

W. TAYLOR & C. G. SAALFRANK.

No. 393,935.

Patented Dec. 4, 1888..

Fig. 1.

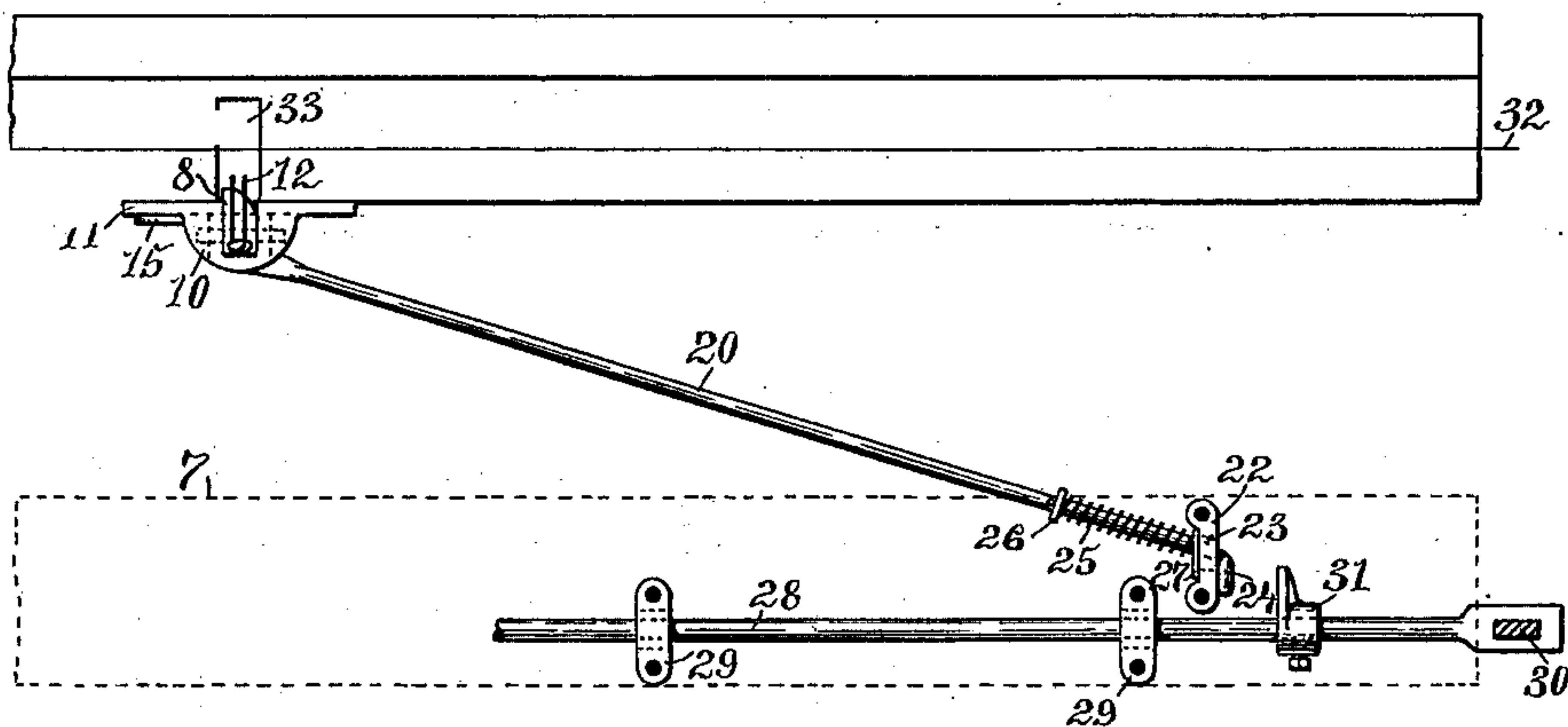


Fig. 2.

