

(No Model.)

2 Sheets—Sheet 1.

W. I. MANN.

CIGAR MACHINE.

No. 299,818.

Patented June 3, 1884.

Fig. 1.

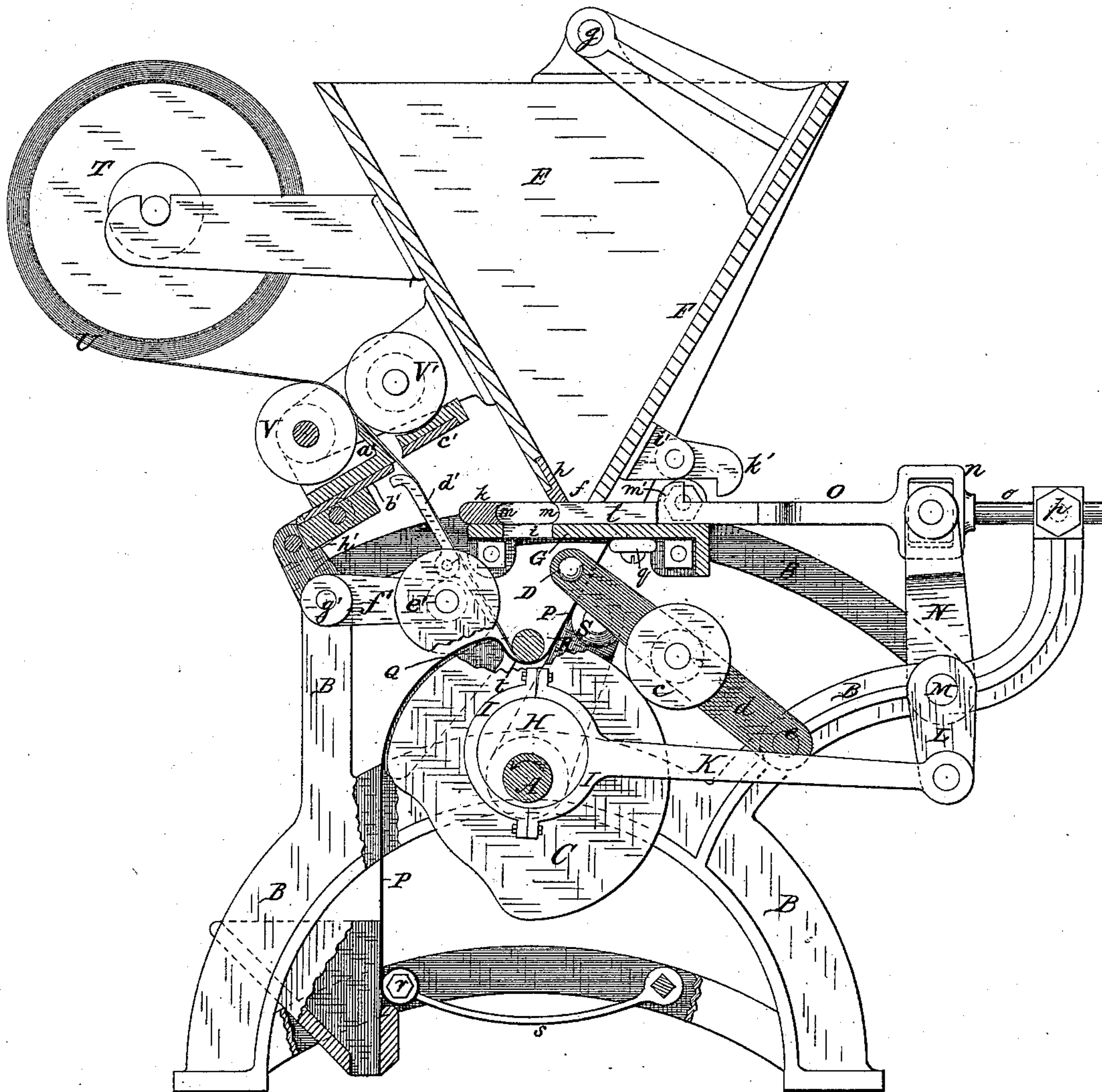


Fig. 2.

