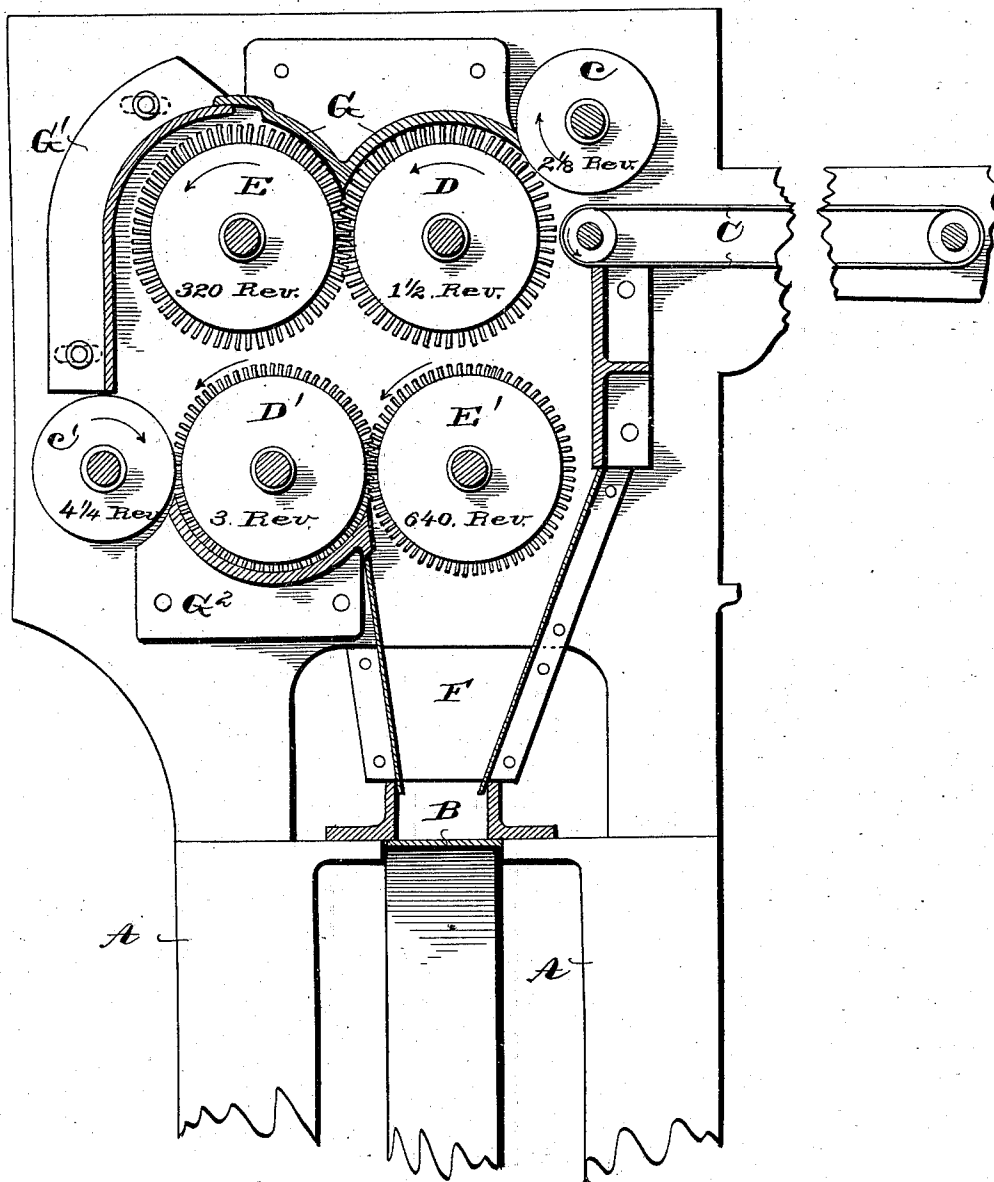


(No Model.)

J. F. HARTIGAN.
FEEDING DEVICE FOR CIGARETTE MACHINES.

No. 578,741.

Patented Mar. 16, 1897.



WITNESSES—

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UNITED STATES PATENT OFFICE

JOSEPH F. HARTIGAN, OF WASHINGTON, DISTRICT OF COLUMBIA.

FEEDING DEVICE FOR CIGARETTE-MACHINES.

SPECIFICATION forming part of Letters Patent No. 578,741, dated March 16, 1897.

Application filed July 8, 1896. Serial No. 598,437. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH F. HARTIGAN, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Feeding Devices for Cigarette-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention relates to cigarette-machines; and it consists in new constructions and combinations of parts whereby I secure the delivery of the tobacco to the rod-forming devices in a more even manner and in a better condition than heretofore.

The best form in which I have contemplated embodying my said invention is shown in the drawing, and my said invention is fully disclosed in the following description and claims.

The drawing shows a sectional view of my feeding device as applied to a cigarette-machine, said section being made transversely of the path of the tobacco in the formation of a cigarette.

In the said drawing, A is the frame of the cigarette-machine, and B is a belt for carrying the tobacco to the rod-forming devices.

C is an endless carrier forming a part of my feeding mechanism and upon which the tobacco to be operated upon is primarily placed. This carrier is moved at a slow rate of speed, not far from twenty-four inches per minute. Adjacent to the delivery end of said carrier is a tooth or pin roller D, which I term a "carrying-roller." This roller moves but little faster than the carrier C, moving about one and one-half revolutions per minute. The teeth adjacent to the carrier move upward and engage with the tobacco as it comes from the carrier, drawing slightly upon it. A smooth-surfaced roller *c* is located adjacent the delivery end of the belt and the carrying-roller D and has its adjacent surface moving in the same direction as the carrier and roller. This roller *c* serves to move the tobacco at the delivery end of the carrier more positively forward and prevents backward movement when engaging the teeth of

the roller D. It also serves to press the tobacco upon the pins or teeth of the carrying-roller.

