

No. 659,415.

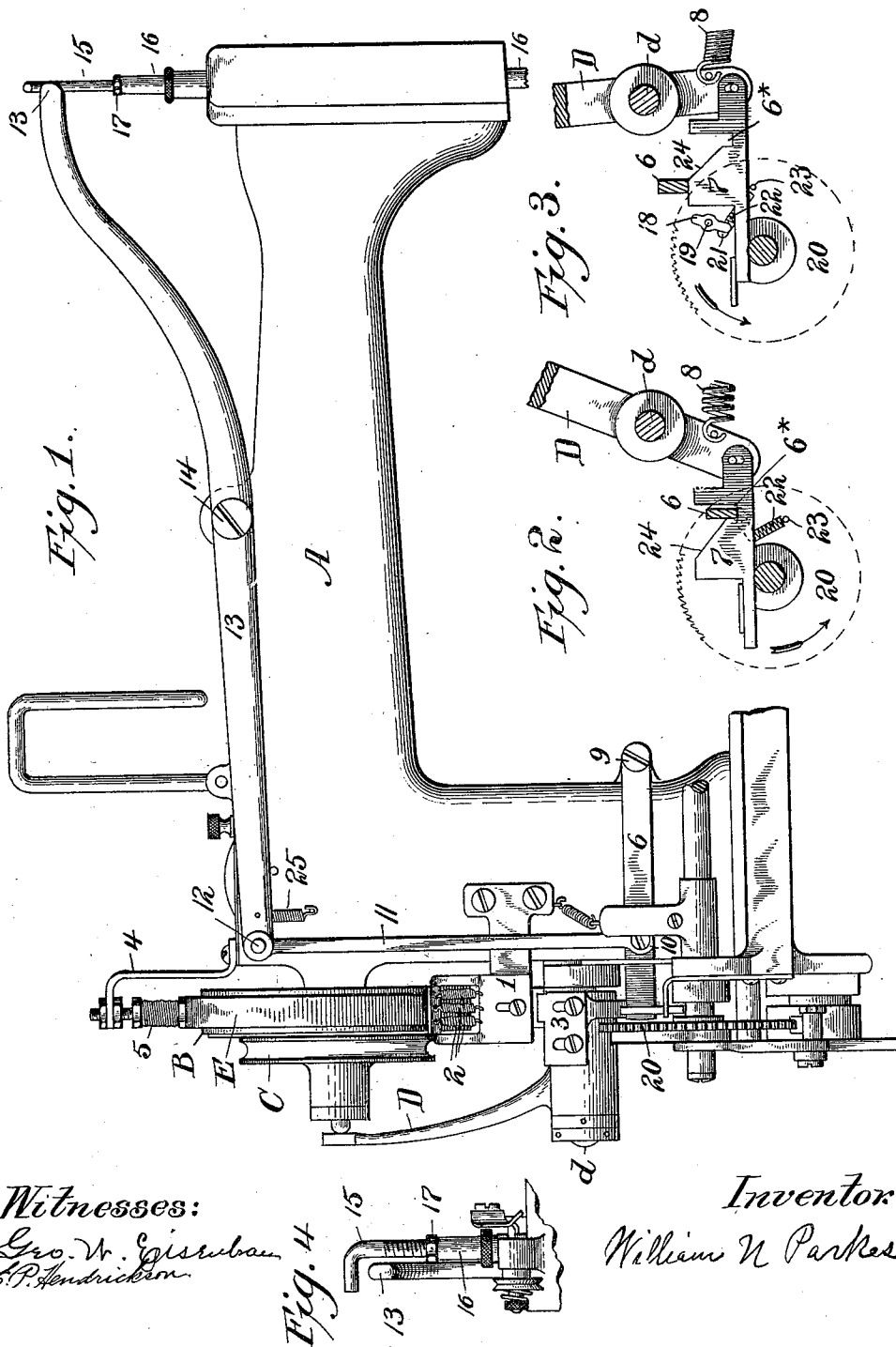
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W. N. PARKES.

TRIPPING DEVICE FOR STOP MOTION MECHANISMS FOR BUTTONHOLE MACHINES.

(Application filed Jan. 3, 1900.)

(No Model.)



Witnesses:

Gro. W. Eisebaun
J. P. Hendrickson

Inventor:

William N. Parkes

UNITED STATES PATENT OFFICE.

WILLIAM N. PARKES, OF NEW YORK, N. Y.

