

May 9, 1944.

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2,348,532

METHOD OF PACKAGING STRAWS IN CARTONS

Filed June 13, 1942

2 Sheets-Sheet 1

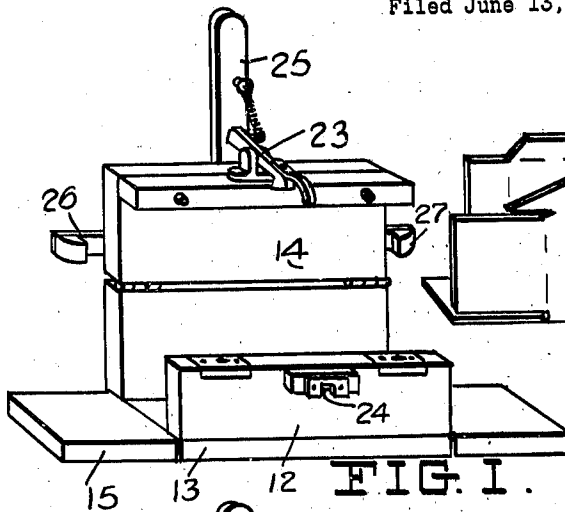


FIG. 2.

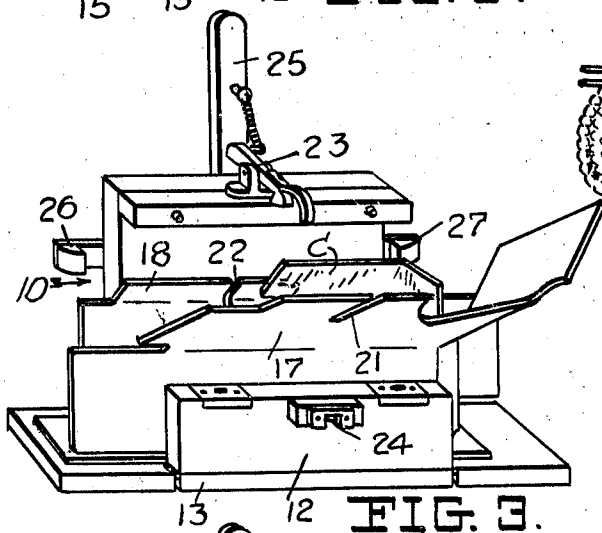
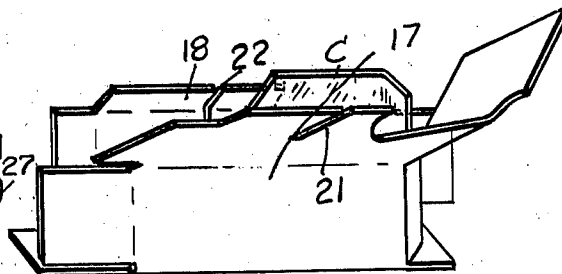


FIG. 4.

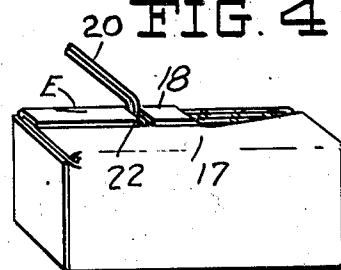
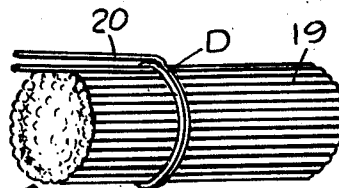


FIG. 12.

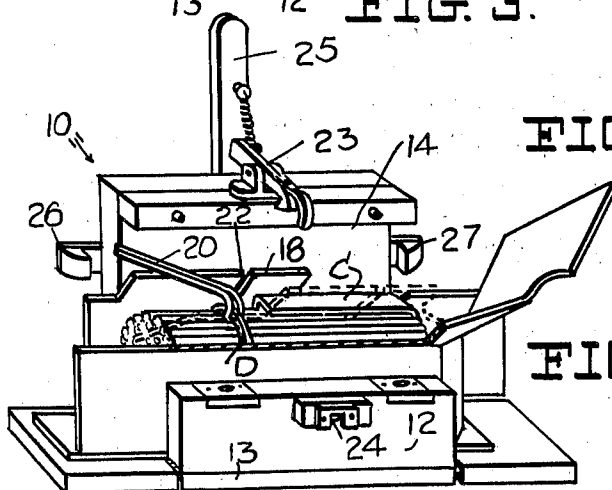


FIG 13.

