

Dec. 14, 1954

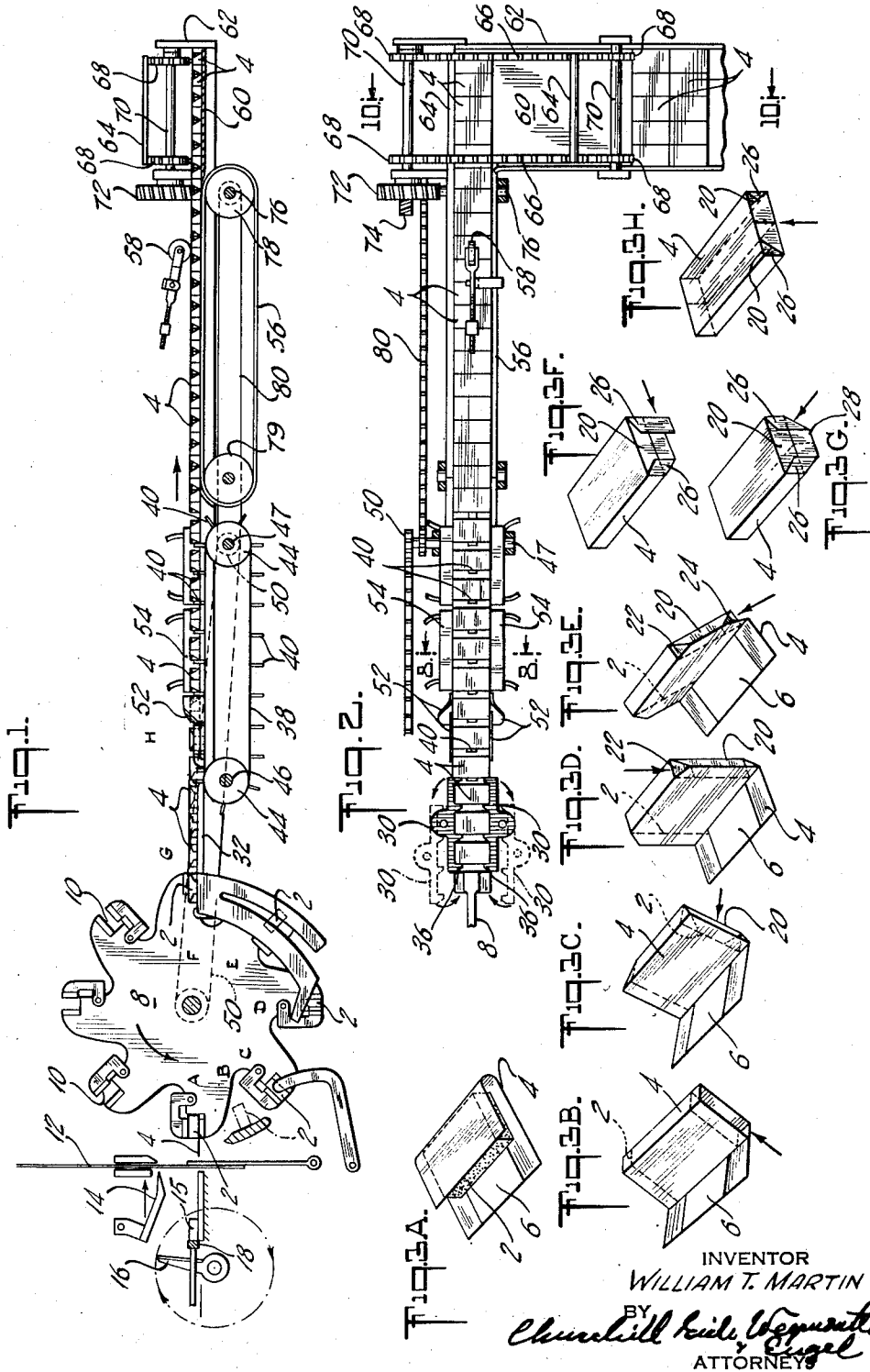
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ARTICLE WRAPPING MACHINE

