United States Patent

[11] **3,599,828**

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[54] **MODULAR CARRIER FOR SUCH ARTICLES AS TAPE REELS**
4 Claims, 8 Drawing Figs.

[52] **U.S. Cl.** ..... **220/102,** 224/45 P, 220/23.4
[51] **Int. Cl.** **B65d 75/00**
[50] **Field of Search** 224/45, 45.14; 220/23.4, 23.83, 102

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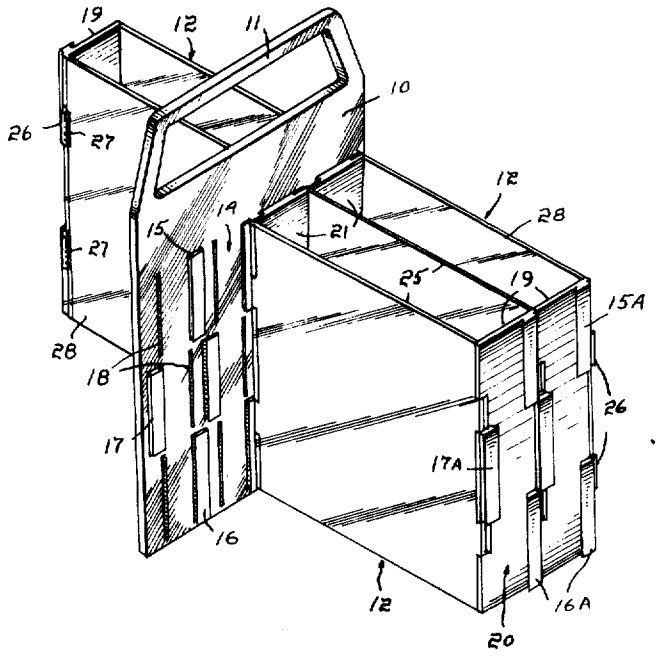
ABSTRACT: A modular carrier is disclosed that consists of a plurality of identical holders, and a support, the support and one end wall of each holder having attaching means by which attaching means on the other end walls of the holder may be detachably connected thereto and supported thereby. The holders are open at the front and have means by which they may be assembled in a side-by-side relationship with their open fronts either closed by the rear wall of another holder or by a front wall.



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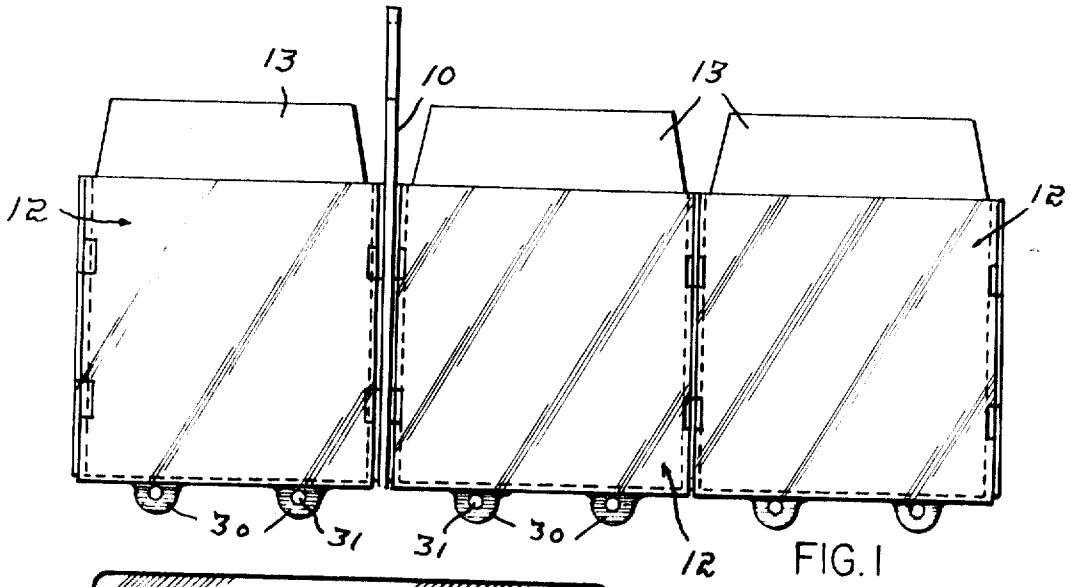

