

No. 719,647.

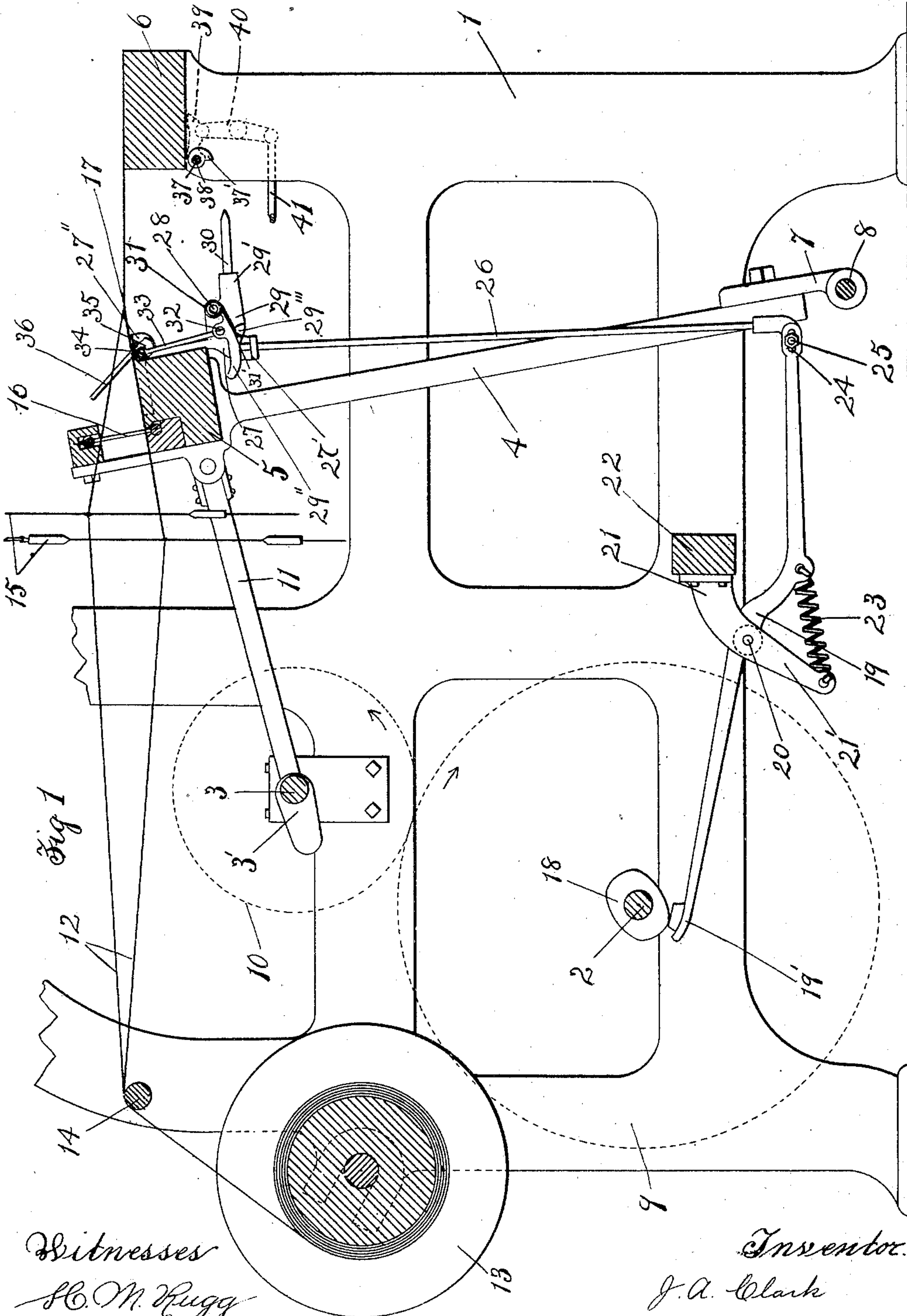
PATENTED FEB. 3, 1903.

