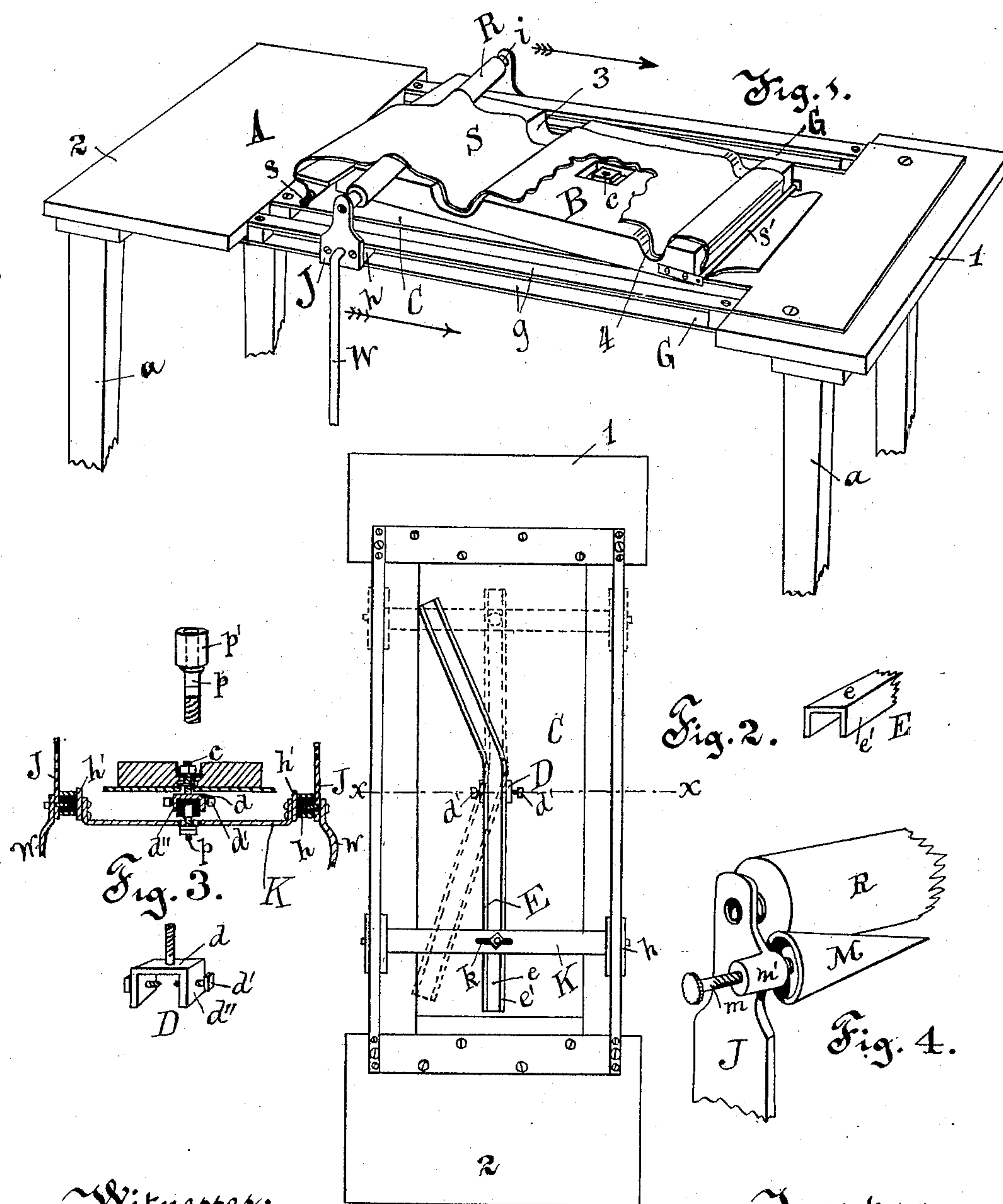


(No Model.)

M. GREENSFELDER.  
CIGAR MACHINE.

No. 409,785.

Patented Aug. 27, 1889.



Witnesses:

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# UNITED STATES PATENT OFFICE.