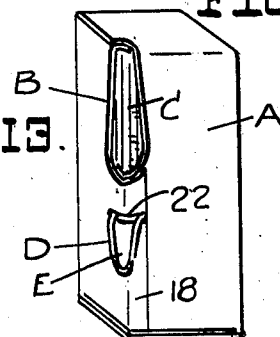


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METHOD OF PACKAGING STRAWS IN CARTONS

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2 Sheets-Sheet 2

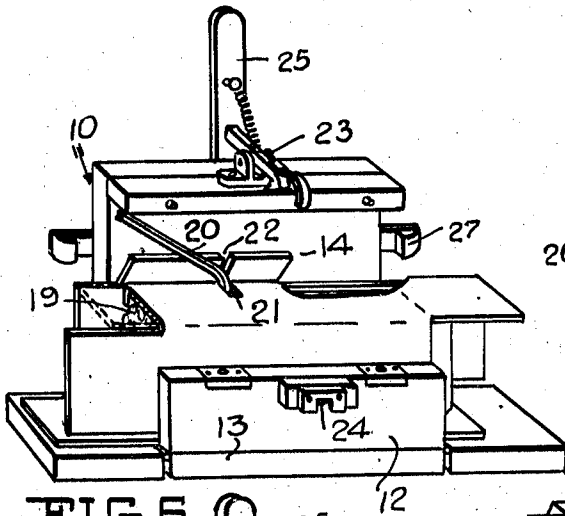


FIG. 6.

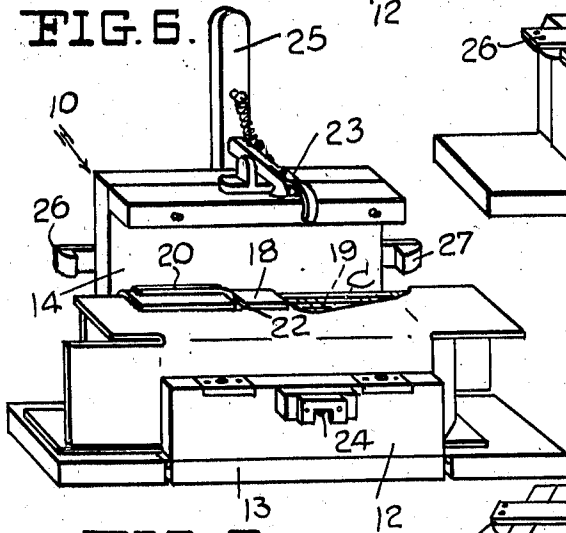


FIG. 7.

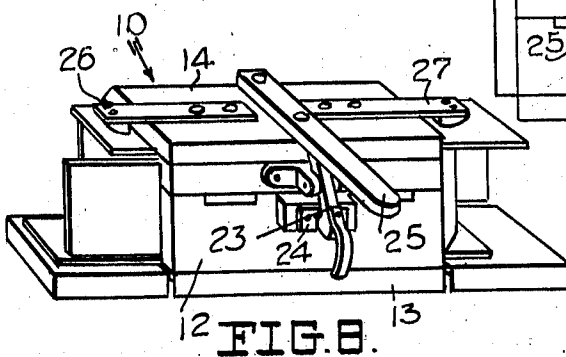


FIG. 8.

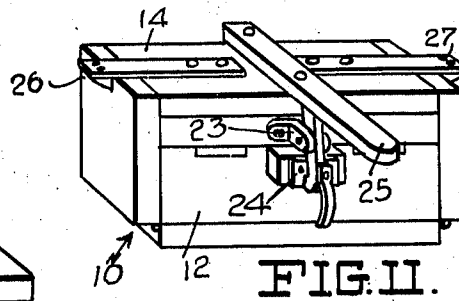


FIG. 9.