Filed Jan. 29, 1953

2 Sheets-Sheet 1



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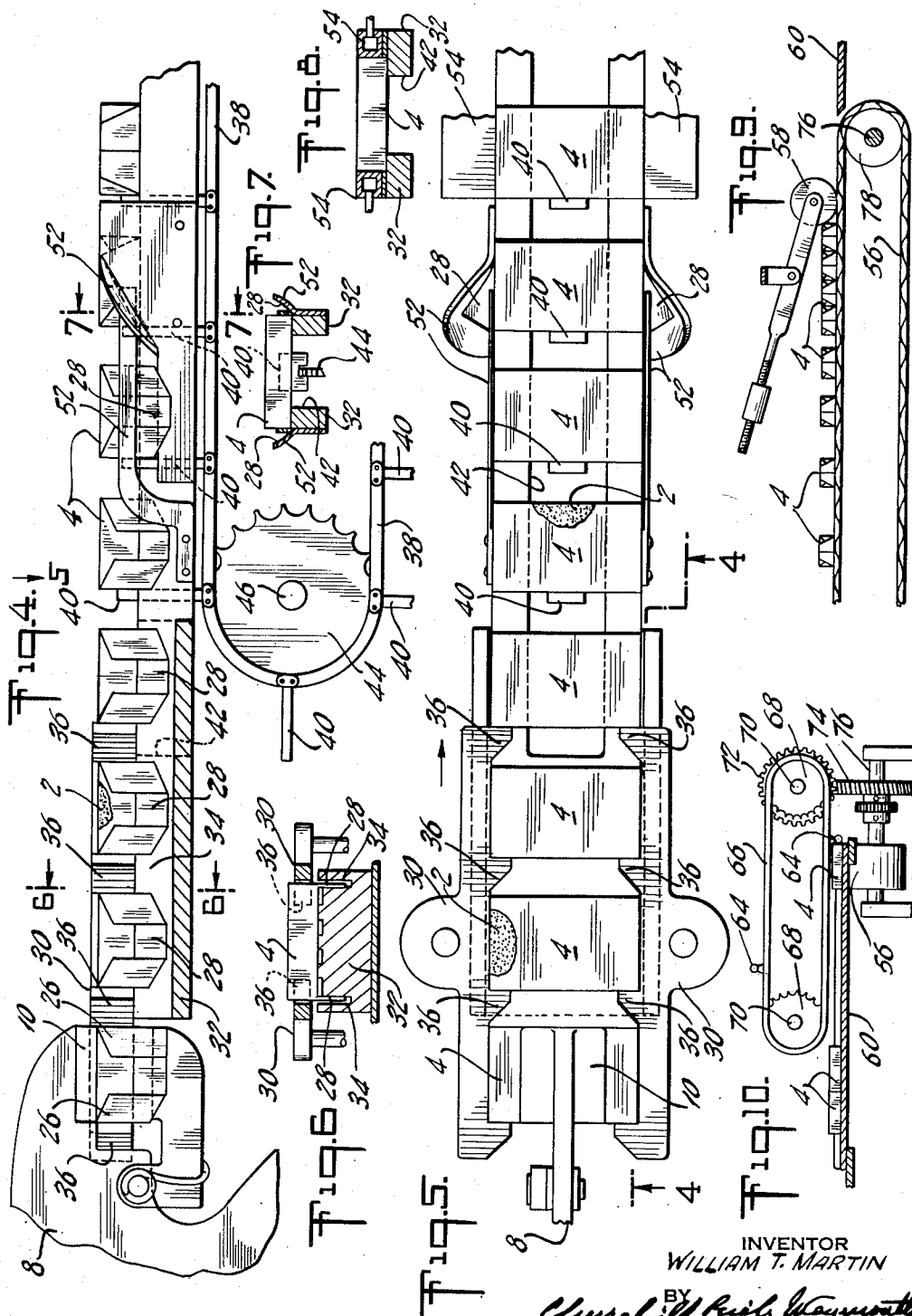
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1

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ARTICLE WRAPPING MACHINE

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2 Claims. (Cl. 53—131)

The present invention relates to wrapping machines, and has special reference to machines for wrapping articles such as pieces of chewing gum and candy.

