

[54] CASSETTE CONTAINER

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[58] Field of Search .....312/107, 111, 163, 157; 220/23.4; 206/52 F, 1

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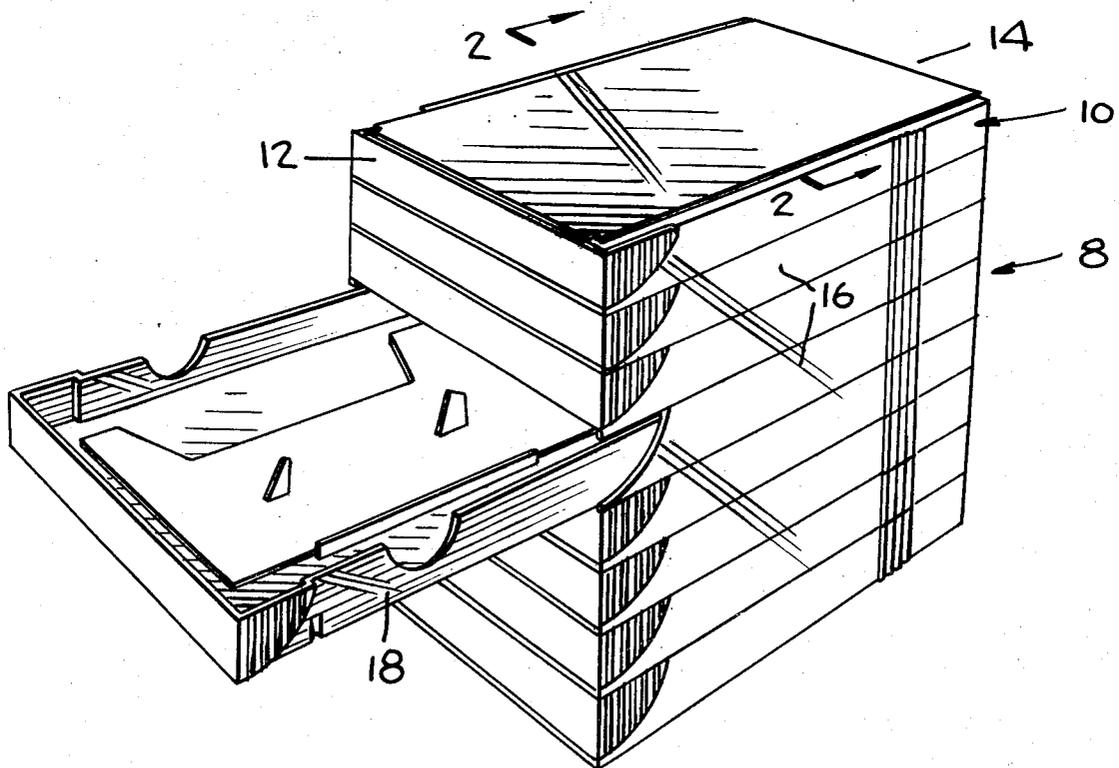
