(No Model.)

H. E. HAWES.

STOP MOTION.

No. 533,535. Patented Feb. 5, 1895.

Fig. 1

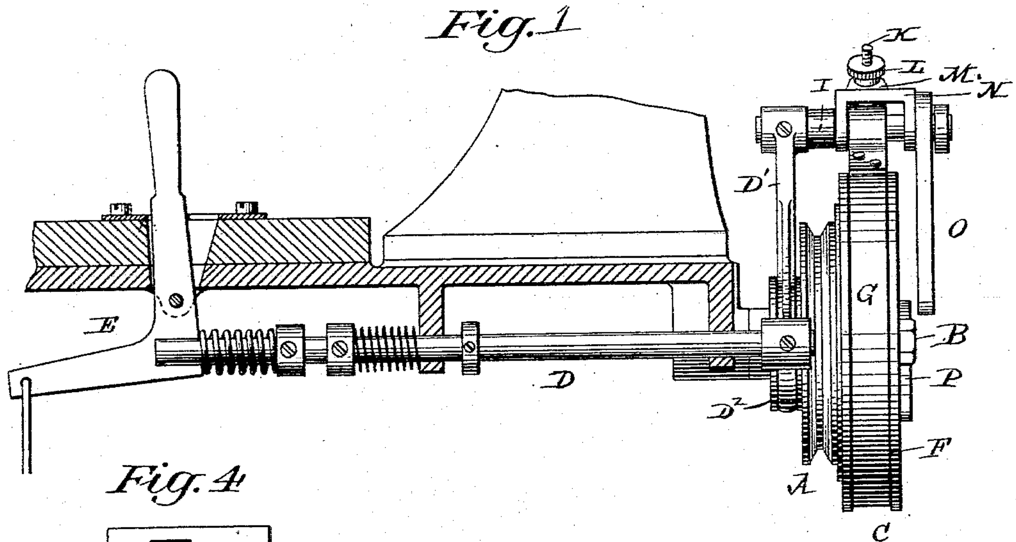


Fig. 4

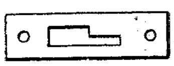


Fig. 2

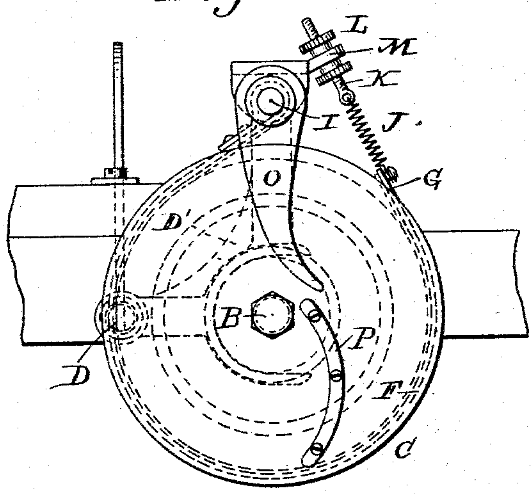
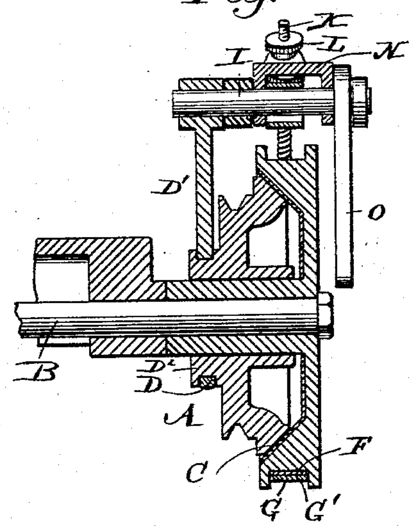


Fig. 3



Witnesses:-

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HERBERT E. HAWES, OF BROOKLYN, NEW YORK, ASSIGNOR TO COLBY & CO., OF SAME PLACE.

STOP-MOTION.

SPECIFICATION forming part of Letters Patent No. 533,535, dated February 5, 1895.

Application filed May 28, 1894. Serial No. 512,592. (No model.)

To all whom it may concern:

Be it known that I, HERBERT E. HAWES, a citizen of the United States, residing in the city of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Stop-Motions for Sewing-Machines, of which the following is a specification.

My invention relates in general to stop-motions for machines in which the shipper by which the loose driven clutch wheel is separated from the machine-actuating fast clutch wheel, is caused to also apply a brake to the fast clutch wheel to stop the same and hence the machine at a predetermined point; and the invention is particularly designed as a stop-motion for button-hole sewing machines, in which the shipper is thus operated on the completion of the button-hole by a tripper moving in harmony with the work-clamp actuating mechanism.

