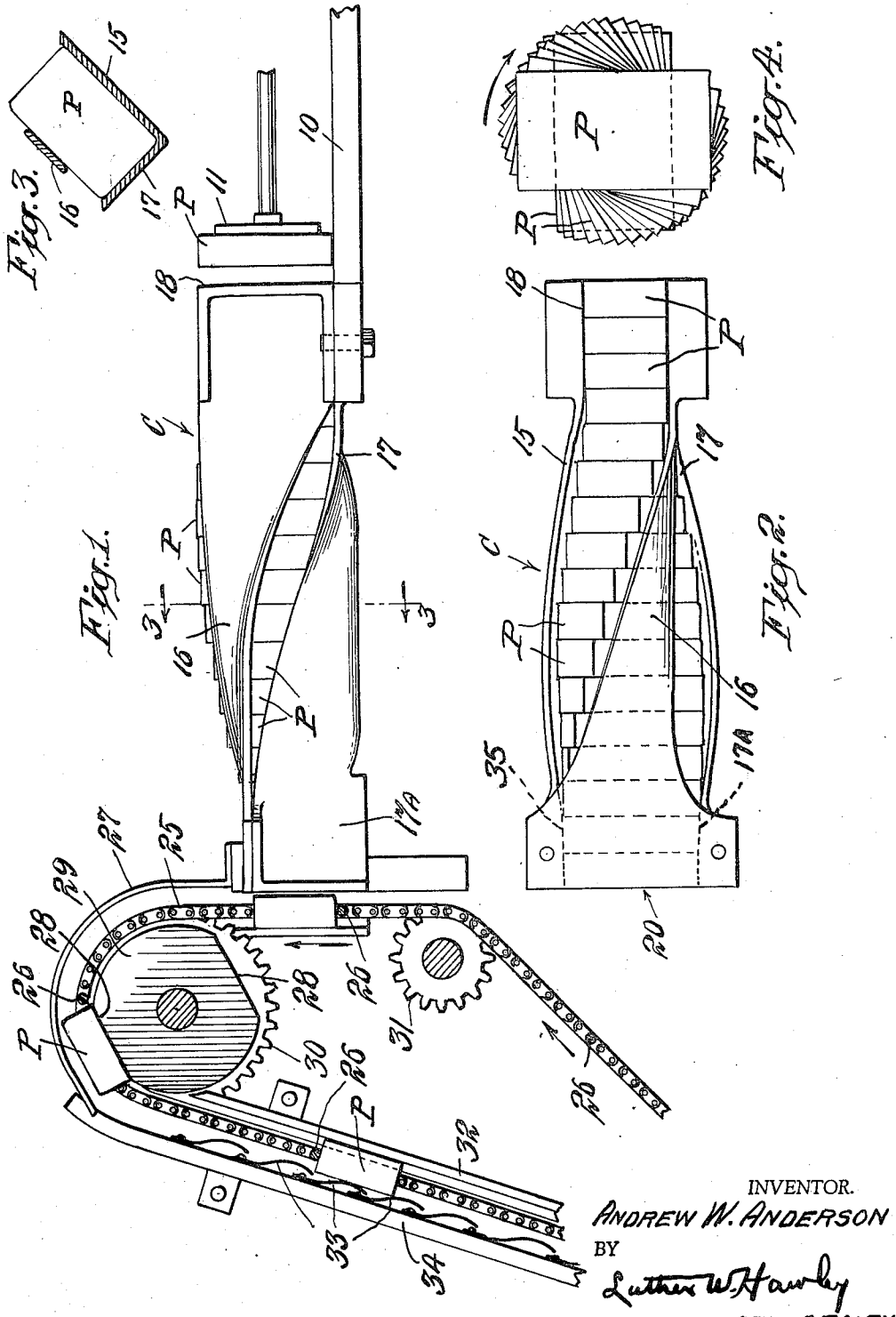
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MECHANISM FOR TURNING PACKAGES

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MECHANISM FOR TURNING PACKAGES

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1 Claim. (Cl. 193—43)

This invention relates to mechanism for handling and turning packages.

More particularly stated, the invention relates to a device, such as a chute, for receiving rectangular packages in one position, such as vertical position, and for turning the packages through an angle and delivering them in another position, such as horizontal position.

The invention has for its salient object to provide simple and practical mechanism for positively controlling the movement of a package through an angle from vertical to horizontal position.