FIG. 1

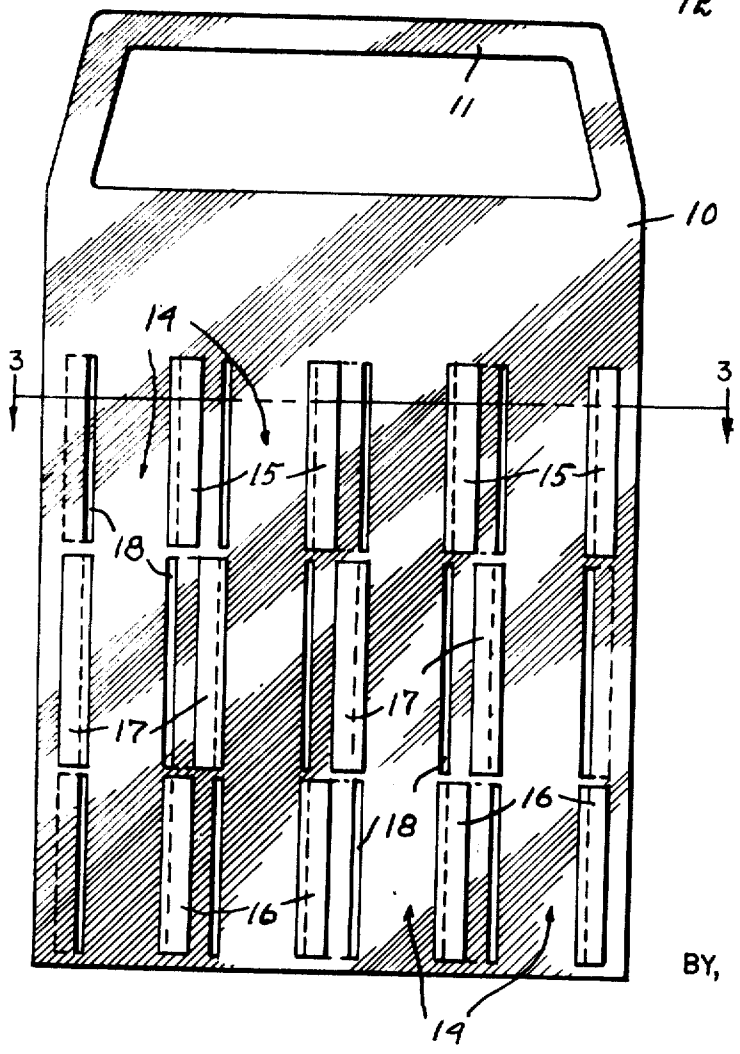

FIG. 2

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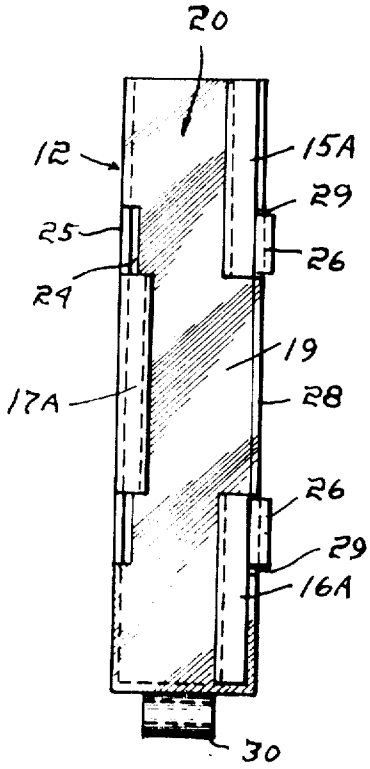

