

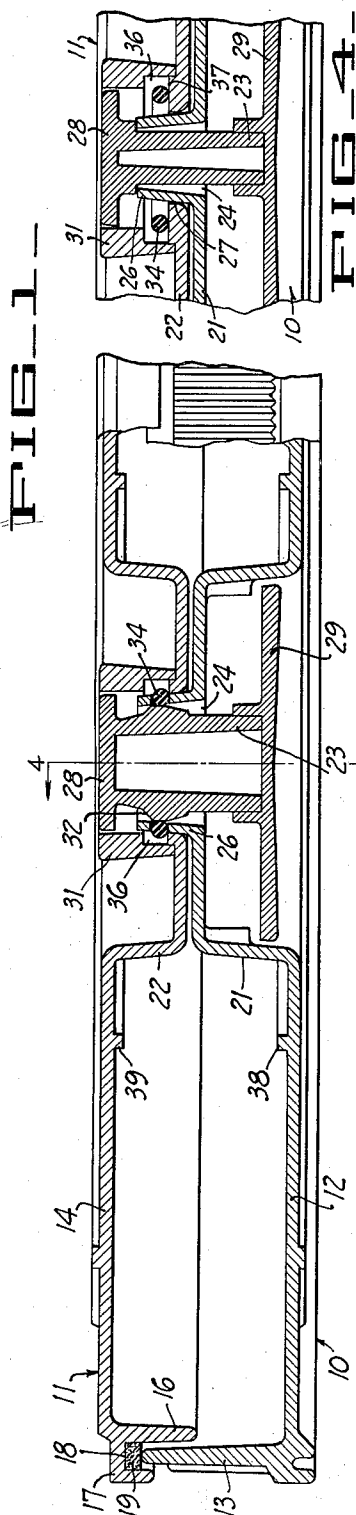
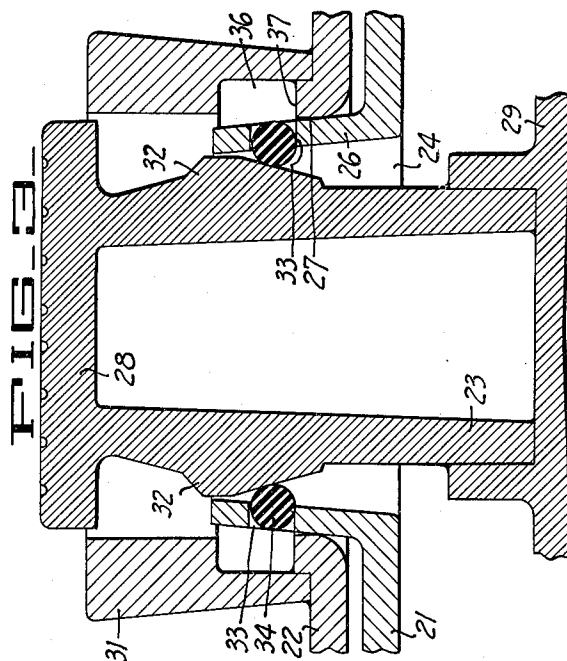
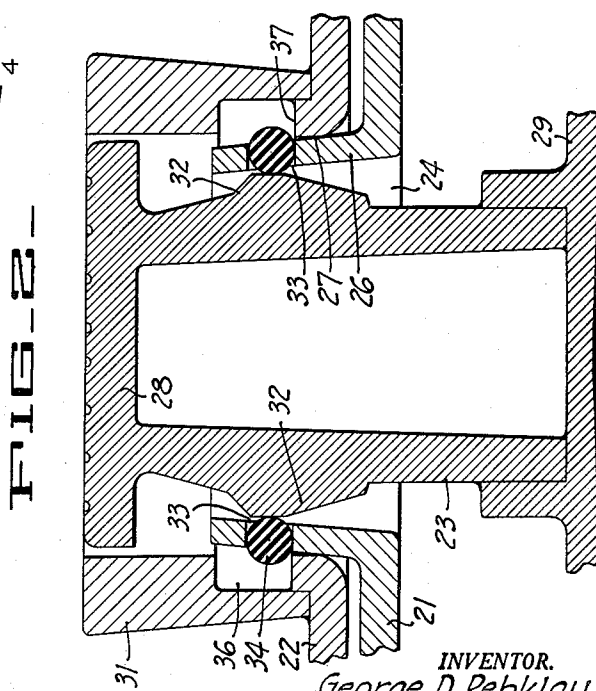
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CONTAINER CONSTRUCTION

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CONTAINER CONSTRUCTION

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This invention relates generally to containers of the type having body and cover portions secured together by manually releasable locking means. More particularly, it pertains to containers suitable for housing reels used for storing tape or film reels.