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## CIGAR-MACHINE.

SPECIFICATION forming part of Letters Patent No. 409,785, dated August 27, 1889.

Application filed December 19, 1888. Serial No. 294,043. (No model.)

*To all whom it may concern:*

Be it known that I, MOSES GREENSFELDER, a citizen of the United States, residing at Baltimore, State of Maryland, have invented a new and useful Improvement in Cigar-Machines, of which the following is a specification.

My invention relates to devices employed in the manufacture of cigars, and has for its object the provision of means whereby a cigar may be formed of any desired shape. In manufacturing cigars of the prevailing style it is necessary to exercise great skill and caution both in preparing the bunch and in the subsequent wrapping. In producing cigars having diverse diameters in cross-section the tobacco cannot be rolled continuously in one direction, as is the case where the finished article is simply cylindrical with practically uniform diametrical proportions. When it is desired to produce a cigar tapering toward either or both ends, it is necessary to roll the tobacco at various divergent angles upon a horizontal bed. This requires great skill and attention, occupies considerable time, and even with the utmost care it is impossible by the ordinary manipulation to succeed in securing uniformity of the various diameters of a number of cigars that have a thick body, which portion I herein denominate the "belly," and tapering sections extending therefrom at different degrees of divergence. To produce cigars uniform in style and shape having from a relative thick diametrical section thereof extensions toward either terminal end tapering at such inclines as may be desired has been the object of my invention.

In carrying out my purpose I prepare a swinging bed or board, herein called a "bunch-bed," loosely overlying which is an adjustable apron, said bunch-bed being connected to a table and having a guide-track, and adjusted to swing horizontally in required directions while the tobacco is being rolled.

My invention embodies certain devices and combinations thereof, hereinafter fully described, illustrated in the drawings, and specifically pointed out in the claims.

Referring to the accompanying drawings, wherein like letters of reference point out similar parts on each figure, Figure 1 is an

upper perspective view of a table and attachments, illustrating my invention, part of the apron being broken away. Fig. 2 is an under view thereof. Fig. 3 is a cross-section on the line  $x x$  of Fig. 2, showing portions of the treadle-levers, side open ways, and roller-supporting arms, as seen in perspective in Fig. 1. Fig. 4 is an enlarged view of one end of the operative roller, showing attached to its supporting-arm an adjustable cone-shaped limiter.

In the drawings, A represents a table supported by legs  $a$ .

B is a bunch-bed pivoted to a plate C, rigidly connected to the ends 1 2 of the table. The bunch-bed is provided upon its upper surface, near its rear end, with a transverse recess or trough 3, and near its opposite end a similar trough 4. The trough 4, as presently more particularly set forth, receives a fold of the apron, which forms a pocket, into which the necessary quantity of tobacco is deposited, while the trough 3 serves as a receptacle for the finished cigar, which will drop therein when the rolling is completed.

The bunch-board is connected to the plate C by a short stud or pin  $c$ , the upper end of which pin is firmly secured to said bed, and after passing through an orifice in the bed-plate, within which orifice it is free to turn, is rigidly connected below said plate to the cross-arm  $d$  of a stirrup D. Said stirrup (see detail to Fig. 3) is formed to clip a detachable bent track E, (more particularly presently described.) As the track E must have a bend the inclination of which is adapted to the swell and taper of each special form of cigar, it is made interchangeable, and is therefore held suspended between the forks of the stirrup D by means of screws  $d'$ , passing through each leg  $d''$ , by turning which screws a track E may be securely gripped or released at will. The stud  $c$  being secured at its upper end to the bunch-bed and at its lower end to the stirrup D, it is manifest that as the track is moved under the bed-plate C it will carry the bunch-bed B with it, and thus cause it to swing divergently on a horizontal plane in accordance with the movements imparted to it through the connected bent track, which is actuated by means hereinafter set forth.

The track E consists, essentially, of an in-



verted grooved way, preferably of the form shown in detail to Fig. 2, composed its full length of an upper strip *e* and sides *e'* at about right angles thereto. The track may, however, be T-shaped or curved, or of any suitable conformation in cross-section to receive an operating pin or wheel, which, while traveling within the inverted groove, will cause the track, when suspended by means of the stirrup *D* below the bed-plate, to turn upon the pivotal bearing of said bed-plate and carry with it the bunch-bed *B*.

