Sept. 28, 1954 W. E. TURNER 2,690,290

YARN CONE HOLDER WITH LOCKING MEANS

Filed April 19, 1949

Fig. 1

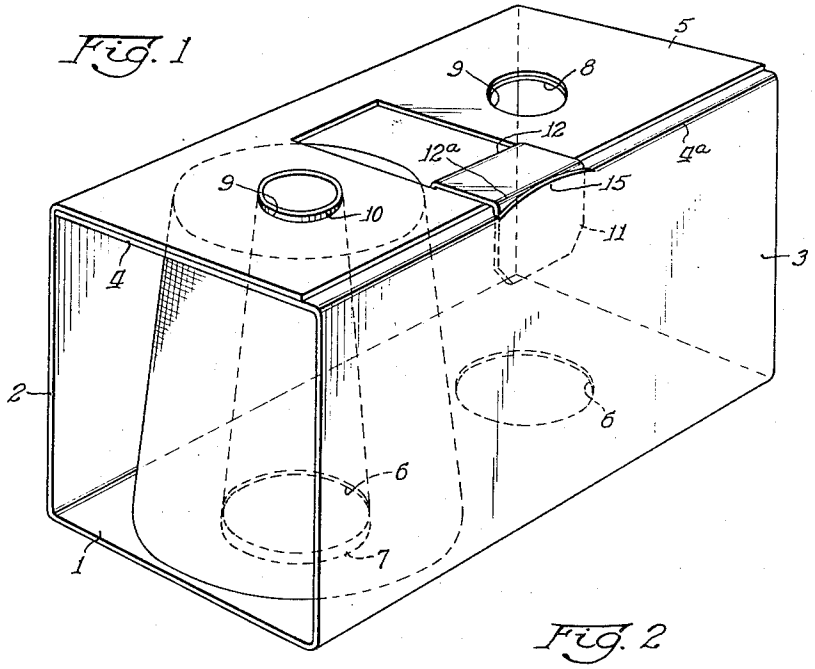


Fig. 2

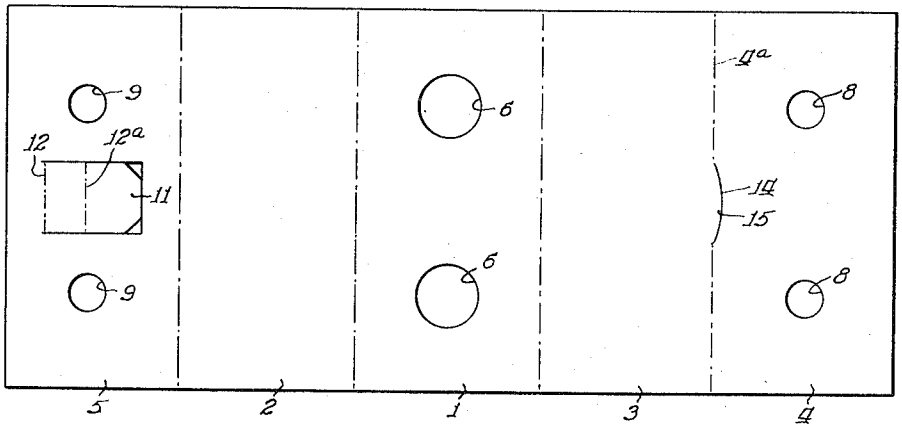


Fig. 3

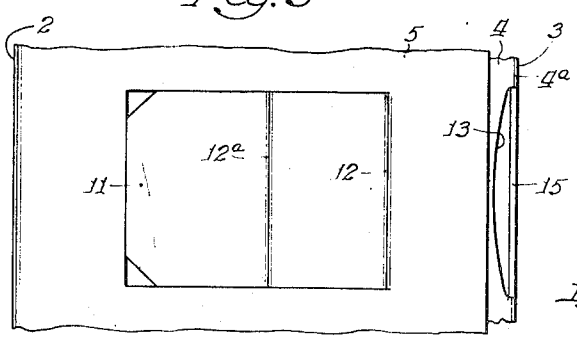
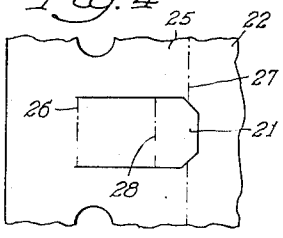


Fig. 4



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YARN CONE HOLDER WITH LOCKING MEANS

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6 Claims. (Cl. 229—87)

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The present invention relates to holders for articles such as yarn cones, such holders being commonly referred to in the trade as yarn cone wraps.

