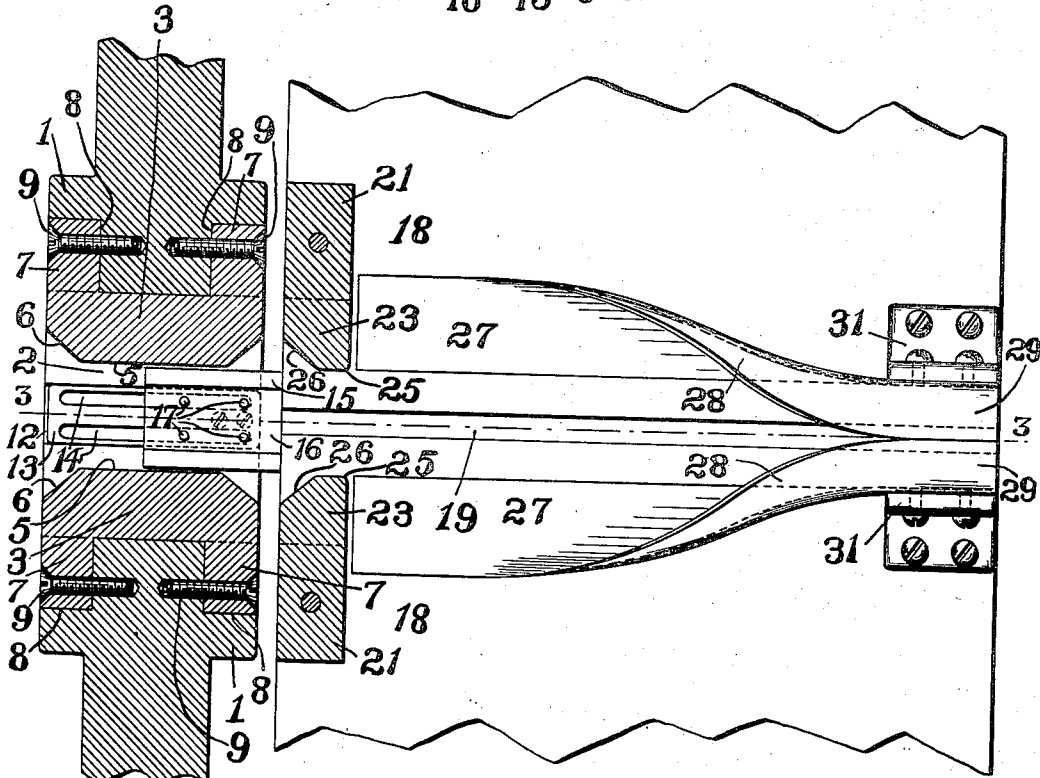
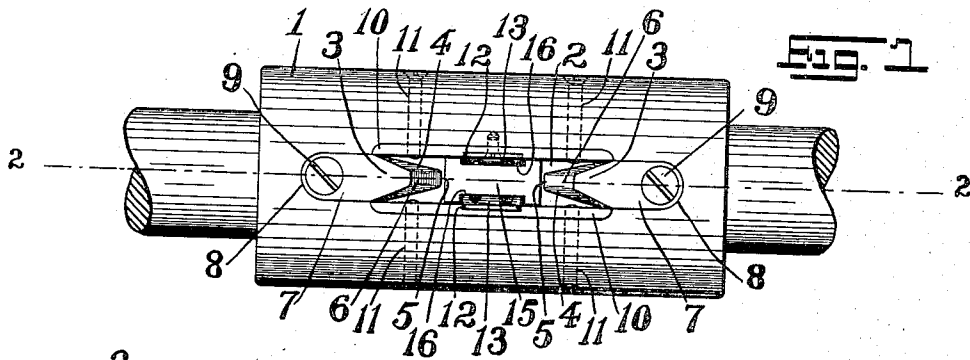


G. I. HOHL.
WRAPPING MACHINE.
APPLICATION FILED AUG. 30, 1912.

1,055,461.

Patented Mar. 11, 1913.