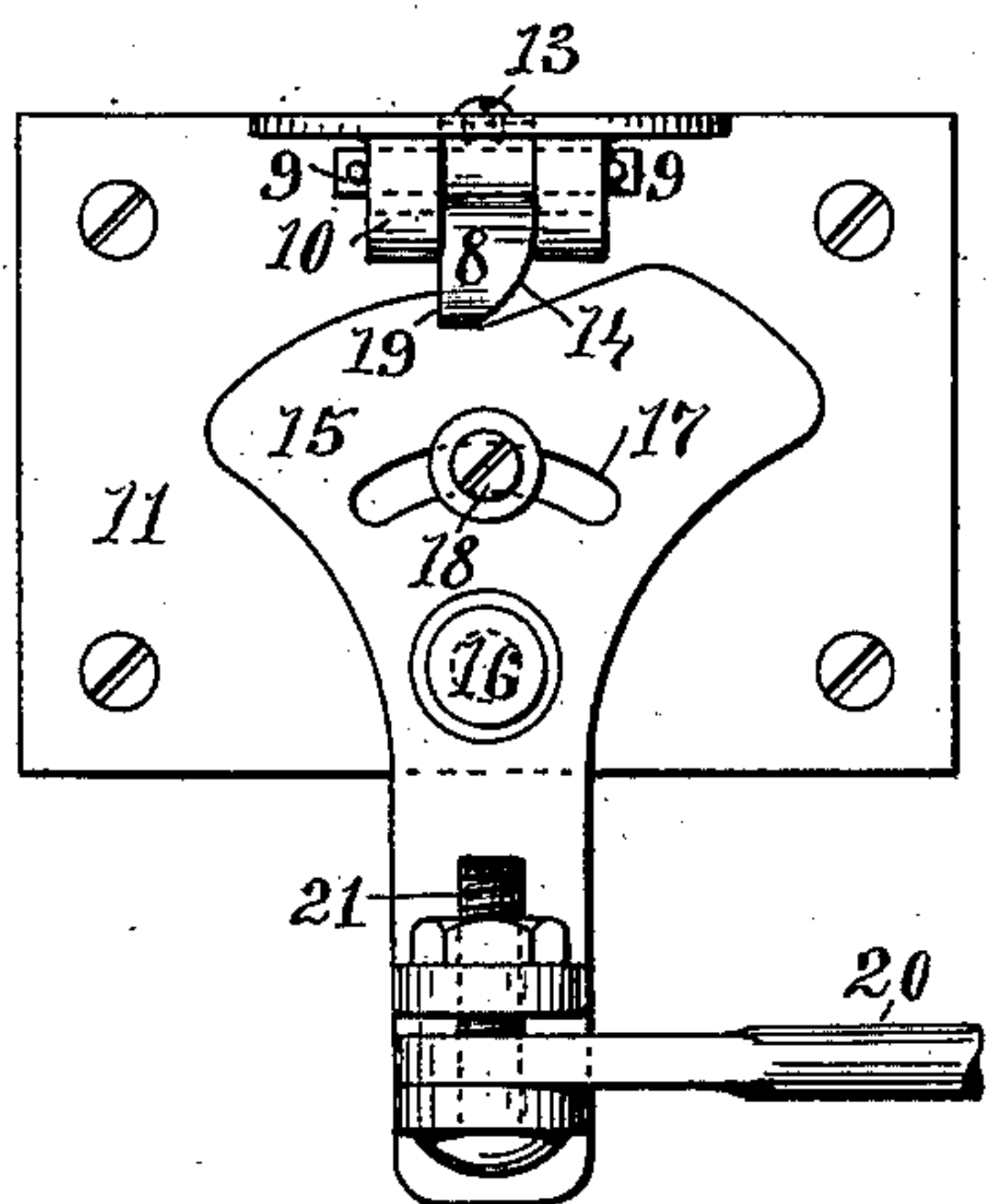


Fig. 3.