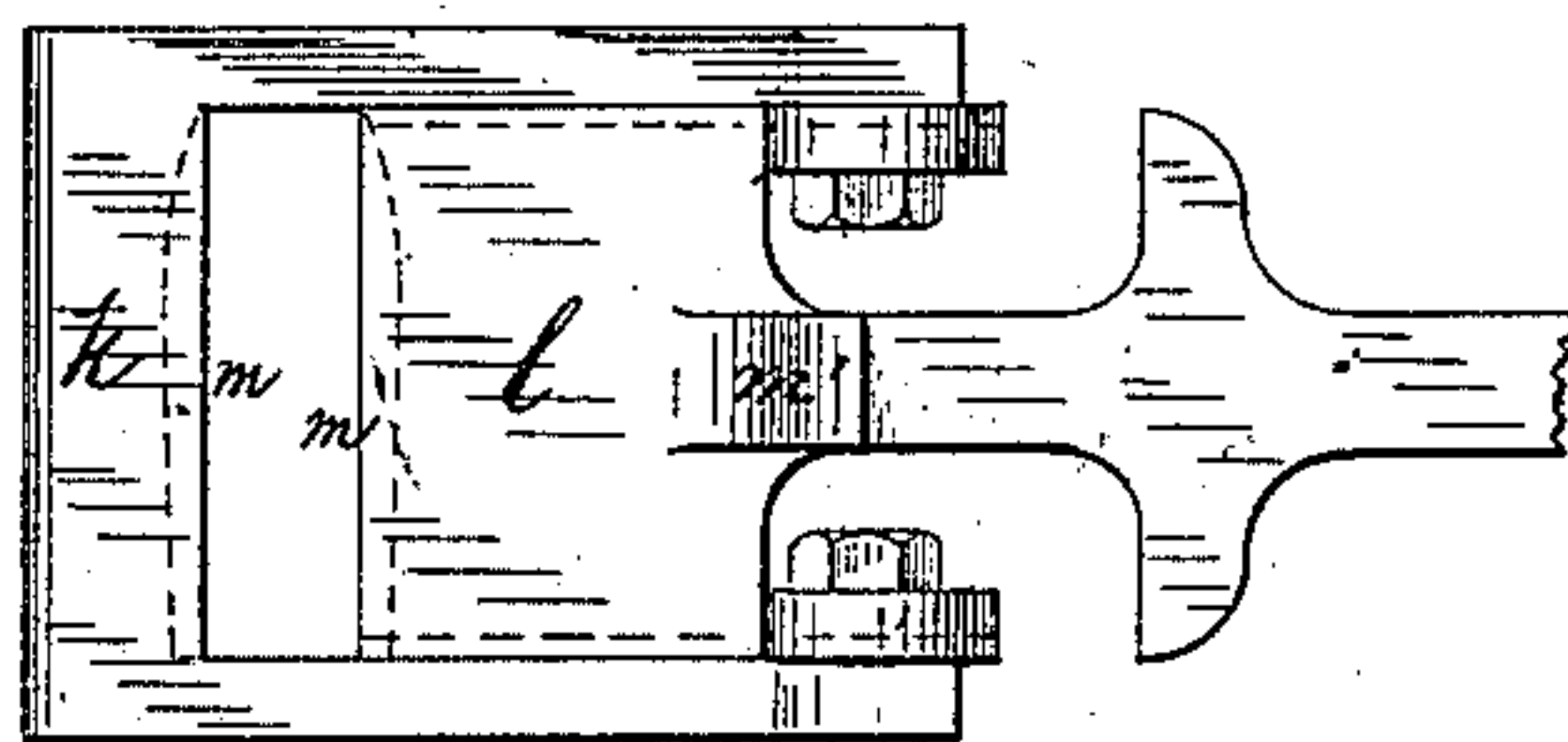
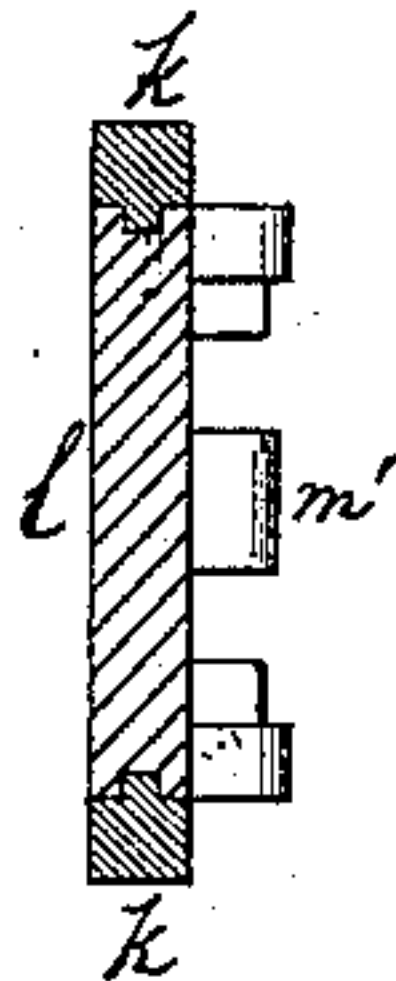


