

(No Model.)

H. A. GREEN.

BELT SHIFTER OR STOP MOTION.

No. 308,357.

Patented Nov. 25, 1884.

Fig. 1.

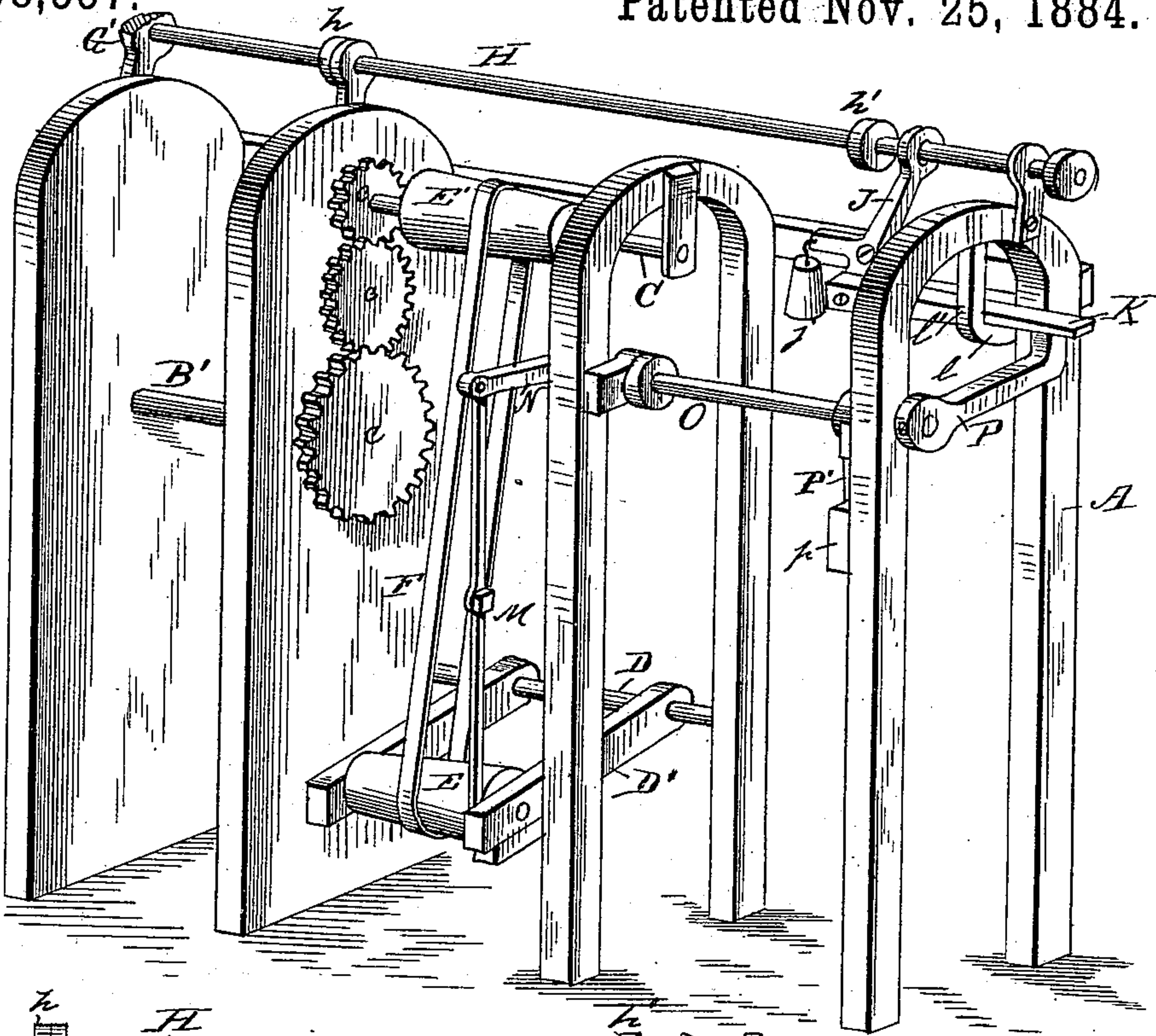
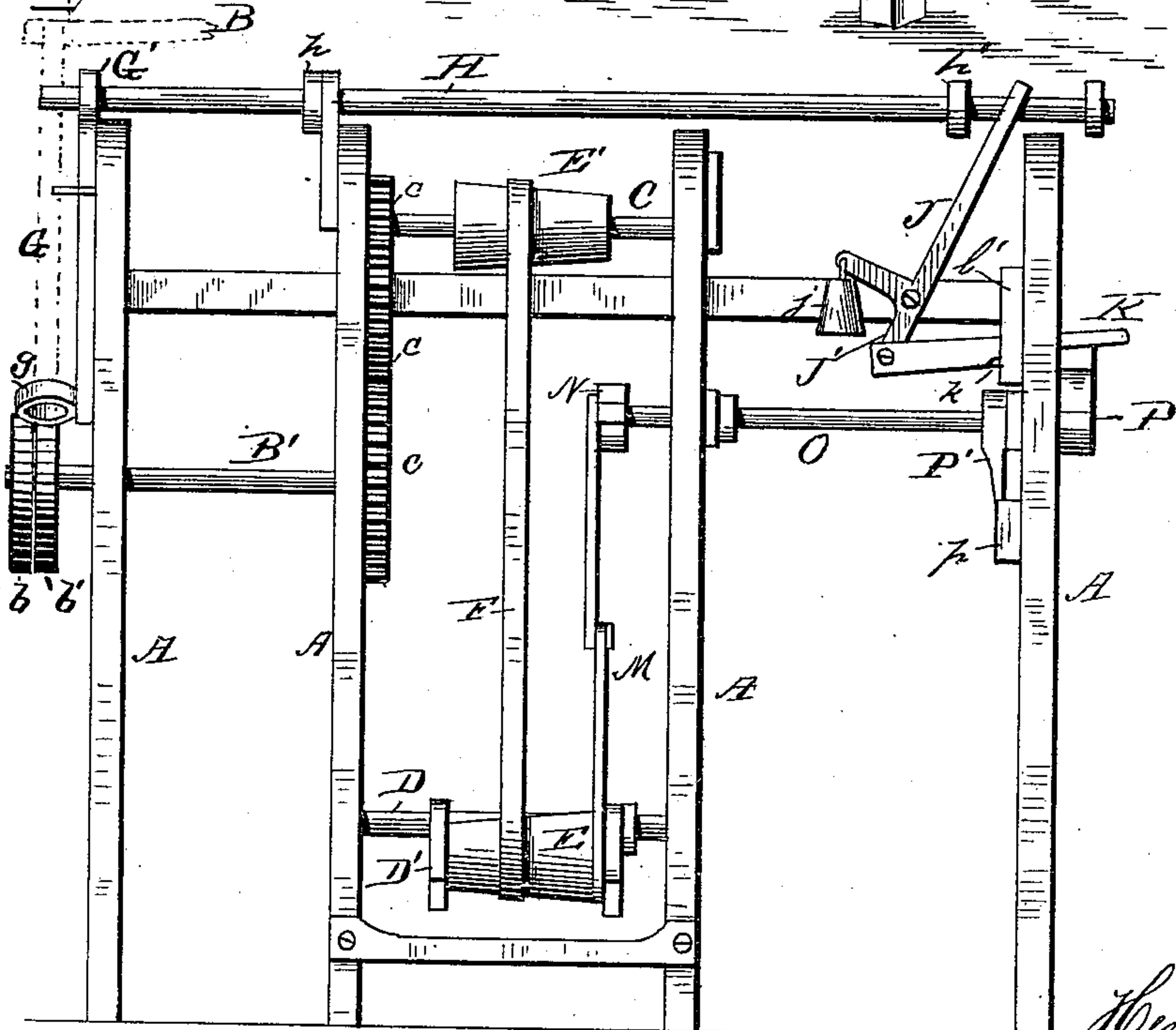


