

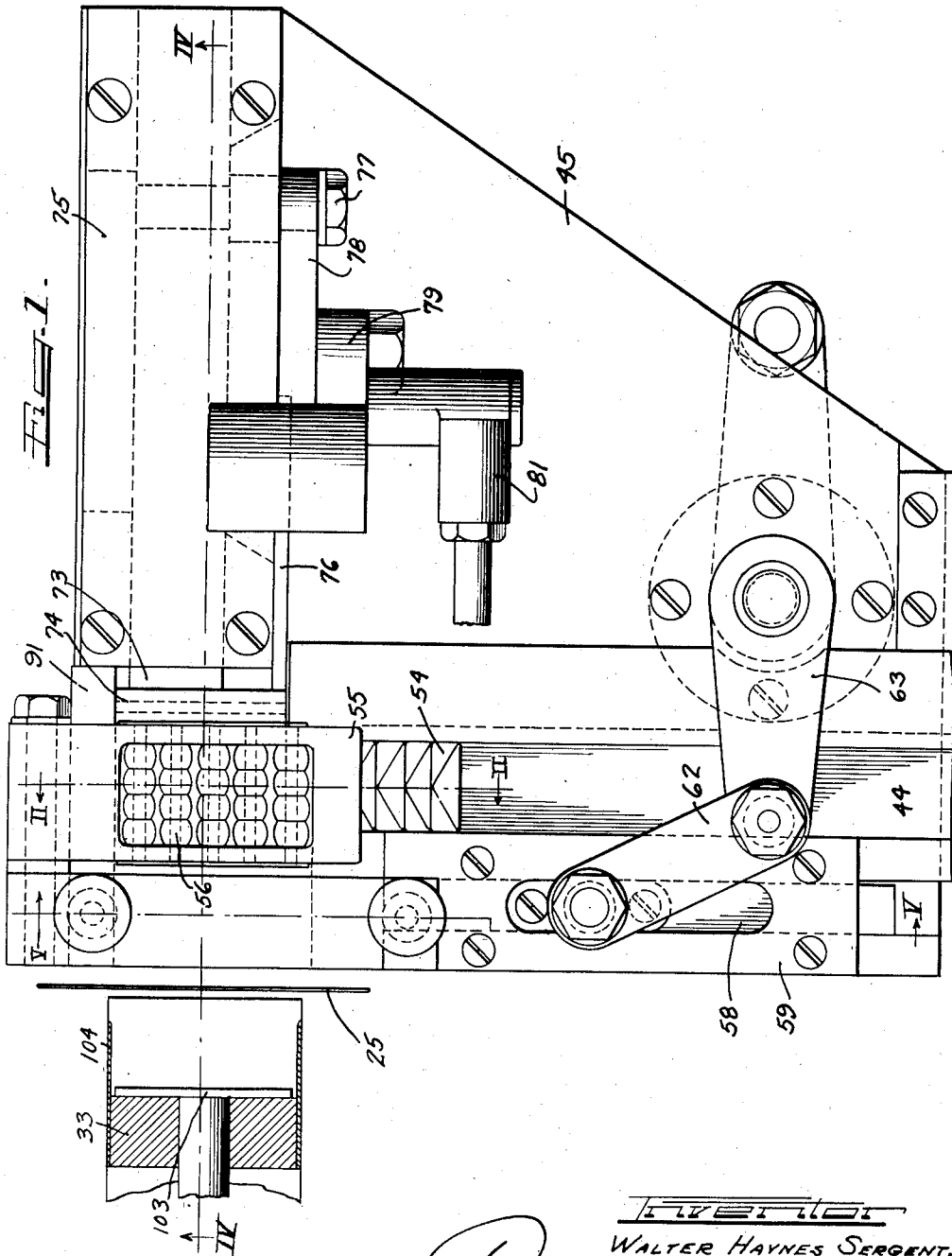
Oct. 20, 1942.

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2,299,504

WRAPPING MACHINE CONVEYER AND FEED MECHANISM

Original Filed Aug. 15, 1938 3 Sheets-Sheet 1



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WRAPPING MACHINE CONVEYER AND FEED MECHANISM

Original Filed Aug. 15, 1938 3 Sheets-Sheet 2

Fig. 2.

