May 3, 1960 R. W. MARSH 2,935,239

SELF-LOCKING, PLIABLE SHEET CONSTRUCTION OR THE LIKE

Filed Nov. 4, 1957 2 Sheets-Sheet 1

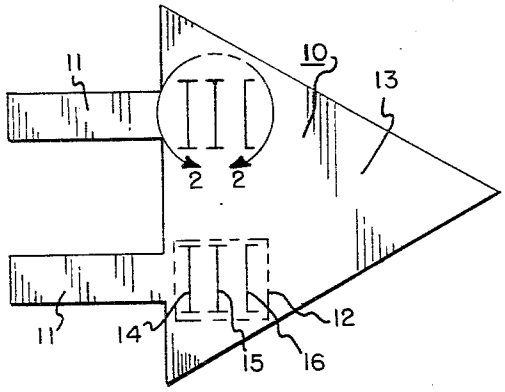


FIG. 1

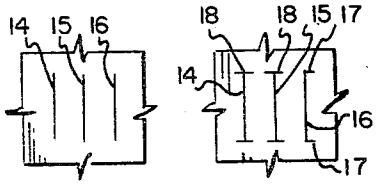


FIG. 2A FIG. 2B

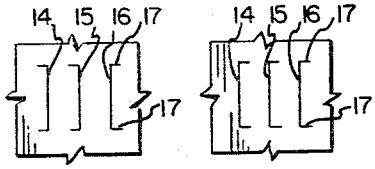


FIG. 2C FIG. 2D

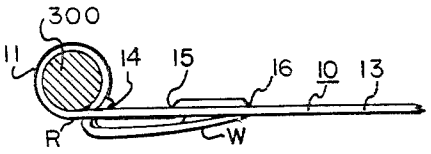


FIG. 3A

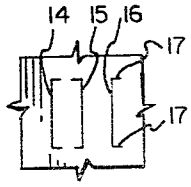


FIG. 2E

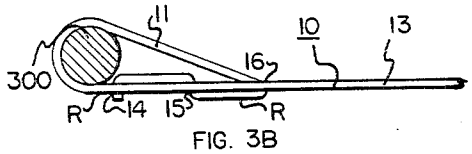


FIG. 3B

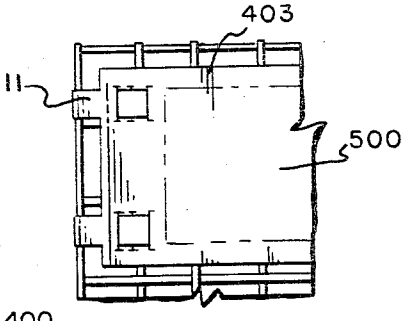


FIG. 5

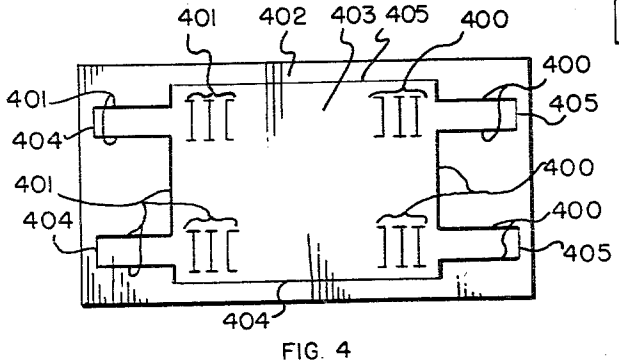


FIG. 4

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May 3, 1960 R. W. MARSH 2,935,239

