

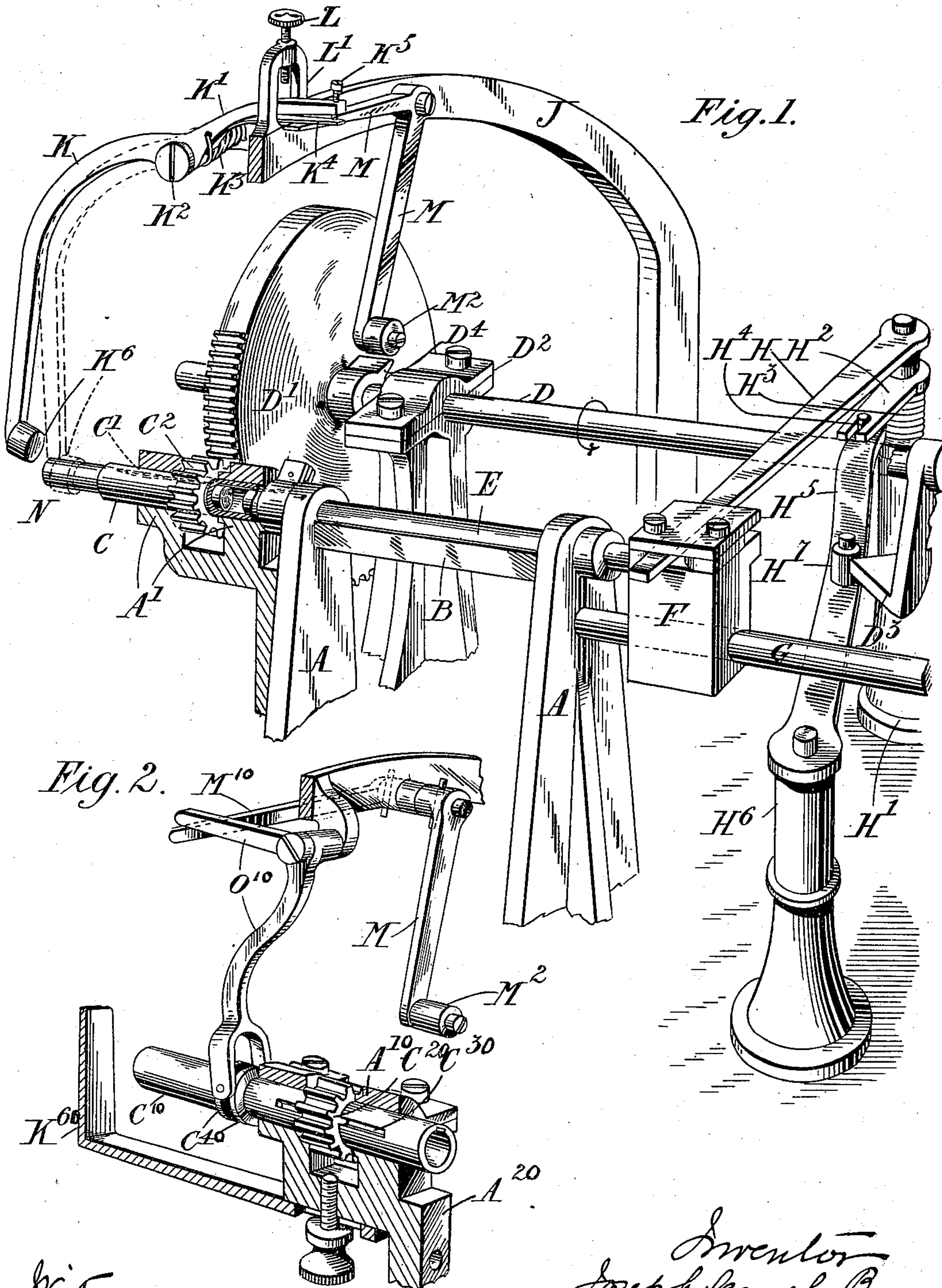
No. 660,831.

Patented Oct. 30, 1900.

J. S. BEEMAN.
AUTOMATIC FEED APPARATUS.

(Application filed Feb. 12, 1900.)

(No Model.)



Witnesses
Laurie Thomas
H. M. Gillman, Jr.

Inventor
Joseph Samuel Beeman
by Louis L. Luman
Attorney

UNITED STATES PATENT OFFICE.

JOSEPH SAMUEL BEEMAN, OF LONDON, ENGLAND.

AUTOMATIC FEED APPARATUS.

SPECIFICATION forming part of Letters Patent No. 660,831, dated October 30, 1900.

Application filed February 12, 1900. Serial No. 4,985. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH SAMUEL BEEMAN, a subject of the Queen of England, residing at London, England, (and whose post-office address is No. 182 Earls Court road, London,) have invented certain new and useful Improvements in or Relating to Automatic Feed Apparatus, of which the following is a specification.

This invention relates to automatic feed apparatus, its object being the provision of means whereby articles which vary somewhat in length may be automatically fed so that their forward ends are brought to a definite position to admit of uniform treatment. This is accomplished according to this invention by first causing the end of the article to protrude too far through a support or holder and then returning it partially, so that the protruded portion is of a definite length. The return of the article is brought about by an alteration in the relative position of the holder and a stop, either the stop or the holder, or both, moving for this purpose.