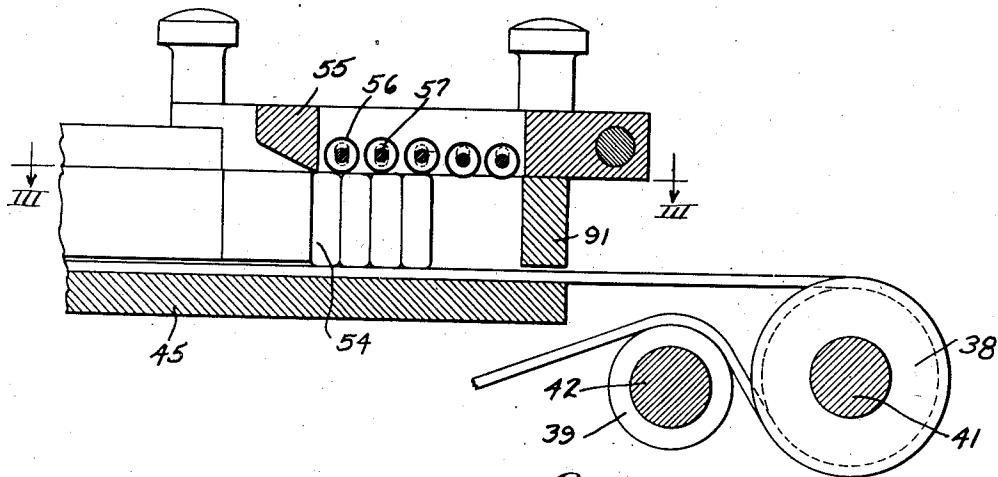
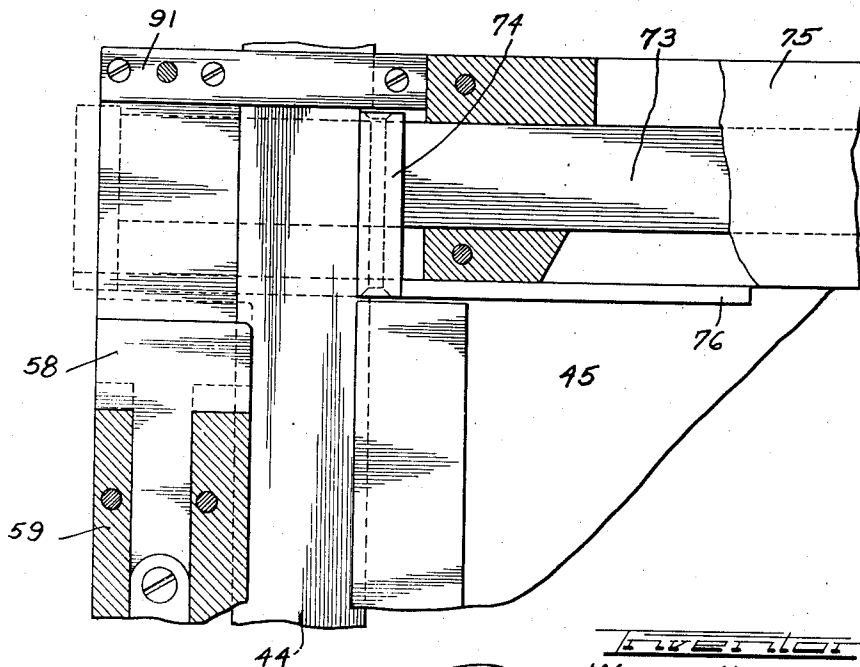


Fig. 3.