SELF-LOCKING, PLIABLE SHEET CONSTRUCTION OR THE LIKE

Filed Nov. 4, 1957 2 Sheets-Sheet 2

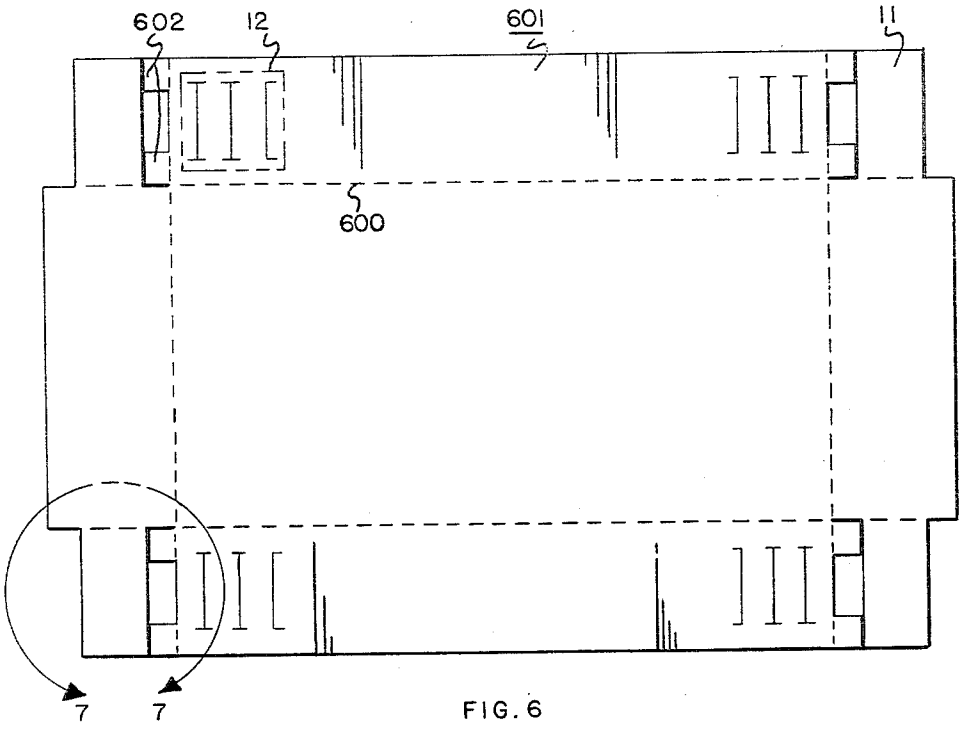


FIG. 6

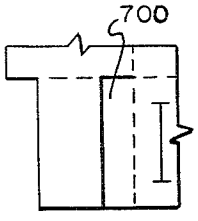


FIG. 7

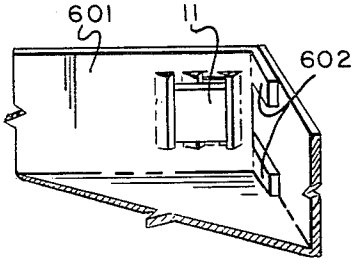


FIG. 8

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2,935,239

# SELF-LOCKING, PLIABLE SHEET CONSTRUCTION OR THE LIKE

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Application November 4, 1957, Serial No. 694,155

1 Claim. (Cl. 229—35)

This invention is related to self-locking, pliable sheet constructions and more particularly to a new and improved self-locking, pliable sheet construction which exhibits improved self-locking properties, has rugged and durable characteristics, and is inexpensive to manufacture. The invention is particularly adapted for the fabrication of display placards and containers, contemplating for the manufacture of same the employment of thin, pliable sheet metal or cardboard. Appropriately configured parts may, for example, be stamped from sheet stock and subsequently hand-molded to the configuration desired.

In the past, many types of constructions have been utilized in producing, in quantity, items of the type described, which items conventionally require, either for their mounting to an external object (in the case of placards) or for fabrication into a completed part (such as a container), a means of securement to affix adjacent, cooperating portions of the pliable member. Staples, glue, strip fasteners, and so forth, are common means for accomplishing appropriate securement, though the use of such means increases substantially the cost of labor and material required to produce the completed part.

At least in container construction, manufacturers have heretofore devised means for stamping appropriate configured members from sheet stock so that, upon appropriate folding a sheet member along crease-scores initially produced in the material, hook portions at the four corners of the material may be fitted into cooperating slits, thereby securing the member into its desired container construction. Owing to the fact that, upon application of the slight pressure the hook portions tend either to tear or to pull out of their respective slits, such construction has proven to be of less durability than that ordinarily required even for "throw-away" container items and is generally unsatisfactory, and therefore unused, in the case of display placard fabrication.

Therefore, it is an object of the present invention to provide a new and useful self-locking, pliable sheet construction.

It is an additional object of the present invention to provide a new and improved self-locking, pliable sheet construction which exhibits a high degree of durability and ruggedness despite the absence in such construction of glue, staples, and other securement means.

It is a further object of the present invention to provide a method by which such new and improved, self-locking, pliable sheet construction may be manufactured in a simple and convenient manner.

According to the present invention, a display placard or container incorporates in the construction thereof at least one locking tongue and a tongue engaging portion, such portion being provided with a plurality of slits the length of which at least equals the width of the tongue. The ends of one of the slits, disposed remotely with respect to the locking tongue, are transversely cut-scored, with the cut-scores extending only on the farther side of the slit so as not to disturb rigidity of contact of the forward edge of the slit with the tongue, and the locking action which results thereby. In the case of a display placard, generally two tongues and two cooperating, tongue-engaging portions will be provided, with each tongue adapted to encompass a rod-like support member, such as a pole, pipe, or wire, and then to be positioned in said slits in a novel, doubled-back configuration, which configuration is hereinafter described. A similar tongue-in-slit technique is employed in the case of container fabrication, at each of the four corners thereof. In both instances, the novel tongue-in-slit construction has proven much more rugged and durable than the corner-hook construction heretofore used, and, of course, requires no staples, glue, or other agents as securement means.



The features of the present invention which are believed to be novel are set forth with particularity in the appended claims. The present invention, both as to its organization and manner of operation, together with further objects and advantages thereof, may best be understood by reference to the following description, taken in connection with the accompanying drawings in which:

Figure 1 is a plan view of a display placard incorporating the present invention, such display placard being shown in flat pattern layout.

