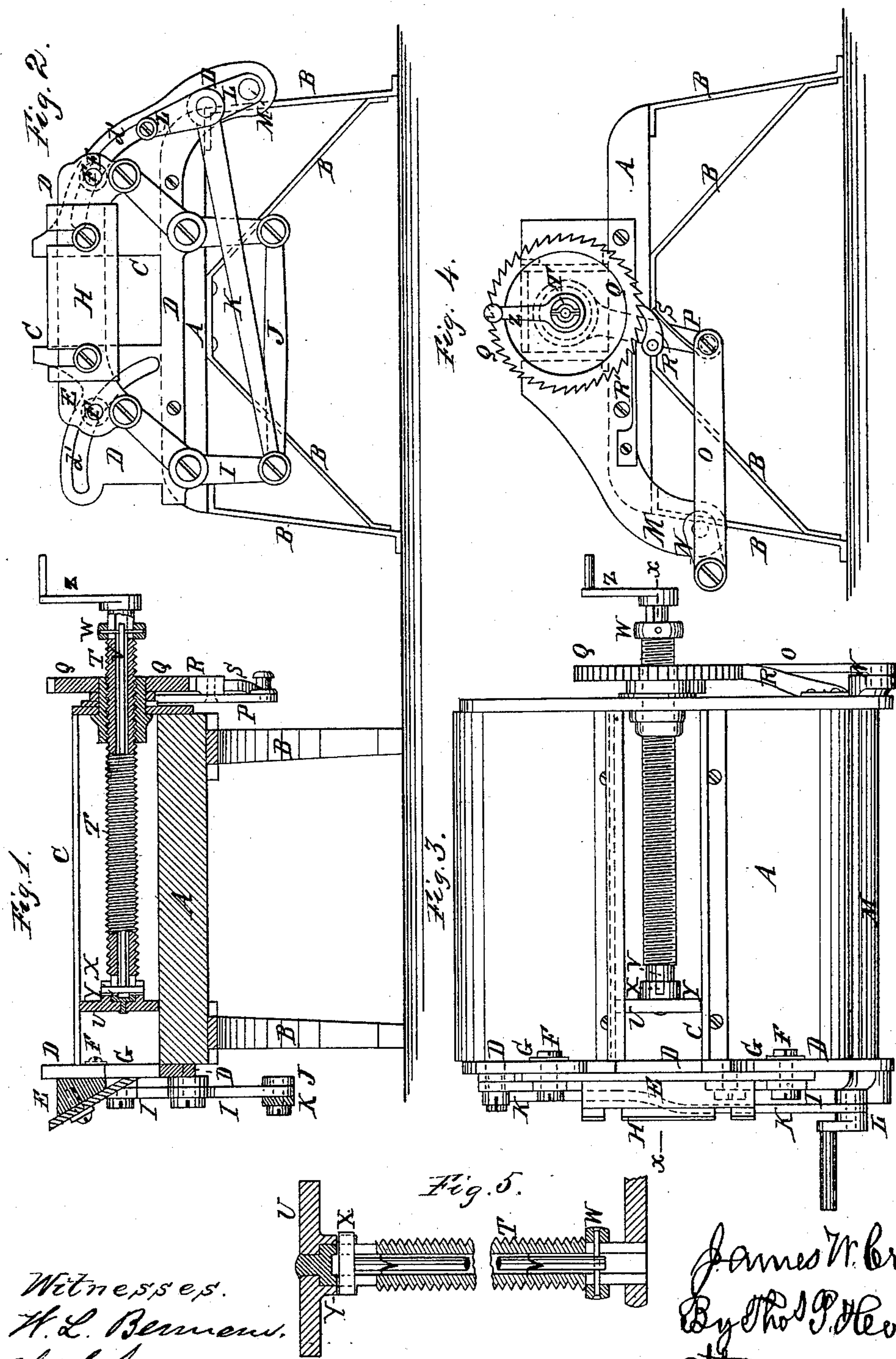


J. W. CROSSLEY.  
Tobacco Cutting Machine.

No. 232,337.

Patented Sept. 21, 1880.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

JAMES W. CROSSLEY, OF NEW YORK, N. Y.

## TOBACCO-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 232,337, dated September 21, 1880.

Application filed December 19, 1878.

*To all whom it may concern:*

Be it known that I, JAMES W. CROSSLEY, of the city, county, and State of New York, have invented certain Improvements in Tobacco-Cutting Machines, of which the following is a specification.

This invention relates to that class of machines in which a drawing cut is given to the knife, and is designed to give greater firmness and more efficient and steady action to the knife than is realized by previous constructions.

Said invention consists in the combinations of parts hereinafter set forth relating to the hanging, support, and guidance of the knife, substantially as hereinafter more particularly described.

In the accompanying drawings, Figure 1 is a vertical longitudinal section of my machine, taken through the line *x x* of Fig. 3, with the exception that the follower-screw is only partly in section. Fig. 2 is a front view of the same machine. Fig. 3 is a plan or top view of the same. Fig. 4 is a rear view of the same. Fig. 5 is a sectional view of the screw *T* and the clutching device.

*A* is the bed-plate of the machine, which plate is supported upon legs or frame-work *B*, of suitable height.

*C* is the feed-box, designed and adapted to contain the tobacco to be cut. This feed-box is attached to the middle portion of the upper side of the bed-plate *A*.

*D* is a plate attached to the forward end of the feed-box and the forward end of the bed-plate, and having an opening corresponding in size with the interior of the feed-box, through which opening the tobacco is forced out to be cut, said plate *D* forming a face, in close proximity with which the knife works.