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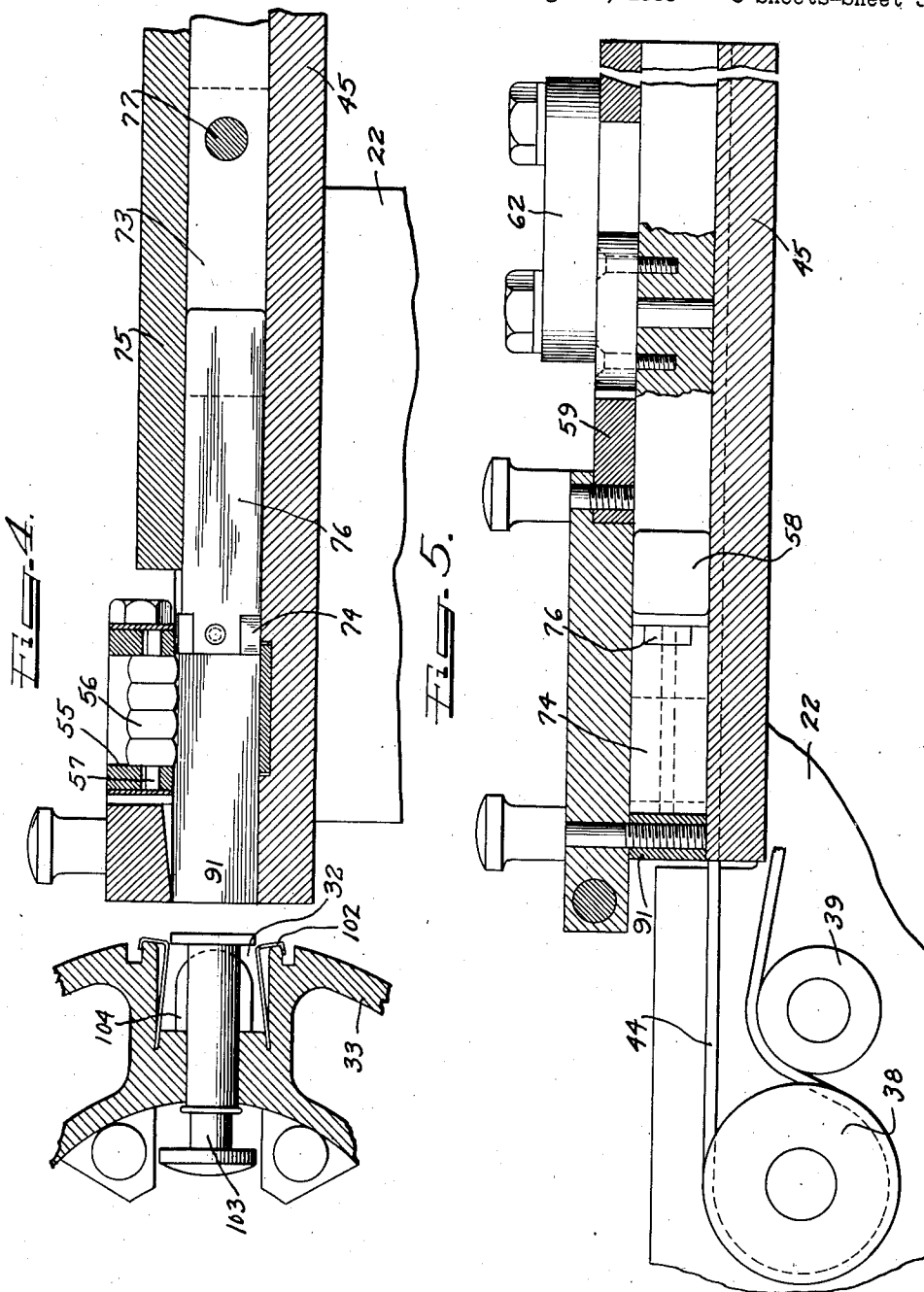
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WRAPPING MACHINE CONVEYER AND FEED MECHANISM

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3 Sheets-Sheet 3



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2,299,504

WRAPPING MACHINE CONVEYER AND FEED MECHANISM

Walter Haynes Sergeant, Middletown, N. Y., assignor to Ideal Wrapping Machine Company, Middletown, N. Y., a corporation of New York

Original application August 15, 1938, Serial No. 224,932. Divided and this application November 25, 1940, Serial No. 366,984

7 Claims. (Cl. 198—24)

This invention relates to a wrapping machine conveyer and feed mechanism and particularly to one which is employed in a machine particularly adapted for wrapping a number of individually wrapped caramels or other rectangular pieces of candy into a single package.

Machines have been made prior to my invention for wrapping a plurality of candies into a single package, but these machines have required frequent attention from the operator because of jamming caused by variation in the size of the candies. This variation in size causes little trouble with single candies but when candies are wrapped together in groups the variation in size of the separate candies add up, and the total often exceeds that which the machine can accommodate. One of the principal objects of my invention is to provide novel feed mechanism for a machine which eliminates this variation in the size of the candies.

Another object of my invention is to provide an improved mechanism for feeding candies into a wrapping mechanism in groups so that several candies can be wrapped together.

Still another object of my invention is to provide an improved feeding mechanism especially adapted to carry thin candies on edge without allowing them to fall over.

Still another object of my invention is to provide a novel method and means for conveying and feeding articles to a wrapping machine.

With these and other objects in view, which will become more apparent in the following description and disclosures in the drawings, my invention comprises the novel features of construction and combination hereinafter described and more specifically pointed out in the appended claims.

In the drawings, which illustrate a preferred embodiment of this invention and in which similar reference numerals refer to similar features in the different views:

Figure 1 is an enlarged plan view of the feeding and sizing mechanism of the machine, a portion of the wrapping wheel being shown in its proper relation and in section.

