

(No Model.)

2 Sheets—Sheet 1.

J. O. EATON.

AUTOMATIC FEEDING DEVICE FOR CIGARETTE MACHINES.

No. 579,819.

Patented Mar. 30, 1897.

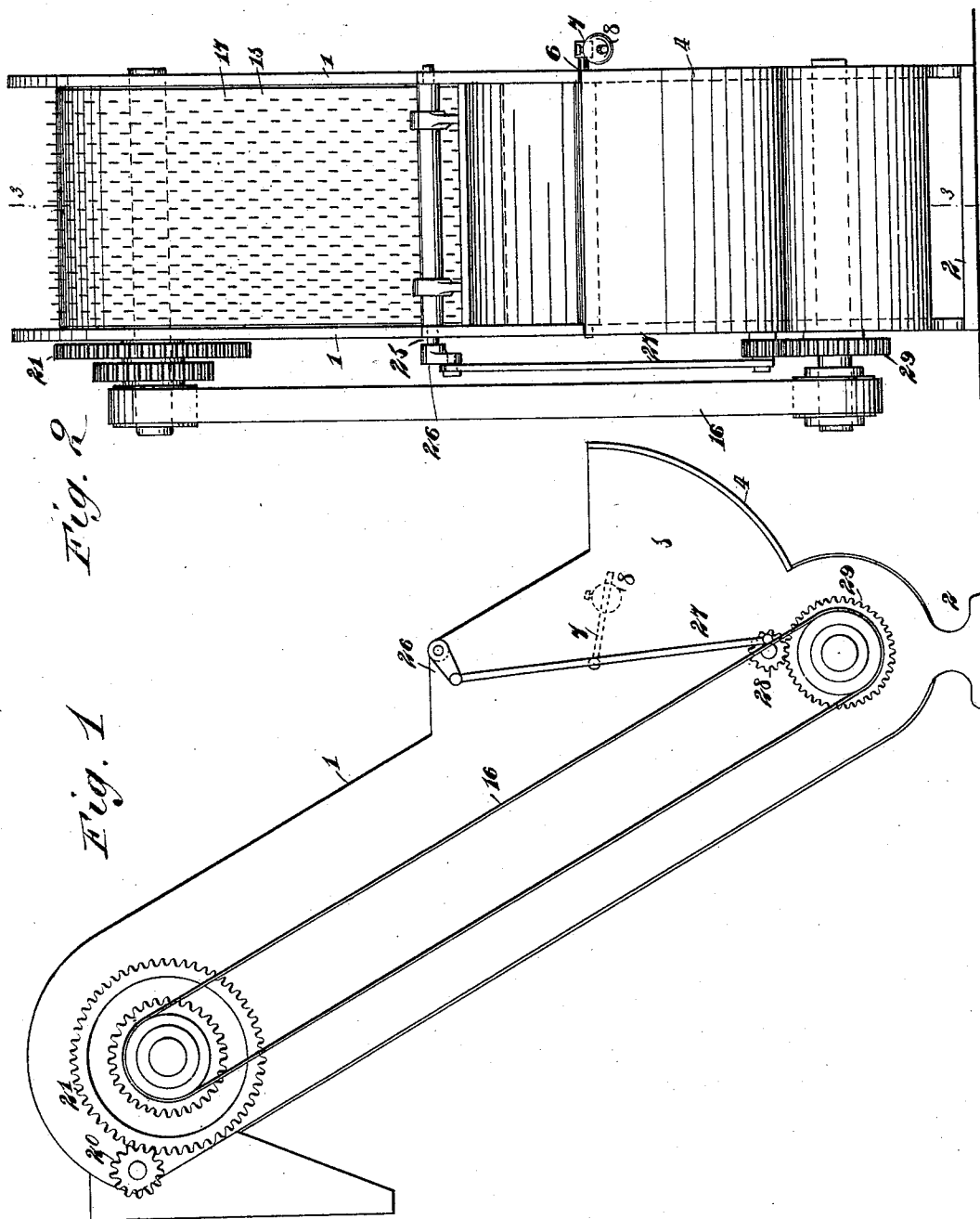


Fig. 2

Fig. 1

WITNESSES:

C. Verneux

C. R. Ferguson

INVENTOR

J. O. Eaton.

BY

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ATTORNEYS.