The principal object of the invention is to provide a machine of this character which is simple in construction and efficient in operation, and capable of collecting the wrapped articles in groups with the articles in each group of the desired number and arrangement for placing into cartons.

The several features of the invention, whereby this and other objects may be attained, will be readily understood from the following description and accompanying drawings, in which:

Figure 1 is a diagrammatical side view, partly in section, of a machine embodying the features of the invention in their preferred form;

Fig. 2 is a diagrammatical plan view, partly in section, of a portion of the same;

Figs. 3A, 3B, 3C, 3D, 3E, 3F, 3G and 3H are views in perspective of an article and its wrapper, and respectively illustrating the different steps in wrapping the article;

Fig. 4 is a side view, partly in section and on an enlarged scale, of a portion of the machine illustrated in Fig. 1, the section being taken substantially on the line 4—4 of Fig. 5;

Fig. 5 is a plan view of the same;

Figs. 6 and 7 are sectional views, partly in elevation, taken substantially on the lines 6—6 and 7—7 of Fig. 4;

Fig. 8 is a sectional view, partly in elevation, taken on the line 8—8 of Fig. 2;

Fig. 9 is a sectional elevation on an enlarged scale, corresponding to a portion of Fig. 1 but with certain parts in different positions;

Fig. 10 is a sectional view, partly in elevation, taken on the line 10—10 of Fig. 2.

The machine illustrated in the drawings is particularly adapted for use in wrapping rectangular articles such as pieces of gum 2 in a wrapper 4 which as shown has an inner lining or wrapper 6, the wrapper being preferably of waxed paper.

As shown, the machine comprises a turret 8 which is provided with jaws in the form of pockets 10, and is rotated intermittently so as to successively position the pockets 8 at the stations A, C, D, E and F.

When each pocket 10 reaches the station A, a wrapper 4 is cut off from a supply strip 12 by means of a knife 14, and a piece of gum 2 is cut off from a strip of gum 15 by means of a knife 16. A pusher 18 pushes the piece of gum against the wrapper 2 as it is cut off and carries it with the wrapper into the pocket 10 at the station A. As the wrapper 4 enters the pocket, it is folded over the sides and one longitudinal edge of the gum.

As the gum and wrapper is carried by the turret from station A to station C, suitable devices act at point B to fold the wrapper over the other edge of the piece of gum, and at station C a portion 20 is folded against each end of the gum.

As the piece of gum and its wrapper reaches station D, end folds or tucks 22 are made, and at station E end folds or tucks 24 are made over the ends of the gum.

As the gum and its wrapper pass point F and reach station G, end folds 26 are successively made in the wrapper (Figs. 3F and 3G).

At the completion of these folding operations, tails 28 are left unfolded and they project downwardly. At station G ejecting devices 30 engage the ends of the thus partially wrapped gum, and slide it over a table 32 to a

2

predetermined position, the table being provided with longitudinally extending grooves 34 for receiving the depending tails of the wrapper.

When the piece of gum has been thus deposited on the table, the ejecting devices 30 retract from the ends of the piece and return into position to engage the next partially wrapped piece of gum reaching the station G. The ejecting devices 30 are provided with spaced lugs 36 so that as the devices engage the ends of each piece of gum at the station G, they also engage the next two previously ejected pieces of gum that are supported on the table, the lugs 36 entering the spaces between the pieces of gum and thus slide the three pieces over the table in spaced relation.

The parts of the machine above described may be and preferably are of a well-known construction.

In accordance with the present invention a belt or chain 38 is positioned beneath the table 32 and is provided with pins or lugs 40 that are adapted to successively enter the spaces between the pieces of gum on the table and slide them in spaced relation over the table, the table being provided with a longitudinally extending clearance slot 42 for the lugs 40. This chain 38 passes over sprocket wheels 44 on shafts 46 and 47. The shaft 47 is driven through a sprocket wheel and chain 50 to drive the chain 38 in timed relation to the operation of the turret 8 and ejecting devices 30.

