

S. SCHOLFIELD.

Machines for Making Cigar Bunches.

No. 140,848.

Patented July 15, 1873.

Fig. 1.

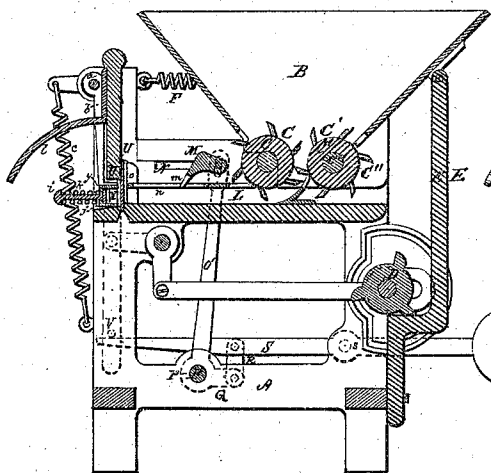


Fig. 2.

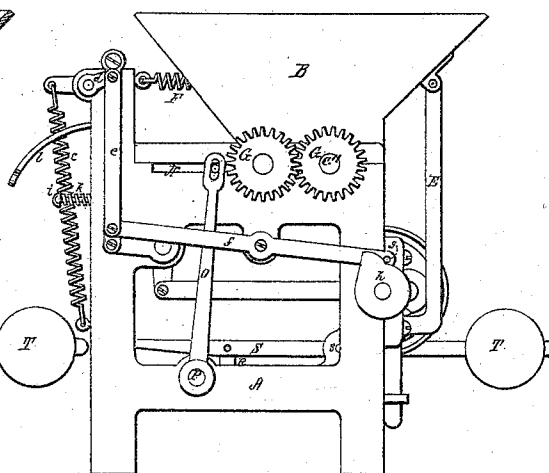


Fig. 3.

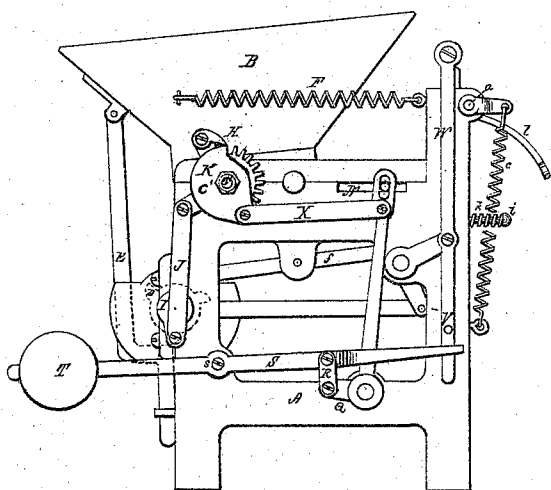


Fig. 4.

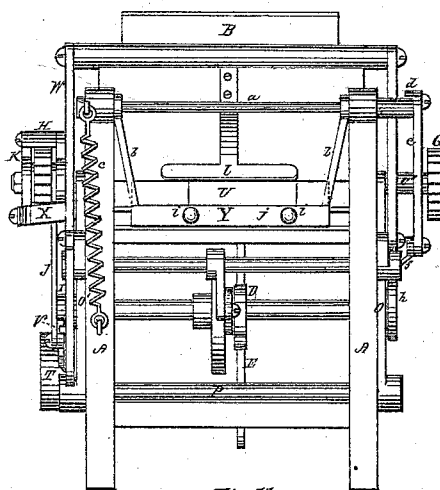


Fig. 5.

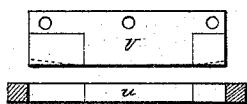


Fig. 6.



Fig. 7.

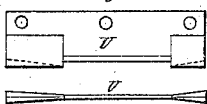


Fig. 8.



Fig. 11.

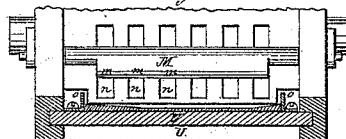


Fig. 9.

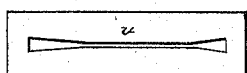


Fig. 10.

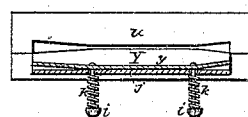
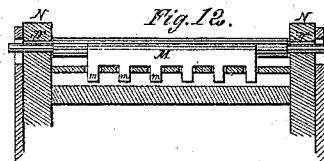


Fig. 12.



