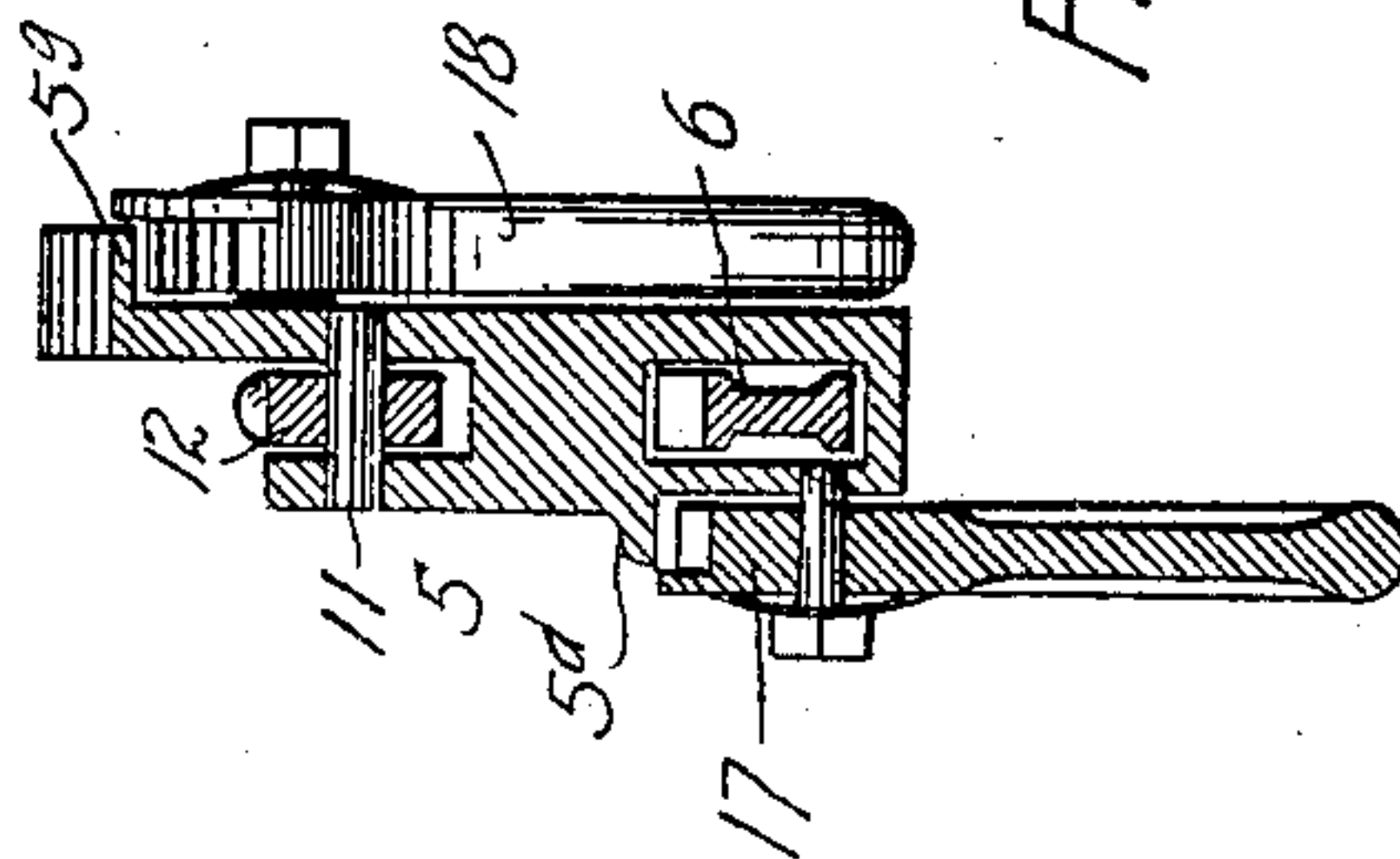


FIG. 6.

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UNITED STATES PATENT OFFICE.

WILLIAM MAHER, OF DENVER, COLORADO.

WIRE-STRETCHER.

SPECIFICATION forming part of Letters Patent No. 682,993, dated September 17, 1901.

Application filed June 22, 1901. Serial No. 65,623. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MAHER, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Wire-Stretchers; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in wire-stretchers for use in the construction of wire fence or wherever a device of this kind may be needed, my object being to provide a device of this class which shall be simple in construction, economical in cost, reliable, durable, and thoroughly practicable in operation; and to this end the invention consists of the features, arrangements, and combinations hereinafter described and claimed, all of which will be fully understood by reference to the accompanying drawings, in which is illustrated an embodiment thereof.