One object of the invention is to provide a yarn cone holder of simple sturdy form that can be readily assembled around a plurality of yarn cones and held in assembled relation without necessitating any particular form of tools, adhesive or other independent securing means.

Another object of the invention is to provide a holder of tubular form which includes means for retaining the upper and lower ends of yarn cones, the holder having a reinforced top construction and including locking means integral with the material of the holder.

Other objects of the invention will become apparent as the description proceeds and will be pointed out in the claims appended hereto.

In the drawings:

Fig. 1 is a perspective view of the holder in set-up condition as it appears after yarn cones have been secured in place therein;

Fig. 2 is a plan view of the blank of the holder;

Fig. 3 is a detailed view of the construction for locking the holder in set-up condition; and

Fig. 4 is a fragmentary plan view of a modified form of locking tongue construction.

As disclosed, the yarn cone holder of the present invention is in the form of an open ended tube having top and bottom walls provided with openings for the reception of the upper and lower ends of yarn cones. The construction is such that portions of the holder provide locking means for maintaining the holder in yarn cone retaining condition.

Referring more particularly to the drawings the holder preferably comprises a single strip of bendable sheet material, such as corrugated board, which has been creased or scored to provide a bottom wall panel 1, side wall panels 2 and 3, a top wall panel 4 which is integral with side wall panel 3, and a supplemental top wall panel portion 5 integral with side wall panel 2.

The bottom wall 1 is formed with a plurality of openings 6, 6 in which the bottom end 7 of a yarn cone core can be inserted. The top wall 4 and supplemental top portion 5 are formed with openings 8, 8 and 9, 9 respectively, which are adapted to come into registration in the set-up condition of the holder and into which the top end 10 of a yarn cone core may be received. For simplicity of illustration only one cone of yarn has been illustrated in place within the holder.

The supplemental top portion 5 is cut and

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creased to provide locking means engageable with another part of the holder so as to retain the holder in tubular form. For this purpose the supplemental portion 5 is suitably slit to provide a flap or tongue 11 having its base portion hinged to the supplemental portion 5 along the fold line 12 which is spaced from the outer free edge of such portion a distance sufficient to provide a desired degree of support for the locking tongue. The locking tongue is of a length so that it can be bent over to extend a substantial distance beyond the free edge of the portion 5.

Means are provided on the holder adjacent the free edge of the portion 5 in the set-up position of the holder adapted to be engaged with the locking tongue 11. For this purpose an elongated opening 13 of the shape of a segment of a circle in the illustrated embodiment is formed in the top portion of the holder into which the tongue may be inserted.

In the present construction the tongue receiving opening 13 is provided by forming an arcuate slit in the top 4 with the ends of the slit terminating at the crease line 4a between the walls 3 and 4. The crease line 4a does not extend entirely across the paperboard strip but extends from the outer edges of the strip inwardly to the ends of the arcuate slit 14, with the portion between the ends of the slit being left uncreased. Due to this construction when the top wall 4 is bent at right angles to the side wall 3 the circular segment shaped portion 15 on the concave side of the slit will remain upstanding in the plane of the side wall 3. Thus when the wall 4 is bent at right angles to the wall 3 the opening 13 will be provided such opening having a center portion of a width equal to or greater than the thickness of the tongue 11 and having extremities which taper gradually to meet the wall 3 at the crease line 4a. The restricted extremities of the opening 13 thus effect a very firm and secure frictional interference locking engagement with the locking tongue 11.

