Dec. 13, 1955 R. W. HOAG 2,726,975

METHOD AND DEVICE FOR FABRICATING PACKAGING MATERIAL

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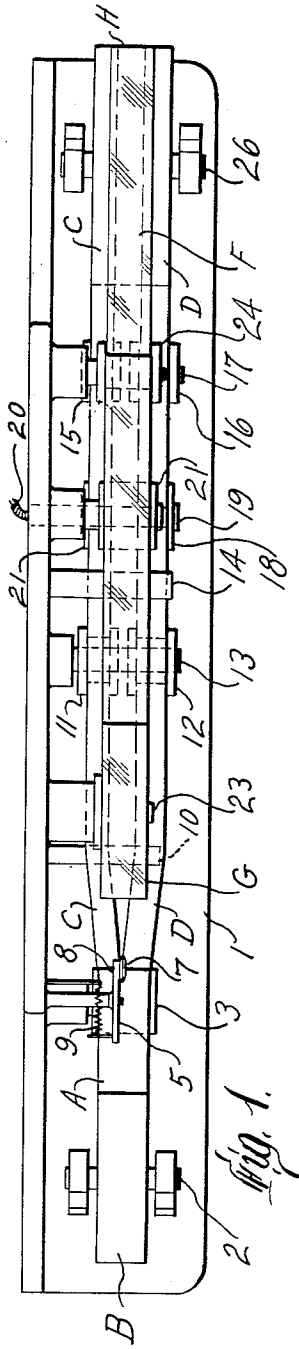


Fig. 1.

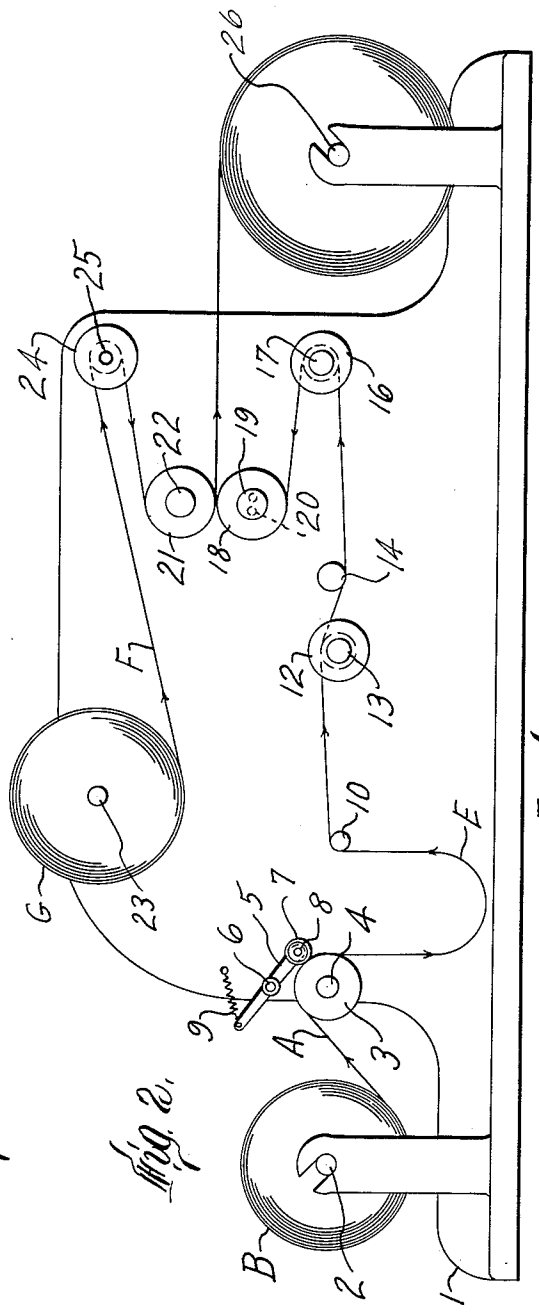


Fig. 2.



Fig. 4.

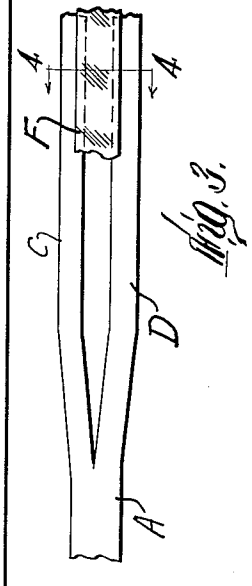


Fig. 3.

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# METHOD AND DEVICE FOR FABRICATING PACKAGING MATERIAL

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2 Claims. (Cl. 154—1.6)

The invention relates to improvements in fabricating and combining webs of material generally and particularly to a method and device for making material for "window" packages.

One object of my invention is to provide an improved method for combining a web of cellophane or other transparent material with a web of paper.

Another object of my invention is to provide a simple device for combining a web of paper with a web of cellophane to provide a composite web with a window in its mid-area.

In the packaging of many products it is desirable that the contents may be visible without opening the package. This is usually accomplished by the use of glassine or transparent cellulosic or other film material. However, these materials are not suitable for all packaging purposes, sometimes the cost is too high or the material may be too soft in texture to provide the required package protection. Glass may be too stiff or be objectionable because of danger of breakage. For many packaging purposes paper is ideal because of its relatively low cost, availability in many degrees of stiffness and thickness, ease of printing and other qualities. However, paper is not usually sufficiently transparent, and the contents of a paper-wrapped package cannot be viewed without opening the package. In order to permit the contents of a paper wrappad package to be viewed without opening the package it is common practice to provide window areas of transparent material, thus permitting the contents of the package to be viewed without losing all the advantages of paper wrapping.