In the drawings, Figure 1 is a top or plan view of my improved wire-stretching device. Fig. 2 is a side elevation of the same, one of the cranks being removed to facilitate clearness of illustration. Fig. 3 is a vertical longitudinal section taken through one member of the device, the other member being shown in side elevation. The cranks are not illustrated in this view. Fig. 4 is a side elevation of the device in use, the parts being shown on a smaller scale. Figs. 5 and 6 are sections taken on the lines *y y* and *x x*, respectively, of Fig. 3.

The same reference characters indicate the same parts in all the views.

Let the numerals 5 and 6 designate the chief elements of my device. The member 5 may be called a "carriage," since it is arranged to travel on the rack-bar 6, the latter being slidably mounted in the carriage. The body of the carriage is provided with an opening in its lower portion 5^c, through which the rack-bar passes, the latter being further supported by a depending metal strap 5^a, attached to one end of the carriage. Journaled in the

end of the carriage remote from the strap 5^a is a shaft or spindle 8, to which is made fast a gear or pinion 9, arranged to mesh with the teeth or cogs of the rack-bar 6. The extremity of the carriage is recessed or cut out to receive the pinion. To each extremity of this spindle is made fast a hand-crank 10 for operating the pinion either to cause the rack-bar to move through the parts 5^a and 5^c of the carriage or to cause the carriage to travel on the rack-bar, as may be required.

Pivotally mounted on the carriage by means of a spindle 11 is a dog 12, adapted to engage the pinion and lock the latter against rotation in one direction, but permitting the pinion to turn freely in the opposite direction. The dog is normally held in engagement with the pinion by a spring 13, mounted on the carriage and engaging the dog from below and on the side of the pivot 11 remote from the pinion. A stirrup-shaped keeper 14, movably mounted on the carriage, is adapted to engage the extremity of the dog adjacent the spring and hold it in the dotted-line position, (see Fig. 3,) whereby its opposite extremity, or that remote from the keeper, is disengaged from the pinion. In this case the pinion may be freely turned in the direction indicated by the arrow in Figs. 2 and 3.

The carriage is provided with a hook 15 at the extremity remote from the pinion, the said hook being preferably formed integral with the carriage. When the device is in use, a chain 16 (see Fig. 4) may be connected with this hook and passed around a post or other suitable stationary support to support the device in position for wire-stretching purposes. Upon the lower part of the carriage is pivotally mounted an eccentric cam 17, having a toothed or roughened face 17^a. Above the face of this cam a ledge 5^d is formed on the carriage to cooperate with the cam to lock the wire in place. A similar locking-cam 18 is pivoted on the upper part of the carriage and on the opposite side from the cam 17. A ledge 5^e on the carriage cooperates with the cam 18 when the latter is in use. To one end of the rack-bar 6 is pivotally connected a locking-cam 19, cooperating with a ledge 6^a, formed on the bar. The extremity of the rack-bar adjacent the cam-lever 19 is also provided with a hook 20.

In the use of the device the chain 16, connected with the hook 15 of the carriage, as aforesaid, is passed around or connected with a post 25 or other suitable stationary support. (See Fig. 4.) The locking-cam 19 of the rack-bar 6 is then tightened on the extremity of the wire 26 to be stretched. At the beginning of the operation the rack-bar 6 should be moved to its extreme left-hand position, referring to Fig. 4, in order to utilize the full capacity of the device during the wire-stretching operation. The cranks 10 are then turned, causing the pinion 9 to rotate in the direction indicated by the arrow in Fig. 4, whereby the rack-bar is moved toward the post and the wire 26 stretched or drawn a distance equal to the travel of the bar. After the bar is moved toward the left as far as possible the cam 17 of the carriage is tightened on the wire and the cam 19 released. The cranks 10 are then turned in the opposite direction, causing the bar 6 to travel toward the right, after which the cam 19 is again tightened on the wire and the cam 17 released. The operation heretofore described is then repeated until the wire is sufficiently tight.

The chain 16 may, if desired, be attached to the hook 20 of the rack-bar, in which case the wire 26 would be held by the cam 17 and the carriage would travel on the rack during the wire-stretching operation. After the carriage travels to its limit of movement the wire is gripped and held by the cam 19 until the carriage is run back to get a new hold, after which the cam 17 on the carriage is tightened on the wire and the cam 19 released. The operation is then repeated.

