To all whom it may concern:

Be it known that I, JOSEPH PERCY REMINGTON, a citizen of the United States, residing at Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented certain new and useful Improvements in Sorting Mechanism for Confection-Wrapping Machines, whereof the following is a specification, reference being had to the accompanying drawings.

The invention relates to improvements in sorting mechanism for use in connection with wrapping machines such as shown and described in my prior Patent No. 1,362,628, dated September 14th, 1920, for improvements in machines for wrapping confections, and also in my co-pending application, Serial No. 166,134, filed May 3, 1917, for improvements in positioning and feeding mechanism for confection wrapping machines of which the present application is a division.

The subject matter of this invention is more particularly directed to mechanism for automatically sorting the articles to be wrapped as they are being continuously fed to the wrapping devices.

In order to accomplish this purpose, the machine constructed according to my invention includes in connection with means for continuously feeding the confections, devices for ejecting confections not properly positioned for subsequent wrapping.

The structure by which I attain these ends will be best understood from the drawings, in which—

Fig. I, is a plan view of a portion of a wrapping machine conveniently embodying my invention.

Fig. II, is a sectional elevation of the same as viewed in the direction of arrows II—II in Fig. I.

Figs. III, IV, and V, are detail views on an enlarged scale of the tilting devices for the feed belts.

Fig. IV, is a detail view of one of the runways illustrating the method of guidance for the confections and also the ejection of an improperly placed confection.

Figs. VII, VIII, and IX, are cross sections of the same taken respectively on lines VII—VII, VIII—VIII, and IX—IX, of Fig. VI.

The confections to be wrapped are promiscuously discharged upon an endless carrier 1, from a suitable hopper or other equivalent container (not shown). This carrier is mounted upon, and driven by rollers, one of which is indicated at 2, in Figs. I, and II.

The carrier 1, discharges by way of an inclined chute 3. Along this chute and overhanging the discharge end of the carrier 1 are the guide strips 4, spaced to form entrances to the runways and partitions between them. Below the discharge end of the chute 3, is another series of guiding walls 5, which accomplish a narrowing of the runways. Corresponding to each of these runways is an endless carrier band 6, mounted at one end upon a pulley 7, on the shaft 14, which may be driven from any convenient source of power—not shown. The shaft 14, is supported by levers 9, counterweighted by the weight 10, whereby a similar and adjustable tension is put upon all of the endless bands 6.

These bands 6 pass between the guiding walls 5, and then across opening 11, where the bands lack any side protection and are subjected to tilting means. Extending across this opening immediately beneath the bands is a rock shaft 12, to the operative crank 13, of which, is pivoted a link 15, capable of being reciprocated in any well known manner. This rock shaft 12, carries tilting collars 16, set one beneath each band 6. One of these is clearly shown in perspective in Fig. V. It is provided with two inclined surfaces 17—17, one sloping in one direction, and the other in the opposite, and so related to each other that as the shaft 15 rocks, these inclined surfaces 17—17 alternately push against the lower face of each endless band 6, and tilt it first to one side and then to the other. The inclination of these surfaces 17—17, as shown in Fig. III, is not sufficient to cause a confection resting upright to tumble off the band 6, but if a confection has reached said band rest....
ing upon its side, as shown in Fig. IV, the inclination or tilting of the band 6, due to the tilting collar 16 causes it to fall off, dropping down to a receptacle 20, whence confections may be returned from time to time to the hopper. The interruptions in the runways also provide a means of eliminating an excess of confections, since such excess cannot remain on the bands 6 where there are no retaining sides to the runways.