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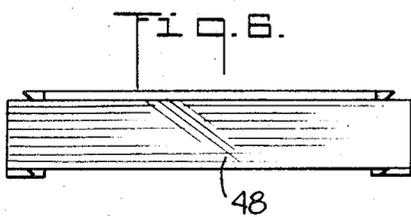
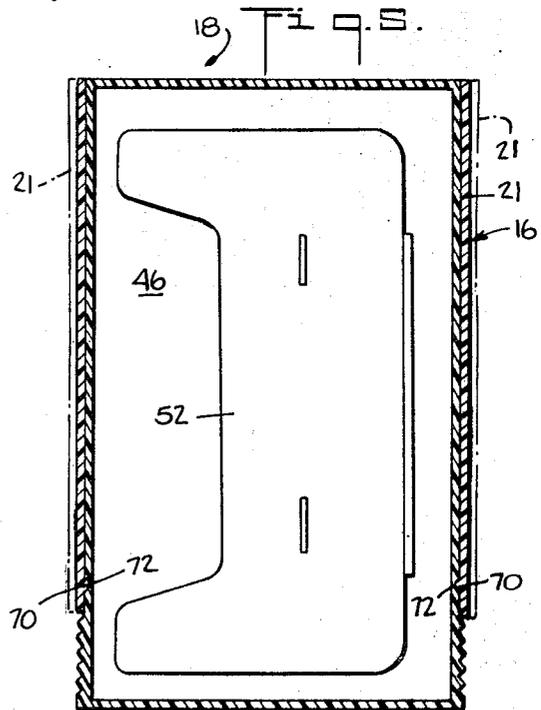
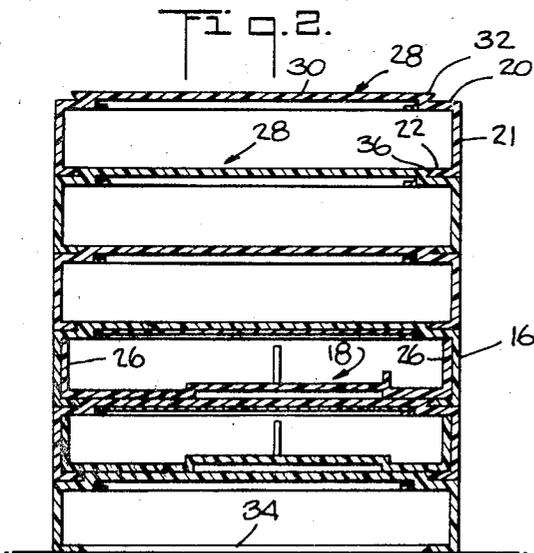
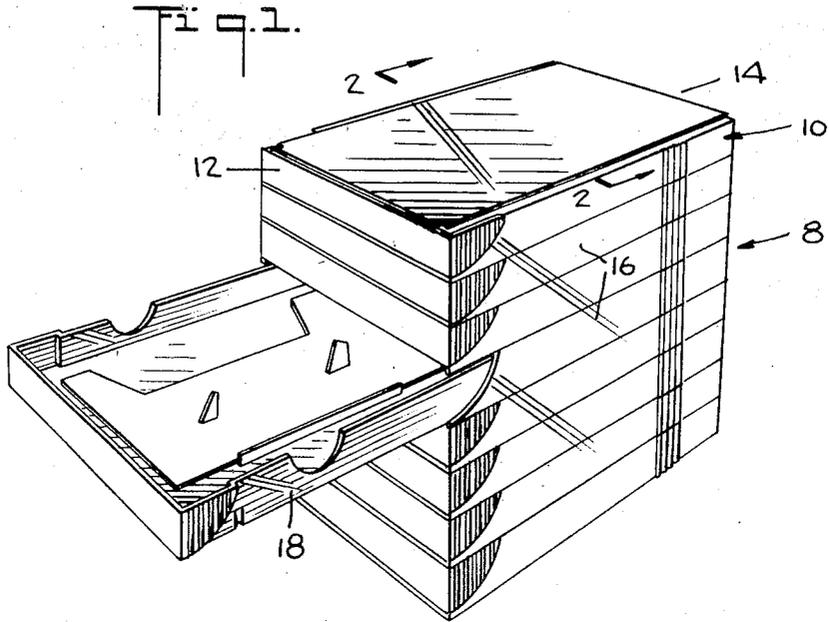
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[57] ABSTRACT