J. A. CLARK.
WEFT STOP MOTION FOR LOOMS.

APPLICATION FILED MAR. 8, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



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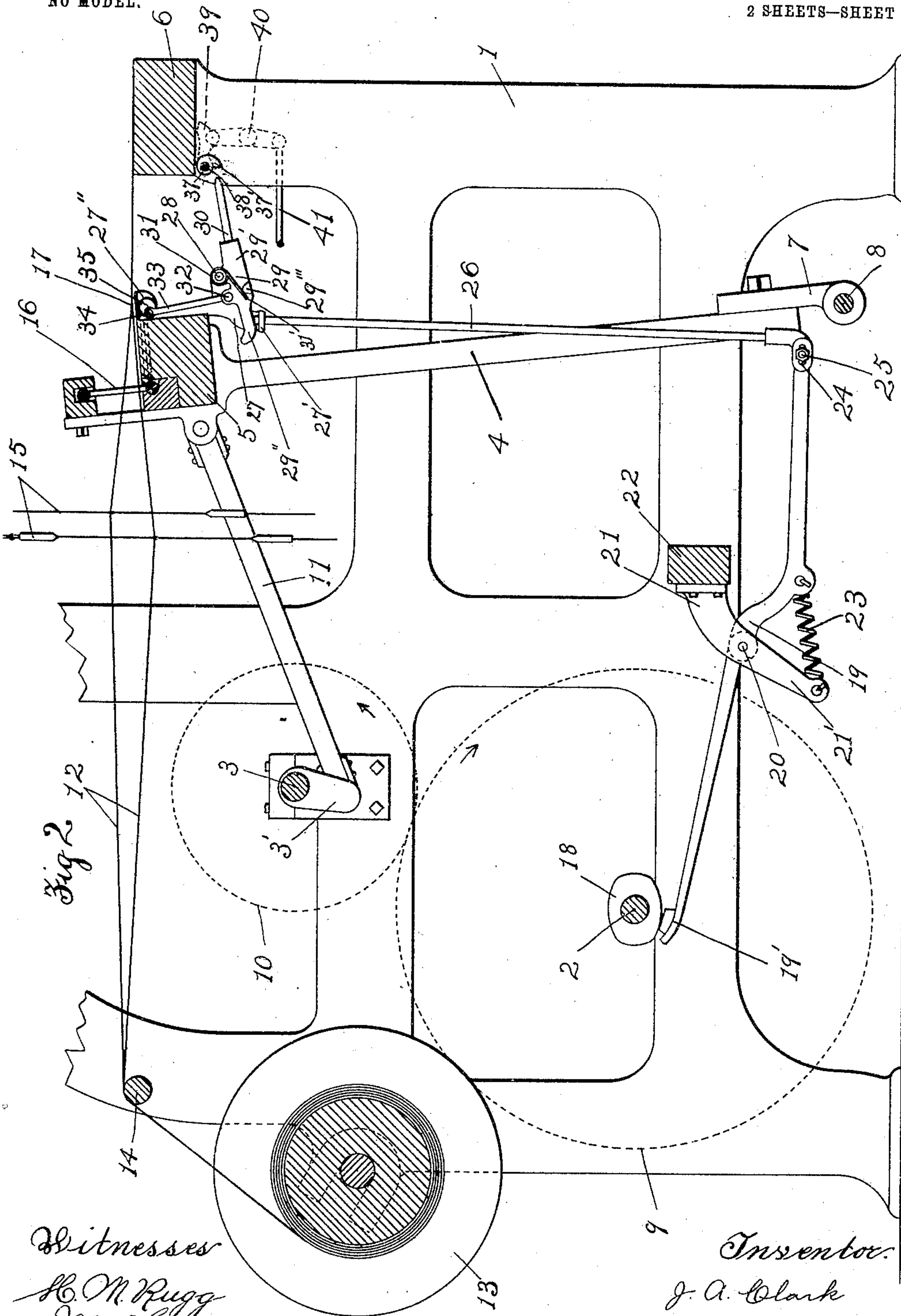
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UNITED STATES PATENT OFFICE.

JOHN A. CLARK, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO CROMPTON & KNOWLES LOOM WORKS, OF WORCESTER, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

WEFT STOP-MOTION FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 719,647, dated February 3, 1903.

Application filed March 8, 1902. Serial No. 97,217. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. CLARK, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Weft Stop-Motions for Looms, of which the following is a specification.

My invention relates to improvements in looms, and more particularly to improvements in center-filling stop-motions of looms.

The object of my invention is to provide positive mechanism for controlling the downward movement of the filling-feeler fingers or wires which rest upon the filling-thread after every passage of the shuttle through the shed and on the absence of the filling-thread are moved downwardly into a recess on the top of the lay and through intermediate connections raise the knock-off dagger to a position where it will engage mechanism on the breast-beam on the forward beat of the lay to put into operation mechanism for stopping the loom.

My invention consists in certain novel features of construction of my improvements in center-filling stop-motions of looms, as will be hereinafter fully described.

I have only shown in the drawings sufficient portions of a loom with my improvements applied thereto to enable those skilled in the art to which my invention belongs to understand the construction and operation of my improvements.

Figure 1 is a sectional side elevation of parts of a loom with my improvements applied thereto, showing the filling-feeler fingers or wires in their raised position; and Fig. 2 corresponds to Fig. 1, but shows the filling-feeler fingers or wires in their lowered position and the mechanism connected therewith in the opposite position to that shown in Fig. 1.

In the accompanying drawings, 1 is the loom side or frame; 2, the bottom shaft; 3, the crank-shaft with the crank 3' thereon; 4, the lay-sword; 5, the lay, and 6 the breast-beam. The lay-sword 4 is secured at its lower end to the lay-sword plate 7, pivotally mounted on a shaft 8. The bottom shaft 2 and the crank-shaft 3 are geared together by gears 9 and 10, (shown by broken lines in the draw-

ings,) so that the bottom shaft 2 will have one revolution to two revolutions of the crank-shaft 3.