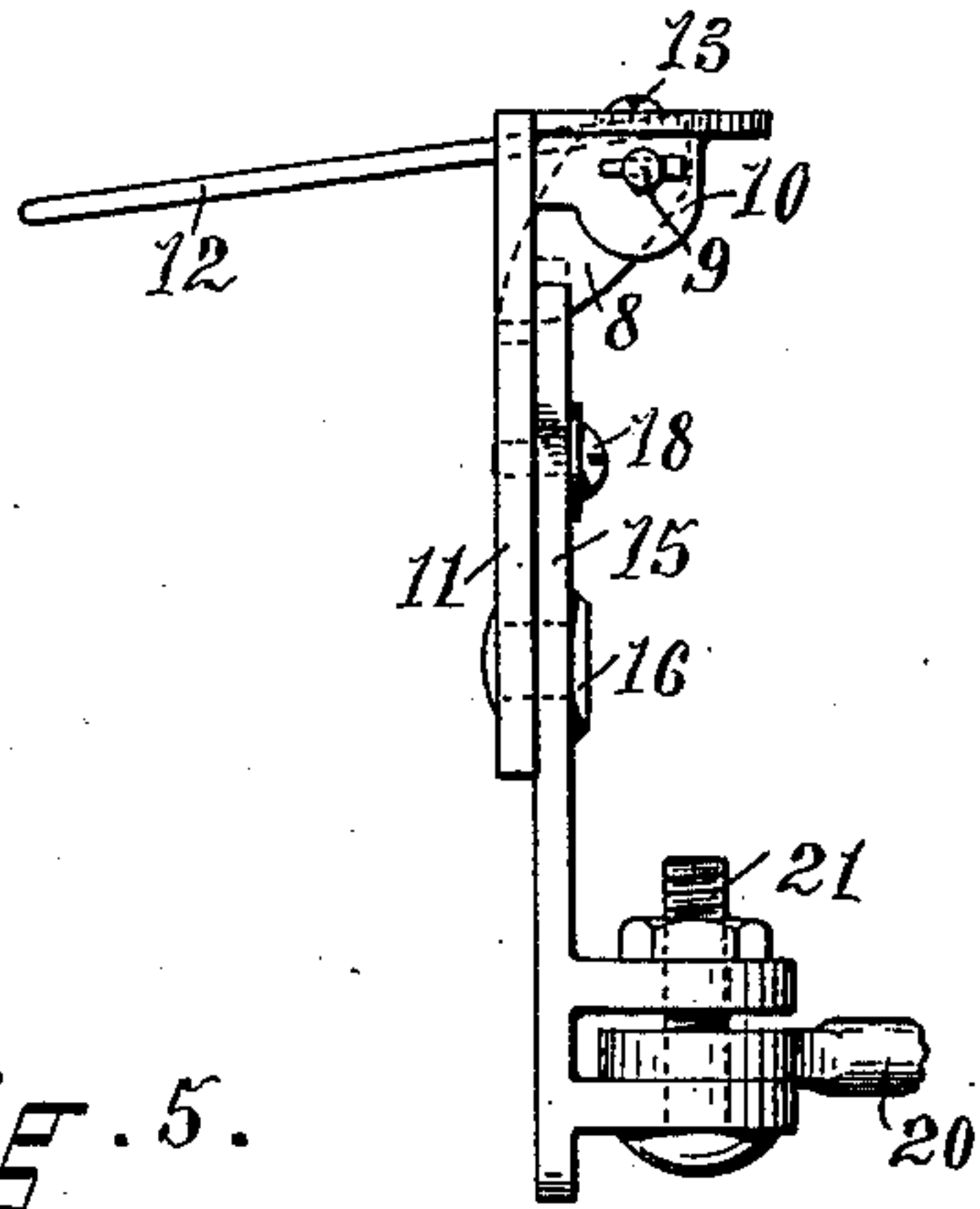