A cassette container which may be releasably secured to identical, other containers to form a filelike storage assembly for cassettes. The container includes a housing with a drawer slidably mounted for longitudinal motion within the housing between exposed and enclosed positions. Tongue and groove members formed at upper and lower ends of the housing enable the upper end of the container to be releasably secured to the lower end of another identical container. Numerous containers can be assembled one upon another to form a connected vertical stack.

10 Claims, 7 Drawing Figures





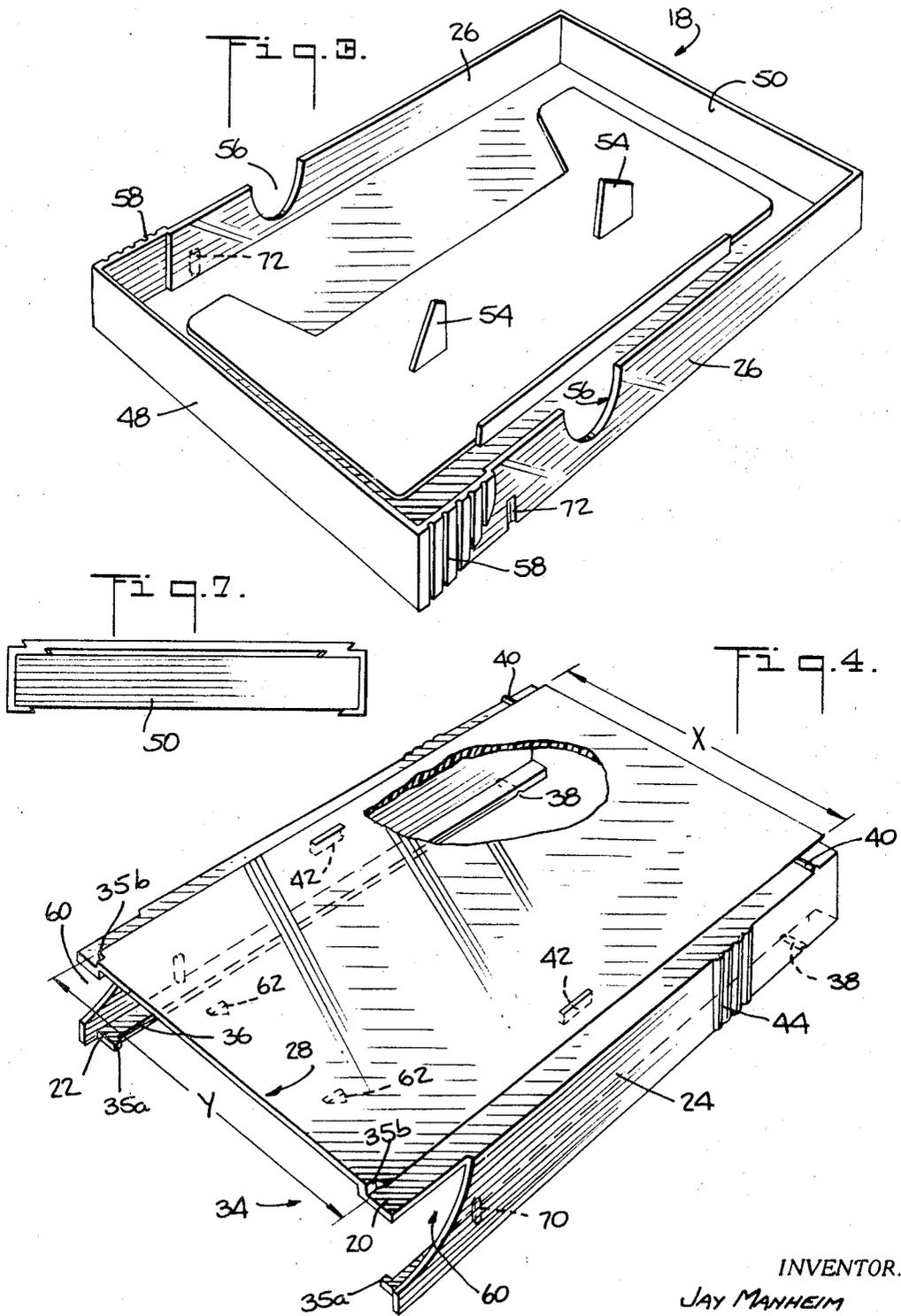
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CASSETTE CONTAINER

## BACKGROUND OF THE INVENTION

This invention relates to a container which may be releasably secured to other, identical containers to form a connected filelike vertical assembly. In particular the invention relates to a container of the foregoing type which is particularly suitable as a merchandising pack for tape cassettes.

The use of magnetic tape cassettes for recorded music and the like can sometimes pose a problem of storage and access to an owner if several cassettes are owned. Each cassette is usually sold in a merchandise container in the form of a box with a hinged or removable lid, and after use the cassette is usually returned to its box and in order to protect it from damage and the entrance of dust and dirt into the cassette. As there is no convenient way for securing the boxes together a collection of cassette boxes may easily become jumbled and untidy creating a problem of finding a particular cassette when it is desired. Moreover, the hinged lids of some of the jumbled boxes may fall open permitting the ingress of dust and other degrading materials to the cassettes within.

## SUMMARY OF THE INVENTION

The present invention avoids the previously discussed problems by providing an attractive merchandise container for the cassette, which after purchase can be releasably connected to other, identical containers to form a connected file assembly for cassette storage.

More particularly this invention provides a container for magnetic tape cassettes, which may be releasably secured to identical, other containers to build up a connected file assembly for the storage of cassettes.

This desirable result is achieved by providing a container including a housing having a drawer slidably mounted for motion longitudinally of the housing between an exposed position extending at least partially outside the housing and an enclosed position within the housing. The housing includes an upper wall provided with a wedge-shaped tongue; sidewalls of the housing depending from the upper wall carry flanges adjacent their lower ends, defining a groove. The tongue on the upper wall of one container may be slid longitudinally into mating relation with the groove on the lower wall of an identical, other container so that the two containers may be locked together in vertical registry. Additional containers may be added by similar tongue-and-groove engagement to build up connected, vertical stacks of cassette containers. The containers thus connected create a file assembly for storage of the cassettes, occupying a minimum of space and providing enhanced protection and ease of finding for the cassettes.