2 SHEETS—SHEET 1.



WITNESSES:

Frank H. W. Fraentzel
Harry E. Pfeiffer

INVENTOR:

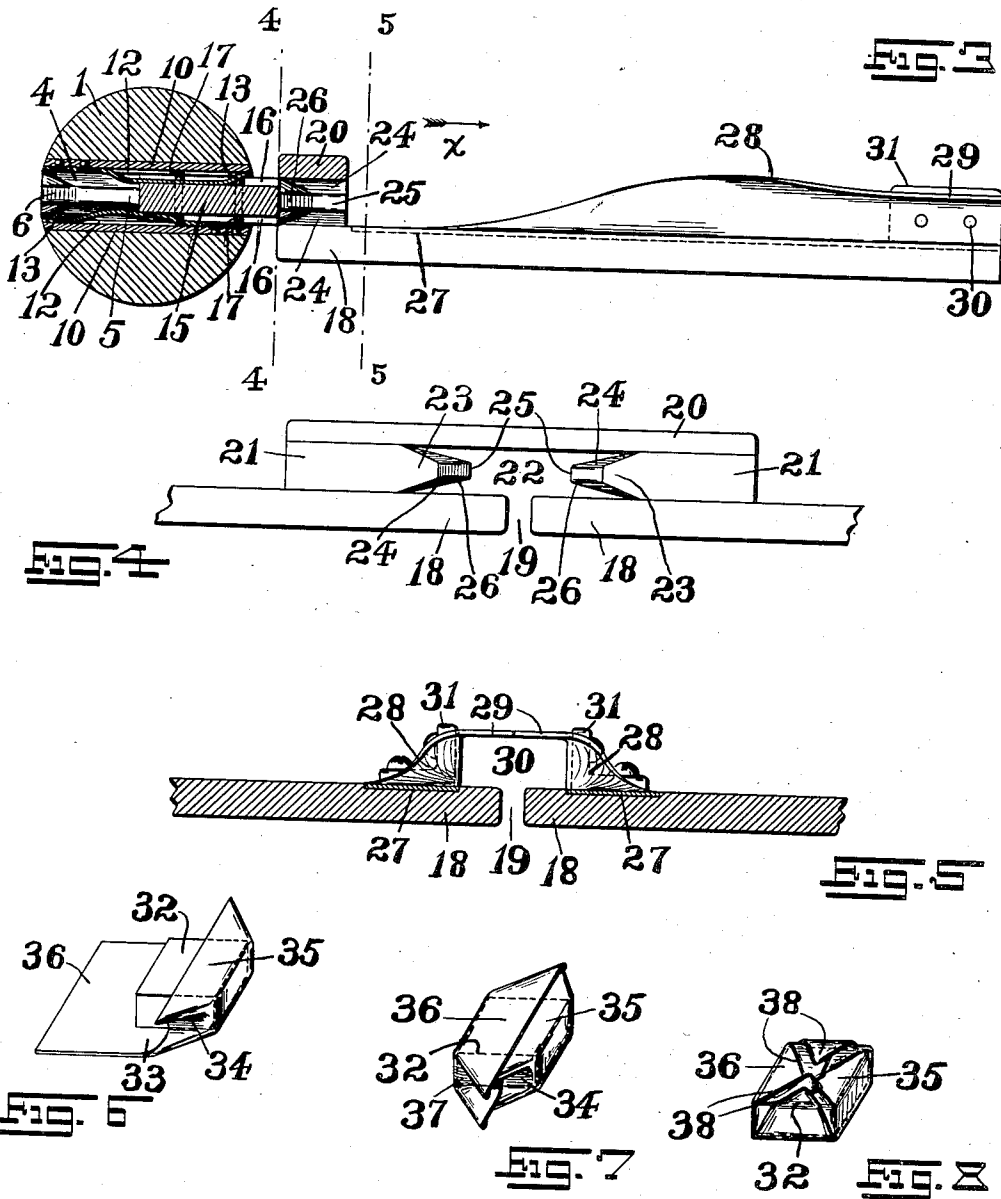
George I. Hohl,
BY
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ATTORNEYS

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2 SHEETS—SHEET 2.