The accompanying drawings illustrate apparatus according to this invention applied, by way of example, to a portion of a machine in which cigarettes are automatically fed so that their forward ends are brought to a definite position for subsequent waxing or other tipping operation.

Figure 1 is a perspective view of one construction, with portions broken away for the sake of clearness; and Fig. 2, a similar view showing part of a modified construction.

With reference first to Fig. 1, A represents standards supporting a trough B, to which the cigarettes are supplied in any convenient way. In line with the trough B and rotatably supported in bearings A', attached to one of the standards A, is a support or holder C, provided internally with a light spring C', which grips the cigarette. The holder C has a pinion C² mounted upon it, which is driven from a gear-wheel D', carried upon a shaft D. This shaft D is mounted in suitable bearings, one of which is shown at D², and is rotated in the direction indicated by the arrow in Fig. 1 by any suitable means. Two cams D³ and D⁴, the action of which is hereinafter described, are carried by the shaft D.

The cigarettes are caused to pass from the

trough B into the holder C by the action of a plunger E, which makes them protrude too far through the holder. The end of the plunger remote from the holder is attached to a slide F, free to reciprocate upon a guide G. The upper portion of the slide F accommodates the end of a lever H, the other end of the lever being pivoted to a support H'. Upon this support H' and attached to the lever H is a forked arm H², controlled by a spring H³. Engaging with the forked arm H² is a pin H⁴, carried upon an arm H⁵, which is pivotally mounted upon a support H⁶ and carries a friction-roller H⁷.

Mounted upon a frame J, which forms part of the fixed framework of the machine, is a lever K K', pivoted as at K². The lower end of this lever K⁶ acts as a "stop" to push back the protruded end of the cigarette for a certain definite distance, the point to which the lever moves being determined by an adjusting-screw L, carried in a bridge L', attached to the frame J. The pivoted lever K K' is operated by one end of a bell-crank lever M, which is pivoted, as at M', to the frame J and carries at its other extremity a friction-roller M², which works in conjunction with the cam D⁴. When the cam D⁴ is not operating upon the lever M, the top end of the latter is depressed into the position shown in Fig. 1 by the limb K' of the lever K K', this lever being kept in contact with the bell-crank lever M through the action of a spring K³. A small spring K⁴, attached to the limb K', is interposed between that limb and the bell-crank lever M. This spring K⁴ is capable of regulation by means of a small screw K⁵. The function of the spring K⁴ is to provide a yielding connection between the lever K K' and the bell-crank lever M. If such yielding connection did not exist, it would be difficult to adjust the limit of the motion of the lever K K'.

The action of the apparatus is as follows: When the shaft D rotates, the cam D³ operates upon the friction-roller H⁷ and causes the arm H⁵ to turn about its pivot. Consequently the forked arm H² turns against the action of the spring H³ and carries with it the lever H. This action causes the slide F to move forward along the guide G, and the plunger E causes a cigarette N to enter the holder C and

protrude too far through it. This position of the cigarette N is shown in full lines in Fig. 1. As soon as the position of the cam D^3 renders such action possible the spring H^3 causes the plunger E to return, and after the return stroke of the plunger E has commenced the cam D^4 operates upon the friction-roller M^2 and through the bell-crank lever M raises the limb K' of the lever K K' and brings the bottom end or stop K^6 of the limb K down into the position indicated in chain-lines in Fig. 1, thus partially returning the cigarette N into the holder C. As before stated, this position is a definite one, but may be altered slightly by means of the screw L.

Fig. 2 illustrates a portion of a modified construction of apparatus according to this invention. In this form the stop takes the shape of a rigid bar K^{60} , adjustably secured to a bracket A^{20} , in which the bearings A^{10} for the holder C^{10} are formed. The holder C^{10} is capable of motion to and from the bar K^{60} . For this purpose the holder C^{10} is engaged with the pinion C^{20} by means of a feather and feather-way C^{30} , and the bell-crank lever M^{10} acts upon another bell-crank lever O^{10} , the lower end of which is forked and operates between two collars or shoulders C^{40} upon the holder C^{10} .

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In automatic feed apparatus the combination of a support for the article, means for causing the article to protrude too far through the support and means for altering thereafter with precision the relative position of the article and support so that the protruded portion is reduced to a definite length.

2. In automatic feed apparatus the combination of a support for the article, a plunger

operating to protrude the article too far through the support, means for reciprocating the plunger, a movable stop for partially returning the article and means for bringing the stop into a definite position relatively to the support and for withdrawing it from that position substantially as set forth.

3. In automatic feed apparatus the combination of a support for the article, a plunger for causing the article to enter and protrude too far through the support, means for reciprocating the plunger, a pivoted stop-lever operating to partially return the article, a bell-crank lever operatively connected to the pivoted stop-lever, a cam capable of rotation and operating upon the bell-crank lever, adjustable means for limiting the motion of the pivoted stop-lever and a spring controlling such lever substantially as set forth.

4. In automatic feed apparatus the combination of a support for the article, a plunger for causing the article to enter and protrude too far through the support, means for reciprocating the plunger, a pivoted stop-lever operating to partially return the article, a bell-crank lever, a yielding connection between the pivoted stop-lever and the bell-crank lever, a cam capable of rotation and operating upon the bell-crank lever, adjustable means for limiting the motion of the pivoted stop-lever, and a spring controlling such lever, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH SAMUEL BEEMAN.

Witnesses:

HAROLD WADE,
HARRY S. RIDGE.