

No. 742,053.

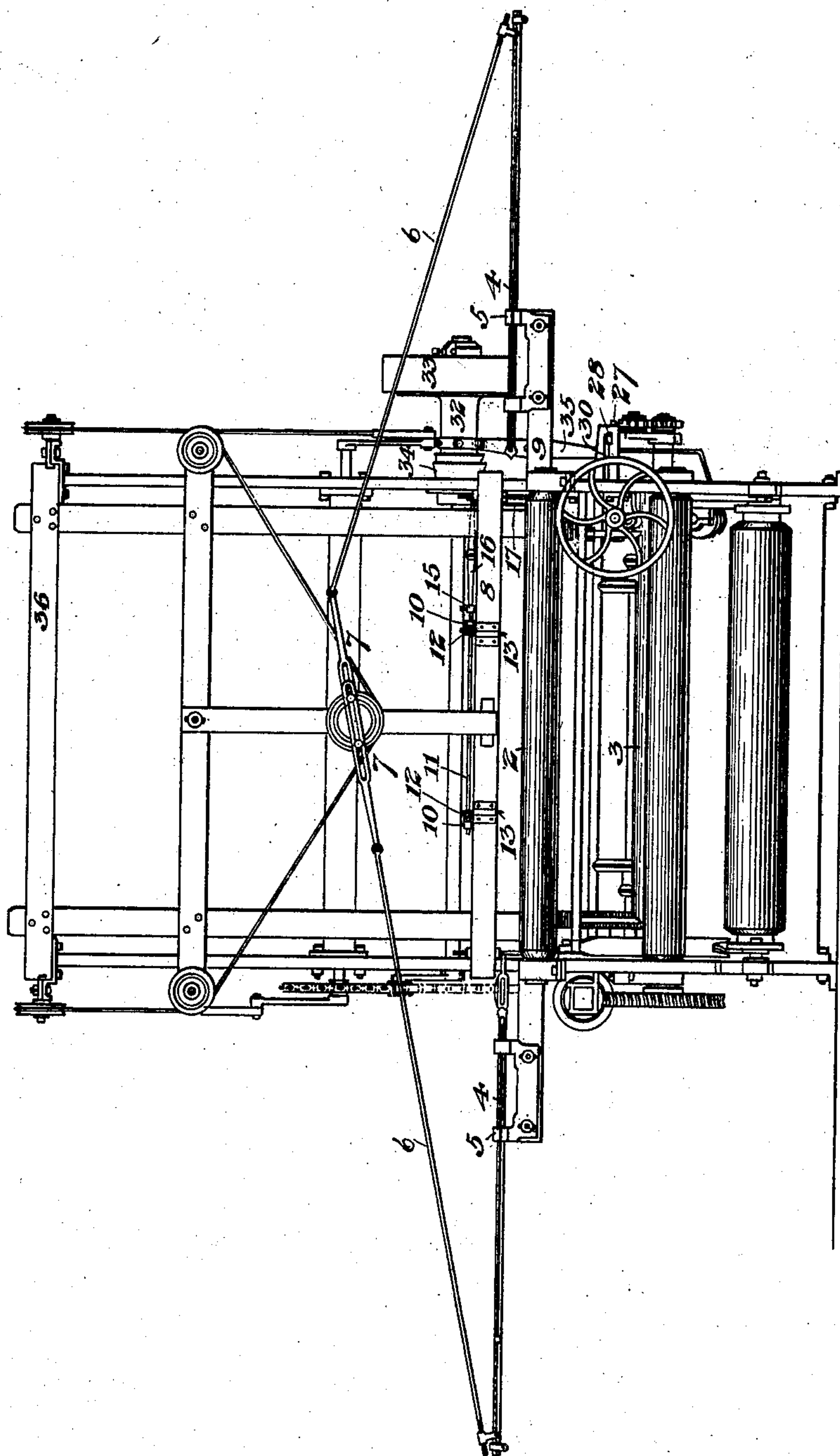
PATENTED OCT. 20, 1903.