The two locking-cams 17 and 18 on the carriage may be utilized for stretching two wires at the same time or the two cams may be used separately, as may be desired.

During the reverse movement of the carriage or while the rack-bar is given a reverse movement to get a new hold of the wire the keeper 14 is slipped over the tail of the dog, whereby its nose is disengaged from the pinion or gear, allowing the latter to turn freely in the reverse direction. (See dotted-line position of dog in Fig. 3.)

Having thus described my invention, what I claim is—

1. In a wire-stretcher, the combination with a carriage, and a rack-bar, the carriage having an opening in its lower portion to allow the rack to pass through, the carriage being also provided with a strap forming a further support for the rack-bar which is slidable in the carriage, the latter being also provided with a hook to permit connection with a stationary support, a cam-lever mounted on the carriage which is provided with a ledge adjacent the face of the cam and cooperating therewith, to hold a wire, a shaft or spindle journaled in the carriage and provided with a hand-crank, a pinion fast on the spindle and meshing with the cogs of the rack-bar, a spring-held dog mounted on the carriage and

normally engaging the pinion to lock it against movement in one direction, a suitable device movably mounted on the carriage and arranged to engage the dog and lock it against engagement with the pinion during the reverse movement of the carriage, and a locking-cam mounted on one extremity of the rack-bar which is provided with a cooperating shoulder or ledge adjacent said cam.

2. In a wire-stretcher, the combination of the carriage, the rack-bar, slidably connected with the carriage, a pinion mounted on one end of the carriage which is cut out to make room therefor whereby the pinion is allowed to mesh with the cogs of the rack-bar, means for rotating the pinion, a spring-held dog mounted on the carriage and engaging the pinion, the arrangement being such that the pinion is normally locked by the dog against movement in one direction, a device for holding the dog out of engagement with the pinion, a locking-cam mounted on the carriage which is provided with a cooperating ledge overlapping the working face of the cam, a cam mounted on the rack which is provided with a cooperating ledge, and suitable means for connecting one member of the device with a suitable stationary support, while the other member is connected with the wire to be stretched by virtue of its locking-cam.

3. In a wire-stretcher, the combination of two cooperating members one arranged to be connected with a stationary support, and the other arranged to be connected with the wire to be stretched, one member being a carriage and the other a rack-bar, the two members being connected in operative relation whereby one is allowed to move upon the other, the carriage member consisting of an integral casting through which the rack-bar member passes, the carriage member being cut out or recessed at one end, a pinion located in the recess of the carriage, a shaft or spindle journaled in the carriage and upon which the pinion is made fast, means for turning the shaft to rotate the pinion, a spring-held dog pivotally mounted on the carriage and arranged to engage the pinion whereby the latter is locked against movement in one direction, means mounted on the carriage for holding the dog against the tension of the spring, out of engagement with the pinion, to permit the reverse movement of the latter, means for connecting one member with a suitable stationary support, and means mounted on the other member for holding the wire to be stretched, and means mounted on the member connected with the stationary support, for holding the wire during the reverse movement of the member connected with the wire during the stretching operation.

4. In a wire-stretcher, the combination of a carriage and a rack-bar, the carriage consisting of an integral casting having an opening in its lower portion through which the rack-bar passes, a hook at one extremity of the carriage, the opposite extremity being re-

cessed or cut out, a shaft or spindle jour-
naled in the recessed portion of the carriage,
hand-cranks attached to the shaft for oper-
ating the latter, a gear or pinion fast on the
5 shaft and occupying the recess in the car-
riage extremity, and arranged to engage the
rack-bar, a locking-cam pivotally mounted
on the lower part of the carriage intermediate
the hook and pinion, a spring-held dog mount-
10 ed on the carriage and normally engaging the
pinion and locking the latter against move-
ment in one direction, a keeper mounted on
the carriage and arranged to engage the dog
and hold it out of engagement with the pin-

ion to permit the reverse movement of the 15
latter, a hook at one extremity of the rack-
bar, a locking-cam pivotally mounted on the
rack-bar extremity adjacent said hook, and
a ledge formed on the carriage and project-
ing over the locking-face of the cam and co- 20
operating with the latter to hold the wire in
place.

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

WILLIAM MAHER.

Witnesses:

DORA C. SHICK,
CHAS. E. STUBBS.