The warp-threads 12 extend from the let-off beam 13 over the back roll 14, through the harnesses 15 and the reed 16 to the fell 17 of the woven fabric, and thence over the breast-beam 6 to the take-up roll. (Not shown.)

The above-mentioned parts may be of the ordinary construction and operation.

I will now describe my improvements.

On the bottom shaft 2 is fast a cam 18, the periphery of which engages one end 19' of a lever 19, centrally pivoted on a stud 20 on a bracket 21, bolted to the girth 22. A spring 23, attached at one end to the lever 19 and at its other end to an extension 21' on the bracket 21, acts to hold the end 19' of the lever 19 in engagement with the cam 18 on the bottom shaft 2.

The cam 18 may be adjustable on the shaft 2 relative to its axis of revolution to vary its time of engagement with the end 19' of the lever 19.

On the opposite end of the lever 19 from the end 19' is a slot 24, which receives a stud 25, fast to the lower end of the vertically-moving rod 26, which has a bearing at its upper end in an extension 27' on the stand 27, secured to the front side of the lay 5.

On a stud 28, secured to the stand 27, is pivotally mounted a rocking lever 29, having secured thereto at its front end 29' the knock-off dagger 30. The rear end of the rocking lever 29 has a cam-surface 29'' thereon, which extends directly over and is engaged by the upper end of the vertically-moving rod 26. On the stud 28 is secured a coiled spring 31, the free end 31' of which engages a lug 29''' on the rocking lever 29. The spring 31, with its free end bearing on the lug 29''' of the lever 29, acts to hold the end 29'' of said lever in engagement with the upper end of the rod 26.

To the rocking lever 29, at the rear of its pivot-stud 28, is pivotally attached at 32 the lower end of a connector or link 33. The upper end of said connector 33 is pivotally attached to a stud 34 on a crank 35. The crank 35 is fast on a rock-shaft (not shown) journaled in bearings 27'' at the upper end of the stand 27.

The filling-feeler fingers or wires 36 are fast on the rock-shaft (not shown) operated by the crank 35 and move with said shaft.

In the raceway of the lay 5 is a recess (shown by broken lines) to receive the filling-feeler fingers or wires 36 when they are moved into their lowest position in case of the absence of filling.

Extending under the breast-beam is a rock-shaft 38, having fast thereon a collar 37, with an extension 37'. On the end of the shaft 38 is a latch 39, (shown by broken lines,) which engages the upper end of a centrally-pivoted lever 40. (Shown by broken lines.) The lower end of the lever 40 is secured to a connector or rod 41, which operates to stop the loom in the ordinary way through mechanism. (Not shown.)

The operation of my improvements will be readily understood.

As the lay beats up after the insertion of the filling-thread the cam 18 on the bottom shaft 2 is partially revolved and the lever 19 is moved on its pivotal support, as shown in Fig. 1, causing the rod 26 to be lowered and allowing the spring 31 to act to move the lever 29 and through the connector 33 and crank 35 move down the filling-feeler fingers or wires 36 upon the filling-thread. The filling-thread limits the downward movement of the filling-feeler fingers or wires 36, and whenever the filling-thread is present in the shed on the forward beat of the lay the fingers 36 are prevented from completing their full downward movement into the recess in the lay and the dagger 30 on the lever 29 is held in a position in which it will not engage the projection 27' on the collar 27. In case of the absence of the filling-thread on the forward beat of the lay the spring 31 (the end 19' of

the lever 19 being on the low part of the cam 18) will move the lever 29 and cause the filling-feeler fingers or wires 36 to be moved to their lowest position into the recess in the lay, and consequently the dagger 30 to be raised to a position where on the forward beat of the lay it will engage the projection 27' on the collar 27, as shown in Fig. 2, and put into operation mechanism to stop the loom.

It will be understood that the details of construction of my improvements in center-filling stop-motions may be varied, if desired.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a center-filling stop-motion for looms, the combination of a lay, filling-feeler fingers pivoted thereon, the bottom shaft, a cam on said bottom shaft, and intermediate connections between said cam and filling-feeler fingers to control the movement of the latter, said connections comprising a rocking lever carrying the knock-off dagger, a link joining the filling-feeler fingers and rocking lever, a spring acting normally to raise the knock-off dagger, said rocking lever having a portion projecting rearwardly of the point of connection between the said link and rocking lever, a centrally-pivoted lever having one end engaging the cam on the bottom shaft, a vertically-movable rod adjustably connected to the opposite end of the pivoted lever, and acting on the rearwardly-projecting portion of the rocking lever and a spring acting on said centrally-pivoted lever and tending to lower the vertically-movable rod.

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