Figure 2 is a vertical section through a portion of the feeding mechanism taken on the line II—II of Figure 1 and looking in the direction of the arrows.

Figure 3 is a horizontal section view taken on the line III—III of Figure 2, looking down in the direction of the arrows.

Figure 4 is a vertical section taken on the line IV—IV of Figure 1 and looking in the direction of the arrows.

Figure 5 is a vertical section taken on the line V—V of Figure 1, looking in the direction of the arrows.

This application is a division of my co-pending application for patent entitled "Wrapping machine," Serial No. 224,932, filed August 15, 1938, and assigned to the same assignee as the present invention. This application has matured into Patent 2,239,375, granted April 22, 1941.

The conveyer and feeding mechanism of the present invention includes a belt feed mechanism for bringing the candies to the machine, and a feed plunger mechanism for removing the proper number of candies from the feed belt and placing them in the sizing mechanism and subsequently moving them into the pocket 32 of the wrapping wheel 33.

The belt feed mechanism, in general, is similar to that shown in my U. S. Letters Patent No. 1,654,146, issued December 27, 1927, and need not be described in great detail. In brief, it includes a pair of feed belt pulleys 38 and 39 fixed to shafts 41 and 42 which are rotatably mounted in the feed belt bracket (not shown). These two pulleys 38 and 39, in connection with an outboard pulley (not shown) serve to carry a feed belt 44. The upper reach of the feed belt 44 lies in a groove in the top of a fixed plate or feed plunger bracket 45 and serves to bring candies individually wrapped in another machine to this machine to be wrapped up into packages. The inboard feed belt pulleys 38 and 39 are driven through their shafts 41 and 42 in any suitable manner which will cause belt 44 to move forward intermittently so that it has a period of rest between each forward movement. Thus, the belt 44 comes to rest each time that a group of candies is to be removed from it, and then it moves forward again to bring another group of candies into place.

Since the candies 54 are carried on edge by the belt, as shown in Figure 2, there is a tendency for them, and especially the leading candy, to fall forward when the belt starts or stops. In order to prevent this, I have provided a drag mechanism which exerts a slight retarding force on the upper edges of the candies and prevents their falling forward. This mechanism comprises a belt cover plate 55 which lies directly above the point where the candies 54 are removed from the belt. The cover plate 55 has a large central aperture in which are mounted a large number of small rolls 56 which hang down into the path of the candies 54. These rolls are carried on pins or spindles 57 which extend across the opening in the belt cover plate 55 in a direction transverse

to the direction of movement of the belt 44. The ends of the pins 57, as shown in Figure 4, are supported in vertical slots in the belt cover plate 55. This allows the rolls 56 and the pins 57 to rise slightly and allow the candies 54 to pass beneath them, as shown in Figure 2. At the same time, it provides a slight resistance to the forward movement of the upper part of the candies, which I have found desirable in order to prevent their falling forward.

The feed mechanism is intimately related to a sizing mechanism which briefly comprises a sizing plunger 58 mounted in a guide 59 which is intermittently reciprocated in any suitable manner through link 62 and arm 63 (such for example as the manner described in my copending application Serial No. 224,932, now United States Letters Patent No. 2,239,375).

The feed plunger mechanism is shown in Figures 1, 3 and 4. It comprises a feed plunger 73 having an integral head 74 and reciprocally mounted in a feed plunger slide 75. The slide 75 is carried by the feed plunger bracket 45 and is placed at right angles to the path of the belt 44 and the sizing plunger 58, as shown in Figure 1. The head 74 of the feed plunger 73 is considerably wider than the body of the feed plunger and has a backwardly extending skirt or stop 76 riveted to one side in order to prevent candies from being carried behind it by the belt 44 when it is in its forward position.

The feed plunger 73 is provided with a stud 77 which projects out laterally through a slot in the feed plunger slide 75 and which is connected by a link 78 to a depending lever 79. These connections are shown in Figure 1. The lever 79 is pivoted on a bracket (not shown) fastened to the oil case 22 and is operated by means of a link 81 from a suitable ejector mechanism (not shown).