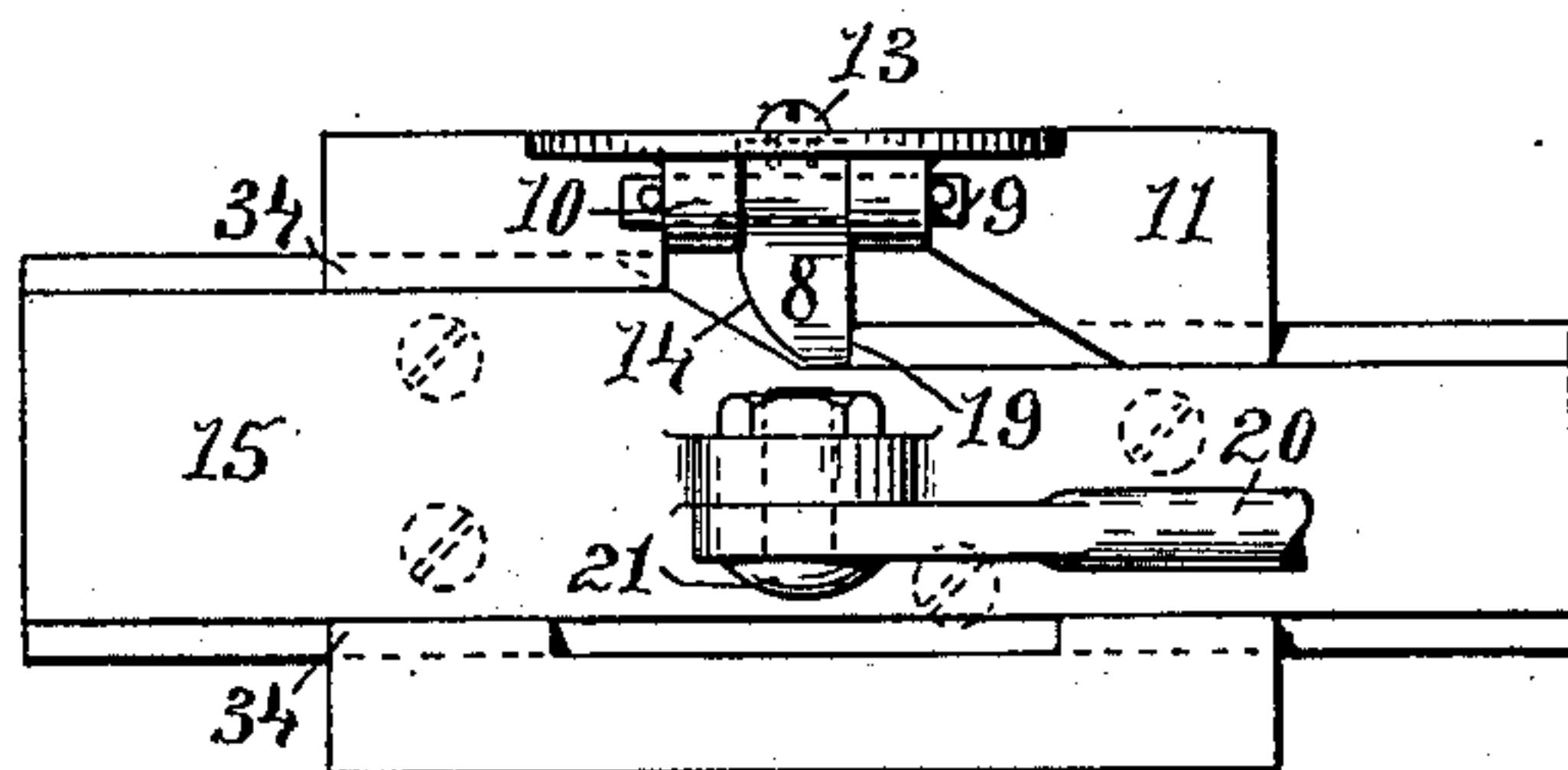