Fig. 2.



WITNESSES

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BELT-SHIFTER OR STOP-MOTION.

SPECIFICATION forming part of Letters Patent No. 308,357, dated November 25, 1884.

Application filed July 3, 1884. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. GREEN, a citizen of the United States of America, residing at Voluntown, in the county of New London and State of Connecticut, have invented certain new and useful Improvements in Belt-Shifters or Stop-Motions; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in belt-shifters or stop-motions, and is adapted to be applied to any class of machinery in which several parts are driven from the same shaft.

In the accompanying drawings I have shown my invention applied to a loom merely for the purpose of illustrating the application of the same.

In the accompanying drawings, Figure 1 is a perspective view. Fig. 2 is a plan view.

A represents a speeder-frame to which my invention is applied, and B is a driving-shaft which extends horizontally over the same, and is provided with a pulley by means of which power is transmitted by means of a belt to a parallel shaft, B', journaled in the frame A. The shaft B' is provided near its end with an idle-pulley, b, and a driving-pulley, b'. The shaft B' is connected by means of suitable gear-wheels, c c c, to a shaft, C, which is journaled in suitable boxes provided for the same.

Beneath the shaft C is a transverse bar, D, which carries the pivoted frame D', in one end of which is journaled a cone-pulley, E. On the upper shaft, C, is secured a similar cone-pulley, E'. Power is transmitted from the upper cone-pulley, E', to the lower cone-pulley, E, by means of a belt or other equivalent connecting device, F, which is kept taut and at a proper tension by the weight of the cone and frame E and D'. This lower cone, E, provides a communicating means to drive the bobbins, fliers, spindles, and other parts of the weaving mechanism which are usually attached to the speeders.

In operating lathes, sewing-machines, and other machinery in which there are several

apparatuses driven from the same shaft power can be applied thereto from the upper cone or from the upper driving pulley, E, or the lower one, if found convenient, and when driven from the lower one a connecting-belt will be necessary. When the machinery is driven from the upper pulley, E', the pivoted platform D' may be supported at its outer end upon suitable springs. The driving-belt G, which passes over the pulley on the shaft B, passes through a projecting portion, g, formed on the lower end of the belt-shifting arm G', which arm is attached rigidly to a transverse shaft, H, which passes through suitable guides on the frame A, which shaft is provided with suitable adjustable stops, h h'. At a point upon the frame A a transverse bar is attached thereto, so as to provide a support for a bell-crank lever, J, which has a lower extending portion, J'. The upper part of this bell-crank lever encircles the rod H and abuts against the button or stop h' when its retaining-catch K is released, as will be hereinafter described. A weight, j, is attached to the projecting member of the bell-crank lever J, as shown. The catch K, which is pivoted to the projecting portion J' of the bell-crank, is provided near its central portion with a recess or catch, k, which engages with a suitable horizontal projection or arm, l, which is attached to the frame A, and is provided with an upwardly-projecting portion, l', or guide-arm. At a point near the outer end of the lower cone-support, D', is pivoted a jointed connecting-arm, M, the upper portion of said arm being pivoted to a projecting crank-shaft, N, which is firmly secured to a shaft, O, which is supported in journals attached to the frame. The outer end of this shaft O is provided with a trip-lever, P, one end of which engages with the end of the catch arm or lever K. Within the frame and upon the shaft O is attached a stop-catch, P', which engages with a suitable projection or stop, p, upon the frame, so as to limit the movement of the shaft O.

The operation of my invention when applied to a belt-speeder or cone-pulleys carrying a belt which by shifting becomes the medium of transmitting various rates of motion is as follows: Should the belt F from the upper to the lower cone pulley break, the pivoted supporting-frame D' will fall, and being connect-

ed by the jointed arm of the jointed connecting-rod to the projecting arm N on the rock-shaft O will raise the lever P and release the catch-bar K. The weight attached to the
5 bell-crank lever will cause the upper part of the same to abut against the stop *h'* and move the same to one side, and the belt-shipper G', being rigidly attached to the idle-pulley *b*, will thus cause a stoppage of the machinery.

10 I claim—

1. In a stop-motion or belt-shifter, a pivoted frame provided with jointed arms connected to a rocking bar having a trip-lever, in combination with a pivoted bell-crank, J, a rod
15 carrying a belt-shipper, and a pivoted catch-arm, K, substantially as shown.

2. In a belt-shifter or stop-motion, a pivoted frame with driving mechanism, a sliding-rod

carrying a belt-shipper, and means for moving said rod laterally when the pivoted frame is
20 depressed, substantially as shown.

3. As an attachment for belt-speeders or cone-pulleys, a pivoted supporting-frame, D', having attached at its outer end jointed connecting-arms M, projecting arm N, attached
25 to a rock-shaft, O, stop-catch P', tripping-arm P, weighted bell-crank J, having attached thereto a catch-arm, K, and rod carrying at its end a belt-shipper, the parts being organized and combined substantially as shown. 30

In testimony whereof I affix my signature in presence of two witnesses.

HENRY A. GREEN.

Witnesses:

TIMOTHY PARKER,

JOHN N. LEWIS.