I. J. NERACHER.
LOOM FOR WEAVING WIRE.

APPLICATION FILED MAR. 27, 1902.

NO MODEL.

5 SHEETS—SHEET 1.



WITNESSES

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L.A. Cormack
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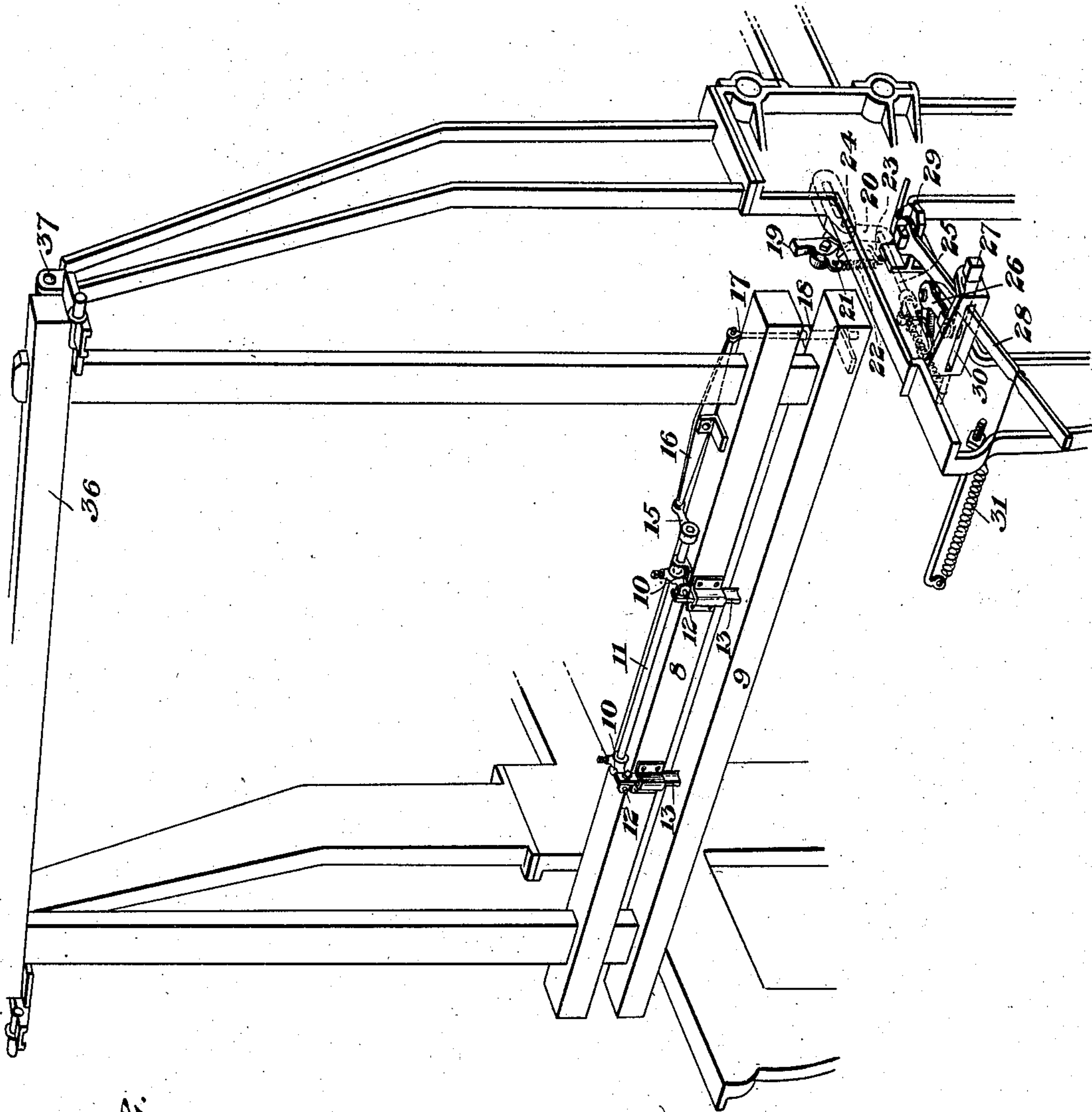
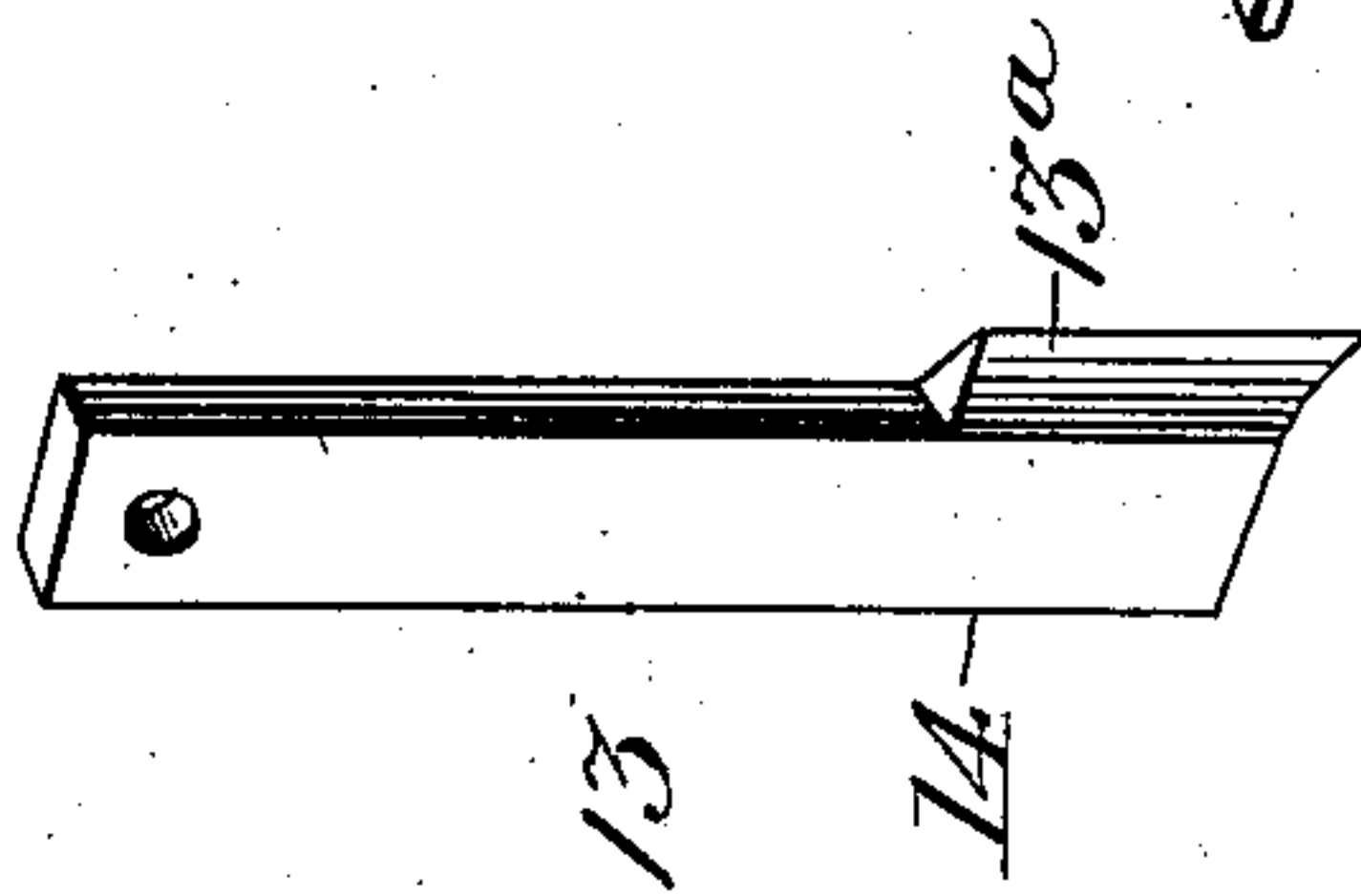


Fig. 2.