The embodiment of my invention shown in the accompanying drawings provides for making a web of material with a longitudinal window area at the center for use in making packets of the kind described and claimed in U. S. Patent No. 2,499,313 issued to me, February 28, 1950.

With said objects in view, and others that will be apparent to those skilled in the art, my invention consists in the method and device for fabricating packaging material as hereinafter described and claimed.

Of the accompanying drawings:

Figure 1 is a plan view of the device for fabricating the material.

Figure 2 is an elevation of the device shown in Figure 1.

Figure 3 is a plan view of the webs of material as they are combined by the device.

Figure 4 is a section at 4—4 of Figure 3.

Similar reference characters indicate similar parts or features in all of the views.

The machine shown in Figures 1 and 2 operates to advance a web of paper, then longitudinally slit the web to provide two webs. The two webs are then advanced in spaced apart, parallel relationship. A web of transparent cellulosic material is next superimposed upon and sealed to the inner margins of the paper webs to form a composite web of paper and transparent cellulosic material having a transparent area longitudinally of its central portion.



Referring again to Figures 1 and 2, the different parts or members of the machine are mounted on a suitable frame 1. The web of paper A is drawn from a roll of paper B pivotally supported on shaft 2 mounted on frame 1. The web A is advanced from the roll of paper B to pass over a cylinder 3 rotatably mounted on pin 4 secured to frame 1. Positioned above cylinder 3 is an arm 5 pivotally mounted on pin 6 secured to frame 1. A circular slitting knife 7 is rotatably mounted on pin 8 fixed at the lower end of arm 5. Arm 5 is actuated by tension spring 9 having one end secured to the upper end of said arm and its other end anchored in frame 1. The spring 9 serves to clockwise pivot the arm 5 on pin 6 with the result that the slitting knife 7 at the lower end of the arm 5 is operatively pressed against cylinder 3 to slit paper web A as it moves with the rotation of the said cylinder 3. The paper web A after being slit by slitting knife 7 becomes two webs C and D and is permitted to drop to form a loop E. From the loop E the webs C and D are drawn over pin 10 secured to frame 1. From pin 10 both webs C and D pass over guide rollers 11 and 12 respectively, mounted on shaft 13 secured in frame 1. The paper webs then pass under guide bar 14 secured to frame 1, thence the webs C and D pass around guide rollers 15 and 16 respectively mounted on shaft 17 secured in frame 1. Webs C and D are next advanced to a heating cylinder 18 pivotally supported on shaft 19 secured to frame 1. An electrical heating unit 20 is operatively mounted in shaft 19 to provide heat for said cylinder 18. Heat and pressure by the action of heated cylinder 18 and pressure roller 21, supported on shaft 22 mounted in frame 1, operate to firmly secure the web of heat sealable cellophane F to the margins of webs C and D, as shown in Fig. 3.

The web of cellophane F is drawn from a roll of cellophane G, pivotally supported on shaft 23 mounted in frame 1. The web F is advanced from the roll of cellophane G to pass over guide roller 24 mounted on shaft 25 secured in frame 1. The cellophane web F then passes over and between the nip of pressure roller 21 mounted on shaft 22 mounted in frame 1 and heated cylinder 18, causing the web F to be securely attached to webs C and D as previously described. The assembled web H is then advanced and rewound on shaft 26 supported in frame 1.

As will be evident from Fig. 2 of the drawing, the webs of the paper space the cellophane web from contact with the heated cylinder 18, thus preventing the cellophane from deformation due to undue heating thereof. The heat applied to the cellophane is substantially only that conducted to it by contact with the heated paper. The latter in passing about the surface of the heated cylinder is preheated before being pressed into contact with the cellophane by the action of the pressure roller 21. This momentary pressure contact is sufficient to transfer enough heat to the contacting cellophane surface from the heated paper to cause its firm adherence thereto.

It will be understood, without need of illustration that any suitable motor may be employed for operating the machine, and that suitable gearing and driving mechanism is employed in practice to cause the various rolls to rotate at uniform peripheral speed to effect the travel of the webs through the machine and to operate the several units in the sequence described.

Having now described my invention, I claim:

1. A method of combining a web of paper and a web of heat sealable cellophane to provide a composite web assembly with a window in its mid-area; comprising causing a web of paper to travel; longitudinally slitting the web of paper to provide two webs; advancing the two paper webs in spaced apart, parallel relationship in pro-

longed contact with the surface of a heated heat conducting medium; causing a web of cellophane to travel; superimposing the margins of the web of cellophane upon the top inner margin of each web of paper material; just before the paper webs leave contact with the heat conducting medium and simultaneously applying rolling pressure upon the surface of the cellophane web to press the same into firm engagement with the contacting surfaces of the paper webs just before leaving contact with the heating conducting medium, thereby uniting the several webs.

2. A machine for combining a web of paper and a web of heat sealable cellophane to provide a composite web assembly with a window in its mid-area; comprising a device having rollers for advancing a web of paper; a slitting knife for longitudinally slitting the web of paper to provide two webs; means to guide the advance of the two paper webs in spaced apart, parallel relationship; rollers for advancing a web of heat sealable cellophane; means for guiding and superimposing the margins of the web of cellophane upon the top inner margin of each web of paper material including a heated cylinder over which the two paper webs are trained in contact therewith for a substantial portion of the circumference thereof, and a pressure roll engaging the cellophane web to press the same into contact with the spaced paper webs just before the latter leave the surface of the heated cylinder, thereby causing firm adherence of the margins cellophane web to the adjacent margins of the paper webs.




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