Fig. 3.



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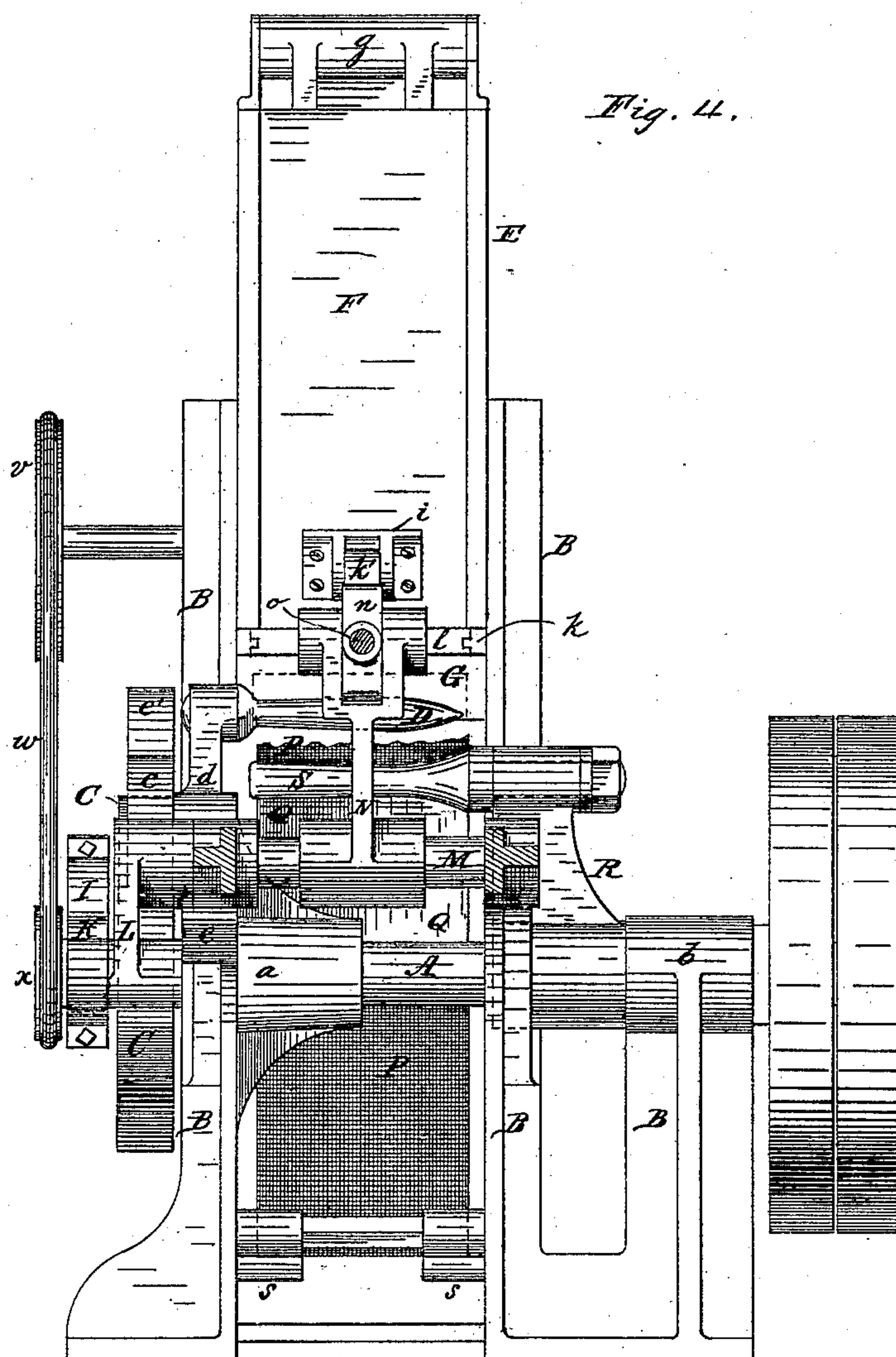