Fig. 8.



WITNESSES

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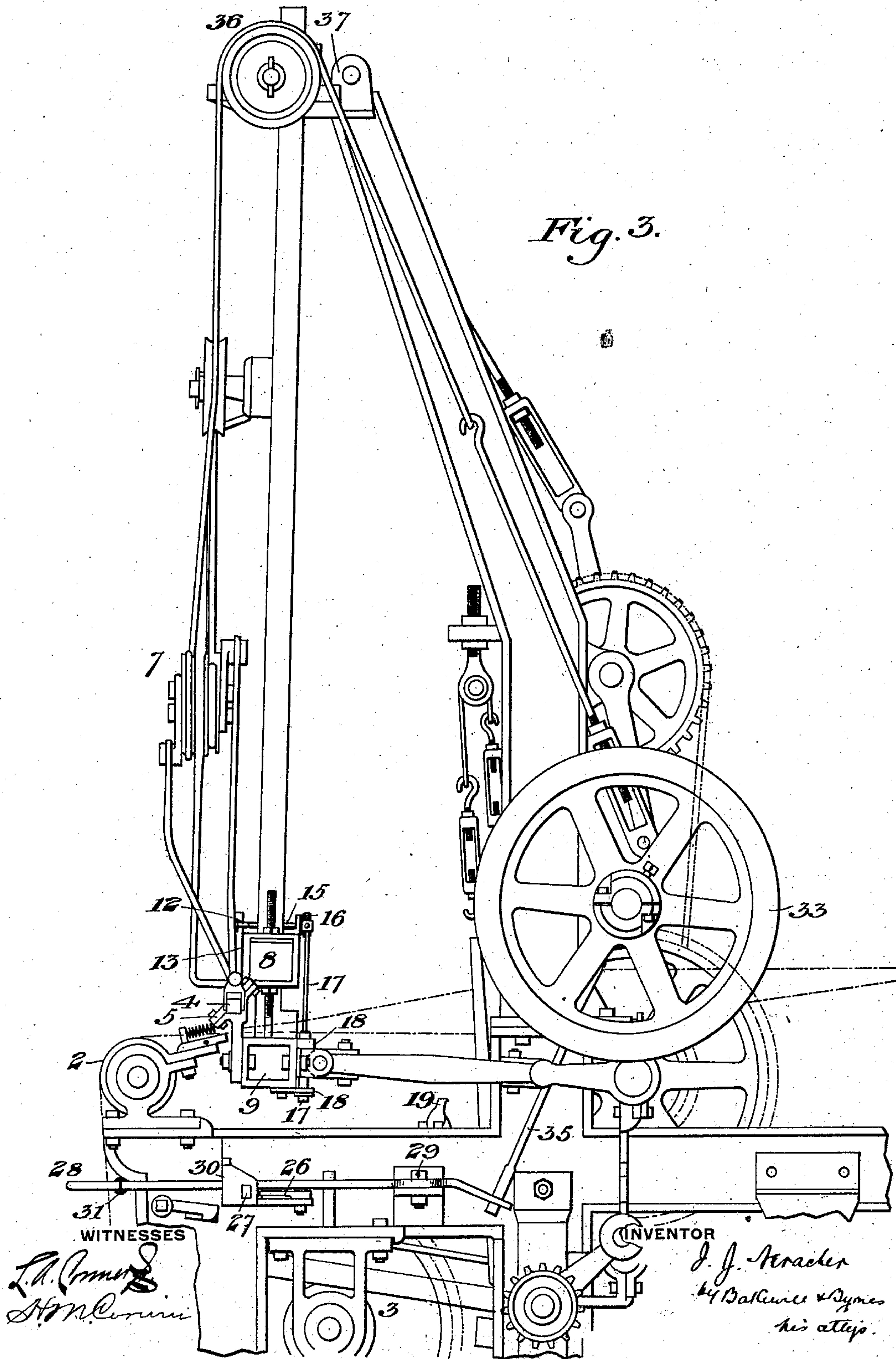
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5 SHEETS—SHEET 3.