Figures 2A through 2E are details of representative configurations of the slit pattern incorporated by the placard of Figure 1.

Figures 3A and 3B are edge views of the placard of Figure 1 when in its developed form, showing alternative methods of weaving the tongues shown in Figure 1 in and out of the placard slits.

Figure 4 illustrates the manner in which a square placard adapted for securement at the four corners thereof, may be produced.

Figure 5 is a fragmentary elevation view of the front-interior of a conventional, wire mesh market basket, showing the mounting of the placard illustrated in Figure 4.

Figures 6 through 8 illustrate the fabrication and assembly of a container or box incorporating the present invention.

In Figure 1, placard **10** includes tongues **11**, tongue engaging portions **12**, and principal placard portion **13**. It will be understood that principal placard portion **13** provides a large area which may contain desired printing thereon. Each tongue engaging portion **12** of the placard includes a plurality of parallel slits **14**, **15**, and **16**. While these slits may simply be of straight character, as is shown in Figure 2A, it is highly desirable from the point of view of ease of tongue insertion therein, that the slits be provided with transverse cut-scores or slits at the ends therof (see Figures 2B through 2E).

Owing to the doubled-back configuration to be taken by the tongues **11**, it is quite essential that the cut-scores **17** associated with slit **16** (Figures 2B through 2E), which slit is the most remote of the three from their associated tongue **11**, take the configuration shown, i.e. extending from the slit itself in a direction away from the respective tongue **11**. With regard to the end cut-scores associated with slits **14** and **15** (Figures 2B through 2E), these cut-scores **18** may extend in either or both directions from the slits.

Figure 3A illustrates that, for mounting the placard **10**, the tongue **11** is first caused to encircle mounting member **300**, and is subsequently routed through slit **14**, slit **16**, and slit **15**, in that order. If desired, the end of tongue **11** may be pulled through slit **14** again as is shown in Figure 3A.

It will be noted with reference to Figure 2B and Figure 3A that cut-scores **17**, in being in the direction shown, facilitate the insertion of the tongue through slit **16** with-

out disturbing the positive cooperation of the forward edge defined by slit **16** with tongue **11**.

Suppose now that one side of the placard is red (R) and the other side of the placard is white (W) as illustrated in Figure 3A. In such event, it will be noted that upon the insertion and the doubling back of tongue **11** through the slits, the white surface of the tongue will appear against the red side of the placard. If this is not to be desired, then the tongue may be inserted through several slits in a manner illustrated in Figure 3B, so as to allow the red side of the tongue to appear against a red background.

If a rectangular placard is to be manufactured, then the method of production illustrated in Figure 4 may be appropriately considered, for by such method there is illustrated the operations of producing cut-scores in the material and of printing the placard in a simultaneous manner. It is well-known to those skilled in the art that cut-scores **400** and **401** may be produced in sheet stock **402** by a cutting die which may be conveniently inserted in a printing press so as to surround the type contained therein. It is to be noted that the cut-scores are limited in number by the configuration of the placard so that the placard **403** will not "fall out" of the sheet material during the printing thereof. However, once the sheet material **402** is removed from the press, the remaining, uncut outline of the placard, i.e. lines **404** and **405** may be scored.

Figure 5 is a fragmentary view, illustrating the manner in which placard **403** of Figure 4 may be secured to the framework of the front-interior of a conventional market basket. The printing contained on placard **403** may be contained in the area **500** in Figure 5. The looping of tongues **11** about the framework of the basket may be accomplished in a manner illustrated either in Figure 3A or in Figure 3B.

In Figure 6, dotted lines **600** are fold lines which may consist of crease-scores in the material produced therein when the material is in the flat. The slit patterns in the material shown in Figure 6 may be any of those shown in Figures 2B through 2E. Accordingly, the box or container **601** in Figure 6 is provided with four tongues **11**



and four tongue engaging portions **12**. Tabs or flanges **602** in Figure 6 may be provided the container so as to render the container substantially dustproof. It will, of course, be understood that in lieu of flanges **602** in Figure 6, a single flange **700** may be provided, as is shown in the detail view of Figure 7.

Figure 8 is a fragmentary perspective view illustrating the corner construction of the completed box or container. Such a container has proven to be extremely rugged and durable, and this without necessitating employment of external fastening means.

While particular embodiments of the present invention have been shown and described, it will be obvious to those skilled in the art that changes and modifications may be made without departing from this invention in its broader aspects, and therefore, the aim in the appended claim is to cover all such changes and modifications as fall within the true spirit and scope of this invention.

I claim:

A self-locking, pliable sheet construction comprising a pliable sheet member having at least one locking tongue and at least one tongue engaging portion, said tongue engaging portion being provided with a plurality of parallel slits the length of which at least equals the width of said tongue, one of said slits remote from said tongue being provided with small transverse cut-scores at the ends thereof, said transverse cut-scores beginning at said one remote slit and extending, directionally, solely away from another of said slits less remote from said tongue; and said locking tongue being disposed through said one remote slit and doubled back through said less remote slit.

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