WITNESSES:
Frank W. Fraentzel
Harry E. Pfeiffer

INVENTOR:
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UNITED STATES PATENT OFFICE.

GEORGE I. HOHL, OF NEWARK, NEW JERSEY, ASSIGNOR TO NEWARK WRAPPING MACHINE CO., A CORPORATION OF NEW JERSEY.

WRAPPING-MACHINE.

1,055,461.

Specification of Letters Patent.

Patented Mar. 11, 1913.

Application filed August 30, 1912. Serial No. 717,881.

To all whom it may concern:

Be it known that I, GEORGE I. HOHL, citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Wrapping-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to characters of reference marked thereon, which form a part of this specification.

The present invention has reference, generally, to improvements in automatic wrapping machines; and, the invention relates, more particularly, to a novel means for providing numerous articles, such, for example, as chewing-gum, candy, soap, and the like, with suitable enveloping wrappers.

The present invention has for its principal object to provide a novel and improved construction of means whereby the several wrapping folds of the enveloped article may be improved; and, furthermore, to provide a means whereby a particularly tight, complete, compact, and secure interfolding of the wrapper about an article is produced.

Other objects of the present invention not at this time more particularly enumerated, will be clearly understood from the following detailed description of the present invention.

With the various objects of the present invention in view, the same consists, primarily, in the novel wrapping elements for wrapping machines hereinafter set forth; and, furthermore, this invention consists in the novel arrangements and combinations of the various devices and parts, as well as in the details of the construction of the same, all of which will be more fully described in the following specification, and then finally embodied in the clauses of the claim which are appended to and which form an essential part of this specification.

The invention is clearly illustrated in the accompanying drawings, in which:—

Figure 1 is a detail front elevation of a tuck-fold wrapping roll made according to and embodying the principles of the present invention. Fig. 2 is a horizontal section, taken on line 2—2 in said Fig. 1, said view including the means for producing the end-

folds of the wrapper enveloping the article operated upon. Fig. 3 is a vertical longitudinal section, taken on line 3—3 in said Fig. 2; Fig. 4 is a detail cross-section, taken on line 4—4 in said Fig. 3, looking in the direction of the arrow *x*; and Fig. 5 is another cross-section, taken on line 5—5 in said Fig. 3, also looking in the direction of the arrow *x*. Figs. 6, 7 and 8 illustrate the type of folds produced by the novel wrapping mechanism, during various stages of the operation of the same.

Similar characters of reference are employed in all of the herein-above described views to indicate corresponding parts.

The novel construction of wrapper fold-producing elements comprising the present invention are adapted to be used in connection with various types of wrapping machines, but are more particularly adapted for use in connection with that class of wrapping machines, illustrated and described in my former application for Letters-Patent Serial No. 671,694, filed Jan. 17, 1912; and, the application of the present invention thereto will be readily understood, without the necessity of any detailed description of the said wrapping machine in the present application.

The novel wrapping element comprising the present invention consists of a rotary wrapping-roll or cylinder 1, the same being provided with a transverse or diametrically disposed opening or slot 2. Arranged within said opening or slot 2, so as to be maintained against the end-walls of said opening or slot, are tuck-producers comprising a chamfered body-portion 3, the inclined sides 4 of which converge toward the free end 5 of said body-portion, and each end of said body-portion being further provided with a rearwardly inclined guide-surface 6, which is formed by chamfering the end of said body-portion. Each body-portion is provided adjacent to its respective ends with rearwardly extending lugs 7 which are received in properly disposed receiving sockets 8 adjacent to said opening or slot 2. Suitable fastening means, such as the screws 9, are passed through said lugs 7 and into the body of said wrapping-roll or cylinder 1, whereby said tuck-producers are secured in their proper positions within the said slot or opening 2 of the roll or cylinder. Arranged within said opening or