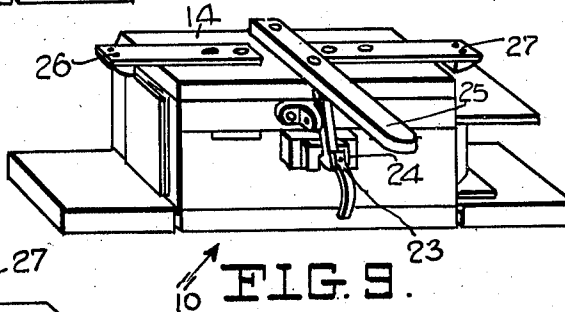


FIG. 10.

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METHOD OF PACKAGING STRAWS IN
CARTONSBurdette Richmond Farrand, Toronto, Ontario,
CanadaApplication June 13, 1942, Serial No. 446,982
In Canada May 6, 1941

4 Claims. (Cl. 226—2)

This invention relates to a method of packaging straws in cartons and particularly in such a manner as to urge said straws towards the discharge opening in the carton.

In my prior United States Patent No. 2,205,158 of June 18, 1940, I have disclosed a special carton for containing straws which includes a special discharge opening through which straws may be withdrawn and a stretchable member or elastic band encircling the straws which is anchored to an exterior portion of the carton and functions to urge the straws towards the discharge opening. In this construction the stretchable member or rubber band is disposed within the carton around the straws in the packaging operation and it is necessary to pull a portion of this band to the exterior of the carton so as to cause it to perform its function when anchored, but considerable difficulty presents itself in so anchoring the band in an ordinary way such as by inserting a device into the sealed carton after packaging has taken place in order to catch the band and draw it out so as to anchor it. Not only does this present difficulty but it also will result in damage to the straws.

It is, therefore, a main object of the present invention to provide a simple method of packaging straws in such carton and in such a way that the stretchable member is readily anchored in its normal position at the outside of the carton and without damage to the straws.

According to the method employed the carton blank is suitably positioned in a partially folded manner so as to receive a bunch of straws to be carried by it. A stretchable member or an elastic band is placed around this bunch of straws and a pulling device is attached to the band. The bundle of straws so formed is then placed in the partially open carton and the pulling device is passed through a slit in the carton to lie along its outside whereupon the various flaps of the blank are folded and sealed to package the straws completely. Finally the pulling device is pulled to draw a portion of the stretchable member to the outside of the carton when it is then anchored by looping it over a suitable anchoring device provided for the purpose. The pulling device may then be withdrawn so that the carton is completed and ready for use.

Preferably, a pulling device such as a length of string readily and loosely looped around the stretchable member or band is employed and which may be withdrawn at the conclusion of operations very quickly. Moreover, the method may be carried out in suitable carton sealing de-

vices and in successive stages as the carton blanks being filled are passed along by suitable conveyors. The invention will be fully understood by reference to the following detailed specification taken in conjunction with the drawings.

In the drawings—

Figure 1 is a perspective view of a device for holding a carton blank and for carrying out the sealing operations of the carton, the device being shown in its open position ready to receive a partially folded carton blank.

Figure 2 is a perspective view of a partially folded carton blank ready to be received by the device illustrated in Figure 1.

Figure 3 is a perspective view of the carton receiving device showing it in the open position and carrying a partially folded carton disposed in a position ready to receive a bunch of straws.

Figure 4 is a perspective view of the package of straws to be inserted in the carton showing a stretchable member or elastic band encircling it and also illustrating the pulling device in the form of a cord looped around the stretchable member.

Fig. 5 is a perspective view similar to Figure 3 but showing the bunch of straws inserted in the open carton and with the transparent covering of the discharge opening folded over the straws in its proper position, one of the walls of the carton being cut away to show the structure more clearly and to illustrate the position of the stretchable band and pulling device prior to folding of the side flaps of the carton.

Figure 6 is a similar view to Figure 5 but showing the side wall of the carton folded and the pulling device passed through the slot in the carton wall with the overlapping edge of an adjacent carton wall about to be folded down into position.

Figure 7 is a view similar to Figure 6 but showing the final flap of the carton side walls folded down in position with the pulling device passed through the slot in said flap and lying along the outside of the carton.