Fig. 4.

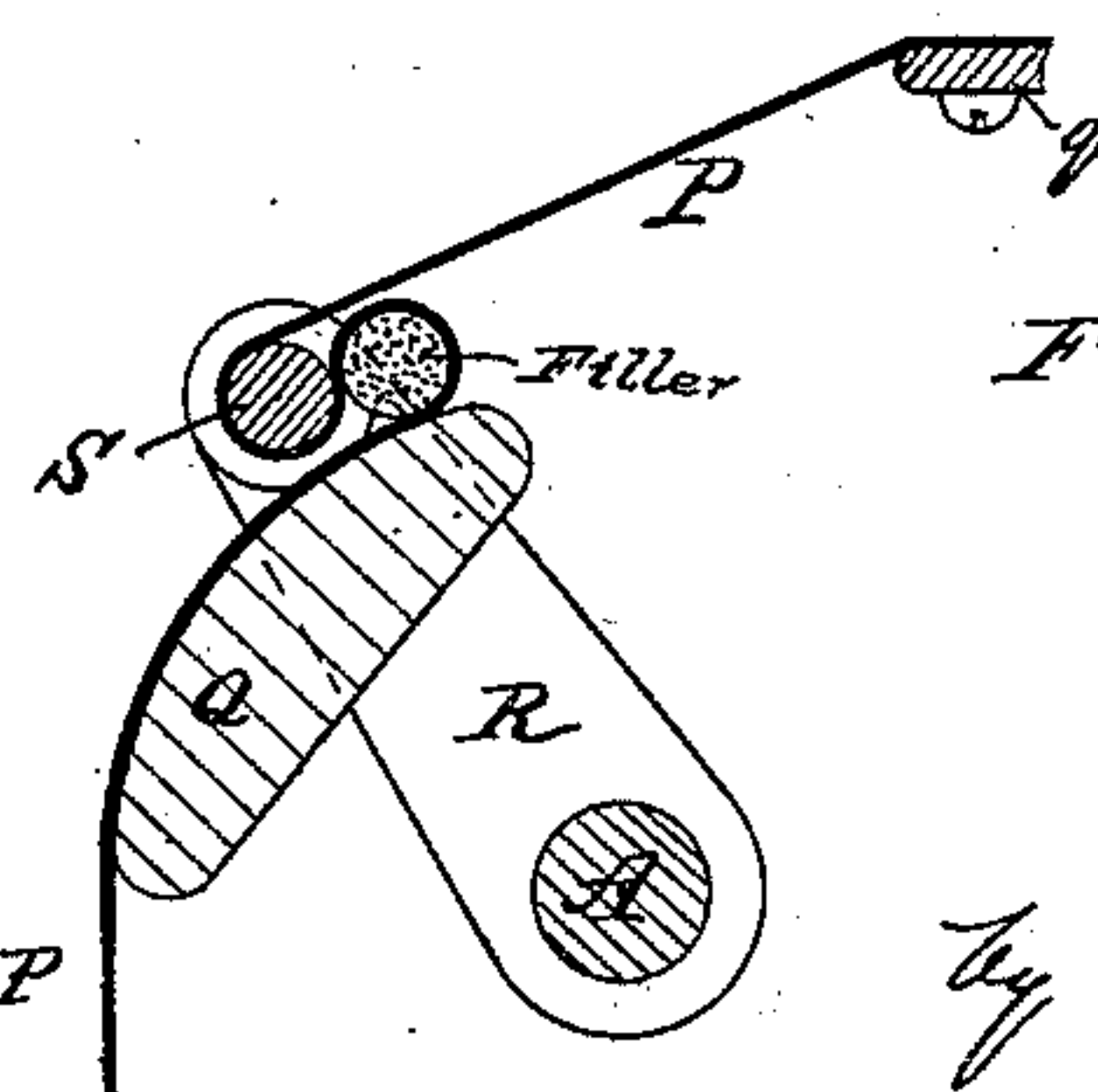


Fig. 5.

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# UNITED STATES PATENT OFFICE.

WILLIAM I. MANN, OF BRADDOCK, PENNSYLVANIA.

## CIGAR-MACHINE.

SPECIFICATION forming part of Letters Patent No. 299,818, dated June 3, 1884.

Application filed June 4, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM I. MANN, of Braddock, in the county of Allegheny and State of Pennsylvania, have invented certain  
5 new and useful Improvements in Cigar-Binding Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to  
10 make and use the same, reference being had to the accompanying drawings, which form a part of this specification, in which—

Figure 1 is a side view of the machine, partly sectional. Fig. 2 is a plan, and Fig. 3 a section, of the cutting and compressing device. Fig. 4 is a rear view of the machine with the projecting portion of the frame B removed. Fig. 5 is a detail showing the peculiar action of the band and sweep.

20 This invention relates to the construction of cigar-machines; and it consists in the various combinations and arrangements of devices, as hereinafter fully described and claimed.

This machine comprises a receptacle for the  
25 scrap or filler tobacco, with means for abstracting enough for a cigar, cutting it loose, compressing it, and dropping it to the wrapping mechanism; feed-rollers for unwinding a continuous roll of binder-tobacco, cutting it to  
30 lengths, and delivering it in position for rolling around the filler already spoken of, and, finally, means for rolling the said filler and binder up into shape, the binder being outside, and then delivering such cigar from the apparatus. I have designed a simple machine operating from a single shaft, so as to bring all these instrumentalities into operation continuously, one operation following another, and the cigars being delivered one after another,  
35 ready for the outside wrapper.

In a pending application I have shown and claimed an improvement in the manufacture of cigars, consisting in forming the wrapper or binder tobacco by pasting or otherwise into  
45 a continuous strip to be cut in suitable lengths as needed. Such a strip I propose to use in the present machine, and will be referred to herein as the "roll of binders," it being coiled up on reels for the purpose.