slot 2, so as to be maintained against the longitudinal surfaces or walls of said opening or slot, are plates 10, the same being secured in place by means of suitable fastening devices, such as screws 11. Each plate is provided with a preferably centrally disposed transverse groove or channel 12 upon its inwardly exposed side or surface, and secured in the said groove or channel 12 of each plate 10 is a leaf-spring 13, the same being preferably provided with slotted openings 14. Slidably arranged within said slot or opening 2 of the roll or cylinder 1 is a push or ejector-plate 15, the same being provided upon its opposite faces with grooves or channels 16, in which the said leaf-springs 13 ride, the tension or pressure of said leaf-springs as they bear against said push or ejector-plate tending to maintain the same in its proper operative position, while the roll or cylinder performs its rotary movements. Connected with said push or ejector-plate 15 are guide-pins 17, the ends of which project above the respective faces of said push or ejector-plate and penetrate or project into said slotted openings 14 of the leaf-springs 13, thereby serving to properly guide the movements of said push or ejector-plate, and at the same time retaining the same in its operative connection with relation to the said wrapping-roll or cylinder 1.

The reference-character 18 indicates the bed-plates for supporting the article and its wrapper when the same are ejected from said rotary wrapping-roll or cylinder 1. Said bed-plates 18 are separated by a longitudinally extending intervening space 19, through which suitable propelling mechanism may be caused to engage and propel the article through the end-fold elements which are connected with the said bed-plates, and which will be subsequently described. Supported upon the forward end of said bed-plates 18, and adjacent to said rotary wrapping-roll or cylinder 1, is a folding bar 20, beneath which the article and its wrapper is passed in the course of the wrapping operations. Arranged beneath said folding bar 20, which is preferably supported thereupon, are another pair of tuck-producers, each comprising a main body-portion or block 21 supported upon said bed-plate 18, the tuck-producing portion of each body-portion or block projecting inwardly into the passage 22 through which the article and its wrapper is propelled, said passage 22 being bounded by said bed-plates, the tuck-producers, and the said folding-bar. The said tuck-producing portion of each body-portion or block comprises a chamfered body-portion 23, the inclined sides 24 of which converge toward the free end 25 of the said body-portion 23, and the end of said chamfered body-portion

tions 23, toward the wrapping roll or cylinder 1, being further provided with a rearwardly inclined guide-surface 26, which is formed by chamfering the ends of said body-portion 23. Supported upon said bed-plates 18, adjacent to said folding bar 20 and the said tuck-producers connected therewith, are a pair of end fold-turning plates, the same comprising the body-portions 27 which lie in the plane of said bed-plates, and the turn-over portions 28 which are turned upwardly and toward each other until, at their outer ends 29, they converge together and parallel the said bed-plates 18, thus forming a passage 30 conforming to the shape of the article to be wrapped; and, which, when the article and its wrapper is passed therethrough, completes the final folds of the wrapper about the article it envelops. The said turn-over portions 28 are secured in proper position to said bed-plates 18 by any suitable fastening means, such as suitable angle-brackets or retaining lugs 31.

The operation of the herein-above described fold-producing elements, in enveloping an article to be wrapped in a suitable wrapper, is as follows:—A suitable wrapper is fed across the mouth of the slot or opening 2 of said wrapping-roll or cylinder 1, and then an article to be wrapped is pressed into said slot or opening 2, by suitable mechanical means, carrying therewith the said wrapper. The free ends 5 of said tuck-producers, arranged within said slot or opening 2, are spaced apart from each other at a distance slightly greater than the width of the article to be wrapped. Consequently, when the article 32 and its wrapper 33 is pressed into the said slot or opening 2, the ends of the wrapper which project beyond the ends of said article, are engaged by the guide-surfaces 6, and are then bent or pressed inwardly against the ends of the article by contact with the free ends 5 of said tuck-producers, thus producing the end-tucks 34 of the wrapper and the first fold 35 of the wrapper about the article, as illustrated in Fig. 6 of the drawings. The article and its wrapper are now within the slot or opening 2 with an unfolded portion 36 of the wrapper projecting exteriorly of the roll or cylinder 1. When thus arranged, the wrapping-roll or cylinder is caused to make a half-revolution or turn, which carries the article and its wrapper into registration with the passage 22 beneath the folding bar 20, and at the same time carries the exteriorly projecting end 36 of said wrapper against said folding bar 21, which turns the same upwardly and across the forward end of the article, and at right angles to the body of the article. When the roll is in this position, a second article and its wrapper is fed into said slot or opening 2, in the manner