This construction of the opening 13 has the further advantage of providing a slot construction that does not require any material to be stripped out of the opening, thus minimizing the cost of manufacturing and using the holder.

The outer end of the locking tongue is preferably somewhat rounded or tapered to facilitate insertion of the tongue into the opening.

In the use of the holder it is only necessary for an operator desiring to pack yarn cones therein to set the lower ends of the cones into the openings 6, 6 in the bottom panel and then bring

the side walls 2 and 3 to a vertical position and the top wall 4 into position whereby the openings 8, 8 will fit over the tops of the cores of the cones. The supplemental portion 5 is then swung downwardly so that its openings 9, 9 also are engaged over the tops of the cores of the cones. The locking tongue 11 is then swung upwardly and outwardly about fold line 12 and its free end is inserted into the opening 13 and pressed down until the parts assume the position shown in Fig. 1, these operations causing the parts to become locked and completing the holder. The entire assembly may then be placed within a shipping container.

The tongue 11 preferably also is provided with an intermediately placed crease or fold line 12*a* parallel to fold line 12 and at a distance therefrom approximately equal to the perpendicular distance between the fold line 12 and crease or score line 4*a* thereby to facilitate the bending of the locking tongue along the fold line 12*a* in the process of inserting and securing the tongue into the opening formed when the slit 14 is opened as the wall panels 3 and 4 are swung about the fold line 4*a* to angular positions relative to one another.

In the modified form of the lock for the holder, illustrated in Fig. 4, the locking tongue 21 is formed by slits made in the supplemental wall panel 25 and the vertical wall panel 22. This locking tongue 21 is hinged to the panel 25 along a fold line 26 which can be spaced somewhat further from the free edge of the supplemental wall than the equivalent fold line 12 in the first described form.

The tongue 21 is preferably tapered at its outer free corners as in the first described form.

The fold line 27 between the panels 22 and 25 is preferably in two parts, each extending inwardly from the edge of the strip and terminating at the edge of the tongue 21. By this construction, when wall panel 22 is moved at right angles to the wall panel portion 25 the end of tongue 21 which extends into the material of the wall panel 22 will break out of wall panel 22 to remain in the plane of the portion 25. It is thus an easy matter for the packing operator to grasp the end of the tongue and bend it over preparatory to insertion of the tongue is the receiving slit.

The tongue 21 is preferably formed with a fold line 28 corresponding to fold line 12*a* to facilitate the bending of the tongue around the free edge of the supplemental portion 25.

While the present description sets forth a preferred embodiment of the invention, certain changes may be made in the construction without departing from the spirit of the invention, and it is therefore desired that the present embodiment be considered in all respects as illustrative and not descriptive, reference being had to the appended claims rather than to the foregoing description to indicate the scope of the invention.

I claim:

1. A blank for a yarn cone holder or the like, comprising a sheet of foldable self-sustaining material cut and creased along fold lines to define a plurality of panels including a pair of terminal panels adapted to overlap, one on the other, a pair of side wall forming inner panels each connected to a terminal panel along a fold line, and a fifth panel between and connecting said inner panels, a tongue in one of the terminal panels defined by a fold connection line spaced a predetermined distance from the free edge of said one terminal panel and extending substantially parallel to the fold line thereof and by a pair of spaced slits extending from the fold connection line in a direction away from said free edge for a distance substantially greater than said given distance and thereat joined by a connecting slit to define the free end of the tongue, the fold line between the other terminal panel and its connected side wall forming panel being discontinued across an intermediate portion of such panels, one of the last said panels having a non-rectilinear slit therein connecting the ends of said fold line across said intermediate portion.

