

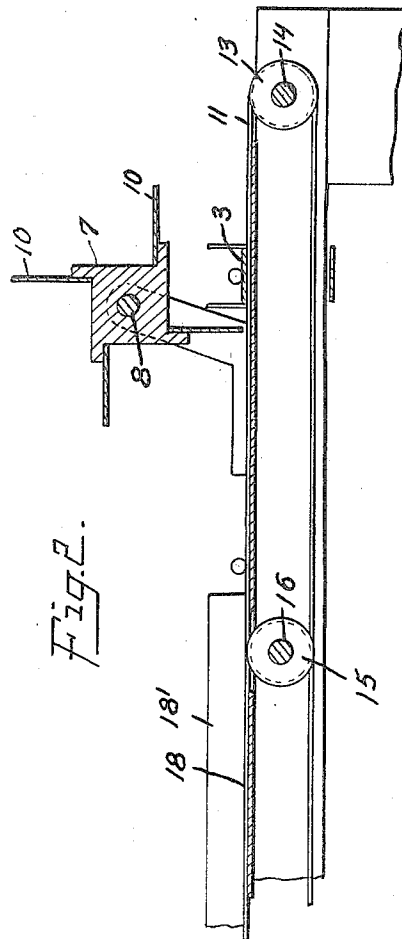
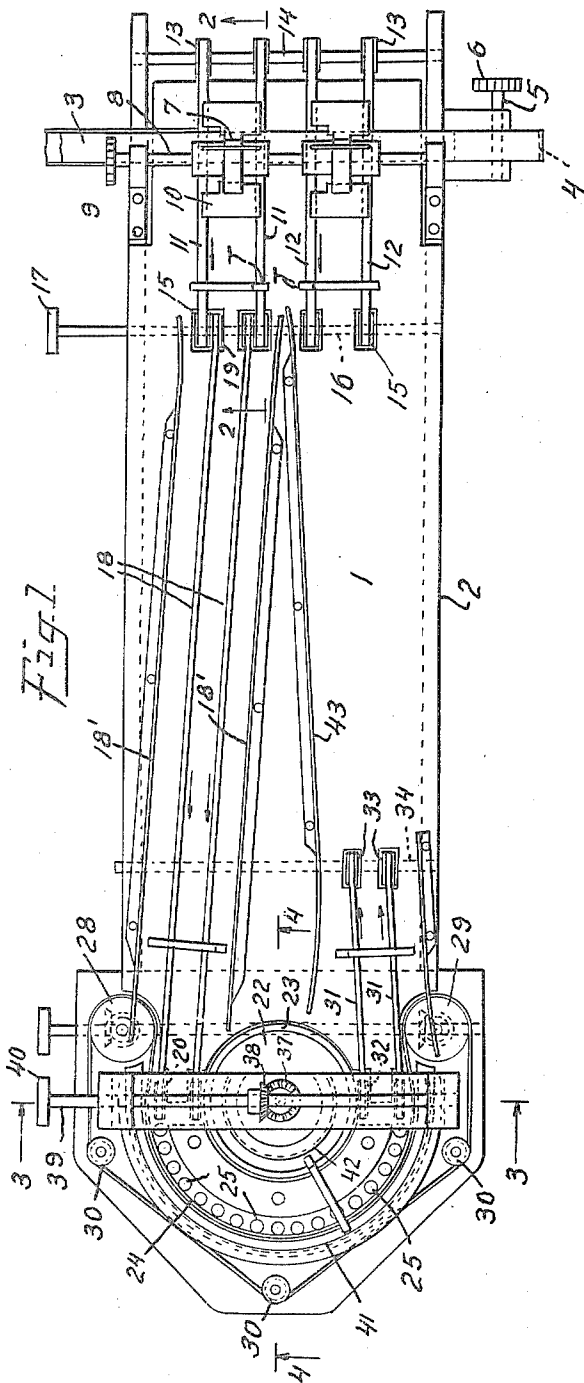
May 30, 1950