The movement of the track is brought about in the following manner: The table is supplied on either side with open ways *G* to receive blocks *h*; or, in lieu of said blocks, small pulleys may be employed. Said blocks or pulleys are adapted to freely pass longitudinally between the upper and lower rails *g*, composing the track *G*, and are kept from lateral displacement by means of flanges *h'* and the lower ends of the roller-arms *J*.

*K* is a bar reaching transversely across the device and firmly secured to the flanges *h'*. The bar *K* midway of its length is supplied with a slot *k*, to receive a vertical pintle *p*, extending upwardly from said bar. The upper end of the pintle *p* is preferably provided with a revoluble sleeve *p'*, (see detail to Fig. 3,) to prevent friction as the grooved track *E* is traversed by said pintle.

*J J* are vertical arms uprising on either side of the table, the lower ends of which are respectively secured to the blocks *h*. The upper ends of the arms *J* are provided with journal-bearings for reception of the axial shaft *i* of a roller *R*, loosely surrounding said shaft, and adapted to turn thereon and therewith when motion is imparted to the machine.

Lying loosely over the face of the mold-bed is an apron *S*, one end of which is fastened to a transverse rod *s*, connected to the bed-plate *C*. The other end of the apron, after passing over the roller, then lies loosely over the upper surface of the mold-bed, and is adapted to be removably fastened to a clip *s'* at the opposite end of the bunch-bed *B*. A portion of the apron will fall into the recess 4 and compose an open pocket. Said pocket is then supplied with a quantity of tobacco, either by hand or through a hopper or any other suitable feeding device—such as are shown, for instance, in two Letters Patent granted to me, one dated April 27, 1880, numbered 226,849, and one dated June 19, 1888, numbered 384,757, my present invention being improvements on the devices secured to me by said Letters Patent.

My present invention broadly relates to the means employed for rolling the tobacco within the apron, so as to form a cigar having a belly of given dimensions, the thickest portion of which is at any desired point of the length of the cigar, from which belly the cigar is caused to taper at any degree of divergence toward its ends. The shape of the cigar both

in longitudinal and cross-section is secured through the actuation of the pintle *p*, which, when motion is imparted to the machine, travels within the groove of track *E*, and thereby turns said track, and with it the bunch-bed *B*, horizontally in directions in exact coincidence with the bends and deflections of said track.

The roller *R* may be caused to move reciprocally over the mold-bed by any suitable gearing. I show in the drawings portions of lever-arms intended to be connected to treadles, by which it will be readily understood that said roller can be moved longitudinally the full length of the open ways *G*. Said ways being in direct parallel lines at each side of the table and the roller being connected by the arms *J* to the blocks *h*, it is obvious that the movement of the roller will be in a right line lengthwise of the table; but as the cross-bar *K* is attached to blocks *h*, the pintle *p* uprising therefrom to and within the grooved track *E* will cause said track to deflect laterally and carry with it the bunch-bed *B*. (See dotted lines, Fig. 2.) In Fig. 1 I illustrate said bed as somewhat diverging from the right parallel lines of the open ways *G*. As the roller *R* is caused to progress in the direction of the arrows, Fig. 1, it will as soon as it reaches the trough 4 bunch up the tobacco therein previously deposited and form the loose fold of the apron into a cylindrical pocket. If the bunch-bed were stationary, said tubular pockets, with their contents, would be transported in a direct line along the upper surface of said bed and a roll of tobacco of uniform diameter from end to end would drop into the forward recess 3, which forms a receptacle therefor. If, however, the bed *B* is arranged in the manner herein shown and described, the tobacco will be so rolled up as to form a cigar having tapering sections, extending from given points of its length, and assume the exact contour of the bend of the special track *E*, adjusted beneath the bed-plate. In other words, the various deflections of the bed during the progress of the roller will cause the apron to be tightly compressed at certain times at certain points of its width, and thus form a pocket that will have more or less of its width cone-shaped, which portions will be tightly compressed while other portions of the pocket will be more or less widened, and consequently the tobacco therein will be caused to conform to the shape of said widened portion of the apron-pocket.

