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M. P. CHAPLIN

2,808,976

MOLDED PULP SET-UP BOX

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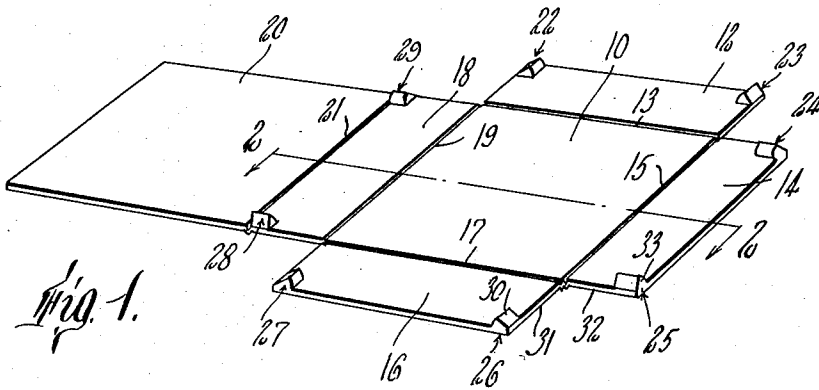


Fig. 1.

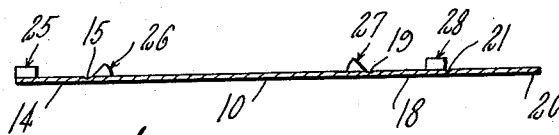


Fig. 2.

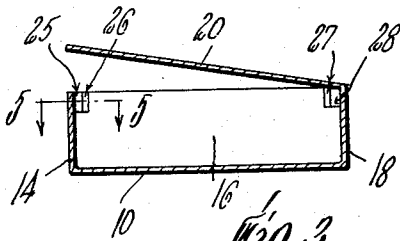


Fig. 3.

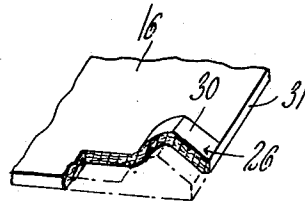


Fig. 4.

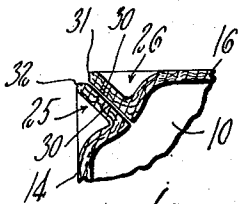


Fig. 5.

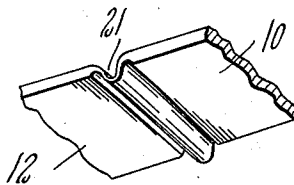


Fig. 6.

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MOLDED PULP SET-UP BOX

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2 Claims. (Cl. 229—2.5)

This invention relates to boxes and more particularly to a substantially flat one-piece structure molded of pulp which is adapted to be quickly and easily set up to form a box.

Set-up boxes of cardboard sheet material and the like are in wide use and have the advantage of a simple manufacturing process. Such boxes, however, are of relatively light material, necessitated by the operations of setting them up to form boxes by bending their various tabs into slits and the like, to position the box sides to provide a suitably formed box, and the use of such tabs is to some extent wasteful of materials.

Accordingly, it is an object of the present invention to provide a generally flat set-up box structure of molded pulp material to provide a much more rigid and substantial box than the known cardboard set-up boxes.

It is a feature of the present invention that novel positioning means are provided integrally molded into the structure to position the box sides relatively to one another when the box is set up and hence to wholly eliminate tabs and the like heretofore considered necessary.

For the purpose of more fully explaining a preferred embodiment of my invention, reference is now made to the following specification together with the accompanying drawings wherein:

Fig. 1 is a perspective view of the set-up box structure of the invention;

Fig. 2 is a cross-sectional elevation of the structure of Fig. 1 taken on the line 2—2 thereof;

Fig. 3 is a view of the structure of Fig. 1 in set-up position;

Fig. 4 is a partially cross-sectional isometric detail view showing the integrally molded positioning means of the structure of Fig. 1;

Fig. 5 is a cross-sectional detail view showing the positioning means of Fig. 3 in set-up position, and Fig. 6 is an isometric detail view showing the fold-line of the structure of Fig. 1.

