J. H. FOOTE.
Back-Stop for Belt.

No. 218,170. Patented Aug. 5, 1879.

Fig. 1.

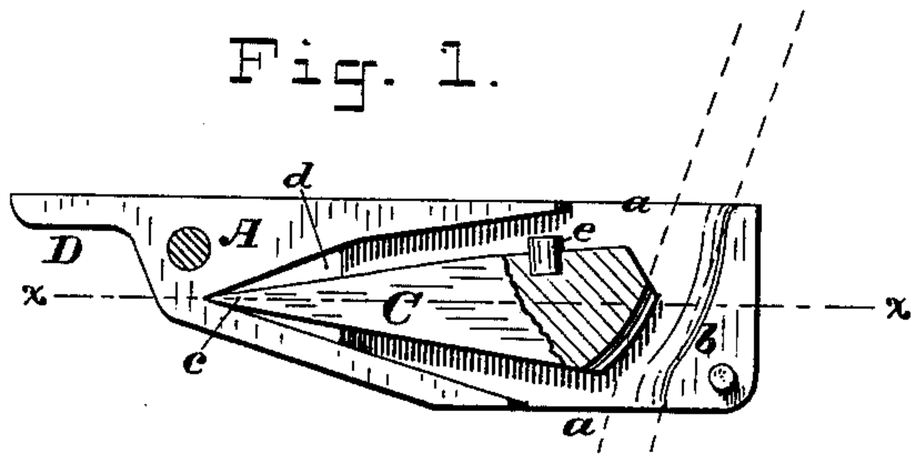


Fig. 2.

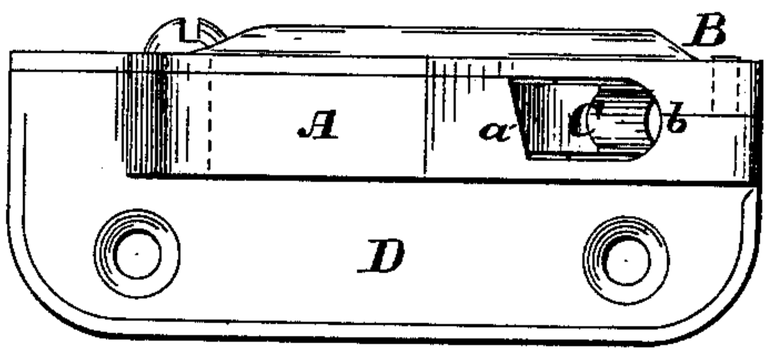


Fig. 5.

Fig. 3.

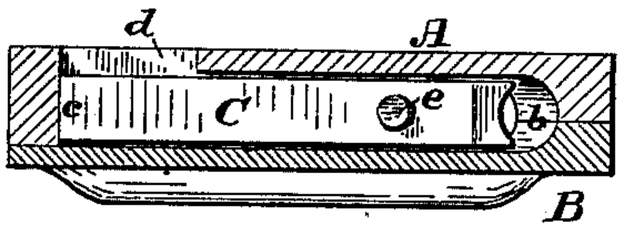
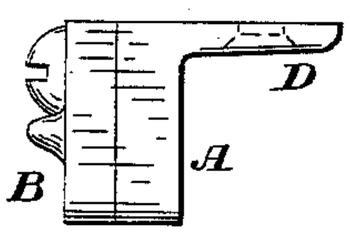
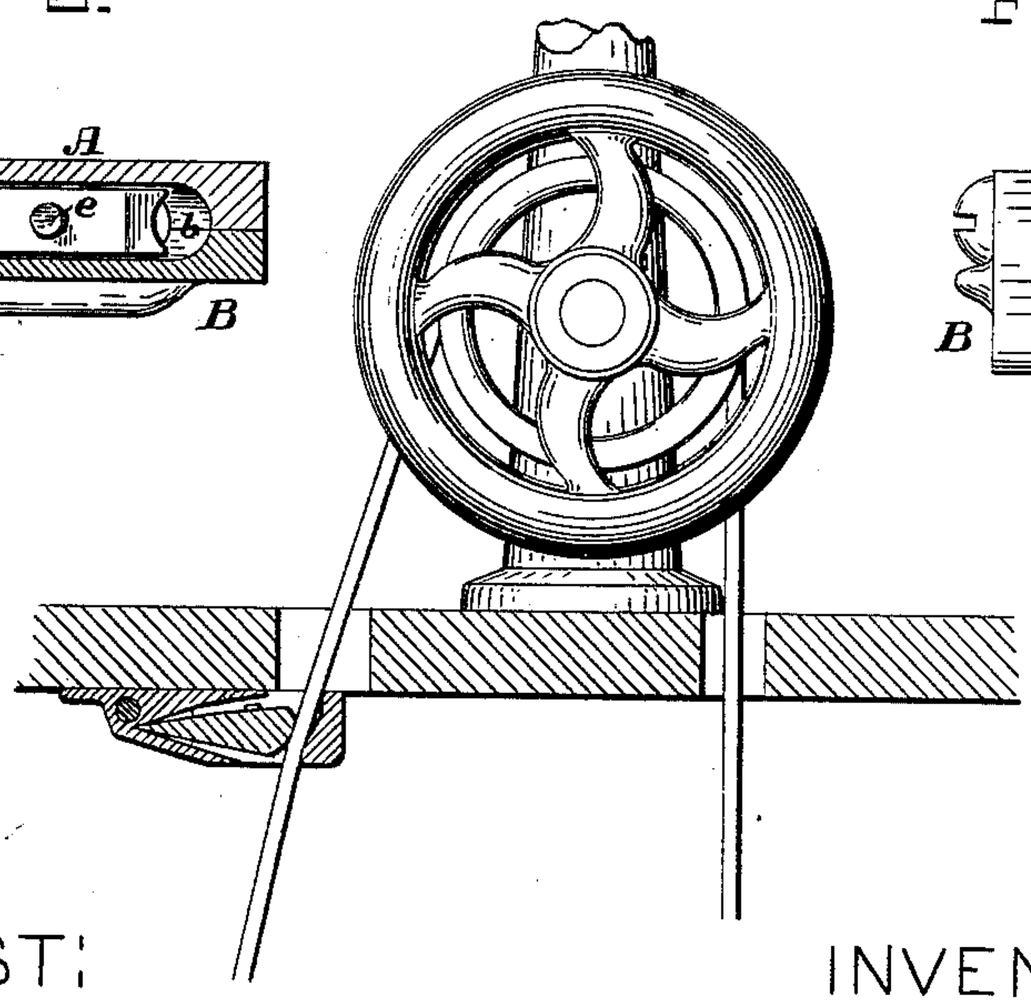