It is my intention to arrange the feed of tobacco so that the supply thereof shall be distributed in approximate quantities necessary to be rolled up for the respective dimensions of the finished cigar.

In Fig. 4 I have shown a supplementary revoluble short limiting-cone *M*, adapted to be adjusted to an arm *J*, to reach forwardly therefrom and a slight distance away from the roller *R*, which cone may be projected later-



ally by means of a threaded shaft *m* passing through a bearing *m'*, attached to an arm *J*, as plainly seen in said figure. In practice the upper edge of the apron will, when the machine is actuated, be intermediate of said cone and the adjacent end of the roller *R*, and keep that end of the pocket compressed, thus preventing the tobacco therein from falling outwardly. The cone, however, is only required on certain styles of cigars, such as have a wide tuck.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

15 1. The bunch-bed pivotally connected midway of its length to the bed-plate and adapted to swing thereon on a horizontal plane, a bent track attached to the bunch-bed arranged under said bed-plate, in combination with a reciprocating roller and apron secured at one end to a transverse rod on the bed-plate and at its opposite end to the bunch-bed, with suitable means for traveling in the bent track, substantially as described.

25 2. The combination of the bunch-bed *B*, having lateral surface-troughs at its opposite ends and a loosely overlying apron attached at one end to a rod on the bed-plate and at its opposite end to the bunch-bed, said bunch-bed being connected with the bed-plate by a pivotal pin passing through said plate, having at its lower end a hanging stirrup provided with fastening devices to firmly grip a bent track attached to said bunch-bed with the track, a transverse bar arranged to reciprocally traverse the track, said bar having uprising therefrom a pintle taking into the groove of the track, substantially as described.

40 3. In a cigar-making machine, the combination of a pivoted bunch-bed arranged to move upon a horizontal plane, a bent track attached to the under side of the bunch-bed, the table *A*, having open side ways *G*, the traveling-blocks *h*, flanged at their inner faces, said blocks having connected to their lower ends transverse bar *K*, carrying midway of its length vertical pintle *p*, intermeshing with the groove of the bent track, the opposite outer side of each block *h* having attached

thereto an arm *J*, provided with the revoluble roller *R*, extending transversely across and above the bed *B*, and an apron, one end being connected to the bunch-bed and the other to the framing, as and for the purpose intended, substantially as described. 55

4. The bunch-bed pivotally connected to a bed-plate and adapted to swing on a horizontal plane, a bent track attached to the under side of said bunch-bed, in combination with said track, the reciprocating roller, an apron secured at one end to the bunch-bed and at its opposite end to the bed-plate, and suitable means for traveling in said track, and the cone-limiter adjusted to be laterally projected against the roller, as and for the purpose set forth. 60

5. The combination of the table *A*, provided with a permanently-attached bed-plate *C*, and open parallel side ways *G*, a pivoted and removable bent grooved track *E*, pintle *p*, engaging said track, a reciprocally-movable cross-bar *K*, carrying the pintle-blocks *h*, sliding within the ways *G*, reciprocating roller *R*, journaled in plates *J*, apron *S*, fastened at one end to the bed-plate and at its opposite end to the bunch-bed, the plates *J*, lever-arms *W*, which, when actuated, will move said blocks within their ways and simultaneously propel the pintle *p* within the grooved track, thereby turning the same laterally, which in turn will cause the bed *B*, attached to the upper end of the common pivot, to swing in coincident direction, as and for the purpose intended, substantially as described. 75 80 85

6. The apron *S*, secured as set forth, the reciprocating roller *R*, horizontally-swinging bunch-bed *B*, bent and grooved track *E*, secured to said bunch-bed, and sliding pintle *p*, arranged and combined as set forth and illustrated, whereby, when motion is imparted to the several actuating members of the device, portions of the apron will be folded over to form a pocket tapering in alignment corresponding with the divergence and bend of the track *E*, substantially as described. 90 95

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