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2,622,380

METHOD OF WRAPPING ARTICLES

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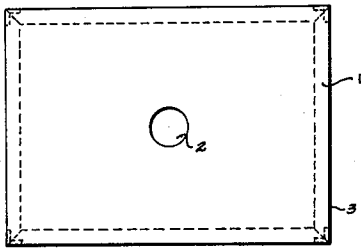


fig.~1

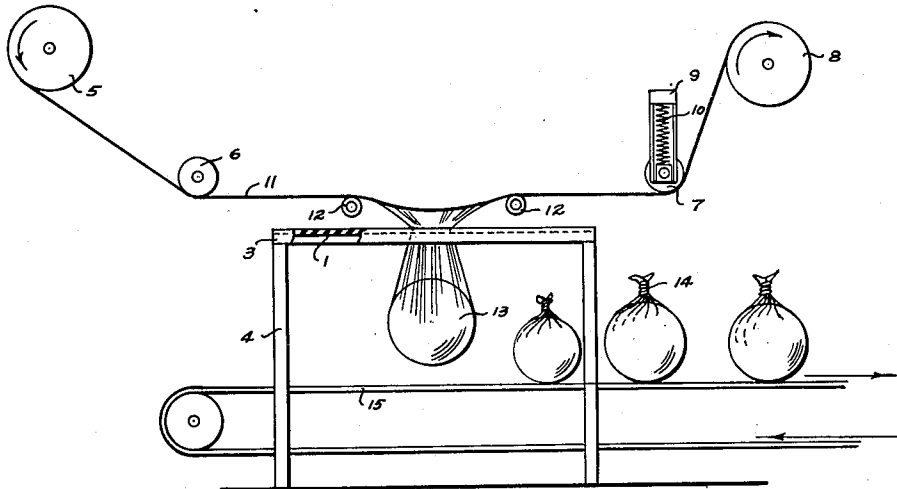


fig. ~ 2

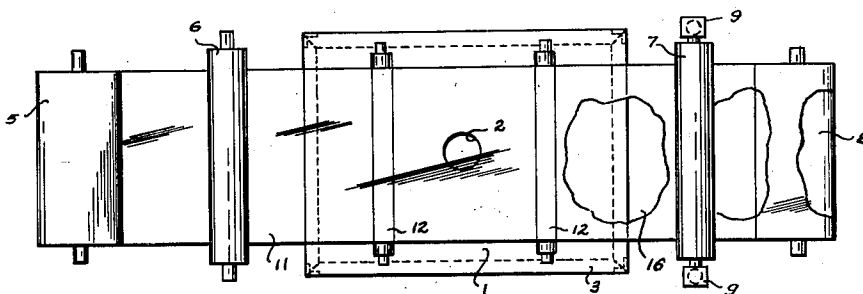


fig. ~ 3

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METHOD OF WRAPPING ARTICLES

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1 Claim. (Cl. 53—15)

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This invention relates to wrapping articles in flat, flexible wrapping materials. More particularly, the process involves enclosing an article in a film and then closing the package by gathering the surplus film at a point on the surface of the article, as by twisting the wrapper to form a pigtail. The package is sealed at the closure thus formed. The wrapping material may be any ordinary wrapping paper, wrapping film, etc.

The apparatus preferably employed includes a sheet of elastic material having a hole in it which is smaller than the article to be packaged. The hole is near the center of the sheet and is preferably circular but may be of any desired shape. The length and width of the sheet should be about twice the length and width, respectively, of the cross section of the object to be wrapped, and the opening in the sheet should preferably be no more than one half the cross sectional area of the object. The wrapping material is placed over the elastic sheet and the object to be wrapped is pushed against the wrapping material and through the opening, and carries the wrapping material with it, although not all of the wrapper is taken through the opening. The package is completed by gathering the wrapper at the opening, as by turning the article and thereby twisting the wrapper. The gathered or twisted portion of the wrapper may be tied, stapled, banded, heat-sealed or otherwise fastened in any suitable manner. The invention is suitable for the packaging of fruits and vegetables such as cabbage, etc. and other objects and particularly objects which have a generally rounded contour.

The invention will be further described in connection with the accompanying drawings in which Fig. 1 is a plan view of the unit of the apparatus which supports the elastic sheet. Fig. 2 is an elevation showing the equipment in use. Fig. 3 is a plan view of the equipment in use.

An essential feature of the apparatus is the elastic rubber sheet 1 in which there is the opening 2 with a continuous uninterrupted edge. This sheet is supported in any suitable manner on the frame 3 which is provided with legs 4. The frame may consist simply of four outside supports over which the elastic sheet is fastened. The sheet is a flat sheet and is held taut by the frame.

The apparatus shown is designed for intermittent operation, but may be used continuously. The wrapping material which may be rubber hydrochloride film is taken off the supply roll 5, brought under the guide rolls 6 and 7, and wound

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on to the roll 8 where the unused waste is gathered together. The guide roll 7 is fastened in the supports 9 under compression springs 10 which tend to hold it down in the same horizontal plane as the guide roll 6. However, these springs permit the guide roll 7 to raise up when sufficient tension is placed on the film.

In operating the equipment the film 11 is drawn from the supply roll 5 over the guide rolls 12 above the top of the elastic sheet 1. The object 13 which is to be wrapped is pushed down onto the film 11 and carries it through the opening 2 in the elastic sheet as the object is pushed through this opening. Fig. 2 illustrates an object enclosed in the film just after it has been pushed through the opening. The object may now be given a complete twist which draws the film down onto the top of the object and closes the package with pigtail 14, or the surplus film may be gathered together in any suitable manner and tied or otherwise fastened. The film is then cut above the seal with any suitable implement. The wrapped object falls onto the conveyor 15. Openings 16 are left in the waste film as the wrapped objects are cut from it.

Fig. 2 shows how the film is drawn through the opening during the wrapping operation. Various adaptations of the equipment will permit such an operation. For example, spring releases may be provided on roll 8 to permit it to be turned backward. In the drawing the guide roll 7 is held under the compression springs 10. This allows the roll to rise up and the used film to be drawn back toward the packaging operation without the roll 8 being turned backward. The roll 6 may be similarly provided with compression springs.

The film used may be a thin tissue paper or any suitable wrapping material. If a thermo-stretchable film such as rubber hydrochloride film is employed, the guide roll 6 may be heated to render the film stretchable. Then when the object is pressed against the film the film will stretch and the object will be enclosed in a stretched wrapper. This tends toward economy of film, and for various wrapping operations there are technical advantages in using a stretched sheet. For instance, a stretched sheet of rubber hydrochloride, nylon, etc. has a higher tensile than an unstretched sheet. Tightly twisting a heated heat-sealable film, such as rubber hydrochloride film, etc., forms a permanent heat seal.

Modifications may be made in the equipment

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employed without departing from the scope of the attached claim.

What I claim is:

The process of packaging which includes placing wrapping material over an expansible opening of smaller area than the area of the largest cross section of the object to be packaged, the opening having a continuous uninterrupted edge, then pressing the object against the portion of the wrapping material over the opening and thus pushing the wrapping material through the opening by means of the object thereby expanding the opening and passing the object entirely through it, then gathering the wrapping material together above the object by contraction of the opening to a smaller area than the largest cross-sectional area of the opening, then turning the object and adjacent wrapping material with respect to the wrapping material on the other side of the opening thereby drawing the wrap-

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ping material to the object and forming a pigtail of the wrapping material as it encloses the object, and then severing the wrapping material above the pigtail to free the wrapped object.

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