Figure 8 is a perspective view similar to Figure 7 but with the top of the carton sealing device closed and lying over the assembled and folded walls of the carton, the end flaps of the carton projecting from the ends of the device prior to the sealing of said ends.

Figure 9 is a view similar to Figure 8 showing the end flaps of one end of the carton folded for sealing just prior to the closing of the corresponding end of the sealing device.

Figure 10 is a view similar to Figure 9 showing

one end of the sealing device closed and locked to seal the end flaps of the carton, the opposite end flaps of the carton being folded and in position for sealing.

Figure 11 is a perspective view of the sealing device closed holding all flaps of the carton in sealed position.

Figure 12 is a perspective view of the sealed carton with the pulling device protruding through the side wall thereof, and

Figure 13 is a perspective view of the completed carton after the pulling device has withdrawn a part of the stretchable member or band from the carton, the latter being anchored on the anchoring member positioned on the outside of the carton.

Referring to the drawings and first of all to Figure 13, A indicates the completed carton carrying a bunch of straws, the carton normally having a discharge opening B along one corner thereof closed by transparent window C. The straws are normally urged towards the discharge opening B by a stretchable member D which encircles the bunch of straws carried in the carton and a portion of the stretchable member is pulled through to the outside of the carton and anchored so as to tension the stretchable member and cause it to always urge the straws towards the discharge opening B. The preferred form of anchoring member consists of a tongue E which is struck from the material of the carton and over which a portion of the stretchable member is looped, thus to anchor it securely. The anchoring device, of course, is disposed substantially in line with the discharge opening so as to cause the stretchable member or band to urge the straws in that direction.

In carrying out the method a suitable carton forming and sealing device 10 may be employed which is shown in Figure 1 in its open position. This provides a form having front and rear walls 11 and 12, a base 13, a swingable top or closure member 14 and swingable end walls 15 and 16. The dimensions of the forming and sealing device 10 are such as to correspond with the size of the carton so that the blank, when inserted therein and folded, will be snugly contained within the device.

The carton blank is inserted in the forming and sealing device such that one side wall lies against the inner surface of the base 13 and two of the side walls automatically lie along and against the inner surface of the side walls 11 and 12 of the device. When in this position the side wall 17 of the carton blank and the final sealing flap 18 for the side walls remain substantially in the unfolded position, as shown in Fig. 3, so as to leave one side of the carton open to receive a bunch of straws.

A bunch of straws ready to be inserted in the carton is shown in Figure 4 and designated by the numeral 19. This bunch of straws has been prepared for insertion in the carton and held together by the stretchable member D which preferably takes the form of an elastic band. A suitable pulling device 20, such as a length of cord, has been looped around the stretchable member D and thus completed. This is the complete unit which is inserted in the partially folded carton carried in the forming and sealing device as illustrated in Figure 3.

The side wall 17 of the carton is normally formed with a slit 21 which extends transversely of this wall and partially across its width. A corresponding slit 22 is formed in the final closure

flap 18 of the carton, the slit 22 being positioned so as to be aligned with the slit 21 and to overlie the slit 21 when the flap 18 is disposed in its final position. The stretchable member or band D encircling the bunch of straws is positioned on the bunch so as to lie somewhere in the neighbourhood of the slits 21 and 22 in the carton blank so that when the carton is closed the stretchable member or band D may readily be caused to pass through the slit to the outside of the carton.

When the bunch of straws has been placed in the partially formed carton the side wall 17 is then folded down over the straws and the final closure flap 18 is overlapped upon side wall 17 during which operations the pulling device 20 is passed through the slits 21 and 22. These operations are illustrated clearly in Figs. 6 and 7. The transparent window or panel C for the discharge opening B of the carton is, of course, in the first instance, disposed to lie over the straws, as shown in Fig. 5, so that when the side wall 17 and the flap 18 has been placed in their final positions, the window C lies beneath the then formed discharge opening B of the carton.