The particular object of my invention is to provide a stop-motion for button-hole machines which will stop the button-hole forming mechanism at the desired time more accurately and more surely than other devices, and which will be in other respects an improvement on the stop-motions heretofore in use.

I believe that I have attained the above object by my invention; and in order that the invention may be clearly ascertained, I shall first describe the same in detail, and then particularly point out my invention in the claims.

Reference is to be had to the accompanying drawings, forming part of this specification, in the various figures of which like parts are designated by the same letters.

Figure 1 represents in sectional side view a stop-motion embodying my invention applied to an ordinary Wheeler & Wilson button-hole machine. Fig. 2 is an end view of the same. Fig. 3 is a longitudinal sectional view of the same. Fig. 4 is a view of a detail.

A designates the loose clutch cone-wheel of an ordinary Wheeler & Wilson button-hole machine which is driven continuously by a belt or band from the driver.

B designates the machine-actuating shaft; C, the clutch cone-wheel fast thereon on the hub of which the loose wheel A works axially to engage or be disengaged from the fast wheel C.

D designates the spring-actuated shipper which works the loose wheel A, and E, the latch-lever by which the cone-wheels are thrown into engagement to start the machine and which is released by the tripper (not shown) moving in harmony with the work-clamp actuating mechanism on the completion of a button-hole to permit the shipper to withdraw the loose wheel A from the fast wheel C and leave the fast wheel and the button-hole forming mechanism operated thereby, free to be stopped.

To stop the fast wheel and the mechanism operated thereby at a predetermined point, by my invention, so that, in this application thereof, the needle and the cutter will be arrested in a position above the work, I provide a brake-band-wheel F fast to the fast cone-wheel C, which band-wheel I have herein shown formed integrally with the said cone-wheel C, and I arrange loosely around said band-wheel a metallic brake-band G, preferably lined with a leather strip G′ for better adherence to the band-wheel F. One end of said band I prefer to make fixed and attach by a loop to a rod I, and the other end by a tension spring J to an adjusting screw K which is fastened by nuts L to an arm M of a lever N, so that by means of said nuts the tension of the band G upon the band-wheel F can be adjusted at will. The lever N is pivoted on the rod I, which is fixed to the shipper D by an arm D′ so as to be carried axially with and by said shipper, and the lever N, while pivoted to turn on the rod I, is carried therewith in its axial movement. The lever N is formed with a depending arm O, which is adapted as a wiper to be engaged by a cam P fast to the band-wheel F, when the shipper D is actuated as before described to withdraw the loose clutch-wheel, but is normally held out of range of the cam P, as shown in the drawings, when the clutch-wheels are in engagement and the machine being driven.

The cam P and the tension-regulating nuts L are so arranged and adjusted that when the

shipper D is actuated as before mentioned to withdraw the loose clutch-wheel and stop the driving of the machine, the cam-wiper O will simultaneously be brought into range of the cam P, and actuated thereby to swing the lever N on the pivot-rod I, and thus by means of the band-arm M, tighten the band around the wheel F, and frictionally stop the same and the button-hole mechanism operated thereby exactly at the predetermined point, in this instance, with the needle and the cutter uplifted. When the shipper is operated to again start the machine, the cam-wiper O will be simultaneously moved out of the range of the cam P, and thus the brake-band G relaxed upon the wheel F, which is then freely driven by the loose wheel A.

It is evident that the axially movable rod I may be mounted in separate bearings from the shipper D, and moved directly by the shipper-wheel D^2; also that both ends of the brake-band G, instead of one only, may be drawn upon to tighten it, as by means of an additional arm on the lever N.

This stop motion is readily applicable to all other machines driven by axially separable clutch-wheels.

I claim as my invention—

1. In a stop motion, the combination, with the clutch wheels and the shipper, of a brake-band-wheel fast to the driven clutch wheel, a brake-band, a cam-wiper, a band-drawing device actuated thereby, a cam moving in harmony with the driven wheel, and means operated by the shipper for bringing the cam-wiper into and out of range of the cam.

2. The combination, with the clutch-wheels and the shipper, of a brake-band-wheel and a cam fast to the driven clutch wheel, a brake-band, and a cam-wiper connected to move axially with the shipper into and out of the range of the cam, and a brake-band drawing device actuated thereby.

In testimony whereof I have hereunto set my hand this 3d day of April, 1894.

HERBERT E. HAWES.

In presence of—
J. CULBERT PALMER,
CLARENCE L. BURGER.