R. C. WHEELLEY
CIGARETTE TURNING DEVICE

2,509,752

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2 Sheets-Sheet 1



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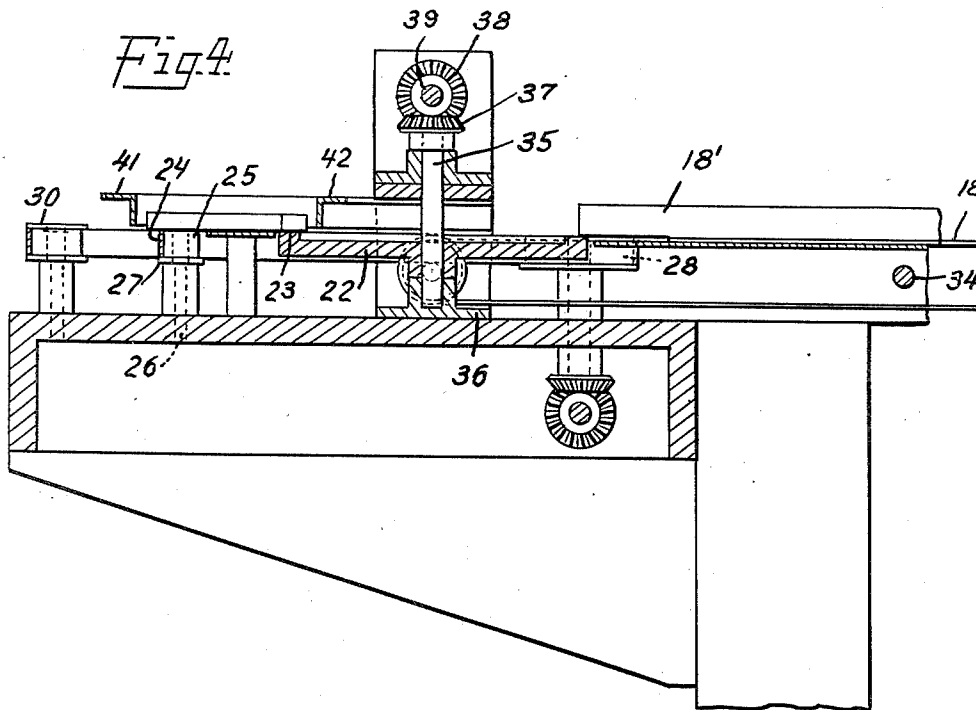
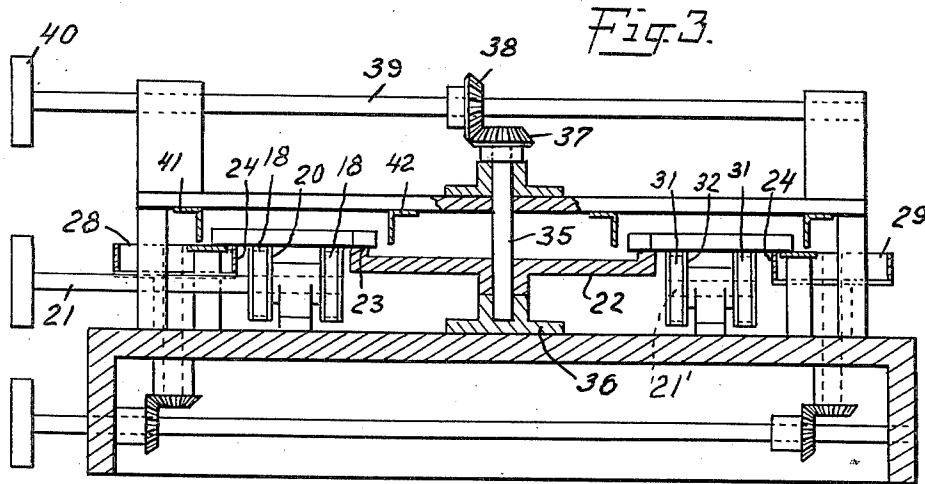
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CIGARETTE TURNING DEVICE

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This invention relates to the manufacture of cigarettes and more particularly to improvements in cigarette making machines employed in the manufacture of tipped cigarettes.

In the manufacture of cigarettes, tobacco is delivered in uniform amounts from a tobacco feeder to a cigarettes making machine. The tobacco so fed is passed through a tubular member, the cigarette paper placed around it and sealed and the product then cut to a predetermined length to produce cigarettes. The completed cigarettes at the outlet of the cigarette making machine are fed across the front of the machine on a belt where they are inspected and placed in containers to be carried to the packaging machines.