Fig. 3.



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5 SHEETS—SHEET 5.

Fig. 6.

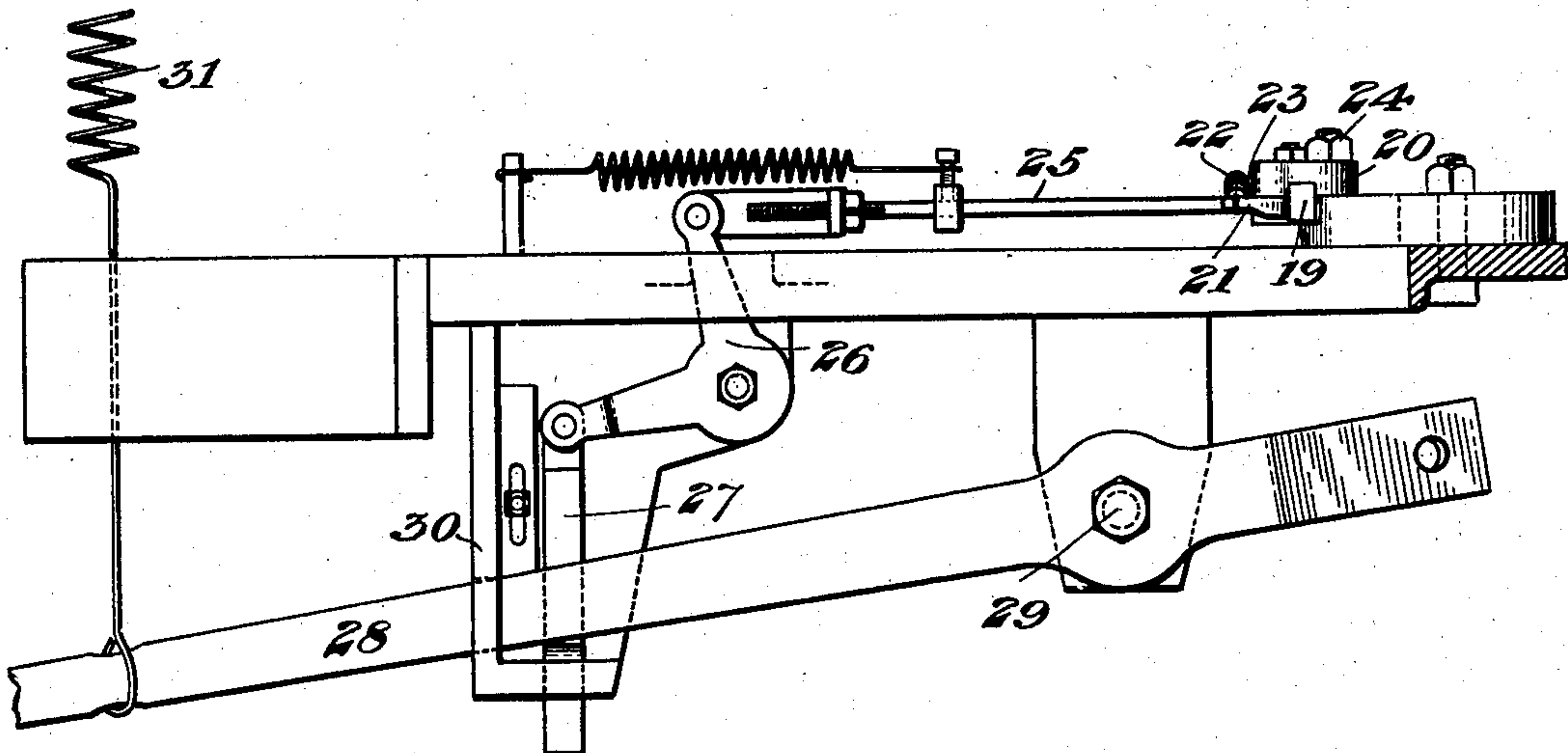
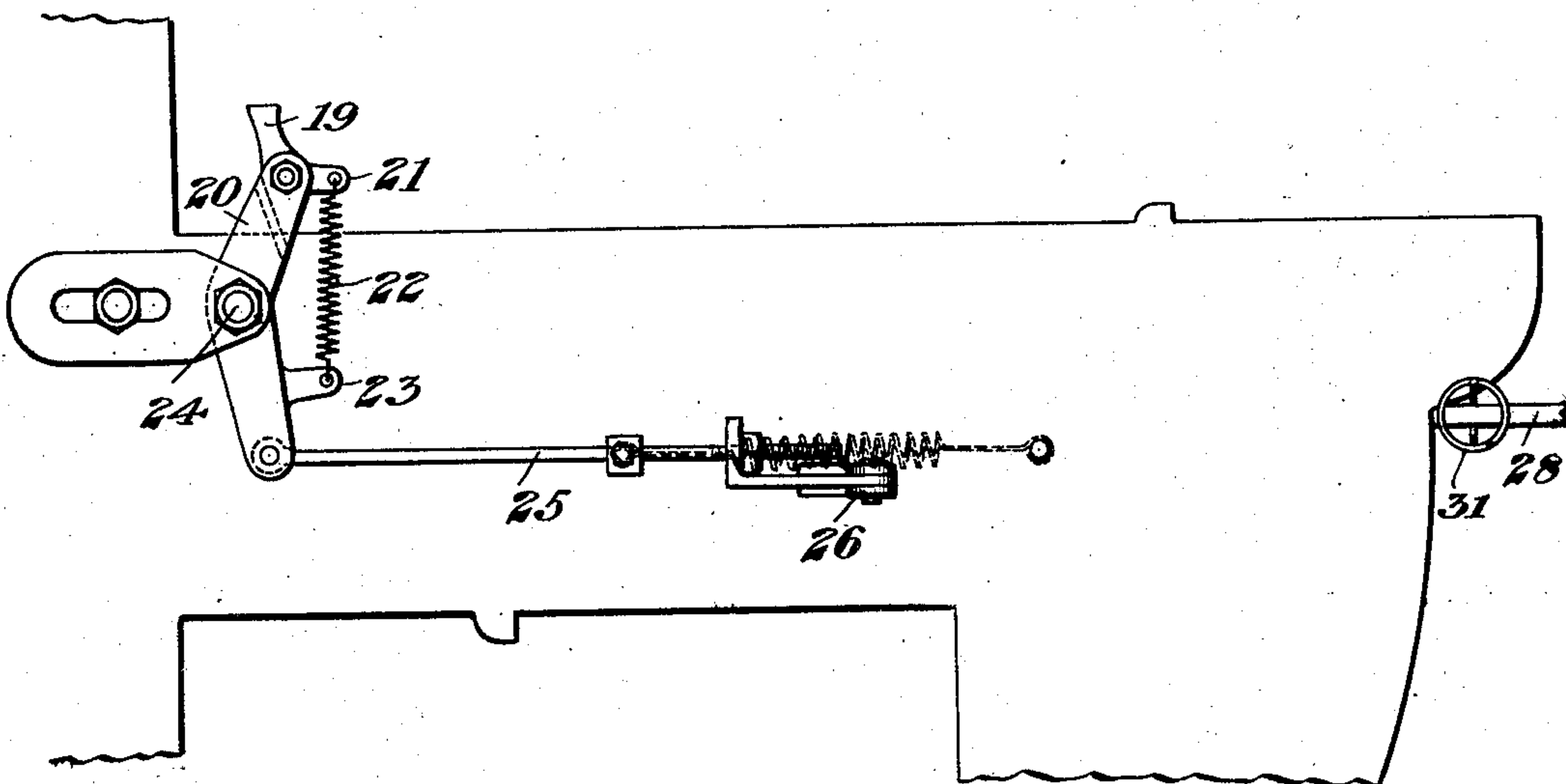