50 In the drawings, A is the main shaft, passing through the apparatus and journaled in

the frame B at *a* and *b*. On shaft A, outside the frame B, I fix the cam C, so as to revolve with the shaft. A whip, D, is given an oscillating movement by means of the roller *c* bearing upon the face of cam C, and carried (with whip D) on an arm, *d*, journaled at *e* to the frame B. The whip D is preferably of a cigar shape, as shown in Fig. 4. A hopper, E, is suitably supported above the frame B, and is  
55 provided with a slit, *f*, at the bottom, and a swinging back, F, back F being mounted on the support *g*, as shown. The front of hopper E, at its lower edge, is provided with a knife, *h*. A stationary flat table, G, is fixed  
60 to the frame B a little below the mouth of slit *f*, and in this table is a transverse opening or slot, *i*, forward of the position of slit *f*. On table G, occupying the space between it and hopper E, is the compound reciprocating  
65 filler-cutter and compressor composed of the frame *k* and the plunger *l*, both arranged to slide on each other within limits. Their contiguous edges *m* are concaved longitudinally to substantially a half-circle, and the upper  
70 edge of plunger *l* is sharpened sufficiently to do its work. Shaft A is formed with the eccentric H, and by means of straps I and rod K an oscillating movement is given the crank L, keyed on rock-shaft M, whose oscillation  
75 vibrates the arm N, and by means of link *n* produces a reciprocating movement of the bar O, which projects from or is a part of the plunger *l*, as shown. For every revolution of shaft A, I thus obtain a forward and back-  
80 ward movement of the plunger *l*. Bar O is guided by its guide-rod *o*, working in the bearing *p*, as shown.

To the under side of the table G, by means of cross-bar *q*, I fasten one end of the band P,  
85 which I prefer to make of rubber, rubber cloth, or other elastic or semi-elastic fabric. I attach to the frame or support B a fixed table or bed, Q, extending circularly about  
90 ninety degrees, and having its face concaved in the direction of its length, to correspond with the cigar shape of the whip D. The band P hangs over the outside of this, and passes down to an adjusting-spindle, *r*, which is carried by the tension-springs *s*, fixed to  
95 frames B in any suitable way. By winding spindle *r* the degree of looseness of band P



may be regulated. Before passing down over table Q the band P passes under the whip D, as shown by Fig. 1. Once in every revolution of cam C the whip D falls upon the band P and presses it down to form a pocket, *t*, at the upper edge of the table Q, after which the whip D rises. A crank, R, is keyed or fixed to shaft A out of the line of table Q, and carries the sweep S, arranged to revolve freely on the crank-eye. Sweep S in its path moves around the outside of table Q, but is under the band P at its initial position. (Shown in Fig. 1.) This sweep S is curved reversely to the face of table Q, so that the aperture between them is substantially cigar-shaped.

Supported at a suitable elevation is the reel T, carrying the roll of binders U, and conveniently arranged below this are journaled the feed-rolls V V'. Roll V is geared by the pulley *v* and belt *w* to the pulley *x* on shaft A, so as to revolve at a proper speed, roll V' revolving by friction. A guide-plate, *a'*, is fixed to the housings of rolls V V', and serves also as a guide for the reciprocating knife *b'*. A stationary knife, *c'*, is also fitted to the housings of rolls V V', the opening between knives *b' c'* being at the base of guide-plate *a'*. Beneath this opening is an apron, *d'*, leading to the pocket *t*, and having its lower portion hinged and weighted, or having a spring, so as to yield to the advance of the sweep S, and, when it has passed, to return to its original position. The end of the roll of binders U is brought down through the rolls V V', and between the knives *b' c'* onto apron *d'*. The knife *b'* is given motion at the proper time by the cam C, allowing a roller, *e'*, on the bell-crank lever *f'* to drop, thus elevating the other end of lever *f'*, (which is pivoted at *g'* to frame B,) and, by means of the link *h'*, pushing the knife *b'* inwardly to cut off the binder, which then slides down the apron *d'*.

To the back F of hopper E is fixed the bracket *i'*, in which is pivoted the hook *k'*, projecting downwardly in the path of a tappet, *m'*, on top of plunger *l*. Back F is arranged so that by gravity or by means of a spring it normally occupies the position shown. Every time the bar O is drawn back by arm N the tappet *m'* engages hook *k'* and pulls the back F slightly, for the purpose of assisting the fall of a charge of filler or scrap.