In the manufacture of tipped cigarettes, the tipping material of double the size of the tip is placed on the cigarette before severing at intervals equal to the length of two cigarettes. The cigarette is then severed both at a point intermediate of adjacent sections of the tipping material and in the middle of each section of the tipping material. As a result, the tipped cigarettes are delivered from the cigarette making machine with alternate cigarettes reversed, that is, the tip on one cigarette is at the forward end and the tip on the next cigarette is at the rear end. Heretofore it has been the practice to provide two transverse belts to deliver the cigarettes across the front of the machine for inspection. Suitable means are provided for feeding each alternate cigarette to the inner belt and the next cigarette is fed to the outer belt. This results in the cigarettes traveling along the transverse belts to the operator or inspector in reversed positions. In removing the cigarettes, it is thus necessary for the operator to reverse those taken from one of the belts before placing them in the container so that the cigarettes will be delivered to the packaging machine with the tubes of all of the cigarettes at the same end.

In the present invention I provide means for turning the cigarettes delivered to one of the transverse belts so that all of the cigarettes pass the operator with the tips in the same relative position thereby avoiding the necessity of turning the cigarettes taken from one of the belts. The cigarettes delivered from the cigarette making machine are fed alternately to two transverse belts as heretofore. One of the belts extends to the adjacent edge of the table and the cigarettes traveling on this belt come to rest on the table adjacent one side. The other belt extends across the table and delivers the cigarettes to a turn table which carries them through an arc of 180°. From that point another belt conveys these cigarettes to the side of the table opposite from the

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side where the alternate cigarettes have been delivered. In passing around the turn table the position of the tips has been reversed. The operator thus has two supplies of cigarettes delivered at opposite sides of the table with the tips arranged in the same relative position. It is therefore unnecessary for the operator to reverse any of the cigarettes before placing them in the container in which they are carried to the packaging machines.

In the accompanying drawings I have shown one embodiment of the invention. In this showing:

Fig. 1 is a plan view of the table at the front of a cigarette making machine showing the invention applied;

Fig. 2 is a detailed, vertical, sectional view on line 2—2 of Fig. 1;

Fig. 3 is a transverse, vertical, sectional view on line 3—3 of Fig. 1; and

Fig. 4 is a detailed, vertical, sectional view on line 4—4 of Fig. 1.

Referring to the drawings the reference numeral 1 designates a table at the front of a cigarette making machine to which the cigarettes are delivered. An operator stands at the front edge of the table indicated by the reference numeral 2, removes the cigarettes from the table, inspects them, and places them in a container (not shown) in which they are carried to the packaging machines. At one side of the table a belt 3 carries the cigarettes from the tube of the cigarette making machine and the cutter (not shown) to the table. This belt travels over a roller 4 at the front of the table and over another roller (not shown) at a point adjacent the cutter. The roller 4 is mounted on a shaft 5 and may be driven by a chain passing over a sprocket 6. When tipped cigarettes are being made and are fed along the belt 3 with their tips reversed, means are provided for delivering alternate cigarettes to a rear pair of belts and a front pair of belts so that all of the cigarettes delivered to each belt will have their tips pointing in the same direction. One means commonly employed consists of a hub 7 (see Fig. 2) which is mounted on shaft 8 and driven by a chain passing over a sprocket 9. This hub is provided with a plurality of paddles 10 which pass over the belt 3 transversely and remove a cigarette from the belt 3. One of these removing devices is arranged adjacent the rear of the table in alignment with a pair of belts 11 which are spaced from each other a distance slightly less than the length of the cigarette and the second is arranged in alignment with a pair of similar belts 12 toward the front of the machine (see Fig. 1). The speed of rotation of the shaft 8 is such that one of the

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blades 10 will pass over this pair of belts as each alternate cigarette passes so that one cigarette will be delivered to the belts 11 and the next cigarette to the belts 12. As shown, tips T of the cigarettes will be in reversed positions.

Belts 11 and 12 pass over rollers 13 on a shaft 14 at the end of the machine and over rollers 15 on a shaft 16 adjacent the side of the table. Shaft 16 may be driven by a belt (not shown) passing over a pulley 17 on the shaft. The cigarettes traveling over the pair of belts 12 are deposited at the right hand side of the table 2 near the front where they may be readily picked up by the operator. Adjacent the rear the table is provided with a pair of slots for a pair of belts 18 which are substantially in alignment with the belts 11. These belts pass over pulleys 19 on the shaft 16 and over pulleys 20 on a shaft 21 at the opposite side of the table. Guides 18' may be arranged substantially parallel to the belts 18, if desired.