FIG. 6

FIG. 3

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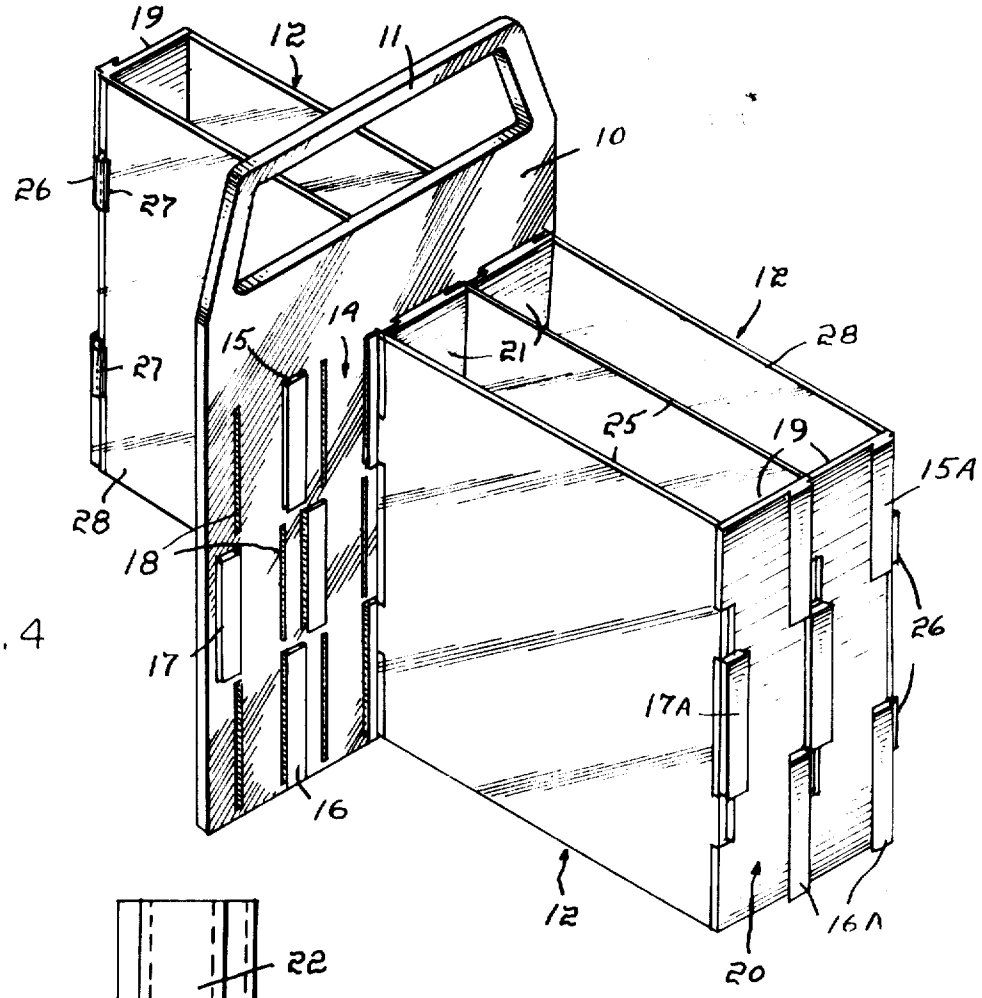