2. A holder of the character described for yarn cones comprising a one-piece strip of fibrous sheet material, cut and creased to provide connected bottom, side and top walls foldable into a tubular shape of substantially rectangular section, said strip creasing being along spaced and substantially parallel lines extending transversely of the strip length to provide a bottom wall panel having opposite longitudinal edges extending generally parallel to the tube axis, a pair of side wall panels, each side wall panel being connected by one longitudinal edge to and extending from one of said opposite longitudinally extending side edges of the bottom wall panel, and an inner and an outer top wall panel, one of said top wall panels being connected by a longitudinal edge to the opposite longitudinal edge of one of said side wall panels and the other being connected by a longitudinal edge to the opposite longitudinal edge of the other of said side wall panels, the opposite longitudinal edge of each top wall panel being free, a tongue-like locking tab formed at least partly from within the bounds of the outer top wall panel and extending transversely of such panel, said locking tab being connected to said outer top panel by a hinge-forming crease line extending adjacent and generally parallel to the said free longitudinal edge of such panel, said locking tab otherwise being cut free from the panels and having its free end directed away from the free longitudinal edge of its panel, the inner top wall panel having a tab receiving slot therethrough for reception of said tab, said slot being formed adjacent to the connection between the longitudinal edge of such top wall and the longitudinal edge of the adjacent side wall and extending generally parallel to said connection, the width of said slot along an end portion thereof being less than the thickness of the material of said tab whereby frictionally to engage the tab when inserted in the slot.

3. A holder of the character and construction defined in claim 2 in which the crease line between the inner top panel and its connected side panel is interrupted from one end of said slot to the other end thereof and in which the slot is of circular segment shape and at its arcuate side extends into said inner top panel between the interrupted ends of such interrupted crease line.

4. A holder of the character and construction defined in claim 2 in which the said free end of said tab is formed in part from within the area of the side panel to which the outer top panel is connected and is uncreased between such part and its other part.

5. A yarn cone holder formed from a strip of foldable sheet material such as that described and comprising two side wall panels, an inner top wall panel and a supplemental top wall panel portion having a free edge and a parallel edge

integral with and extending from an edge of one side wall panel and swingably connected to such wall along a crease line interrupted intermediate of its length, said supplemental portion being adapted to lie over and against the inner top wall panel, the supplemental portion and its connected side wall having spaced slits extending transversely of and at the adjacent interrupted ends of said crease line from places spaced from one another and from said free edge to a juncture with one another within the side wall connected to said supplemental portion thereby to provide a locking tongue having its base portion spaced from the outer free edge of the supplemental portion whereby automatically to effect separation of the end portion of the tongue from the sheet material when the supplemental portion is bent at an angle to the side wall connected thereto, the strip of sheet material being formed with a tongue receiving opening adjacent to the free edge of the tongue supporting portion in the set-up position of the holder, said opening being defined by edges shaped gradually to converge toward the opposite ends thereof for compressive frictional engagement with the tongue, said locking tongue being of sufficient length to be bent over the free edge of the supporting portion and insertable into the receiving opening.

6. A tubular holder for yarn cones and the like, said holder being formed from a single strip of foldable material of self-sustaining character and comprising a plurality of connected wall-forming panels including intermediate panels constituting bottom and side walls and an end panel at each end of said strip constituting a top wall, one of such end panels overlapping and disposed outward of the other end panel, adjacent panels being connected to one another along generally parallel crease lines extending transversely of the strip, the crease line between the inner end panel and its adjacent connected panel being interrupted to provide spaced lengths of

such crease line, there being a slot of irregular width joining the adjacent ends of said spaced length of such crease line, said slot being defined in part by an edge extending at least partly within the bounds of said one end panel, the outer end panel of the top wall having a free edge disposed adjacent to said interrupted crease line and said slot with said slot exposed, and a locking tongue formed in part at least from within said outer end panel and having a hinge connection with such end panel along a crease line spaced a predetermined distance from and generally parallel to the said free edge of such panel, said tongue having a free end directed away from said free edge and a length greater than said distance, said tongue being foldable at said hinge connection to project beyond said free edge in a reverse direction from the first said direction and downwardly past said free edge into said slot for frictional locking engagement therein, at least that portion of said tongue which is engageable in the slot being of a width substantially equal to the length of the slot and the thickness of the material of said portion of the tongue being greater than the narrowest part of the slot.

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