TRIPPING DEVICE FOR STOP-MOTION MECHANISMS FOR BUTTONHOLE-MACHINES.

SPECIFICATION forming part of Letters Patent No. 659,415, dated October 9, 1900.

Original application filed October 10, 1899, Serial No. 733,226. Divided and this application filed January 3, 1900. Serial No. 199. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM N. PARKES, a citizen of the United States of America, residing at the borough of Brooklyn, New York city, county of Kings, and State of New York, have invented new and useful Improvements in Tripping Devices for Stop-Motions, of which the following is a specification.

On October 10, 1899, I filed an application for a patent on a stop-motion for sewing-machines, Serial No. 733,226, of which this application is a division.

My invention relates particularly to buttonhole-machines which have an automatic cutting device and a stop-motion device, and especially those in which the cutter is depressed by a spring.

The object of the invention is to provide a device which will prevent the stop-motion after it has been actuated from being returned to its normal position until after the cutter-carrier of the cutting device has been elevated or returned to its normal position. By preventing the stop-motion from being returned to its normal position until after the cutter-carrier is elevated the mistake of starting the machine while the cutter is in a depressed position is prevented. Also if by any reason the cutter-carrier is depressed during the running of the machine the stop-motion is tripped and the machine stopped.

In the accompanying drawings, Figure 1 is a side elevation of a portion of a machine embodying my invention. Fig. 2 is a view of the stop-motion latch and catch when holding the stop-motion in its normal position, and Fig. 3 is a view of the same after the stop-motion has been actuated. Fig. 4 is a detail view showing the trip-controller in the upper end of the cutter carrier or bar and also the end of the trip-controller lever.

The stop-motion herein partly shown is fully shown and described in the above-referred-to application, Serial No. 733,226. The cutter device can be of any operative construction—such, for example, as shown by me in my former application for a patent on a buttonhole-machine filed September 12, 1898, Serial No. 690,777. In my present application I only show the upper end of the cutter-carrier that is used in that buttonhole-ma-

chine, all other parts of the same being omitted.

In the drawings, A designates the arm of a machine, B a wheel rigidly attached to an upper shaft of a machine, (which shaft is not shown,) and C a wheel loosely mounted on the end of the said shaft. These wheels are constructed so that the wheel C clutches and turns the wheel B when pushed into engagement with the same.

D designates a lever pivoted at *d*, which when actuated in one direction is adapted to push the wheel C into engagement with the wheel B and to allow when actuated in the other direction the wheel C to become disengaged from the wheel B.

E is a friction-strap adapted to clutch the wheel B, and thereby stop the movement of the machine.

A bracket 1 is suitably attached to the arm of the machine. To the said bracket one end of the friction-strap is attached by means of springs 2, the other end being attached to the lever D by means of a plate 3. The upper part of the friction-strap is held in position by means of a bracket 4 and a spring 5, which connects the strap with the bracket. A latch 6, in engagement with a notch 6*, formed in a catch 7, normally holds the lever D (against the action of a spring 8) in such a position that the friction-strap E is disengaged from the wheel B. The latch 6 is pivoted at 9, and to the said latch is attached at 10 one end of a link 11, the other end of the link being connected at 12 to a trip-controller lever 13. The lever 13 is pivoted at 14, and the forward end of the same projects under a bent rod 15, which I call the "trip-controller" and which is adjustably attached to a cutter-carrier 16. The controller is adjustable by means of the lower portion, which is threaded in a usual way, having a seat in the upper end of the cutter-carrier nut 17, serving in a usual way as a means for locking the controller in position. A small lever 18 is pivoted at 19 on a ratchet or feed wheel 20, in the said wheel a slot 21 being formed. A pin (not shown) projects from one end of the lever 18 into the slot 21 and limits the movement of the said lever. A spring 22, one end of which is attached at 23

to the wheel 20 and the other end to the pin projecting from the lever 18, normally holds the lever in the position shown in Fig. 3. The body of the spring is located in the slot 21.

5 The operation of the stop-motion, briefly, is as follows: At the proper time in the rotation of the feed-wheel 20 the lever 18 comes into engagement with the latch 6 of the stop-motion and lifts it out of engagement with the notch 6*, when by the action of the spring 8
10 the lever D is turned on its pivot, the wheel C disengaged from the wheel B, the friction-strap E closed into engagement with the said wheel B, and the movement of the machine stopped. During this movement of the stop-motion the parts change from the position shown in Fig. 2 to the position shown in Fig. 3, a cam-surface 24, formed on the catch 7, having lifted the latch 6 to the position shown
20 in the latter figure. This change in the position of the latch 6 lifts the rear end of the lever 13 and of course lowers the forward end of the same. A light spring 25 normally draws the rear end of the lever 13 down, and consequently returns through the connection
25 11 the latch 6 into the notch 6*, when the lever D is returned to its normal position, which position brings the notch 6* under the latch 6.