FIG. 4

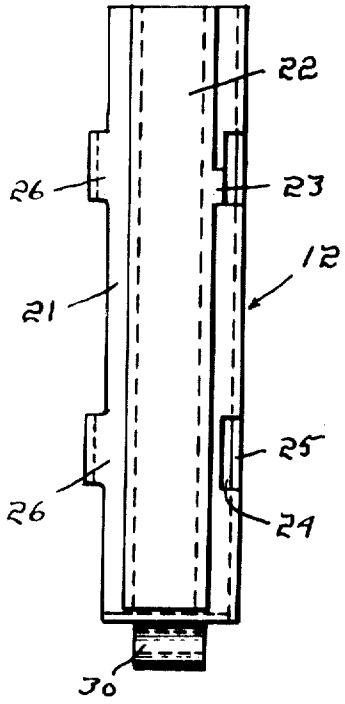

FIG. 5

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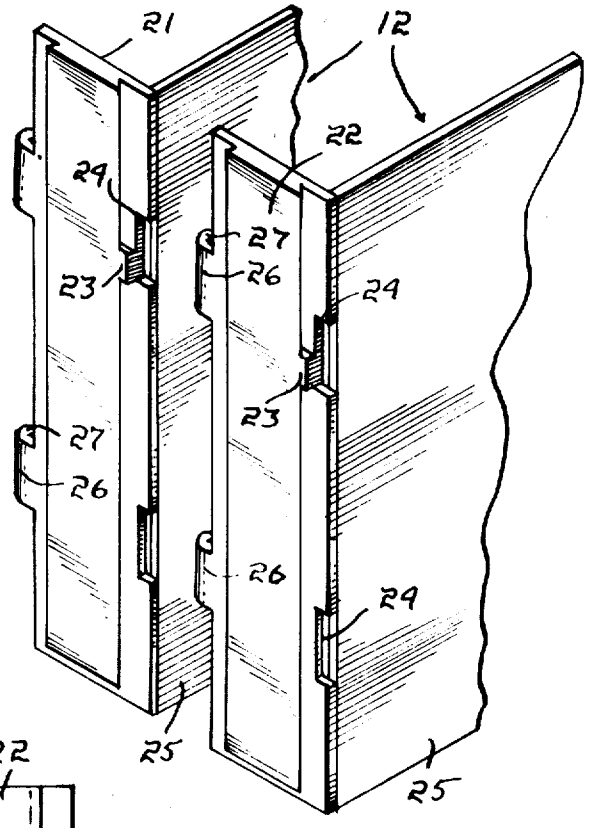
FIG. 7



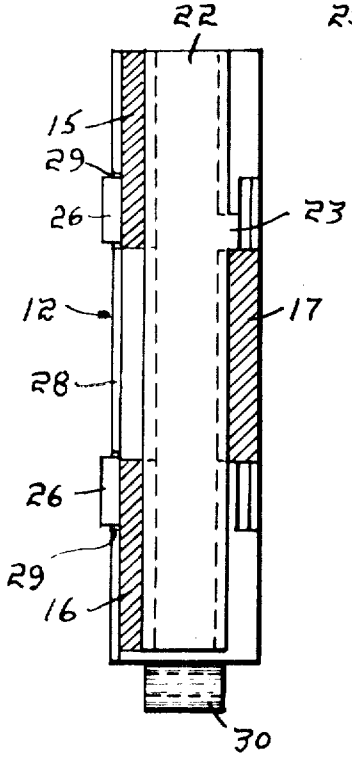


FIG. 8

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MODULAR CARRIER FOR SUCH ARTICLES AS TAPE REELS

The present invention relates to modular carriers, particularly adapted for use when there is a need to provide means to enable a growing accummulation of like articles to be protected on a basis that enables them to be conveniently stored and carried.

While the invention is adapted for use wherever articles present problems as they accumulate, it is discussed herein with particular reference to cartridges for stereo tape reels. Such tape reels, while within cartridges, are not fully protected against damage by reason of dirt and it is often necessary to assemble a group of them for the purposes of carrying them or to have them available together because of common or related subject matter.

The objective of the present invention is to provide for modular carriers for such articles that ensure their protection on a basis contributing to the ease of handling them as the collection of tape reels increases. In accordance with the invention, this objective is attained with a handled support and a plurality of identical holders for the articles. Each end wall of each holder is provided with attaching means, the attaching means of one end wall being a vertical channel having inwardly disposed shoulders and the attaching means of the other end wall being a vertical rib dimensioned for sliding entry into the channel of another holder and including outwardly disposed marginal shoulders to underlie the shoulders of the vertical channel. At least one face of the wall member has a series of laterally spaced attaching means complemental to one type of the attaching means with.which one end of each holder is provided. Additionally, the attaching means of both types have portions interengageable to limit the extent to which the interengaged attaching means may be slid relative to each other in a direction such that holders attached to the wall member or to another holder may be connected to the wall member to be carried therewith.

Another objective is to provide a handled support that can have undercut channels molded on both of its faces, an objective attained by providing that the undercut members defining each channel are so spaced that a member on one channel side is faced with a gap between two members defining the opposite channel side and that each channel-defining member on either side is backed by such a gap in the channel on the opposite side in order that the support may be slotted by the die parts undercutting the margins of the channel defining members.

And yet another objective of the invention is the provision of holders with open fronts and with means enabling each such holder to be attached to the rear of another holder with the rear wall thereof becoming the front wall of the attached holder. Each such holder may, however, be completed by a front wall attached thereto by its attaching means.

In the accompanying drawings, there is shown an embodiment of the invention illustrative of these and other of its objectives, novel features, and advantages.