The operation of the above described feeding and sizing mechanism is as follows: The feed belt 44 is kept supplied with individually wrapped candies 54, either by an operator who places manually upon it the output of several candy-wrapping machines or by some suitable mechanism designed for this purpose. During each cycle of operation of the machine, the feed belt 44 is moved forward a distance equal to or slightly greater than the total thickness of the number of individual candies to be wrapped up in a single package. The candies 54 as they are moved up are prevented from falling forward by the rollers 56 which exert a slight retarding force on the upper edges of the candies. This brings the candies up against a candy stop 91 extending across the feed belt 44 in line with the far side of the wrapping wheel 33. The desired number of candies is then directly in front of the head 74 of the feed plunger 73. The feed plunger 73 then moves forward in the first step of its forward motion and pushes the desired number of candies off the feed belt 44 and in front of the sizing plunger 58. At this point the feed plunger 73 stops momentarily. The sizing plunger 58 then moves forward from the full line position shown in Figure 3 to the dotted line position shown in the same figure, in which position the distance between its face and the opposed face on the candy stop 91 is slightly less than the width of the wrapping wheel 33. If the total width of the candies in this space was originally greater than this dimension, the candies are now squeezed down until they will fit readily into the pockets 32 of the wrapping wheel 33. The feed plunger

73 then makes the second step of its forward movement and pushes the candy into a pocket of the wrapping wheel 33, which at this moment is stationary. As the candies are pushed into the pockets 32 of the wrapping wheel, they carry with them the end 25 of the strip of wrapping material or Cellophane, which has been moved up into position between the feeding and sizing mechanism and the wrapping wheel.

While I have shown a particular embodiment of my invention, it will, of course, be understood that I do not wish to be limited thereto, since many modifications may be made, and I, therefore, contemplate by the appended claims to cover all such modifications as fall within the true spirit and scope of my invention.

I claim as my invention:

1. In a machine having an intermittently moving belt for carrying objects on edge to a position from which they are pushed laterally off the belt in groups, a drag means above the belt at said position, said drag means comprising a plurality of yieldably mounted rollers projecting into the path of said objects.

2. In a machine having an intermittently moving belt for carrying objects on edge to a position from which they are pushed laterally off the belt in groups, a drag means above the belt at said position, said drag means comprising a plurality of rollers projecting into the path of said objects, horizontal spindles for said rollers, and supporting means having vertically elongated holes receiving said spindles and permitting vertical movement thereof.

3. In a machine for wrapping a predetermined number of articles into a single package, means for receiving a group of said articles, a feed belt passing by said receiving means, a stop member extending across said feed belt in line with one side of said receiving means, a feed plunger, means for moving said feed plunger across said feed belt in front of said stop member and up to said receiving means for pushing groups of said articles thereinto from said belt, the face of said feed plunger being substantially as wide as the length of a row of said predetermined number of articles, and a drag mechanism above the belt in front of the stop member to keep articles thereon from falling forward, said drag mechanism comprising a plurality of drag members spaced along said belt and individually supported so as to be able to move up under light pressure, each of said drag members being rounded underneath on the side away from the stop member so as to be lifted by oncoming articles.

4. In a machine for wrapping a predetermined number of articles into a single package, means for receiving a group of said articles, a feed belt passing by said receiving means, a stop member extending across said feed belt in line with one side of said receiving means, a feed plunger, means for moving said plunger across said feed belt in front of said stop member and up to said receiving means for pushing groups of said articles thereinto from said belt, the face of said feed plunger being substantially as wide as the length of a row of said predetermined number of articles, and a drag mechanism above the belt in front of the stop member to keep articles thereon from falling forward, said drag mechanism comprising a plurality of drag members spaced along said belt and individually supported so as to be able to move up under light pressure, each of said drag members being

rounded underneath on the side away from the stop member so as to be lifted by oncoming articles and also being rounded underneath on the end towards the feed plunger so as to be lifted by the feed plunger in case it is not already lifted by said articles.

5. In a machine of the class described, a feed belt, means for moving the feed belt intermittently for carrying objects on edge to a station from which they are pushed off the belt, a drag means above the belt at said station, said drag means comprising a plurality of individually mounted floating members projecting into the path of said objects.

6. In a machine having a feed belt for carrying objects on edge to a position from which they are pushed off the belt, a drag means above the belt at said position, said drag means comprising a plurality of individually mounted float-

ing members which project into the path of said objects and which float on and are supported by said objects as said objects pass therebeneath.

7. In a machine of the class described, a feed belt, means for moving said feed belt intermittently, a stop extending across the top of said belt, a feed plunger moving across the belt beside the stop and drag means directly above the belt and directly above the path of said plunger for preventing the objects carried on edge by the belt from falling forward, said drag means including a plurality of rollers, said rollers being mounted for limited vertical movement of their axis of rotation and independent of each other, said rollers being positioned to float on said objects when said objects pass therebeneath.

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