Fig. 7.



WITNESSES

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UNITED STATES PATENT OFFICE.

INOZENS J. NERACHER, OF CLEVELAND, OHIO.

LOOM FOR WEAVING WIRE.

SPECIFICATION forming part of Letters Patent No. 742,053, dated October 20, 1903.

Application filed March 27, 1902. Serial No. 100,215. (No model.)

To all whom it may concern:

Be it known that I, INOZENS J. NERACHER, of Cleveland, Cuyahoga county, Ohio, have invented a new and useful Loom for Weaving Wire, 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 front elevation of a loom provided with my improved automatic stop mechanism. Fig. 2 is a perspective view of the same applied to a positive-motion loom. Fig. 3 is a partial side elevation. Fig. 4 is a partial front elevation of one side. Fig. 5 is a detail view of the lay cap and slide. Fig. 6 is a plan view, on a larger scale, of the stop mechanism, and Fig. 7 is a view of same looking from the inside of the frame outwardly. Fig. 8 is a perspective view, on an enlarged scale, of one of the slides 13.

My invention relates to looms for weaving wire, and is designed to provide automatic stop mechanism which will stop the movement of the loom if the carriers do not properly exchange the shuttle, this stop mechanism acting immediately before the carrier-arms have moved out beyond the web.

The invention also relates to a means for giving the lay an upward movement of greater amount than that now obtained in the ordinary movement of the beater, and it also consists in the construction and arrangement of the parts, as hereinafter more fully described, and set forth in the claims.

In the drawings I show a loom for weaving wire wherein the warp-wires pass over a breast-roll 2 and thence down over a weight-roll and upwardly to the take-up device 3. The shuttle-carrying arms 4 4 slide in guide-ways 5 and are simultaneously moved toward and from each other by link connections 6 of the usual form and actuated by lever-and-disk mechanism 7 7. The carriers 4 and their actuating connections are old and well known and act in the usual manner, the shuttle being transferred from one to the other within the web and the carriers then moving out, one of them withdrawing the shuttle before the lay strikes the blow. It sometimes occurs that the shuttle is not properly transferred from one arm to the other and is dropped within the web. In such case

devices have been used which are actuated by the carrier-arms after they are withdrawn from the web and which stop the motion of the machine; but it frequently happens that before the machine can be stopped in this manner the lay will have struck its blow, thus greatly injuring the warp, the reed, and the shuttle, necessitating delay and extra expense.

I will now describe the mechanism by which the shuttle itself when dropped in the web will stop the loom, and thus prevent such injury.