For the remainder of its operative travel, each endless band 6 passes along a metal channel 21. Initially, this channel 21 has low edges, as shown at 22—23, in Fig. VII, but first one edge is turned partway over, as illustrated in Fig. VI, at 23, and then the other, as shown at 24, so that during the latter part of its travel, the band 6 draws the confections through a partially closed channeled runway of such shape that the confections are confined in their lateral movement, so that they cannot stagger enough to lock, and in their vertical movement so that they cannot capsize. In case the tilting collars 16 have for any reason failed to eject misshapen or improperly positioned confections, the turned edges 23, and 24, will insure this ejection after the manner illustrated in Figs. VI, and VIII.

In dropped goods, notwithstanding the variations in shape to which they are subject, there is a plane at a determinable height above the base at which all the goods have a common cross-section, and the channel 21 is so shaped that the line of contact of the channel sides touches the sides of the confections in this plane.

As the confections pass along the runways, they are subject to inspection, while the rejection of any imperfect or misshaped confections may be thus manually facilitated if desired.

Channels 21, lead directly to a wrapping mechanism not shown, and by reason of the interposition of the devices above described, the confections are delivered positively in upright positions to the elements by which their envelopment is subsequently effected.

Having thus described my invention, I claim:

1. In a machine of the class described, a carrier band for conveying confections to a point where they are to be wrapped, means for placing confections upon the band, and means whereby the carrier band is intermittently inclined from the horizontal so that confections which have reached said band resting upon their sides are precipitated therefrom.

2. In a machine of the class described, a carrier band for conveying confections to a point where they are to be wrapped, means for placing confections upon the band, and tilting mechanism whereby the carrier band is intermittently inclined from the horizontal so that confections which have reached said band resting upon their sides are precipitated therefrom, and a runway traversed by the carrier band having means for aligning the confections before they pass from said runway.

3. In a machine of the class described, a carrier band for conveying confections to a point where they are to be wrapped, means for placing confections upon the band, tilting mechanism whereby the carrier band is intermittently inclined from the horizontal so that confections which have reached said band resting upon their sides are precipitated therefrom, and a runway traversed by the carrier band having means for aligning the confections before they pass from said runway.

4. In a machine of the class described, a carrier band for conveying confections to a point where they are to be wrapped, means for placing confections upon the band, tilting mechanism whereby the carrier band is intermittently inclined from the horizontal so that confections which have reached said band resting upon their sides are precipitated therefrom, and a channel-section runway traversed by the carrier band having its sides merging into overhanging parallel relation, whereby an improperly positioned confection is ejected and the rest are moved into aligned relation centrally of the carrier band.

5. In a machine of the class described, a carrier band for conveying confections to a point where they are to be wrapped; means for placing confections upon the band; a rock shaft mounted below the band and provided with inclined surfaces sloping in different directions, which, as the shaft rocks, intermittently incline the band first one way and then the other, whereby the confections which have reached the band resting upon their side are caused to drop off said band.

6. In a machine of the class described, a runway for the confections formed by a channel, a part of which near the receiving end has low longitudinal edges, whereas for the remainder of its length the sides overhang sufficiently to reject misplaced confections, in combination with a carrier band traveling along the runway; and means for continuously feeding confections thereto, whereby the pressure of the on-coming line of confections traveling in the runway causes a misplaced confection which has been halted by the overhanging sides to be rejected and fall out of the channel.

7. In a machine of the class described, a combination with a carrier band for conveying confections to a point where they are to be wrapped, of a channel section runway having longitudinal relatively low entry edges merging into overhanging parallel portions, said overhanging portions being in interval relation for the purposes specified.
8. In a machine of the class described, the combination with a carrier band for conveying confections to a point where they are to be wrapped, of a tilting mechanism comprising a rock-shaft having a collar provided with peripheral and reversely inclined projections, and means for rocking said shaft whereby the carrier band is intermittently tilted to the right and left hand relative to its line of travel for the purpose specified.

In testimony whereof, I have hereunto signed my name at Philadelphia, Pennsylvania, this 7th day of August, 1923.

JOSEPH PERCY REMINGTON.

Witnesses:

JAMES H. BELL,

E. L. FULLERTON.