When the cigarettes traveling along the belts 18 reach the far end, they pass to a turn table mechanism shown in detail in Figs. 3 and 4. As shown, I provide a central disc 22 having an up-standing peripheral flange 23 on one edge of which the cigarette rests. Concentric with this flange I provide a belt 24 which extends vertically. The belt is guided in the concentric path on its operative flight by a plurality of rollers 25. These rollers (see Fig. 4) are rotatably mounted on pins 26 and are provided with flanges 27 to retain the belt in position. Adjacent the end of the belts 18 and at the beginning of its operative flight, the belt 24 passes over a larger drive roll 28. Adjacent the end of its operative flight it passes over a similar roll 29. On its return flight, it is guided by a plurality of idler rolls 30.

Adjacent the roll 29 I provide a pair of belts 31. These belts pass over rollers 32 on shaft 21' and also over rollers 33 loosely mounted on a stationary shaft 34. Shaft 34 is arranged at the edge of the table 2 as shown.

The various rotating parts of the turn table may be driven in any suitable manner. By way of illustration, the disc 22 on shaft 35 is supported in a bearing 36. This shaft is provided with a bevel gear 37 meshing with bevel gear 38. Bevel gear 38 is mounted on a shaft 39 which may be driven in any suitable manner as by a belt (not shown) passing over pulley 40 mounted on the shaft.

A guide 41 may be arranged adjacent the operative flight of the belt 24 and a similar guide 42 may be arranged adjacent the disc 22. A guide 43 may also extend along the table in the rear of the place where the cigarettes are deposited on the side of the table from the belts 31.

In operation, the cigarettes are fed from the cutter of the cigarette making machine over belt 3. As each alternate cigarette reaches the discharge device 7 in alignment with the pair of belts 11, it is moved on to this pair of belts. The next cigarette passes to the discharge device in alignment with the belts 12 and is delivered on to this pair of belts. It will be noted (see Fig. 1) that the tip of the cigarette on the belt 11 points toward the front or the outer edge of the table and the tip of the cigarette on the belts 12 points in the opposite direction. Cigarettes from the belts 12 pass on to the table 1 and are taken from the table and placed in the container (not shown) by the operator in the usual manner. Cigarettes from the belts 11 pass on to the belts

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18 and thence entirely across the table. At the opposite end of the table the cigarettes are received on the turn table consisting of the flange of disc 22 and the upper edge of the belt 24 (see Fig. 3). The cigarettes pass 180° around the turn table and thus the position of the tipped end is reversed. At the point 180° from where the cigarettes are fed to the turn table, they pass on to the belts 31. The belts 31 feed them to the opposite side of the table 1 from the point where the cigarettes from the belts 12 are fed but with their tips extending in the same direction. The operator thus picks up the cigarettes from either side of the table as they accumulate and places them in the container.

I claim:

1. A cigarette turning device comprising two parallel sets of belts to which cigarettes are delivered, a table in alignment with the path of the belts, one set of belts terminating at the adjacent side of the table to deliver cigarettes to the adjacent side of the table, the second set of belts extending across the table, and a turntable device adjacent the other side of the table to receive the cigarettes from the second set of belts and deliver them to the second side of the table in a reversed position.

2. A cigarette turning device comprising two parallel sets of belts to which cigarettes are delivered, a table in alignment with the path of the belts, one set of belts terminating at the adjacent side of the table to deliver cigarettes to the adjacent side of the table, the second set of belts extending across the table, and a rotating disc adjacent the other side of the table to which the cigarettes are delivered from the second set of belts, the disc conveying the cigarettes through an arc of substantially 180°, reversing their positions and delivering them to the second side of the table.

3. A cigarette turning device comprising two sets of belts to which cigarettes are delivered, a table, one set of belts terminating at the adjacent side of the table, the second set of belts extending across the table, and a turntable device to receive the cigarettes from the second set of belts and deliver them to the opposite edge of the table in a reversed position, the turntable device comprising a central disc and a belt spaced from the edge of the disc and traveling in a path concentric to the edge of the disc.

4. A cigarette turning device comprising two sets of belts to which cigarettes are delivered, a table, one set of belts terminating at the adjacent side of the table, the second set of belts extending across the table, and a turntable device to receive the cigarettes from the second set of belts and deliver them to the opposite edge of the table in a reversed position, the turntable device comprising a central disc, a series of rollers spaced from the edge of the disc concentric thereto, and a belt arranged in a vertical plane and traveling over the rollers.

RUDY C. WHEELLEY.

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