*E* is the knife-bar, the ends of which are attached by proper journals to the levers *I I*, which latter are hung in the middle upon journals attached to the bed-plate, and the lower ends of which are connected to each other by a connecting-bar, *J*, so that the said levers may always be held parallel to each other, and may thus hold the knife horizontal while making the cut, but at the same time giving to the knife a motion which corresponds with the circular motion of the journals by which it is

hung to the levers *I I*, thus making what is known as a "draw-cut."

A connecting-rod, *K*, extends from a journal at the end of one of the levers *I I* to the crank or crank-wheel *L*, to which power is applied for driving the cutting parts. This crank or crank-wheel *L* is attached to the driving-shaft *M*, which revolves in bearings in the frame of the machine, and to the other end of which may be attached a crank or slotted crank-wheel, *N*, for driving the feed.

Instead of extending the levers *I I* downward from the points at which they are hung to the bed-plate, they may, if desired, be extended upward from the points at which they are hung to the knife-bar and connected to each other above the knife-bar by the connecting-bar *J*, thus leaving the space below the knife wholly unobstructed, the said levers and bars being then entirely out of the way of the tobacco as it falls from the knife.

The knife-bar *E* is made with a vertical face on its inner side, next to the plate *D*, as shown in Fig. 1, and to its outer or inclined face is bolted the knife *H*, which is slotted transversely from its upper edge to receive the fastening-bolts, so that it may be readily moved down as it wears. This construction allows the knife *H* to be arranged with the beveled side of its edge inward, as shown in Fig. 1, so that by changing the bevel of the said edge the knife may be made to work with more or less gain, as may be desired.

The knife-bar *E* is held in close proximity to the face-plate *D* by bolts *F F*, extending from the knife-bar through curved slots *d' d'* and washers *G G*, properly adjusted to the inner side of the face-plate *D*, and secured in such adjustment by jam-nuts or other suitable means. The slots *d' d'* are concentric with the axes of the levers *I I*. This mode of adjusting the knife laterally by means of the curved slots *d' d'* in the face-plate and the bolts *F F* and washers *G G* gives steadiness to the knife in making the cut, and avoids its being forced out of place laterally by the pressure of the tobacco against the side of the knife, which might otherwise be sufficient to spring the levers *I I* laterally, and thus throw the knife out of the exact proximity to the plate *D* which it should properly occupy.



Any suitable feeding device may be used; but I prefer that invented by Augustus A. Hagen and myself jointly, and which I am about to describe as the best. In this feeding apparatus the crank N is connected, by the connecting-rod O, to the lower end of the arm P, the upper end of which is hung upon the nut Q and vibrates upon it as a center. The driving-nut Q is fitted to revolve in the back-  
 10 end plate of the feed-box, and has ratchet-teeth formed upon its periphery.

R is a pawl which is hung upon the arm P, and which engages with the ratchet-teeth of the nut Q, being kept up to its work by the  
 15 spring S, so as to give an intermittent rotary motion to the nut Q as the crank N revolves, the detent-pawl R' preventing the nut Q from being turned backward by the backward movement of the pawl R.

T is a screw, which is fitted into the nut Q, and its inner end is fitted to revolve in the follower U so as to advance the follower (and consequently the tobacco to be cut) as the nut Q is turned by the feed at each revolution of  
 25 the crank N corresponding with the stroke of the knife, the operation of the feed being so arranged as not to interfere with the action of the knife.

The distance which the follower shall be  
 30 moved forward at each stroke of the knife may be varied to correspond with the work to be done by setting the crank-wrist at a greater or less distance from the center of the shaft M.

For the purpose of disengaging the follower  
 35 from the action of the feeding appliances when it has been advanced as far as it ought to go, the screw T is made hollow, and contains within it the rod V, which is connected at its outer end to the collar W by a pin or screw extending transversely through a slot in the shaft of  
 40 the screw T, and the rod V is made fast at its inner end to the short cross-head X, which projects transversely through a slot in the shaft of the screw T into slots or notches in the hub  
 45 Y of the follower U. As the follower U ap-

proaches the limit to which it is allowed to be driven toward the knife the advance of the screw T brings the collar W in contact with the nut Q, which stops its advance, and consequently that of the rod V, which carries the  
 50 cross-head X, and as the screw T continues to advance the cross-head X will be drawn out of the slots in the hub Y of the follower U, leaving the screw T free to revolve with the nut Q, which it accordingly does as the feed  
 55 continues to turn the latter, and consequently the follower is advanced no farther.

Z is a crank attached to the outer end of the screw T to furnish a convenient means for turning the latter back to withdraw the fol-  
 60 lower for recharging the feed-box.

I claim as my invention—

1. The combination of the levers I I, having the knife hung to them, with the connecting-rod J, substantially as hereinbefore set forth.  
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2. The combination of the levers I I, having the knife hung to them, with the connecting-bar J, and a crank or handle for operating the same, substantially as hereinbefore set forth.

3. The combination of the levers I I, hung  
 70 on journals to the machine-bed, and having the knife hung to them, with the connecting-rod J, substantially as hereinbefore set forth.

4. The combination of the levers I I, hung  
 75 on journals to the machine-bed, and having the knife hung to them, with the connecting-bar J and a crank or handle for operating the same, substantially as hereinbefore set forth.

5. The combination of the levers I I, the connecting-bar J, and the two bolts and wash-  
 80 ers F F and G G with the knife-bar E, the stationary plate D, provided with the two curved slots  $d' d'$ , and the crank or crank-wheel L, substantially as herein shown and described.

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Witnesses:

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