(No Model.)

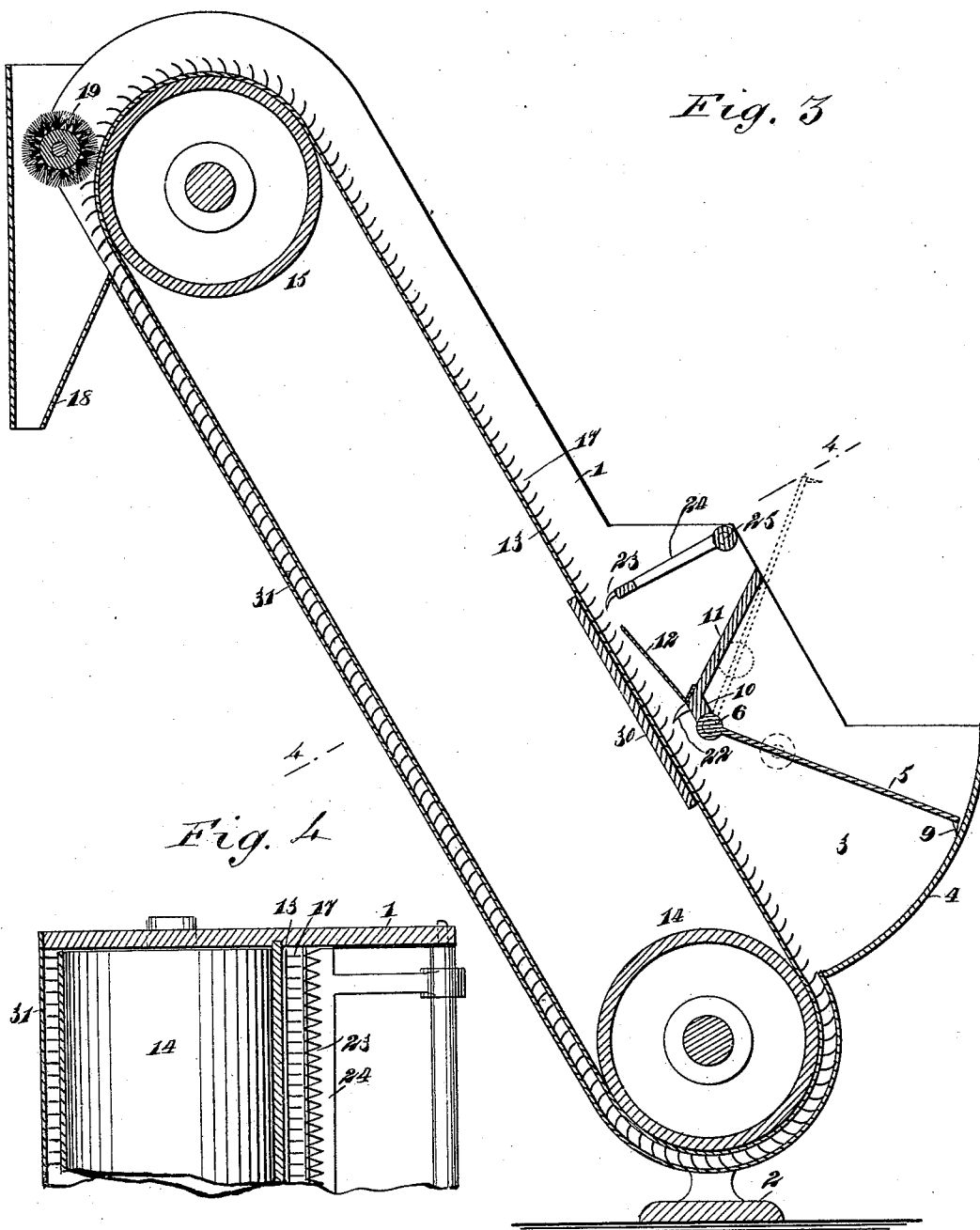
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C. Naveux
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UNITED STATES PATENT OFFICE.