The lay is provided with the usual lay-cap 8 and lay-beam 9, and in suitable bearings 10 on the lay-cap is mounted a shaft 11, having lever-arms 12, connected to vertical slides 13. These slides are of peculiar form. (Shown in enlarged detail in Figs. 5 and 8.) Their rear downwardly-projecting sharpened or wedge-shaped portions 13^a are arranged to project down through the warp-wires, while the thicker front portion 14 is arranged to contact with the shuttle itself when this shuttle passes through the wires. The shaft 11 is provided at its one end with a lever-arm 15, having loose connection with a rocking lever 16, also pivoted on the lay-cap and loosely connected to rod 17, which extends through guides 18 on the lay-beam and projects below this beam. When the shuttle contacts with either of the slides 13, it rocks the shaft 11, and thereby lifts the latch 17 and enables it to pass over the trigger 19, pivoted on the frame. This trigger is pivoted on a bell-crank lever 20 and has a lug 21 connected by spring 22 to a similar lug 23 on the lower arm of the bell-crank 20. The bell-crank is pivoted at 24, and a sliding rod 25 is connected to its lower arm. This rod extends forward to a bell-crank lever 26, the other arm of which is pivotally connected to a sliding bar 27, which is beveled on its upper face. The inclined face of this slide is arranged to lift a hand-lever 28, pivoted at 29. The lever has a slight vertical movement on its pivot, which allows the wedge-face to lift the lever out of a locking-recess in a guide 30, and when thus released a spring 31 will act upon the hand-lever and draw it over, thus disconnecting the clutch member 32 from the driving-pulley 33 and simulta-

neously bringing together the members of a brake 34. The forward end of the lever 28 is bent downwardly and loosely engages the end of lever 35, which acts upon the clutch members. When the slides 13 do not contact with the shuttle in the normal working, the stop mechanism will not be brought into action. It will be understood that the contact of the shuttle upon entering the warp with the first slide 13 or its failure to contact therewith has no effect in stopping the loom, since the lay is then upon its backward swing and the latch 17 merely trips the trigger 19. The latter is instantly restored to its normal position by the spring 22. When the carriers meet in the center, the lay is in its extreme rearward position, and the lay begins its forward stroke at the instant the carriers withdraw from the center. Should the shuttle have been dropped in exchanging between the carriers, its failure to contact with the second slide 13 will cause the latch 17 to contact with the trigger 19 and actuate the stop mechanism above described.

In order to give the lay a greater upward motion than is ordinarily imparted to strike low in the reed to make the reed stronger and do heavier work and also to carry the slides 13, which I use, out of the web, I secure to the upper beam 36 at the upper end of the lay a pair of rearwardly-extending brackets 37 and upon which brackets the lay is pivoted. This brings the pivotal point of the lay to the rear of the vertical plane of its axis, and consequently as the blow is struck the amount of upward motion of the lay is increased. This moving back of the pivotal point of the lay is an important part of my invention, as it improves the action, prevents injury to the reed, and carries the slides before mentioned out of the wires.

The advantages of my invention result from the use of the automatic stop mechanism, which is actuated by the shuttle itself before

the arms are moved out. In this way I can stop the loom much more quickly than in previous devices, and hence reduce the liability to injury. The rearward pivoting of the lay increases the upward movement, giving the advantages above recited.

Many changes may be made in the form and arrangement of the automatic stop mechanism and in the pivotal mechanism of the lay without departing from my invention.

I claim—

1. A loom for weaving wire having a shuttle, mechanism for exchanging the shuttle from side to side, devices arranged to contact with the shuttle, and actuating connections from said devices arranged to stop the machine when the shuttle does not actuate them; substantially as described.

2. A loom for weaving wire, a lay having downwardly-projecting elements mounted thereon and arranged to move between and spread the warp-wires, and contact with the shuttle, and trip mechanism arranged to stop the machine when the shuttle is not exchanged and does not contact with said elements; substantially as described.

3. A loom, a lay having devices thereon arranged to contact with the shuttle and be lifted thereby, and latch mechanism arranged to be tripped by the devices on the lay when it is not lifted by the shuttle; substantially as described.

4. A loom having an actuating clutch connection and a brake device, a lay and mechanism thereon arranged to be contacted with by the shuttle, and to sever the actuating connection and apply the brake when the shuttle is dropped; substantially as described.

In testimony whereof I have hereunto set my hand.

INOZENS J. NERACHER.

Witnesses:

L. M. REDMAN,
H. M. CORWIN.