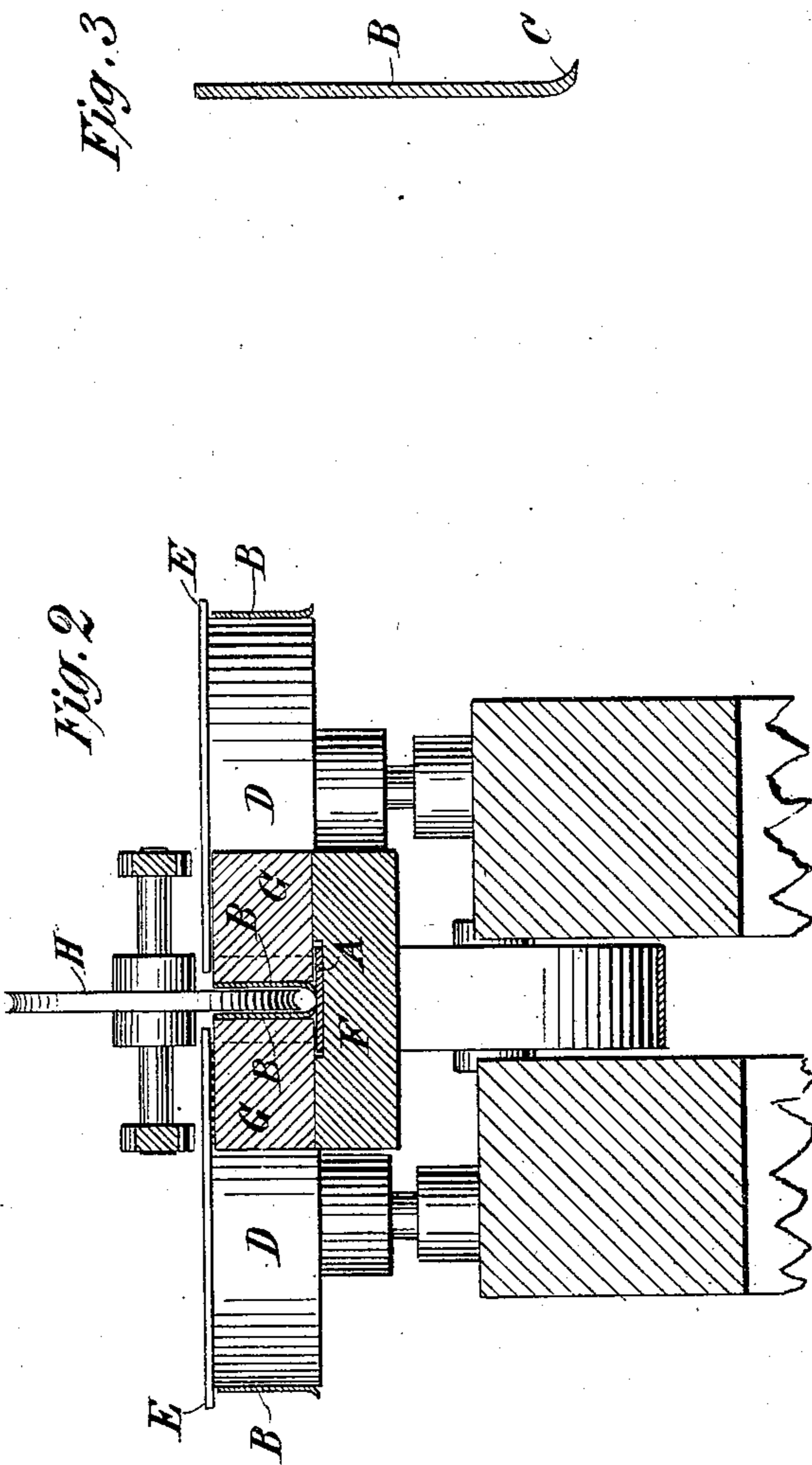
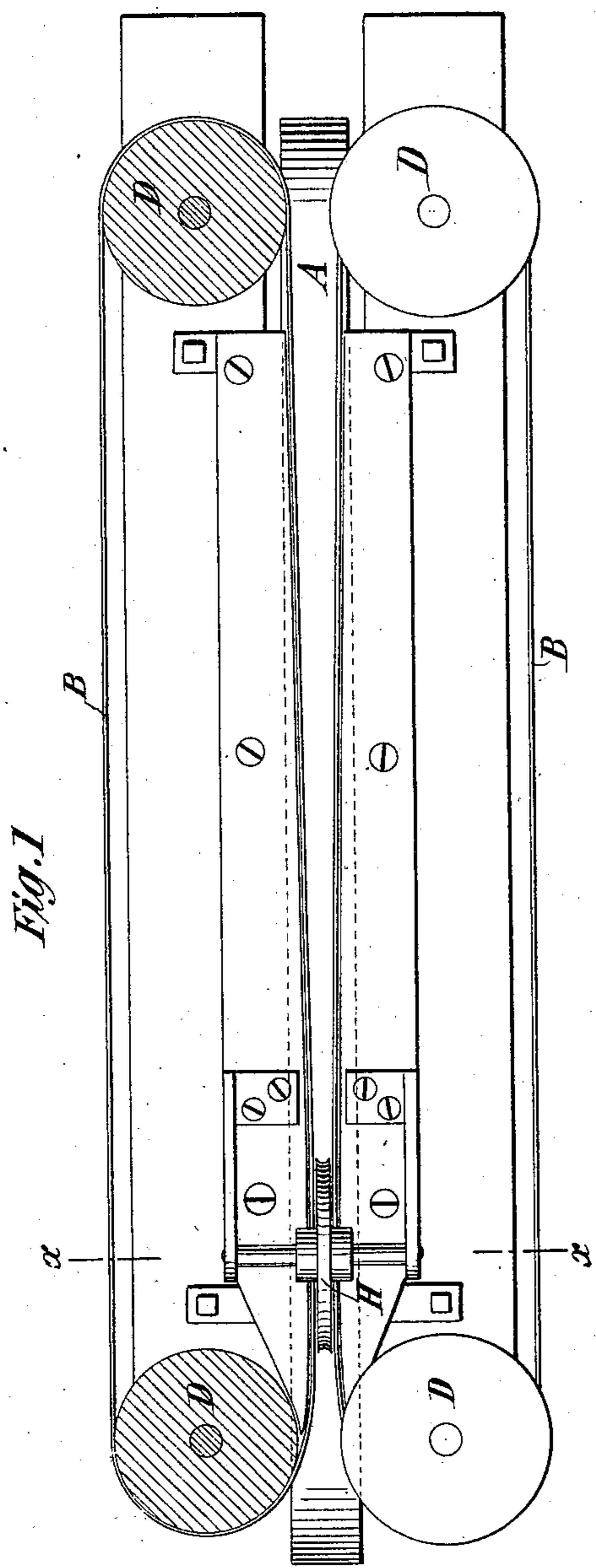