JOHN O. EATON, OF FALL RIVER, MASSACHUSETTS.

AUTOMATIC FEEDING DEVICE FOR CIGARETTE-MACHINES.

SPECIFICATION forming part of Letters Patent No. 579,819, dated March 30, 1897.

Application filed April 8, 1896. Serial No. 586,636. (No model.)

To all whom it may concern:

Be it known that I, JOHN O. EATON, of Fall River, in the county of Bristol and State of Massachusetts, have invented a new and Improved Automatic Feeding Device for Cigarette-Machines, of which the following is a full, clear, and exact description.

This invention relates to devices for feeding tobacco to cigarette-machines of the class in which a continuous filler is formed; and the object is to cause an even and steady shower or stream of tobacco to be deposited in the feeding mechanism of the cigarette-machine in sufficient quantity to form a continuous filler, thus obviating the feeding by hand, as is the usual custom.

I will describe the machine embodying my invention, and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the feeder embodying my invention. Fig. 2 is a front elevation thereof. Fig. 3 is a vertical section, and Fig. 4 is a section on the line 4 4 of Fig. 3.

The feeder comprises a casing consisting of side pieces 1 1, supported on a base 2 and extended upward at an incline. The lower portions of these side pieces 1 are extended outward to form the side walls for the hopper 3, the front wall 4 of which is formed in the arc of a circle. In the hopper 3 is arranged to swing vertically a cover 5. This cover 5 is mounted on a shaft 6, having bearings through the side pieces 1, and one end of this shaft 6 is extended outward and has attached to it an arm 7, upon which is adjustably mounted a weight 8, the arm 7 being at right angles to the shaft 6 and extended forward therefrom. It is obvious that the weight 8 will cause the cover 5 to move downward with considerable pressure upon the tobacco in the hopper.

The free end of the cover 5 is provided with a downwardly-extending scraper 9, adapted to engage with the inner surface of the front wall 4 of the hopper to scrape therefrom any tobacco that might be apt to adhere to said wall. The shaft 6, or a portion of the door surrounding the same, moves in a transversely-curved groove in a cross-piece 10, ar-

ranged between the side pieces 1 1, so that a tight joint is provided to prevent the passage of the tobacco outward at this joint. From the cross-piece 10 a board 11 extends outward and upward and has its ends attached to the side pieces 1. This board 11 forms one side of a hopper, the other side of the said hopper being formed by a plate 12, extending upward from the inner edge of the said board 11. The hopper formed by the parts 11 12 is of course above the hopper 3, and it is designed to receive the surplus of tobacco that may be scraped off of a carrier, as will be hereinafter described.

13 is a carrier or feeder belt extended around a cylinder 14, mounted on a shaft having journal-bearings in the lower ends of the side pieces 1 and around a cylinder 15, mounted on a shaft having bearings in the upper ends of the side pieces 1. The shafts of these cylinders 14 15 are extended outward at one end and are provided with band-wheels, over which passes a driving-band 16, so that there is a positive movement imparted from one cylinder to the other. The carrier or feeder belt 13 is provided on its outer side with curved carding-teeth 17, arranged quite closely together, as indicated in Fig. 2. These carding-teeth are designed to carry the tobacco from the hopper 3 upward and to discharge the same into a chute 18, leading to the feeder-forming mechanism of the cigarette-machine.

In order to thoroughly clean the tobacco from the teeth of the belt and discharge the same into the said chute, I may employ a brush 19, mounted on a shaft having bearings in the upper ends and near the rear edges of the side pieces 1. Rotary motion is imparted to the brush 19 by means of gear connections 20 21 between the brush-shaft and the shaft of the cylinder 15.

As a means to prevent the carrier or feeder belt from taking too great an amount of tobacco from the hopper 3 I may employ a series of teeth 22, mounted on the rear side of the cross-piece 10 and extending nearly to the point of engagement with the ends of the teeth 17 on the carrier. These teeth 22 will engage and detach the greater amount of the tobacco extended forward of the teeth 17. Should a surplus be carried beyond said teeth

22, the said surplus may be brushed off by means of a series of teeth 23, extended inward and slightly downward from the inner edge of a plate 24, mounted to swing up and down between the side pieces 1.