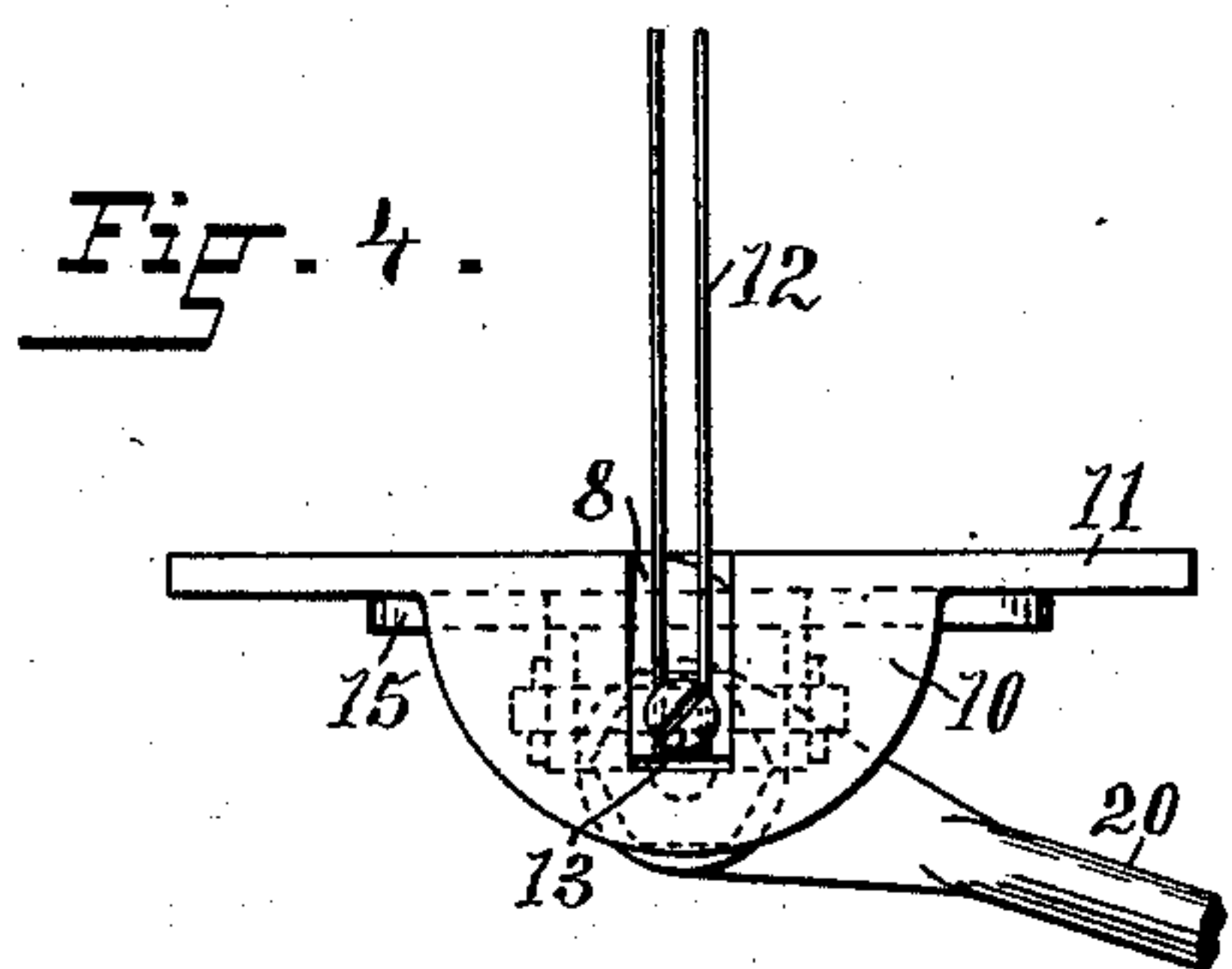


