(No Model.)

O. W. ALLISON.

FILLER FORMING MECHANISM FOR CIGARETTE MACHINES.

No. 459,118. Patented Sept. 8, 1891.

Fig. 1.

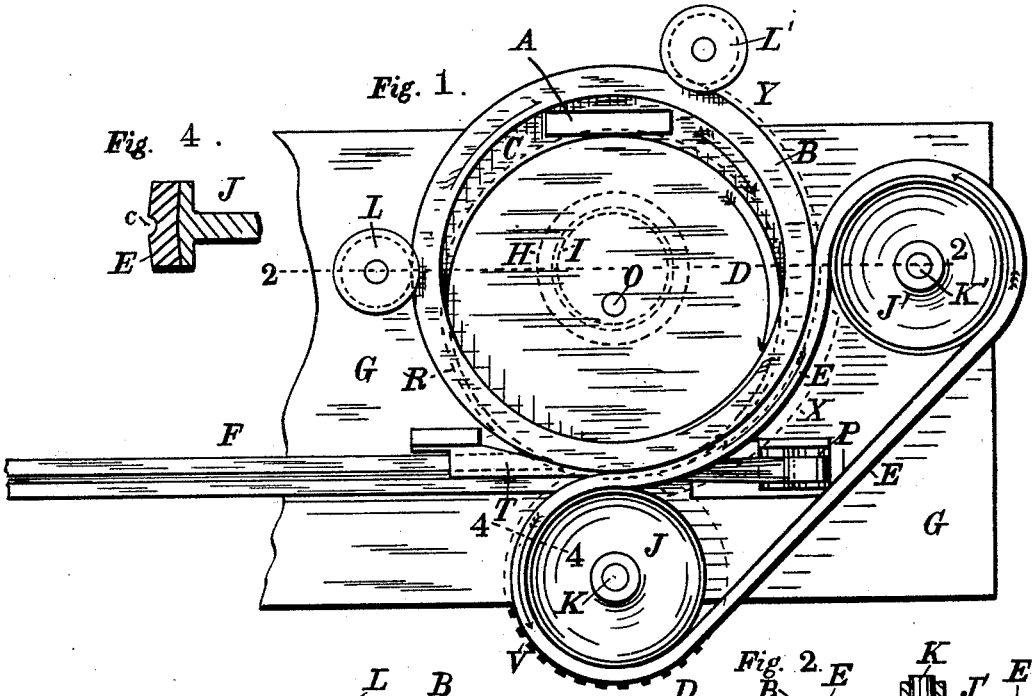
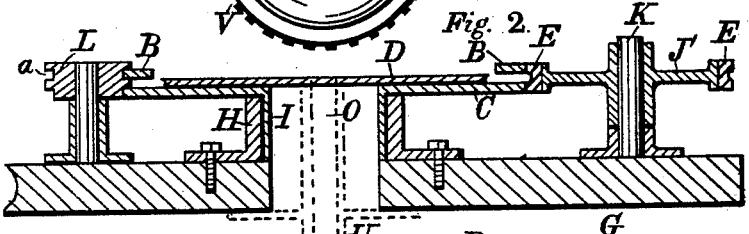


Fig. 4.

Fig. 2.



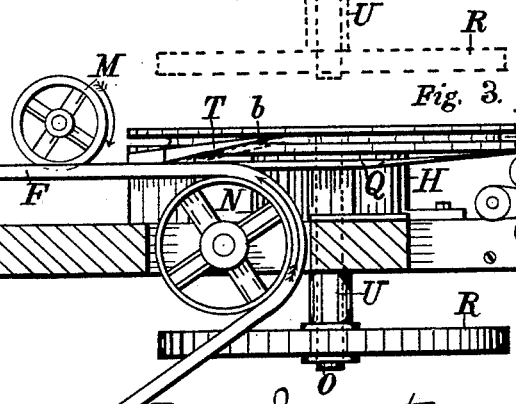
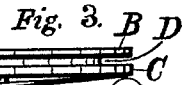


Fig. 3.



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UNITED STATES PATENT OFFICE.

OSCAR W. ALLISON, OF ROCHESTER, NEW YORK.

FILLER-FORMING MECHANISM FOR CIGARETTE-MACHINES.

SPECIFICATION forming part of Letters Patent No. 459,118, dated September 8, 1891.

Application filed June 28, 1889. Renewed July 17, 1891. Serial No. 399,804. (No model.)

To all whom it may concern:

Be it known that I, OSCAR W. ALLISON, a citizen of the United States, residing at Rochester, in the county of Monroe, in the State of New York, have invented certain Improvements in Filler-Forming Mechanisms for Cigarette-Machines, of which the following is a specification, reference being had to the accompanying drawings.

My present invention relates to an improved construction of the filler-forming mechanism of continuous-filler cigarette machines, which improvements are fully described and illustrated in the following specification and the accompanying drawings, and the novel features thereof specified in the claims annexed to the said specification.

In the accompanying drawings, representing my present improvements, Figure 1 is a plan view of the filler-forming mechanism. Fig. 2 is a longitudinal section on the line 2 2, Fig. 1. Fig. 3 is a side elevation, partially in section, the compressor-belt being removed. Fig. 4 is a section through the compressor-belt and the rim of one of its carrying-wheels on the line 4 4, Fig. 1.