(No Model.)

K. H. CARPER.
CONTINUOUS CIGARETTE MACHINE.

No. 589,121.

Patented Aug. 31, 1897.



Witnesses:
Raphael Netter
James W. Catlin

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UNITED STATES PATENT OFFICE.

KENT H. CARPER, OF SALEM, VIRGINIA, ASSIGNOR TO THE BONSAK MACHINE COMPANY, OF SAME PLACE.

CONTINUOUS-CIGARETTE MACHINE.

SPECIFICATION forming part of Letters Patent No. 589,121, dated August 31, 1897.

Application filed August 11, 1894. Serial No. 520,049. (No model.)

To all whom it may concern:

Be it known that I, KENT H. CARPER, of Salem, in the county of Roanoke and State of Virginia, have invented a new and useful
5 Improvement in Continuous-Cigarette Machines; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

10 The present invention relates to the filler-forming mechanism of cigarette-machines and to the special class of such mechanism which employs three endless belts arranged
15 to form an open-top trough. This trough is composed of a bottom belt and two side belts, the bottom belt running in a horizontal plane around suitable pulleys, while the two side
20 belts run in vertical planes, their lower edges being in contact with the upper surface of the bottom belt. These side belts are arranged to converge toward each other as they pass from their rear toward their forward pulleys, and
25 at their point of greatest convergence a pressure device or grooved wheel is located to act to press down the tobacco in the trough. The tobacco being properly prepared is fed into the rear end of the trough and is carried on-
30 ward by the movement of the three belts and is gradually compressed by the convergence of the side belts and the pressure device and brought into the form of the filler to receive the wrapper. A filler-forming mechanism of
35 this class is described and shown in Letters Patent of the United States, No. 247,795, issued to James A. Bonsack and bearing date the 4th day of October, 1881.

40 In practice the construction above described is defective in this particular that the vertical side belts as they cooperate with the horizontal belt form three sides of a rectangular channel or trough having square corners. Of course this gives to the tobacco as it is compressed into the filler a corresponding shape—
45 that is, the filler as it emerges from this trough is nearly square upon its lower half, while its upper half is rounded by the operation of the grooved pressure-wheel. The square or semi-square shape thus given to the filler is far less
50 desirable than the round or cylindrical shape, inasmuch as it is far more difficult to properly

apply the wrapper thereto, and the finished cigarette by reason of its irregular shape is lacking in proportion and symmetry.