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM TAYLOR AND CHRISTIAN G. SAALFRANK, OF PROVIDENCE, RHODE ISLAND.

WEFT STOP-MOTION FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 393,935, dated December 4, 1888.

Application filed October 3, 1887. Serial No. 251,289. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM TAYLOR and CHRISTIAN G. SAALFRANK, of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Weft Stop-Motions for Looms, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to mechanism for stopping the running of a loom upon the failure of the proper supply of the weft or filling in the loom, whether the failure be due to the breaking of the weft or the depletion of the same from the shuttle.

The object of our invention is to provide an efficient and neat stop-motion mechanism which will promptly effect the stopping of the loom upon the absence of the weft from its proper position as the lay beats up.

To the aforesaid purpose our invention consists in the novel and peculiar arrangement and construction of the several parts of the mechanism, all as hereinafter fully described.

In the accompanying drawings, illustrating our invention, Figure 1 is a plan view of our improved stop-motion, part of which is mounted on the lay of the loom and part on the breast-beam, the latter part being indicated in broken lines. Fig. 2 is an enlarged detail view of a portion of the stop-motion shown in side view; and Fig. 3 is a view of the parts shown in Fig. 2, the view being taken at right angles thereto. Fig. 4 is a plan view of the parts shown in Fig. 2. Fig. 5 is a side view of another form of cam used in the mechanism, together with the other adjacent parts.

In the said drawings like numbers of reference designate corresponding parts throughout.

Referring to the drawings, the number 6 designates the lay of the loom, and the broken lines 7 indicate the breast-beam. The swinging locking-dog 8 is provided with the bearings 9, which are journaled in the bracket 10, secured on the bed-plate 11. The detector-fork 12 is secured by means of the screw 13 to the locking-dog, the under face, 14, of which

is formed inclined, and over this inclined face slides the cam 15, which serves to elevate the dog and raise the detector-fork into its highest position, so that the fork may clear the shuttle when passing thereunder. The detector-fork is disposed transversely of the lay, in which is formed the slot 33, which the fork may fall into in order to lower the dog sufficiently to lock the cam 15, as hereinafter described. The cam 15 is pivoted at 16 to the bed-plate 11, and is provided with the segmental slot 17, which works over the stud 18, fixed to the bed-plate.

The cam 15 is provided with a projection or shoulder, 19, which is engaged by the locking-dog 8, when the latter is permitted to fall into low position, through the absence of the weft and its consequent failure to hold the attached detector-fork elevated, as shown in Figs. 2 and 3. In this position the dog 8 locks the cam 15 against moving in one direction.

The stop-motion rod 20 is hinged to the cam 15 by the bolt 21, and the other end of the rod is passed loosely through the bracket 22, formed with slot 23, which is shown in broken lines. The extreme end of this rod is formed with an enlargement, 24, to prevent the rod from being withdrawn from the slot. The spring 25 is placed about the rod, and one end thereof abuts against the adjustable stop 26, secured on the rod, while the other end of the spring bears against the slide or washer 27, which engages with one face of the bracket 22.

The shipper-bar 28 is mounted in the hangers 29, which are fastened upon the under face of the breast-beam 7, and the bar is capable of being reciprocated endwise in its bearings. One end of the shipper-bar engages the shipper-lever 30, (shown in cross-section in Fig. 1,) and 31 is an adjustable stop, mounted on the bar and designed to be engaged by the foot 24 of the rod 20 and pushed thereby sufficiently far to slip the driving-belt (not shown) in order to stop the loom, whenever the absence of the weft 32 (shown in Fig. 1) allows the detector-fork to lower the dog 8, so as to lock the cam 15, which then being fixed will push the rod 20 through the slot in the bracket 22, in an obvious manner, into engagement with the stop 31 as the lay moves forward.

In Fig. 5 we show the cam 15 as sliding in the ways 34 on the bed-plate instead of the oscillating pivoted cam.