The side wall 17 of the carton is given a coat of glue prior to overlapping the closure flap 18 upon it so that the flap 18 may be sealed to the side wall 17. Thus, when the pulling device 20 has been disposed to lie along the outside of the carton, as shown in Figure 7, the swingable top 14 of the forming and sealing device 10 is swung downwardly into pressure engagement with the final sealing flap 18 and the side wall 17, thus completely enclosing the side walls of the carton in the device. In this connection the swingable top 14 may be provided with a suitable spring latch 23 designed to engage with the cooperating member 24 on the side wall 12 of the forming device so as to lock the swingable top 14 in its closed position. A suitable operating handle 25 may also be attached to the top 14.

With these preliminary operations completed the end flaps may be quickly folded and glued such as illustrated in Figures 9 and 10 and the end walls 15 and 16 of the forming device swung to their closed position where they may be retained by suitable spring catches 26 and 27, thus sealing the carton completely, as shown in Fig. 11. The carton is then completely formed and when withdrawn it takes the form shown in Fig. 12, with the pulling device 20 protruding from the slit 22.

The package is then completed by pulling upon the pulling device 20 so as to pull through the slit 22 a portion of the stretchable member or band D and upon pulling it downwardly and lifting the lower end of the tongue E slightly from its position of repose, as shown in Fig. 12, the portion of the stretchable member or band 20 withdrawn from the carton may be looped over the tongue, thus to anchor it on the latter. The pulling device may then be immediately withdrawn, or in fact, may be withdrawn simultaneously with the looping operation over the tongue E by merely releasing, when the pulling device is a cord, one end of it. The operations described may be carried out very quickly and the forming and sealing devices 10 may be positioned on a suitable travelling conveyor passing successive stations where operators carry out certain of the operations required, so that practised operators may produce a large number of packaged cartons in a very minimum of time. It is, of course, within the

scope of the invention to carry out the steps by way of automatic machine.

The preferred form of stretchable member is, of course, an elastic band, while likewise the preferred form of pulling device is a length of string, cord or tape loosely looped around the band, as shown in Figure 4. However, as other equivalent devices might be employed, I do not desire to be limited to these preferences.

From the foregoing it will be appreciated that I have provided a simple method for packaging straws in cartons where such straws are urged towards the discharge opening by a stretchable member which is anchored on the outside of the carton.

What I claim as my invention is:

1. The method of packaging straws in cartons to urge said straws towards a discharge opening in the carton by means of a stretchable member passing from the interior of the carton and anchored on the outside of the latter, comprising encircling a bunch of straws with a stretchable member, attaching a pulling device to the stretchable member, placing said bunch in said carton when open, passing said pulling device through the carton to lie along its outside, closing and sealing the carton, and finally pulling said pulling device to draw a portion of the stretchable member to the outside of the carton and anchoring said stretchable member on the outside of the carton.

2. The method of packaging straws in cartons to urge said straws towards a discharge opening in the carton by means of a stretchable member passed through an opening in the carton and anchored on the latter, comprising encircling a bunch of straws with a stretchable member, attaching a pulling device to the stretchable mem-

ber, placing said bunch in said carton when open, passing said pulling device through the second mentioned opening in the carton to lie along its outside, closing and sealing the carton, and finally pulling said pulling device to draw a portion of the stretchable member to the outside of the carton and anchoring said stretchable member on the outside of the carton.

3. The method of packaging straws in cartons to urge said straws towards a discharge opening in the carton by means of a stretchable member passed through an opening in the carton and anchored on the latter comprising encircling a bunch of straws with a stretchable member, attaching a cord to the stretchable member, placing said bunch in said carton when open, passing said cord through the second mentioned opening in the carton to lie along its outside, closing and sealing the carton, and finally pulling said cord to draw a portion of the stretchable member to the outside of the carton and anchoring said stretchable member on the outside of the carton.

4. The method of packaging straws in cartons to urge said straws towards the discharge opening in the carton by means of an elastic band passed through an opening in the carton and anchored on the latter comprising encircling a bunch of straws with a rubber band, attaching a cord to the rubber band by loosely looping it around the latter, placing said bunch in said carton when open, passing said cord through the second mentioned opening in the carton to lie along its outside, closing and sealing the carton and finally pulling said cord to draw a portion of the band to the outside of the carton and anchoring the band on the outside of the carton.

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