In the drawings:

FIG. 1 is a side view of a modular carrier in accordance with the invention,

FIG. 2 is a face view of the holder support,

FIG. 3 is a section taken approximately along the indicated lines 3–3 of FIG. 2,

FIG. 4 is a perspective view of the carrier,

FIG. 5 is a view of a holder as seen from one end,

FIG. 6 is a view of the holder as seen from the other of its ends,

FIG. 7 is a fragmentary perspective view illustrating holder assembly, and

FIG. 8 is a view of the end of the holder shown in FIG. 5 showing its relation to a channel, the channel of the holder support, for example.

A modular carrier in accordance with the invention includes a support 10 in the form of a plate having a recess in its upper end defining a handle 11 and one or more holders, each generally indicated at 12 and dimensioned to slidably receive a tape reel cartridge generally indicated at 13.

Each face of the support 10 has a series of laterally spaced, vertical channels 14. Each channel is shown as being established at one side by upper and lower marginal shouldered members indicated at 15 and 16, respectively, and by an intermediate marginal shouldered member 17 at the other side. The length of each marginal member is about one-third the length of the channel and the marginal members are so spaced that the members 15 define the upper third of their channels, the member 16, the lower third, and the members 17 the intermediate third thereof. This arrangement enables the channel defining members to be molded on both faces of the support 10 with the mold parts that form their undercuts forming slots 18 in the support 10.

Each holder 12 has one end wall 19 provided with a generally indicated channel 20 identical to the channels 14 of the support 10 with the reference numerals for the corresponding channel-defining members being distinguished by the suffix addition "A."

The other end wall 21 of each holder 12 has a vertical rib 22, undercut along each margin, extending substantially from top to bottom thereof. Each rib 22 is shaped and dimensioned for sliding entry downwardly into a channel 14 or a channel 20 and to be held thereby. In order that each holder 12 may be carried by the support 10 with its bottom in the plane of the bottom edge of the support 10, each rib 22 has a marginal projection 23 disposed to engage the upper end of the channel-defining member 17 and thus function as a stop.

In practice, both end walls of each holder 12 are provided with a vertically spaced pair of open-ended slots 24 along their rear edges and opening into the holder to expose portions of the side edges of the rear wall 25. Both end walls also have tabs 26 projecting from their front edges in the plane of the end wall of which they are a part and in transverse alignment with an appropriate one of the slots 24. The stock from which the end walls re molded is such as to afford the tabs 26 with a suitable degree of resilience. The tabs 26 are dimensioned so that each will fit a slot 24 and each tab 26 terminates in an inwardly disposed shoulder 27.

With this construction, a holder 12 may be completed by attaching it to another holder with the shoulders 27 caught in back of its rear wall 25 which now serves as the front wall of the attached holder. Such a holder may also be completed by means of a front wall 28 which is sufficiently wider than the rear wall 25 that the distance between the bottom of its tab-receiving, open-ended slots 29 is equal to the width of the back wall 25, the slots 29 being positioned to receive the tabs 26 with their shoulders 27 anchoring the front wall 28 in place. In the case of holders 12 attached to the handled support 10, it is only the outermost one of a transversely aligned group of holders that can have such a front wall.

In addition, each holder 12 has a pair of bosses 30 on its bottom with each boss 30 having a passage 31 to enable the holder 12 to be locked against theft from a display by means of an interconnecting rod not shown.

We claim:

1. A modular carrier comprising a support in the form of a wall including a handle, and a plurality of identical holders each having an open front, each end wall of each holder including attaching means, the attaching means of one end wall being a vertical channel including inwardly disposed marginal shoulders and the attaching means of the other end wall being a vertical rib dimensioned for sliding entry into the channel of another holder and including outwardly disposed, marginal shoulders to underlie the shoulders thereof, at least one face of said support including a series of laterally spaced attaching means complemental to one type of attaching means of said holder end walls, the attaching means of both types including portions engageable to limit the extent to which interengaged attaching means may be slid relative to teach other in one direction, and the front and rear edge of the sides of each

holder including complemental coupling means in the plane of the sides enabling one holder to be attached to another holder with its front closed by the rear wall thereof.

2. The modular carrier of claim 1 in which the coupling means at the front edges are tabs including inwardly disposed shoulders and the coupling means at the rear edges are rearwardly opening slots opening into the holder adjacent its rear wall.

3. The modular carrier of claim 2 and a front wall having slots opening through its side edges and disposed field dimensioned to receive a tab.

4. The modular carrier of claim 1 in which each holder includes bosses on its bottom having holes extending therethrough to receive anchoring means.