From the foregoing description it will be readily understood that when the filling or weft 32 is present in its proper position on the lay 6 as the lay beats up the detector-fork will rest on the weft and thereby hold the dog clear of the projection 19 on the cam 15, which is moved by the motion of the lay because of the resistance offered to the rod 20 by the spring 25. The dog thus escaping the projection on the cam, it cannot lock the cam, so that the rod 20 is not moved far enough to engage the shipper-bar; but when the weft 32 is broken or is not in proper position the dog locks the cam, and the beating up of the lay pushes the rod 20 into engagement with the shipper-rod and stops the loom as above described.

The bed-plate 11 is to be fastened at a suitable place along the lay and upon the face thereof opposite the breast-beam, as shown in Fig. 1.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. The combination, as hereinbefore set forth, with a swinging locking-dog and a detector-fork mounted thereon, of a cam for elevating the fork to its highest position, the said cam provided with means for engaging the locking-dog when the fork detects the absence of the weft, the shipper-bar, and the stop-motion rod provided with a spring and intermediate the said bar, and cam, whereby the shipper-bar may be moved by the rod upon the locking of the cam by the locking-dog, substantially as and for the purpose herein described.

2. The combination, as hereinbefore set forth, with the lay, of the swinging locking-dog and the detector-fork mounted thereon, a cam for moving the dog so as to elevate the fork into its highest position and provided with a projection for engaging the dog, whereby the dog may lock the cam, a shipper-bar for effecting the shipping of the belt, and a stop-motion rod hinged to and operating the cam and engaging the shipper-bar when the cam is locked by the dog, and a spring mounted on said rod to resist the motion imparted to the rod by the movement of the lay, substantially as and for the purpose herein described.

3. The combination, as hereinbefore set forth, with the lay, of the swinging locking-dog and the detector-fork mounted thereon, a cam for raising the dog and provided with

a projection for engaging the dog, whereby the latter may lock the cam, a shipper-bar, and a stop-motion rod hinged by one end to the said cam for operating the latter and engaging by the other end the shipper-bar, and a fixed slotted bracket through the slot of which the other end of the said rod takes, the rod being provided with a spring to resist the motion imparted to the rod by the movement of the lay, substantially as and for the purpose herein described.

4. The combination, as hereinbefore set forth, with the lay formed with a slot to receive the detector-fork, of a swinging locking-dog and the detector-fork mounted thereon and adapted to engage the weft, the cam for raising the dog and provided with a projection or shoulder by means of which the dog may lock the cam, a shipper-rod provided with a stop, a stop-motion rod hinged by one end to the cam and engaging by the other end the stop on the shipper-bar, a slotted bracket fixed to a stationary part of the loom, and the end of the stop-motion rod loosely passing through the slot of the bracket, a slide or washer working on the rod and abutting against the bracket, a stop fixed to the rod, and a spring intermediate the stop and the slide on the rod, substantially as and for the purpose herein described.

5. The combination, as hereinbefore set forth, with the lay of a loom, of the swinging locking-dog 8, provided with the detector-fork 12, the cam 15, provided with the projection 19, which is engaged by the dog, the stop-motion rod 20, hinged to the cam 15, and the slotted bracket 22 for receiving the end of the rod 20, the spring 25, mounted on the rod 20, the reciprocating shipper-bar 28, engaged by the rod 20, substantially as and for the purpose herein described.

6. The combination, as hereinbefore set forth, with the lay of a loom provided with the slot 33, of the swinging locking-dog 8, provided with the detector-fork 12, and mounted on the lay, the cam 15, provided with the projection 19, the stop-motion rod 20, having the enlarged end 24 and the spring 25, the stop 26, and the slide 27, mounted on the rod, the bracket 22, formed with the slot 23, and the shipper-bar 28, provided with the adjustable stop 31, substantially as and for the purpose herein described.

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