first-above described, and this second article and wrapper in entering said slot or opening 2, presses against said push or ejector-plate 15 arranged within the slot, and causes the same to eject the first article and its wrapper from the slot or opening 2, and into said passage 22. In entering said passage 22, the end 36 of the wrapper is pressed by the folding bar 20 across the top of the article, and the tuck-producers arranged beneath said folding bar and projecting into said passage 22 engage the fold of the wrapper projecting beyond the ends of the article and produce the end-tucks 37 and a second fold of the wrapper, as illustrated in Fig. 7 of the drawings. These operations being completed, a suitable propelling mechanism now engages the article and its wrapper and carries the same forward through the end fold-turning elements. The article and wrapper are thus carried into contact with the turn-over portions 28, which engage the outwardly projecting end folds 38 of the wrapper and turn them upwardly across the ends of the article, until the article and wrapper are finally passed through the passage 30, wherein the end-folds 38 are engaged by the converging outer ends 29 of said fold-turning plates, and the folds thereupon are turned over and across the top of the article, completing the wrapping of the article, as shown in Fig. 8 of the drawings.

I am aware that changes may be made in the general arrangements and combinations of the various devices and parts, as well as in the details of the construction of the same, without departing from the scope of the present invention, as set forth in the foregoing specification and as defined in the appended claims. Hence, I do not limit my invention to the exact arrangements and combinations of the devices and parts as described in the said specification, nor do I confine myself to the details of the construction of the said parts as illustrated in the accompanying drawings.

I claim:—

1. In a wrapping machine, means for producing the enveloping folds of a wrapper comprising a rotary wrapping-roll provided with a diametrically disposed opening, tuck-producers connected with the end-walls of said opening, an ejector-plate arranged to reciprocate transversely within said opening and between said tuck-producers, a folding-bar adjacent to said rotary wrapping-roll, tuck-producers arranged beneath said folding bar and in registration with the opening of said wrapping-roll, and means adjacent to said folding bar for turning over the end-folds of said wrapper.

2. In a wrapping machine, means for producing the enveloping folds of a wrapper comprising a rotary wrapping-roll provided

with a diametrically disposed opening, tuck-producers connected with the end-walls of said opening and projecting within said opening, an ejector-plate arranged to reciprocate transversely within said opening and between said tuck-producers, bed-plates adjacent to said wrapping-roll, a folding bar supported upon said bed-plates, tuck-producers arranged beneath said folding-bar and in registration with the opening and the tuck-producers of said wrapping-roll, and end-fold turning plates supported upon said bed-plates, said end-fold turning plates being provided with turn-over portions turned upwardly and toward each other, and converging together at their outer ends to form a passage conforming in shape to the article to be wrapped.

3. In a wrapping machine, a folding element comprising a rotary wrapping roll provided with a diametrically disposed opening, tuck-producers connected with the end-walls of said opening and provided with inclined sides converging toward their free ends, rearwardly inclined guide-surfaces formed at each end of each tuck-producer, the free ends of said tuck-producers being spaced apart slightly more than the width of the article to be wrapped, and an ejector-plate arranged to reciprocate transversely within said opening and between the free ends of said tuck-producers.

4. In a wrapping machine, a folding element comprising a rotary wrapping roll provided with a diametrically disposed opening, tuck-producers connected with the end-walls of said opening and provided with inclined sides converging toward their free ends, rearwardly inclined guide-surfaces formed at each end of each tuck-producer, the free ends of said tuck-producers being spaced apart slightly more than the width of the article to be wrapped, and an ejector-plate arranged to reciprocate transversely within said opening and between the free ends of said tuck-producers, and leaf-springs arranged within said opening and adapted to engage said ejector-plate with a slight tension or pressure.