Conventional containers for the housing of tape or film reels are made of pressed sheet metal or molded plastic, with the cover having a rim which frictionally fits over the open side of the body. For the larger tape reels, such as are employed for storing relatively wide magnetic tapes used for example, for data recording, or for the recording of television programs, it is desirable to provide a more convenient and adequate container, which securely attaches the cover in place without the necessity of supplemental retaining means, such as tape or rubber bands, and which can be stacked horizontally or stored vertically on shelves.

It is an object of the present invention to provide a more adequate and convenient reel container which in particular is characterized by novel means for releasably retaining the cover in place.

Another object of the invention is to provide a reel container in which the cover locking means is located centrally, and which when engaged does not project beyond the planes of the top and bottom container walls.

Another object of the invention is to provide a reel container which is well adapted for manufacture from a variety of materials, including plastics.

Additional objects and features of the invention will appear from the following description in which the preferred embodiment has been set forth in detail in conjunction with the accompanying drawing.

Referring to the drawing:

FIGURE 1 is a side elevational view, partly in section, illustrating a reel container in accordance with the present invention.

FIGURE 2 is an enlarged detail in section, illustrating the means used for releasably retaining or locking the cover upon the body.

FIGURE 3 is a detail in section like FIGURE 2, but showing the parts in a different operating position.

FIGURE 4 is a cross sectional detail taken along the line 4—4 of FIGURE 1.

The container illustrated in the drawing consists of a body 10 together with a cover 11, with these parts being dimensioned to enclose a magnetic tape reel. The body consists of the wall 12, which forms the bottom or back wall of the container, together with the side or edge walls 13, which extend about and are attached to the perimeter of the wall 12. The cover part 11 consists of a well 14, which forms the top or front of the container, together with side or edge walls 16, which in this instance are dimensioned to interfit the walls 13. A lip 17 is shown carried by the walls 16, and the groove 18 provided by this lip serves to accommodate a resilient sealing gasket 19, which is adapted to be pressed into sealed engagement with the walls 13.

The bottom wall 12 for the body part 10 is provided with an inwardly dished wall portion 21, which may be annular in configuration, and which is aligned with the central axis of the body. The top wall 14 of the cover 11 is similarly provided with a dished wall portion 22.

Locking means extends within the dished portions 21

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and 22, and is manually operable between locking and release positions, to releasably retain the cover upon the body. As illustrated, the locking means consists of a stud 23 that is generally rectangular in section, and which extends through the aligned and generally rectangular opening 24 in wall portion 21. The opening 24 is formed within the tapered or conical shaped flange or collar 26. This flange or collar is adapted to interfit the aligned opening 27, in the dished portion 22. This interfitting relationship serves to insure alignment between the body and cover portions, when the cover is being applied.

Finger engaging portions are carried by the ends of the stud 23. Thus at one end the stud is provided with the member 28, which may be circular in configuration, and at the other end it is provided with the knob 29, which likewise may be circular. The dished portion 22 is provided with a knob-like collar 31, which closely surrounds the stud, and which, together with the knob 29, forms guide means for the stud.

The stud 23 is also provided with diametrically opposite and segmented portions 32, which form cam surfaces. Portions 32 are normally located adjacent the segmented slots 33 formed in the collar 26. A ring 34 of the resilient O-ring type embraces the portions 32, and forms a locking member which can be radially expanded or contracted. In its expanded position (FIGURE 2), segmented portions of the ring 34 are accommodated within the slots 33 and a recess 36 in collar 31. When in this position, ring 34 engages the shoulder 37 formed on the adjacent part of the dished portion 22. For the retracted position of the ring 34 (FIGURE 3), its greatest diameter is smaller than the opening 27, thus permitting the removal of cover 11.