As the pieces are thus conveyed over the table, suitable folding devices 52 serve to fold the depending tails 28 of their wrappers upwardly over the ends of the pieces. The pieces then pass between heating members 54 which heat-seals the end folds of the waxed paper wrapper.

The lugs 40 slide the wrapped pieces, as they leave the heating devices 54, over the end of the table 32 to a belt conveyor 56. A pressure roller 58 is positioned over this belt conveyor which by engagement with the foremost piece of gum on the conveyor causes the pieces of gum between it and the chain conveyor 38 to close the spaces between them so as to form a continuous row of pieces.

When this occurs, the pressure of the row of pieces on the roller 58 causes the pieces to pass beneath the roller, the pressure of the roller maintaining the pieces in the row in contact. The pieces as they leave the conveyor 56 are shoved across a table 60 and against a flange 62 on the table. When this occurs, a rod 64 having its ends mounted on sprocket chains 66, slides the row of pieces thus deposited on the table to a position past the end of the chains 66. As the row of pieces are thus moved on the table 60, the row of pieces on the conveyor 56 is permitted to advance to position another predetermined number of pieces across the table 60. These pieces are then carried by the lugs 64 against the row of pieces previously advanced on the table, and shove them a sufficient distance on the table to permit the new row of pieces to take their place.

It will be apparent that a predetermined number of pieces are delivered to the table 60 in successive rows and the rows are advanced on the table one behind the other. Thus it is insured that there is collected in each row the desired number of pieces for placing in cartons.

The sprocket chains 66 are mounted on sprocket wheels 68 on shaft 70. The further shaft 70, viewing Fig. 2, is driven, so as to drive the sprocket wheels and chain 66 through a worm wheel 72 on one end thereof which is engaged by a worm 74 on a shaft 76. This shaft 76 carries a pulley 78 over which the belt conveyor 56 passes, the belt also passing over a pulley 79. The shaft 76 is driven by a sprocket chain 80 which passes over sprocket wheels on the shaft 76 and the driven shaft 47.

What I claim is:

1. In a machine for wrapping articles of the class described, means for successively applying wrappers about the articles with end portions of each wrapper folded over the ends of the article and the tails at the ends of the wrapper projecting downwardly, a table for receiving the articles from the wrapping means, said table having longitudinally extending grooves for receiving the tails of the wrappers, devices for transferring the articles one behind the other and spaced apart to the table from the wrapping means, an endless conveyor having projecting lugs adapted to successively enter the spaces between the

3

articles and feed them along the table, said table having a longitudinally extending clearance slot for said lugs, devices for folding the tails of each wrapper against said folded end portions of the wrapper as the articles are thus fed over the table, means for heat-sealing the ends of the wrappers as the articles are thus fed, a belt conveyor for receiving the articles from the table, a second table arranged transversely of and adjacent to the delivery end of the belt conveyor for receiving the articles therefrom, means for retarding the movement of the articles with relation to the belt conveyor to cause the articles to be positioned in contact with each other as they are transferred to the second table whereby a predetermined number of articles are delivered in a row across the table, and devices traveling lengthwise of the second-mentioned table for successively moving the rows of articles lengthwise of the table as the rows are delivered to the table.

2. In a machine for wrapping articles of the class described, means for successively applying wrappers about the articles with end portions of each wrapper folded over the ends of the article and the tails at the ends of the wrapper projecting downwardly, a table for receiving the articles from the wrapping means, devices for transferring

4

the articles one behind the other and spaced apart to the table from the wrapping means, an endless conveyor having projecting lugs adapted to successively enter the spaces between the articles and feed them along the table, said table having a longitudinally extending clearance slot for said lugs, devices for folding the tails of the wrapper against said folded end portions of the wrapper as the articles are thus fed over the table, means for heat-sealing the ends of the wrappers as the articles are thus fed, a belt conveyor for receiving the articles from the table, and means for retarding the movement of the articles with relation to the belt conveyor to cause the articles to be positioned in contact with each other as they are transferred thereby.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,218,787	Lev -----	Mar. 13, 1917
1,523,275	Ney -----	Jan. 13, 1925
2,192,683	Bronander -----	Mar. 5, 1940
2,578,799	Grey -----	Dec. 18, 1951