5. In a wrapping machine, a folding element comprising a rotary wrapping roll provided with a diametrically disposed opening, tuck-producers connected with the end-walls of said opening and provided with inclined sides converging toward their free ends, rearwardly inclined guide-surfaces formed at each end of each tuck-producer, the free ends of said tuck-producers being spaced apart slightly more than the width of the article to be wrapped, and an ejector-plate arranged to reciprocate transversely within said opening and between the free ends of said tuck-producers, leaf-springs arranged within said opening and adapted to engage said ejector-plate with a slight ten-

sion or pressure, and means for guiding and limiting the reciprocatory movements of said ejector-plate.

6. In a wrapping machine, a folding element comprising a rotary wrapping roll provided with a diametrically disposed opening, tuck-producers connected with the end-walls of said opening and provided with inclined sides converging toward their free ends, rearwardly inclined guide-surfaces formed at each end of each tuck-producer, the free ends of said tuck-producers being spaced apart slightly more than the width of the article to be wrapped, and an ejector-plate arranged to reciprocate transversely within said opening and between the free ends of said tuck-producers, leaf-springs arranged within said opening and adapted to engage said ejector-plate with a slight tension or pressure, means for guiding and limiting the reciprocatory movements of said ejector-plate comprising the provision of a slot in said leaf-springs, and guide-pins projecting from the surface of said ejector-plate and adapted to ride in said slots of said leaf-springs.

7. In a wrapping machine, folding elements, each element comprising a rotary wrapping roll provided with a diametrically disposed opening, tuck-producers connected with the end-walls of said opening and provided with inclined sides converging toward their free ends, rearwardly inclined guide-surfaces formed at each end of each tuck-producer, the free ends of said tuck-producers being spaced apart slightly more than the width of the article to be wrapped, and an ejector-plate arranged to reciprocate transversely within said opening and between the free ends of said tuck-producers, leaf-springs arranged within said opening and adapted to engage said ejector-plate with a slight tension or pressure, and means for guiding and limiting the reciprocatory movements of said ejector-plate, bed-plates adjacent to said wrapping-roll, a folding-bar supported upon said bed-plates, tuck-producers arranged beneath said folding bar and in registration with the opening and tuck-producers of said wrapping-roll, said tuck-producers being provided with inclined

sides converging toward their free ends, and rearwardly inclined guide-surfaces at the forward end of each tuck-producer, the free ends of said tuck-producers being spaced apart slightly more than the width of the article to be wrapped.

8. In a wrapping machine, folding elements, each element comprising a rotary wrapping roll provided with a diametrically disposed opening, tuck-producers connected with the end-walls of said opening and provided with inclined sides converging toward their free ends, rearwardly inclined guide-surfaces formed at each end of each tuck-producer, the free ends of said tuck-producers being spaced apart slightly more than the width of the article to be wrapped, and an ejector-plate arranged to reciprocate transversely within said opening and between the free ends of said tuck-producers, leaf-springs arranged within said opening and adapted to engage said ejector-plate with a slight tension or pressure, and means for guiding and limiting the reciprocatory movements of said ejector-plate, bed-plates adjacent to said wrapping-roll, a folding bar supported upon said bed-plates, tuck-producers arranged beneath said folding bar and in registration with the opening and tuck-producers of said wrapping-roll, said tuck-producers being provided with inclined sides converging toward their free ends, and rearwardly inclined guide-surfaces at the forward end of each tuck-producer, the free ends of said tuck-producers being spaced apart slightly more than the width of the article to be wrapped, and end-fold turning plates supported upon said bed-plates, said end-fold turning-plates being provided with turn-over portions turned upwardly and toward each other, and converging together at their outer ends to form a passage conforming in shape to the article to be wrapped.

In testimony, that I claim the invention set forth above I have hereunto set my hand this 9th day of May 1912.

GEORGE I. HOHL.

Witnesses:

FREDK. C. FRAENTZEL,
FREDK. H. W. FRAENTZEL.