On the side of the carrying-roller D opposite the carrier C is a toothed roller E, which I term a "picker." The teeth or pins of this roller mesh or pass between the pins or teeth of the carrying-roller. The roll E moves at a high rate of speed, approximately three hundred revolutions a minute, and its teeth take the tobacco in small quantities from the roller D and carry it forward and deliver it downward upon a smooth-surfaced roller *c'*, or between that roller and a second carrying-roller D'. The carrying-roller D' is also provided with pins or teeth. The teeth are shorter than those of roller D, and though the roller is substantially the same size it is made to move with about double the rapidity of the first carrying-roller, or about three revolutions per minute. The roller *c'* and roller D' move toward each other, and the tobacco is thereby pressed upon the teeth of the carrying-roller.

On the side of the roller D' opposite the roller *c'* is another toothed picker-roller E', which moves at a higher rate of speed than the first picker—from four to six hundred and fifty revolutions per minute. Beneath this roller is the hopper F and the picker E', whose teeth mesh with those of the second carrying-roller, take the tobacco from said carrying-roller, and deliver it into the said hopper, which guides it downward upon the carrying-belt B.

Between the rollers *c* and *c'* the first carrying-roller and the first picker are inclosed by a stationary shield or double concave G and a movable or an adjustable shield G'. The portion opposite the first carrying-roller D approaches nearly the ends of the teeth of the same, so that no tobacco can escape therefrom. From the point of divergence of the teeth of these two rollers the shield or concave curves gradually away from the picker E. The shield G' is adjustable toward or from the picker E, so as to increase or decrease the space between it and the teeth of the picker. A concave G² is provided beneath the second carrying-roller D', and this

concave is set close to the ends of the teeth of the roller to prevent the escape of the tobacco therefrom.

It is to be noticed that the point at which the first carrying-roller takes the tobacco from the endless carrier C is above the picker E' and the hopper, so that any tobacco dropping at this point is caught by the picker and delivered into the hopper with that taken from the second carrying-roller. So also any tobacco falling between the first carrying-roll and the first picker is caught by the second carrying-roller. Such tobacco as will fall at either of these two places will be finely divided and in good condition to be delivered to the hopper F and belt B.

The different moving parts of my mechanism will be driven from the operative mechanism of the cigarette-machine by such connections and gearing as will secure the motions and speed desired for each. Such driving mechanism should also be of such form as to permit of the speed of the pickers E and E' being increased or diminished according to the condition of the tobacco to be operated on.

The direction of the motion of the different parts and their relative speeds are indicated on the drawing.

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

1. In a feeding mechanism for cigarette-machines, the combination with the first and second carrying-rolls, of the picker interposed between the carrying-rolls, a shield and pressure-roller inclosing said devices, a part of said shield or casing adjacent to said picker being adjustable to and from the same, substantially as described.

2. In a feeding mechanism for cigarette-machines, the tobacco-dressing devices consisting of a carrying-roller, a picker therefor, a second carrying-roller, a picker therefor, an endless carrier delivering tobacco to the first carrying-roller, a hopper receiving the tobacco from the second picker and devices extending around and inclosing the carrying-rollers and pickers from the endless carrier to the hopper, consisting of a pressure-roller, two shields, a second pressure-roller adjacent to the second carrying-roller and a concave extending from said second pressure-roller to the hopper, substantially as described.

3. In a feeding mechanism for cigarette-machines, the combination with an endless receiving feed-carrier and a toothed carrying-roll, the upper faces of both moving in the same direction, the carrying-roll moving at a slightly greater speed than the feed-carrier, of a pressure-roller serving to grip the tobacco

at the discharge end of the carrier and to press the tobacco upon the teeth of the carrying-roller, a shield parallel with the travel of the teeth of the said roller to hold the tobacco upon the same, and a picker moving in the same direction as the carrying-roller and taking the tobacco from the carrying-roller, substantially as described.

4. In a feeding mechanism for cigarette-machines, the combination with a receiving feed-carrier, of a toothed carrying-roll for taking the tobacco from the said carrier, a picker taking the tobacco from the said carrying-roll, a second carrying-roll taking the tobacco from the said picker and a second picker taking the tobacco from said second carrying-roll, all of said instrumentalities engaging the same side of the sheet of tobacco in its progress through the mechanism, substantially as described.

5. In a feeding mechanism for cigarette-machines, the combination with an endless-belt-receiving carrier, a toothed carrying-roller taking the tobacco from said carrier, a picker for taking the tobacco from the carrying-roller, a second carrying-roller receiving the tobacco from the picker, a second picker taking the tobacco from the said second carrying-roller, a pressure-roller for each carrying-roller and a hopper, said hopper receiving the tobacco from the second picker, the said second carrying-roller and second picker being located directly beneath the first carrying-roller and picker, and in position to catch the droppings between the receiving-carrier and the first carrying-roller and between the first carrying-roller and the first picker, substantially as described.

6. In a feeding mechanism for cigarette-machines, the combination with a receiving feed-carrier, of a toothed carrying-roller moving in the same direction and at a slightly greater speed than the receiving-carrier, a picker moving in the same direction as the carrying-roller and with great rapidity, a second toothed carrying-roller receiving the tobacco from said picker, said second toothed carrying-roller moving at a slightly greater speed than the first-mentioned carrying-roller and a second picker taking the tobacco from the second carrying-roller, said second carrying-roller and its picker being located directly beneath the first carrying-roller and picker, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH F. HARTIGAN.

Witnesses:

WM. C. REDDY,
WOODVILLE FLEMMING.