Further objects of the invention will appear from the following specification taken in connection with the drawings which form a part of this application, and in which:

Fig. 1 is a side elevation of mechanism embodying the invention;

Fig. 2 is a top plan view of the chute shown in Fig. 1;

Fig. 3 is a transverse sectional elevation taken substantially on line 3—3 of Fig. 1, looking in the direction of the arrows; and

Fig. 4 is an elevational view illustrating the various positions of movement between vertical and horizontal through which the packages turn.

In the embodiment of the invention shown in Fig. 1, the invention is illustrated in connection with a cigarette package which is received from the packaging machine in vertical position and is successively turned from vertical to horizontal position. The packages are received on the platform 10 from the packaging machine and are thereafter pushed in any suitable manner, as by a plunger 11.

The plunger 11 pushes the packages into a chute C which comprises side walls 15 and 16 and a bottom 17. The entrance to the chute is indicated at 18 and at the entrance the side walls are spaced apart the proper distance to receive between them a package P when disposed in vertical position, the sides of the package contacting the side walls 15 and 16.

As the package passes through the chute C, it is turned successively in the direction of the arrow, as shown in Fig. 4, from vertical to horizontal position, being controlled in this turning movement by contact with the walls 15 and 16 and the bottom 17.

As shown in Figs. 1 and 2, the side wall 16 is curved so that at the entrance 18 of the chute the side wall is vertical and at the delivery end of the chute, indicated at 20, the wall 16 is horizontal.

The wall 15 also curves from the vertical to the horizontal position from the entrance to the delivery end of the chute and, as shown in Fig. 3, the walls 15 and 16 are properly spaced apart in their successive curvatures to support the package P therebetween. The bottom 17, as also shown in Fig. 3, supports the bottom of the package during its passage through the chute, but the bottom wall or the wall which is initially at the bottom of the chute curves upwardly and forms an end wall at the delivery end of the chute, as indicated at 17A.

Fig. 2 illustrates the turning of the package as it passes through the chute C and from this figure it will be noted that the package is turned in a clockwise direction from a vertical position at the receiving end 18 of the chute to a horizontal position at the delivery end 20 of the chute.

From the delivery end 20 of the chute C, the packages are pushed into the path of movement of a conveyor 25, which has cross rods 26 by which the packages are engaged one at a time. The conveyor moves upwardly in the direction of the arrow and carries the packages around a casing 27, the packages being supported against flat supporting surfaces 28 on a rotating block 29.

The conveyor chains are fed by a sprocket 30, being supported by another sprocket not shown. An idler 31 engages the conveyor and holds it in position during its vertical travel.

After the packages have moved through the casing 27 they pass downwardly, being supported by an inclined support 32 and being held against this support by springs 33 carried by a bar 34. The conveyor delivers the packages to a wrapping machine which is disposed at a lower level than the machine which fills the packages and feeds them along the platform 10.

From the foregoing description it will be clear that the packages P enter the chute C in vertical position and are then pushed through the chute by succeeding packages and during their passage through the chute are turned through 90° and are delivered at the delivery end 20 to the conveyor in horizontal position. During their passage through the chute, they are positively held by the chute walls and are turned from vertical to horizontal position.

It will be noted that the wall 16 at the receiving end is a side wall and at the delivery end forms the top of the chute. The wall 15 at the receiving end is a side wall and at the delivery end forms the bottom of the chute. The bottom 17 at the receiving end of the chute forms the bottom, whereas, at the delivery end of the chute the bottom is turned up and forms one of the side walls. Since the side wall 15 has been curved downwardly to form the bottom, the other side wall 35 at the delivery end of the chute merges into the side wall 15 intermediate the ends of the chute.

Although one specific embodiment of the invention has been particularly shown and described, it will be understood that the invention is capable of modification and that changes in the construction and in the arrangement of the various cooperating parts may be made without departing from the spirit or scope of the invention, as expressed in the following claim.

What I claim is:

A chute for receiving rectangular packages in vertical position and delivering the packages in horizontal position comprising two side walls, said side walls being vertical at the receiving end of the chute, one of said side walls being curved intermediate its ends and at the delivery end of the chute being horizontal and forming the bottom of the chute and the other side wall being curved intermediate the ends of the chute and being horizontal at the delivery end of the chute and forming a top wall at the delivery end of the chute, the remaining portion of the top of the chute being open to facilitate the turning of the rectangular packages during passage of the packages through the chute, the top opening being wider at the receiving end of the chute and tapering toward the delivery end thereof, and side walls at the delivery end of the chute extending to a position midway between the ends of the chute, said side walls engaging the ends of the packages and guiding the packages to the outlet opening of the chute.

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