George H. Rogers.
Alta R. Abbott.

WITNESSES.

Socrates Scholfield

UNITED STATES PATENT OFFICE.

SOCRATES SCHOLFIELD, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN MACHINES FOR MAKING CIGAR-BUNCHES.

Specification forming part of Letters Patent No. 140,848, dated July 15, 1873; application filed July 8, 1872.

To all whom it may concern:

Be it known that I, SOCRATES SCHOLFIELD, of Providence, in the county of Providence and State of Rhode Island, have invented an Improvement in Machines for Making Cigar-Bunches, of which the following is a specification:

The nature of my invention consists in feeding the tobacco to the knife or sizing chamber of a cigar-machine, by means of a primary feeding mechanism, the progressive movement of which is regulated and controlled by means of the differing action of an independently-operated secondary feeding mechanism. In all machines heretofore constructed for feeding loose masses of tobacco automatically, the tobacco has been placed in a mass of nearly uniform thickness upon an endless belt, or an equivalent device, which was driven with a positive and uniform motion, and the bunches made by such machines were always full or loose, according to the depth or quality of the tobacco placed upon the belt, the act of putting up the tobacco and placing it on the belt determining exactly the relative state of the bunches to be made therefrom, so that in order to secure uniformity in the work great care and skill were required in arranging the tobacco properly. In order to obviate the difficulty referred to, it is necessary to combine with the endless belt, or with any equivalent, as heretofore used for a primary feeding device, another feeding device, operating to receive the tobacco from the primary, and, by a reflex action, to cause the primary to so regulate and adjust its rate of action as to feed the proper quantity required at any moment. My invention also embraces a reciprocating feeding mechanism, operating, by means of a hinged or sliding dog directly upon the tobacco, to force it to the knife or gate, or to the sizing-chamber, whenever such reciprocating mechanism is actuated in its forward movement by the force of a spring or weight, or by any equivalent adjustable force, as by friction. It also includes a vertically vibrating or rocking movement, imparted to a beveled hopper, when used to supply the tobacco to a cigar-machine. It also includes an improved mode of securing the proper tapering form to the filler, by enlarging the ends of

the knife or gate, so as to form therefrom plungers, arranged to operate in a die, thus removing the surplus tobacco at the moment the filler is divided from the mass. It also relates to an improvement in the chamber for receiving and discharging the fillers.

Figure 1 is a sectional side view of the machine, as made to be fed from a hopper. Fig. 2 is a side view of the same. Fig. 3 is a side view, the reverse of Fig. 2. Fig. 4 is a front view. Figs. 5, 6, 7, 8, 9, 10, 11, and 12, are detail drawings, made to illustrate certain parts.

A is the frame of the machine. B is a flaring hopper pivoted upon the shaft C' of the roll C', and receiving a vertical vibratory or rocking movement from the cam D, acting through the connecting-bar E, against the force exerted by the spring F. The hopper will thus receive a jarring vibratory movement, which will serve to cause the loose particles of tobacco to sink down within reach of the feed-rolls C C'. The feed-rolls C C' are connected to each other by the gears G G, and are made to revolve by means of the ratchet H, which is operated from the main shaft by means of the crank I and bar J. The amount of movement to be imparted to the rolls C C' is to be determined by the position of the guard K, which may cover or uncover the teeth of the ratchet-wheel. Thus the movement of the rolls, while being positive in its character, may be made variable in extent to any required degree, through the simple movement of the guard K. The feed-rolls C C', pawl or dog H, bar J, and crank I, constituting a uniform positive movement, when applied for the purpose of feeding a machine with tobacco, are referred to as an exemplification of the principle to be embodied in the operation of the primary feeding device, mentioned in my first claim.