Operation: The first operation is the cutting of the charge of filler. When the bar O is drawn back, it first acts on plunger *l*, and then on frame *k*, and both are drawn backward till the slotted opening between edges *m m* is under the slit *f* of hopper E, the action enlarging the opening between *m* and *m*. During this movement tappet *m'* engages hook *k'*, and swings the back F slightly away from the contents of hopper E, thus allowing the scrap-tobacco or filler to readily fall into the opening *m m*. Then the bar O moves forward, and with it the released back F. The sharp-edged plunger cuts off the scrap or filler and com-

presses the charge against the concave face of frame *k* into an approximate cigar shape. The continued movement of bar O carries the charge forward till it is in the position shown in Fig. 1, over the slot *i* in table G. The first backward movement of bar O now draws plunger *l* away from frame *k*, and allows the charge to drop, which it does through slot *i*, into the pocket *t*, already formed in band P by the whip D. Just before such dropping of the filler the cam C has caused the knife *b'* to move and cut off a length of binder or wrapper, which slides down the apron *d'* till its lower edge rests in the pocket *t* beside the filler-charge. Then the sweep S, in its continuous revolution, reaches the band P, strikes it at a point above the pocket *t*, and forms the band P into a bight or loop, as shown in Fig. 5. The upper end of the band P being secured and its lower end held by the yielding springs *s*, the band is undulated around both the sweep S and the charge of filler while under tension. The onward movement of the rotary sweep S causes this bight of the band P to undulate over the table Q, and thus a rolling effect is produced on the filler and binder within the bight of the band, and so the binder is tightly wrapped around the filler or charge. The preliminary shape of the filler, combined with the shape of the sweep S and table Q and the elastic band P, unite to give the cigar-bunch the required shape. When the sweep S has arrived a little below the lower end of table Q, the bight of band P opens and the cigar-bunch is thrown out. Immediately the cam C lowers the whip D, which at once re-forms the pocket *t*, and the operations are continuously repeated, the action being automatic until the hopper or roll of binders, or both, are exhausted.

I have shown and described a continuous binder of tobacco; but I do not herein claim the same, as I have made it the subject of a separate application filed January 2, 1883.

I claim as my invention—

1. In a cigar-machine, a scrap or filler hopper, E, having the swinging back F and slit *f*, in combination with suitable means for oscillating said back to facilitate the discharge of scrap, substantially as described.

2. In a cigar-machine, the combination of the hopper E, having swinging back F and slit *f*, and knife-edge *h*, with the reciprocating plunger *l*, having cutting-edge, whereby a single filler is cut off, substantially as described.

3. The combination of the swinging hopper-back F, having hook *k'*, with plunger *l*, having tappet *m'*, substantially as described.

4. The combination, with feed-rollers V V' and knives *b' c'*, of the hinged apron *d'*, substantially as described.

5. In a cigar binding or wrapping mechanism, the combination of a flexible band, means for forming said band into a pocket to receive the filler and one end of a binder, a segmental table, and a revolving sweep adapted,



in its continuous revolution, to travel at regular intervals over said table under the band, to form the latter into a bight containing the filler and binder, and in its sweeping movement cause a rotation of the filler to take place, substantially as described.

6. In a cigar-machine, the combination of the sweep S, adapted for continuous revolution, suitable means for revolving the same, table Q, and band P, adapted to be intermittently formed into a bight or loop during a part of the continuous revolution of said sweep, and thereby rotate any body lying in said bight, substantially as described.

15 7. The combination, with cam C, of the piv-

oted arm d, carrying roller c and whip D, substantially as described.

8. The combination of band P, rotating shaft A, arm R, and revolving sweep S, having suitable means for revolving it, with the concave table Q, curved concentric with the axis of shaft A, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

WILLIAM I. MANN.

Witnesses:

T. J. McTIGHE,

T. J. PATTERSON.