The outer end of the board 24 is mounted on a shaft 25, which at one end is extended outward through one of the side pieces 1, and this extended end is provided with a crank 26, with which the pitman 27 connects, the lower end of said pitman being connected to a wrist-pin on a crank-gear 28, meshing with a gear-wheel 29 on the shaft of the lower cylinder 14. As the crank 26 is considerably longer than the crank-gear 28, it is obvious that a complete rotation of the crank-gear 28 will impart a vertical oscillating motion only to the plate 24.

The surplus tobacco removed by the teeth 23 will fall into the hopper formed by the parts 11 and 12. To form a solid foundation for the belt at the point adjacent to the teeth 22 and 23, I employ a backboard 30, extended between the side pieces 1 and bearing against the inner side of the belt. The back and lower end of the belt may be protected by means of a metal or similar casing 31, extended from the chute 18 to the front wall 4 of the hopper 3. This casing 31 will of course have its edges attached to the edges of the side pieces.

The operation is as follows: The hopper 3 is to be filled with tobacco and the cover 5 closed on the top of the same. When the belt 13 is in motion, the teeth 17 thereof first moving through the hopper will carry an amount of tobacco upward and the greater amount of the surplus will be removed by the teeth 22, before described, the remainder of any surplus being removed by the teeth 23, leaving sufficient tobacco on the teeth to form the desired size of filler, and this tobacco is removed from the teeth and deposited in the chute 18 by means of the rotary brush 19.

The machine may be driven from any desired source of power, and it is obvious that when once put in operation the feeding of the tobacco will be practically continuous and automatic.

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

1. A tobacco-feeding device for cigarette-machines, comprising a casing having a hopper in its lower portion, the front wall of said hopper being formed in the arc of a circle, a weighted cover mounted to swing vertically in said hopper, a scraper on the free ends of said cover and adapted to engage with the curved wall of the hopper, an endless carrier-belt movable within the casing and through

the hopper, curved carding-teeth on said belt, a series of fixed teeth for removing the surplus of tobacco from the carding-teeth as they leave the hopper, a series of vertically-reciprocating teeth above the fixed teeth, and a hopper independent of the first-named hopper for receiving the material scraped off by said reciprocating teeth, substantially as specified.

2. A feeding device for cigarette-machines, comprising a vertically-disposed inclined casing having a hopper at its lower portion, the front wall of said hopper being formed in the arc of a circle, a weighted swinging cover in said hopper, a scraper on the free end of said cover adapted to move upon the inner side of the curved front wall of the hopper, an endless carrier-belt mounted to move through said hopper, carding-teeth extending outward from said belt, and a rotary brush at the outlet of the casing adapted to brush material from the belt, substantially as specified.

3. A feeding device for cigarette-machines, comprising a casing having a hopper at its lower portion, a cross-piece in the frame, a cover having swinging connection with said cross-piece, a board extended outward and upward from said cross-piece, a plate extended upward from the inner edge of the said board, the said board and plate forming the opposite walls of a hopper above the first-named hopper, inwardly-projecting teeth on said cross-piece, a carrier-belt having teeth movable through the first-named hopper, and means for removing surplus tobacco therefrom at a point above the last-named hopper, substantially as specified.

4. A tobacco-feeding device comprising a vertically-disposed casing having a hopper at its lower portion, the side pieces of the casing being extended outward to provide side walls for the hopper, the fixed front wall of said hopper being curved vertically, a weighted cover swinging vertically in the hopper, a scraper on the free edge of said cover for engaging with the curved wall, a cross-piece in the casing having a transversely-curved groove in which the hinged edge of the cover closely engages, a board extended outward and upward from the cross-piece and forming one wall of a hopper, a plate on the board forming the other wall of said hopper, a scraper arranged above said last-named hopper, and an endless carrier-band movable through the first-named hopper and movable along the innerside of the last-named hopper, substantially as specified.

JOHN O. EATON.

Witnesses:

ANDREW F. MCCANN,
SAMUEL H. FAIRCHILD.