In the operation of my improved tobacco-filler-forming mechanism for cigarette-machines the tobacco is received from any suitable feeding mechanism through the spout A and is carried around and compacted into a suitable filler by the revolving ring B, ring or disk C, eccentric disk D, and compressor-belt E, the compressed filler being delivered to the endless grooved drawing-belt F or to other suitable mechanism constructed and arranged to inclose and seal the filler within a paper wrapper.

G is a suitable bed or table which supports the various operative parts of the machine. The eccentrically-located compressing-disk D is driven positively by power applied in any convenient way, the shaft O of the disk and the shaft K of the pulley J of the compressor-belt E being geared together by the gears R and V, which are so proportioned that the edge of the disk and the outer surface of the belt travel at the same speed. The shaft O of the eccentric compressing-disk is supported in a suitable sleeve U, attached to the bed. The shaft K is supported in a similar manner. The edge of the compressing-disk D is preferably grooved to give the filler the proper form. The ring B is driven by the friction of the compressor-belt upon its edge, being supported by the rollers L L′, which are preferably provided with a groove *a*, into which the edge of the ring fits. The rollers L L′ are supported in any suitable manner, so as to keep the lower side of the ring in contact with the eccentric disk where the ring passes over the disk. As represented in the drawings, the compressor-disk D is made somewhat smaller in diameter than the ring B and its center placed at one side of the center of the ring, so as to leave a space between the edge of the disk and the interior of the ring, through which the tobacco is discharged by or from the spout A onto the upper surface of the lower disk C, which is made of the same diameter as the ring and has its center located in the same vertical line. On the side next the pulley J the edges of the ring, the compressor-disk, and the lower disk are coincident. The lower disk C is driven, like the ring B, by the friction of the compressor-belt E. The lower disk is provided on its lower side with a projecting ring or sleeve I of sufficient internal diameter to pass around the shaft O of the compressor-disk, and which sleeve revolves in a suitable tubular or hollow support H, attached to the bed. The upper surface of the lower disk is maintained in contact with the compressor-disk, and the edges of the lower disk may be supported by grooves in the rollers L L′. The compressor-belt E runs around the pulleys J J′, one of the pulleys, preferably J, being driven positively, as already described. The pulley J′ is supported on a stud K′. The pulleys J J′ are so located relatively to each other as to cause the belt E to wrap around the edges of the ring and the lower disk for such a portion of the circumference as may be necessary to effect the compression of the tobacco into the filler. The belt E may be supported where it comes in contact with the ring and disk by a series of rollers or a suitable curved guide X, Fig. 1, attached to the bed of the machine. A guard Y may be placed outside the edge of the ring and lower disk to prevent the escape of any tobacco at that point.

The operation of the compressing mechanism will have been already understood from the preceding description. The tobacco fed into the space between the ring and the compressor-disk through the spout A is carried along by the movement of the parts, and particularly by the rotation of the lower disk, and forced into the gradually-contracting space between the edge of the compressor-disk D and the belt E, by the combined operation of which it is compacted into a suitable continuous filler, which is detached from the disk by the scraper T and discharged onto the endless grooved traveling belt F, as indicated by the dotted lines *b* in Fig. 3. The compressor-belt is preferably provided with a continuous longitudinal groove *c*, Fig. 4, which may be of any preferred dimensions up to a depth equal to about half the diameter of the cigarette. In order to prevent the cigarette from sticking or hanging in the groove *c*, I make the face of the pulley J crowning or provided with a ridge around the center of its circumference, so that as the belt passes around it it is bent slightly in the transverse direction, as indicated in Fig. 4, so as to distend or expand the groove, thus facilitating the delivery of the filler therefrom. Such construction, however, is not necessary with a shallow groove in the compressor-belt.

I claim—

1. The combination, with the revolving ring B and the disk C below it, of the eccentrically-located intermediate revolving compressor-disk D and the endless traveling compressor-belt E, arranged to travel against the edge of the ring B and the disk C, substantially as described.

2. The combination, with the revolving ring B and the disk C below it, of the eccentrically-located intermediate revolving compressor-disk D, the endless traveling compressor-belt E, arranged to travel against the edge of the ring B and the disk C, and the feed-spout A, located between the ring and the compressor-disk, substantially as described.

3. The combination, with the revolving ring B and the disk C below it, of the eccentrically-located intermediate revolving compressor-disk D, the endless traveling compressor-belt E, arranged to travel against the edge of the ring B and the disk C, and the scraper T, substantially as described.

4. The combination, with the revolving ring B and the disk C below it, of the eccentrically-located intermediate revolving compressor-disk D, the endless traveling compressor-belt E, arranged to travel against the edge of the ring B and the disk C, the pulleys J J′ for supporting the compressor-belt, and the gearing V R, substantially as described.

5. The combination, with the revolving ring B and the disk C below it, of the eccentrically-located intermediate revolving compressor-disk D, the endless grooved traveling compressor-belt E, arranged to travel against the edge of the ring B and the disk C, and the crowned pulley J, substantially as described.

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