In practical use in the buttonhole-machine
30 above referred to the stop-motion is timed to act just previous to the depression of the cutter-carrier 16, and consequently the lever 13 acts ahead of the cutter-carrier and the forward end of the said lever moves down ahead
35 of the controller 15. The movement of the lever 13 is of such an extent that the forward end, which is under the controller 15, moves the same amount as the cutter-carrier, so that the controller normally does not come into
40 engagement with the lever. However, it is seen that if the lever D is turned on its pivot so as to bring the notch 6* under the latch 6 before the cutter-carrier is raised the said latch will not drop in the said notch, for the
45 reason that the forward end of the lever 13 will come into contact with the controller 15, which will prevent its further movement, and thereby, through the connection 11 between the lever and the latch, prevent the latch from
50 moving down into the notch. If, for example, the operator turns the lever D to disengage the stop-motion from the wheel B, it will at once return into engagement with the said wheel unless the cutter-carrier has been raised
55 to its elevated position. If, on the other hand, the stop-motion is in its normal position and for any reason the cutter-carrier is lowered, the controller 15 will engage the forward end of the lever 13 and, through it and the con-
60 nection 11 with the latch 6, trip the stop-motion into action. If it is desired to trip the stop-motion into action manually when the machine is running, a pressure on the forward end of the lever 13 of course does it.

65 In my buttonhole-machine above referred to I depress the cutter-carrier with a spring and raise it through the manual movement of

a lever, which lever at the same time, through a connection between it and the work-clamp, opens the clamp. It can be very readily seen
70 that in a machine which uses such a cutter device means for preventing the machine from being rotated when the cutter is in a depressed position are very desirable.

I do not wish to be limited to the use of
75 this device on the particular kind of machine herein mentioned, as it is obvious it is valuable in any machine where the cutter can remain or be thrown in a depressed position without stopping the machine.
80

What I claim as new is—

1. The combination with a stop-motion mechanism provided with a tripping device of a cutter mechanism having a cutter-carrier, of means interposed between the said
85 stop-motion mechanism and the said cutter mechanism, whereby the tripping device is held in an inoperative position until the cutter-carrier has been raised to its elevated or normal position.
90

2. The combination with a stop-motion mechanism provided with a tripping device of a cutter mechanism having a cutter-carrier, of means controlled by the cutter-carrier, whereby the said tripping device is held
95 in an inoperative position until the cutter-carrier has been raised to its elevated or normal position.

3. The combination with a stop-motion mechanism having a tripping device comprising a latch and a catch of a cutter mechanism having a cutter-carrier, of means interposed
100 between the said latch and catch and the cutter-carrier, whereby the tripping device is held in an inoperative position until the cutter-carrier has been raised to its elevated or normal position.
105

4. The combination with a stop-motion mechanism provided with a tripping device, of a cutter mechanism having a cutter-carrier,
110 of means comprising a lever interposed between the said stop-motion mechanism and the said cutter mechanism, whereby the tripping device is held in an inoperative position until the cutter-carrier has been raised to its elevated position.
115

5. The combination with a stop-motion mechanism provided with a tripping device of a cutter mechanism having a cutter-carrier, a suitably-pivoted lever, means operated
120 through the movement of the cutter-carrier adapted to engage one end of the said lever, and means interposed between the other end of the said lever and the aforesaid stop-motion mechanism, whereby the tripping device
125 is held in an inoperative position until the cutter-carrier has been raised to its elevated or normal position.

6. The combination with a stop-motion mechanism having a tripping device comprising a catch and a latch, of the cam 24 formed
130 on the said catch, the pivoted lever 13, the connection 11 between the said lever and the latch, a cutter mechanism having a cutter-

carrier, and means carried by the cutter-carrier adapted to engage the lever 13, and thereby hold the aforesaid tripping device in an inoperative position until the cutter-carrier
5 has been raised to its elevated or normal position.

In testimony whereof I have hereunto set

my hand in the presence of two subscribing witnesses.

WILLIAM N. PARKES.

Witnesses:

EUGENIE P. HENDRICKSON,
GEORGE EISENBRAUN.