Referring to the drawings, the molded pulp set-up box structure of the invention comprises in general a flat molded pulp sheet having integrally molded lug means so positioned as to act as stops for the box sides upon said box being set up. Such a flat structure has the great advantage that it may be molded by the simplest of dies such as are known to the pulp-molding art, and if desired, may even be molded as a relatively large strip containing a plurality of set-up box structures which may be separated either in the molding process itself by suitable die structure or thereafter as by cutting.

More specifically, in the set-up box structure shown, the integrally molded flat sheet includes a generally rectangular box bottom section 10 and generally rectangular box side sections 12, 14, 16 and 18 molded integrally therewith along each of the four sides of the box bottom section to form fold-lines 13, 15, 17 and 19 respectively. Such fold-lines preferably are thinned or scored in the molding process so that folds may readily be made in the proper position and to enable the use of relatively thick materials for the bottom and sides of the box structure to provide the rigidity of which my novel set-up box is capable. For example, fold-lines 13, 15, 17 and 19 may

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be constructed as shown in Fig. 6, such also being described in Patent No. 2,515,113. Also, if desired, a box top section 20 may be provided molded integrally with the flat sheet on one of the box side sections, here shown as side section 18, along a similar fold-line 21 parallel to and remote from the fold-line 19 between said box side section 18 and box bottom section 10.

According to the present invention, the sides 12, 14, 16 and 18 are each provided with a pair of integrally molded lugs 22 and 23, 24 and 25, 26 and 27, and 28 and 29 respectively at or closely adjacent to the corners of each said box side section 12, 14, 16 or 18 remote from its respective fold-line 13, 15, 17 or 19, each of such lugs cooperating with a lug adjacent on the adjoining side section to act as stops for the side sections upon the box structure being set up with its side sections generally perpendicular to the box bottom section and to each other as shown in Fig. 3.

The lugs themselves, as best shown in Fig. 4 with reference to lug 26, are all similar, being of generally prismatic molded shape with their open side adjacent the sheet providing slanted surfaces 30 adjacent the edge of a side section perpendicular to the fold-line, such as edge 31 of side section 16, with said slanted surfaces 30 being at a 45° angle to said sheet in a direction along the fold-line of their respective box side section, fold-line 17 of side section 16. Thus, when adjacent box side sections such as side sections 14 and 16 are folded upward at 90° to the box bottom section 10, their adjacent edges 31 and 32 will lie adjacent one another and their respective lugs 25 and 26 will contact along their slanted surfaces 30 to positively and rigidly position the sides and, if desired, adhesive may be applied to such surfaces 30 to hold the box sides in position. The top section 20 may also be folded into position wherein the flat end surfaces 33 of all of the lugs will act as a stop and, again, adhesive may be applied to such end surfaces to hold the top in position.

Thus it may be seen that the invention provides a novel one-piece molded set-up box structure having substantial advantages of rigidity and in saving of material over heretofore known set-up box structures. Various modifications within the spirit of the invention and the scope of the appended claims will be apparent to those skilled in this art.

I claim:

1. A molded pulp set-up box structure comprising a substantially flat molded pulp sheet including a generally rectangular box bottom section and generally rectangular box side sections molded integrally therewith along each of the sides of said box bottom section to form fold-lines therewith, said side sections each having generally prismatic integrally molded lugs providing slanted surfaces at a 45° angle to said sheet in a direction along the fold-line of a respective box side section and positioned adjacent the corners of each said box side section remote from its fold-line to cooperate with adjacent lugs to act as stops for said sides upon said box being set up with its side sections generally perpendicular to said box bottom section and to each other.

2. A molded pulp set-up box structure as claimed in claim 1 further including a box top section molded integrally with one of said box side sections along a fold-line parallel to and remote from the fold-line between said box side section and the box bottom section.

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