Fig. 4.





ATTEST:

George Holt Fraser,
Theodore A. B. Putnam

INVENTOR:

James H. Foote,
By his Attorneys,
Burke, Fraser & Bennett

UNITED STATES PATENT OFFICE.

JAMES H. FOOTE, OF NEW YORK, N. Y.

IMPROVEMENT IN BACK-STOPS FOR BELTS.

Specification forming part of Letters Patent No. **218,170**, dated August 5, 1879; application filed June 16, 1879.

To all whom it may concern:

Be it known that I, JAMES H. FOOTE, of the city, county, and State of New York, have invented certain Improvements in Back-Stops for Belts, of which the following is a specification.

My invention has for its object to prevent the belt of the machine to which it is attached, or in connection with which it is used, from being turned backward, while offering no obstruction to its proper forward motion.

Many machines are so constructed that if run backward their parts do not operate in proper succession, and in some cases the more serious result ensues of their being either broken themselves or of their breaking or injuring the article or goods upon or with which they operate.

In the accompanying drawings, Figure 1 is a side elevation of my device, the cap of the case being removed and the pawl partly in section. Fig. 2 is an inverted plan of the device. Fig. 3 is a horizontal longitudinal section taken on the line *x x* in Fig. 1. Fig. 4 is an end elevation; and Fig. 5 is a sectional view on a smaller scale, showing the device applied to a machine.

Let A represent the case or frame, B the cover, and C the contained pawl, one end of which is pivoted or fulcrumed within the case A, and the other is free to vibrate in the same. Instead of pivoting the pawl on a pin in the usual manner, I taper its confined end to an edge, *c*, and form a corresponding but less acute angle or recess in the walls of the case A to receive it. As the arc of the pawl's vibration need not be great, and as it must be limited by the walls of the case, this method of pivoting it answers perfectly, and has the advantages of being very cheap and simple and working with almost no friction.

The cavity of the case is extended sufficiently beyond the free end of the pawl for the interposition of the belt, which passes through the same diagonally to the axis of the pawl. The sides of the case are cut away at *a a* to give the belt free passage.

The case is provided with a flange or web, D, by which it may be secured to some fixed part of the machine to which the device is to be applied, and this flange may project from either side or end of the case, and in any direction required for its proper attachment to the machine.

The case having been secured to the machine in the proper position and the belt passed through its end, as indicated in dotted lines in Fig. 1, and the pawl being properly arranged within the case, the cap or cover B is put on, and the device is ready for operation.

The cover may be secured to the case in any known or convenient way, that shown being by a single screw, which passes into the case; and to keep the cover from turning out of place, a pin may project into it from the opposite end of the case.

The operation is as follows: In running the machine in the proper direction the belt moves as indicated by the arrows in Fig. 5, moving vertically, or nearly so, where it passes through the case A. The free end of the pawl C rests in contact with the belt, and as the belt passes upward the pawl is lifted and sustained thereby, but offers no obstruction to the belt's passage. If, however, the belt should be moved backward, it will no longer support the pawl, which will drop or be drawn down, where it will engage and bite the belt, forcing it against the opposite surface, *b*, of the case, and wedging it so tightly thereagainst as to effectually prevent its further backward motion. The belt is thus certainly and immediately checked in its first backward movement before either it or the machine has acquired sufficient momentum to cause a strain or jar in stopping. The harder the backward pull upon the belt the more firmly will it be held; but as soon as the pull is in the other or forward direction it is at once and easily released.

I prefer to arrange the pawl at such an angle that it will drop down upon and bite the belt of its own weight, as shown; but if more convenient in any particular case to arrange it at any other inclination, a light spring can be arranged to press it back.

In casting the case A, I prefer to form an aperture, *d*, through its back wall at the apex of the recess, which receives the end *c* of the pawl. This enables the recess to be dressed out with a file after casting, to fit it properly to the end of the pawl.

To prevent noise by contact of the upper

edge of the pawl with the wall of the case, I interpose between them an elastic buffer, *e*, consisting of a plug of rubber projecting from one surface or the other, and preventing their contact.

In the drawings I have shown my invention as adapted for use with a round belt, such as is employed on most sewing-machines; but it can be used as well with a flat belt by altering the shape and proportions of the parts.

I claim as my invention—

1. The combination of the case A, provided with belt-openings *a a* and cover B, with the pawl C, its end *c* being tapered to an edge, and engaging a corresponding but less acute angle in the case A, substantially as set forth.

2. The combination, to form a belt-stop, of the loose pawl C, provided with buffer *e* and wedge-pivot *c*, with the case A and its cover B, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JAMES H. FOOTE.

Witnesses:
HENRY CONNETT,
ARTHUR C. FRASER.