It is the object of the present invention to 55 remedy this defect, and to this end the lower edges of the side belts are bent or curved away from the face of their pulleys, so that as these belts pass between their rear and forward pulleys their lower edges project toward 60 each other and form with the bottom belt a rounded space or channel, depending upon the shape of the bend of the edges. It is preferred that the edges be curved, but they may be bent to form an angle with the plane of a 65 belt, in which case the lower part of the filler instead of being round would be hexagonal in shape.

The invention is illustrated in the accompanying drawings, in which— 70

Figure 1 is a plan view of the filler-forming mechanism of a cigarette-machine. Fig. 2 is a vertical cross-section through the line 75 $x x$ of Fig. 1, and Fig. 3 is an enlarged cross-section of one of the side belts.

In the drawings, A represents the bottom belt passing around the rear and forward pulleys.

B B are side belts having their lower edges C bent, curved, or offset away from the face 80 of their pulleys D, and consequently projecting toward each other when they pass from their rear toward their forward pulleys and coact with the bottom belt to form a channel or trough to receive, carry forward, and compress 85 the tobacco into a filler, as shown in Fig. 2 of the drawings.

The belts A and B are preferably made of thin spring metal, as steel or brass, and the lower curved or offset edges of the side belts 90 B are preferably thinned or beveled off upon their under side to form a flat smooth surface or shoe to ride over and in close contact with the upper surface of the bottom belt and prevent any fibers of tobacco from passing under 95 the edges, as also to form a thin edge which will leave little or no impression upon the tobacco filler, as would be the case were the original thickness of the metal retained.

The pulleys D are provided with flanges 100 E upon their upper edges to keep the lower edges of the belts B down in contact with the

lower belt. Abutments or backing-pieces F and G are arranged beneath the bottom belt A and outside of the inner line of the side belts B to keep these belts in the proper relation to each other—that is, to give the side belts the direction to cause them to converge toward each other and to prevent them from yielding under the outward and downward pressure of the tobacco.

10 H is a pressure-wheel located at or near the point of greatest convergence of the side belts B. This wheel is preferably grooved to give a rounded or cylindrical shape to the upper part of the filler as the tobacco is fed past this point. The periphery of this wheel re-
15 volves within the trough and near enough to the bottom thereof to form a filler of the desired diameter, and it is mounted in any desired manner on the frame of the machine
20 and is preferably frictionally driven by the feed of the tobacco.

In lieu of the wheel H any other pressure device known in the art of cigarette-machines for pressing down the tobacco between
25 the converging side belts to form a filler may be employed.

The pulleys over which the bottom and side belts pass are supported upon the frame of the machine, as shown in Fig. 2 of the draw-
30 ings, and may be driven through connections with the main driving-pulley of the machine. In the said Letters Patent referred to Fig. 3 shows the rear pulleys of the side belts as driven by beveled gears formed on their
35 lower edges, which mesh with corresponding beveled gears formed on the opposite edges of the face of the bottom-belt pulley, while the latter is driven by beveled gear connections with the shaft G⁵, as shown in Figs. 3
40 and 4 of said Letters Patent.

The diameter of the pulleys D should be sufficiently great to permit the side belts to pass around them without causing too great strain upon the flanges or curved lower edges

C, and I have found that a diameter of about 45 twenty inches is sufficient for this purpose, provided the projection of the flanges is not more than one-eighth or three-sixteenths of an inch.

What is claimed as new is—

1. In a filler-forming mechanism of a cigarette-machine, the combination substantially as set forth, of two endless converging side belts having their lower edges curved or offset, an endless bottom belt and a pressure device
55 operating to press down the tobacco between the side belts, whereby there is formed a tobacco feeding and compressing channel or trough with a rounded bottom.

2. In a filler-forming mechanism of a cigarette-machine, the combination substantially as set forth, of two endless converging side belts having their lower edges curved or offset and beveled off to a thin edge to conform to the upper surface of the bottom belt, an endless
65 bottom belt and a pressure device operating to press down the tobacco between the side belts, whereby there is formed a tobacco feeding and compressing channel or trough with a rounded bottom and the lower edges
70 of the side belts have a flat smooth contact with the upper surface of the bottom belt.

3. In a filler-forming mechanism of a cigarette-machine, the combination substantially as set forth, of two endless converging side
75 belts having their lower edges curved or offset and without slits or notches, and pulleys of sufficient diameter to permit such belts to pass around them without causing their flanged or curved edges to break, an endless bottom
80 belt and a pressure device operating to press down the tobacco between the side belts, for the purpose described.

KENT H. CARPER.

Witnesses:

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