The tobacco, being first drawn from the hopper B by means of the positively driven rolls C C', and forced into the passage L, is then further acted upon by the reciprocating dog M, the several points *m m m* of which reach the tobacco through the slots *n n n* on the upper side of the chamber or passage L. The dog M is provided with bearings in the slots N N, and is operated

back and forth in the slots by means of the arms *O O'* attached to the rocking-shaft *P*. To the hub of the arm *O'* is attached the short arm *Q*, from which connection is made, by the link *R*, to the weighted lever *S* pivoted at the points. The action of the weight *T*, on the outer end of the lever *S*, serves to throw the dog *M* forward, as shown in Fig. 3, thus forcing the tobacco into the sizing-chamber under a fixed and uniform pressure, which is governed by the size of the weight *T*. The extent of such movement is measured by the quantity of tobacco lying between the dog *M* and the sizing-chamber *Y*. When the knife or gate *U* is brought down, the pin *V* on the bar *W* will strike the end of the lever *S*, raising the weight, and causing the dog *M* to be thrown back to its extreme limit, as shown in Fig. 1. Fig. 11 shows a top view of the dog *M*, and the slots *n n n* through which the points *m m m* operate upon the tobacco; and Fig. 12, a front view of the same. From the arm *O'* connection is made to the guard *K* by means of the bar *X*.

In illustrating my invention as above, I have preferably used a gravitating dog, *M*, arranged to operate upon the tobacco in the passage *L*; but a corresponding hinged or sliding device, controlled in its up-and-down movements by mechanical means, operating in timely relation to the forward-and-backward movement, may be employed. The dog *M* may be divided into several sections, each capable of independent movement, if preferred. I have also preferred, in establishing the proper regulating connection between the primary and secondary feeding devices, to use a pawl, ratchet-wheel, and guard, as common in regulating the progressive movements in machinery. But other regulating devices, as cone-pulleys, clutches, &c., which are also in common use for similar purposes, may be employed in this connection. The ordinary endless apron may also be used as a primary receptacle for the tobacco, in lieu of the hopper *B*, when using long fillers.

The knife or gate *U* is thickened out at either one or both of its ends, in gradually-expanding form, to be used in connection with a die, *u*, made of like shape to receive it. By this means a portion of the filler will be cut out and forced downward into the die, in order that the deposit in the chamber *Y* may be made in the proper tapering form for a cigar, as illustrated in Fig. 10, which is a top view of the die *u* and a horizontal section of the sizing-chamber. Fig. 5 shows a side view of the gate *U*, and a longitudinal sectional view of the die *u*. Fig. 6 is an edge view of the gate *U*. Fig. 7 is a side and bottom view of

a gate, *U*, having its inner straight portion sharpened into a knife, as shown by its central cross-section in Fig. 8, the ends being thickened up so as to form suitable plungers to fit the die *u*, shown in Fig. 9. The knives *o o*, also attached to the slide *P*, are used for cutting off the fag-ends of the loose fillers as they approach the chamber *Y*. The sizing-chamber *Y* is connected to the rocking shaft *a* by the arms *b b*, and is held to its seat against the gate *U* by means of the spring *c*, and is thrown back to remove the inclosed filler, in timely relation to the action of the gate *U*, by means of the arm *d*, bar *e*, lever *f*, pin *g*, and cam *h*. The inner movable back *y* of the chamber *Y* is curved or bent to conform to the tapering form desired, as shown in section in Fig. 10. To the back *y* are firmly secured the rods *i i* passing loosely through the outer back *j* of the chamber, upon which rods are placed the springs *k k*. When the chamber *Y* is thrown back by the action of the machine, the ends of the rods *i i* will strike the cross-bar *l*, or any suitably arranged obstruction, and cause the curved back *y* to be thrown forward, so as to eject the filler from the chamber, allowing it to drop, if desired, into a suitably-arranged binding-machine.

I claim as my invention—

1. The combination, in a cigar-bunching machine, of a primary feeding device, actuated by rigidly or positively operating mechanism, with a regulating mechanism for controlling the extent of such movement as desired, and a reciprocating yielding feeding mechanism, the whole operating substantially as herein specified.

2. The combination of a grated or barred chamber or passage, *L*, with a reciprocating yielding feeding device, substantially as and for the purpose described.

3. The combination of a knife or gate, *U*, passage *L*, feed-rolls *C C*, and vertically-vibrating or rocking hopper *B*, substantially as described.

4. A knife or gate, *U*, with the thickened end or ends for operating in the corresponding die *u*, substantially as and for the purpose specified.

5. The combination of the movable back *y* of the chamber *Y* with the rods *i i* and obstructing-bar *l* or its equivalent, operating to discharge the filler upon the backward movement of the chamber, substantially as described.

SOCRATES SCHOLFIELD.

Witnesses:

W. P. WELSH,
A. R. ABBOTT.