When in use, the portions 21 and 22 loosely interfit the hub of a tape reel. The raised ribs 38 and 39 may engage the sides of the reel. Normally the parts are in the position shown in FIGURES 1 and 2, with the resilient O-ring 34 engaging the shoulder 37, to hold the parts locked together. Under such conditions, neither the member 28 nor the member 29 projects beyond the front and back surfaces of the container. In other words, all of the parts of the locking means are located within the dished portions 21 and 22. When one desires to open the container, the member 29 is forced inwardly with the result that the cam portion 32 permits the resilient ring 34 to contract radially, thus withdrawing it from engagement with the shoulder 37. This also translates the finger engaging portion 28 to a position in which it projects from the adjacent front wall 14. When the cover is re-applied, the collar 26 is aligned with the opening 27, and thereafter the cover moved to closed position manually, after which the operator presses upon the member 28 to translate the stud 23 back to position shown in FIGURES 1 and 2. If the operator should neglect to properly lock the cover, the projecting end member 28 would warn him to this effect, because it would interfere with stacking or close positioning of the containers in side by side relationship on a shelf.

I claim:

1. In a construction of the character described, body and cover parts fitting together and forming an enclosing container, said parts including substantially parallel walls forming spaced bottom and top walls for the container together with cooperating side walls, axially aligned first and second inwardly dished wall portions carried by said bottom and top walls, manually operable means located with said dished portions and mounted on said first dished portion for movement in an axial plane of said first dished portion and between container locking and release positions to selectively lock and release said second dished portion, and means on said second dished

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portion engaging said manually operable means and cooperating therewith to hold said dished portions together only in the locking position of said manually operable means.

2. In a construction of the character described, body and cover parts fitting together and forming an enclosing container, said parts including substantially parallel walls forming spaced bottom and top walls for the container together with cooperating side walls, axially aligned first and second inwardly dished wall portions carried by said bottom and top walls, manually operable means located within said dished portions, said means including an element mounted on said first dished portion for radial movement between container locking and release positions to selectively lock and release said second dished portion, and means on said second dished portion engaging said radially moving element and cooperating therewith to hold said dished portions together only in the locking position of said radially moving element.

3. In a construction of the character described, body and cover parts fitting together and forming an enclosing container, said parts including substantially parallel walls forming spaced bottom and top walls for the container together with cooperating side walls, axially aligned first and second inwardly dished wall portions carried by said bottom and top walls, manually operable means located within said dished portions and mounted on said first dished portion for movement in an axial plane of said first dished portion and between container locking and release positions to lock or release said second dished portion, said means including a stud aligned with the axis of the dished portions, the dished portions having aligned openings accommodating the stud, said stud being axially movable between locking and release positions for moving the remainder of said means between its locking and release positions; and means on said second dished portion engaging said manually operable means and cooperating therewith to hold said dished portions together only in the locking position of said manually operable means.

4. In a construction of the character described, body and cover parts fitting together and forming an enclosing container, said parts including substantially parallel walls forming spaced bottom and top walls for the container together with cooperating side walls, first and

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second inwardly dished wall portions carried by said bottom and top walls, said dished wall portions being in alignment with each other and with the central axis of the container, a stud aligned with said dished wall portions, said dished wall portions having openings accommodating said stud, finger engaging members carried by the ends of said stud and located within said dished wall portions, said stud being mounted on said first dished portion and being axially movable between container locking and release positions relative to the same, a radially moving locking member carried by said first dished portion and operated by movement of said stud between container locking and release positions to lock or release said second dished portion, and means carried by said second dished portion and engaging and cooperating with said locking member in the locking position thereof to hold said dished portions together.

5. In a construction of the character described, body and cover parts fitting together and forming an enclosing container, said parts including substantially parallel walls forming spaced bottom and top walls for the container together with cooperating side walls, first and second inwardly dished wall portions carried by said bottom and top walls, said dished wall portions being in alignment with each other and with the central axis of the container, a stud aligned with said dished wall portions, said dished wall portions having openings to accommodate said stud, finger engaging members carried by the ends of said stud and located within said dished wall portions, said stud being mounted on said first dished portion and being axially movable between container locking and release positions relative to the same, a resilient ring carried by said first dished portion and operated by movement of said stud, said stud being provided with a cam means causing radial expansion of said ring when the stud is moved to its one limiting axial locking position, and shoulder means carried by said second dished portion and engaged by said locking member in its expanded condition to hold said dished portions together.

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