## THE DRAWINGS

A cassette container constructed in accordance with one preferred embodiment of the invention, is illustrated in the accompanying drawings in which;

FIG. 1 is a perspective view of an assembled stack of cassette containers each constructed in accordance with the preferred embodiment of the invention,

FIG. 2 is a cross-sectional end view of a portion of the assembly of cassette containers shown in FIG. 1 taken along the lines 2—2 therein, with the upper three drawers omitted for clarity,

FIG. 3 is a perspective view of a drawer forming a part of one of the cassette containers shown in FIG. 1,

FIG. 4 is a perspective view of a housing forming part of one of the cassette containers shown in FIG. 1,

FIG. 5 is a cross-sectional plan view showing a detent arrangement for retaining the drawer shown in FIG. 3 within the housing prior to stacking the containers with other containers,

FIG. 6 is an end view of a forward end of one of the cassette containers shown in FIG. 1; and

FIG. 7 is a view of the rear end of the cassette container shown in FIG. 6.

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DETAILED DESCRIPTION

Referring to FIG. 1 of the drawings, an assembly 8 of cassette containers 10 each constructed in accordance with the preferred embodiment of the invention, is there shown.

Each cassette container 10, which is of generally boxlike shape having forward and rear ends 12 and 14, includes a housing 16 slidably receiving a drawer 18. Each housing 16 (FIGS. 2 and 4) includes a generally horizontal upper wall 20 and two laterally spaced, vertical sidewalls 21 extending downwardly from the upper wall. Fixedly secured to the sidewalls adjacent the lower ends thereof are two generally horizontal, inwardly facing narrow flanges 22. The previously mentioned drawer 18 rests on the upper surface of the flanges 22 of the housing 16, with vertical sidewalls 26 of the drawer in sliding contact with the interior surfaces of the sidewalls of the housing.

Projecting upwardly from the upper wall 20 of the housing therealong is a wedge-shaped tongue 28 having a flat horizontal upper surface 30 bounded by two laterally spaced, wedge edge surfaces 32 inclined downwardly and inwardly. The flanges 22 of the housing define a groove 34 spaced below and generally coextensive with the wedge member 28. The edges of the groove 34 are bounded by groove edge surfaces 36 formed on the flanges 22 inclined downwardly and inwardly.

To assemble one container with another, one container is placed at a lower level than the other and the forward end of the tongue 28 on the lower container is slid into the open rear end of the groove 34 in the upper container. The lower container is then advanced forwardly beneath the upper container until it is in vertical alignment therewith, as which time further forward movement of the lower housing is restrained contact with a pair of inwardly projecting stops 35a secured to flanges 22. The stops 35a fit into correspondingly positioned notches 35b in the tongue.

In an important feature of the invention, the tongue 28 is laterally tapered so that the forward end of the tongue is less wide than the rearward end of the tongue (referring to FIG. 4 the dimension X is greater than the dimension Y). The groove 34 is correspondingly tapered to the tongue with the groove edges 36 parallel to the tongue edges 32. Moreover the width of the groove 34 is slightly less than that of the tongue so that on assembly with another container the groove edges are forced relatively apart, said flexing being permitted by the natural resilience of the housing material. As a result the groove edges 36 are biased against the engaged tongue 28 by the resilience of the flexed housing, thus providing a satisfactorily tight connection between the containers. Additionally the provision of tapered wedge-and-groove members reduces the need for accurate machining to provide a mating fit. Other advantages of the structure described are that the provision of an opening which extends entirely through and along the lower wall reduces the amount of material used in the housing, and also reduces the overall height of a stacked assembly of the containers to a minimum by effectively removing the lower wall thickness of each housing.

Adjacent the rear end of the housing extending transversely across the lower surface of the flanges 22 are two rounded, downwardly facing grooves 38 (FIG. 4) extending only partially into the thickness of the flanges. Aligned vertically above the grooves, projecting upwardly from the upper surface of the upper wall 20, are corresponding transverse ribs 40. As the upper container moves into the vertical alignment with the lower one, the natural resilience of the housing material enables the ribs 40 on the lower housing to snap into the grooves 38 on the upper housing. This arrangement retains the containers in connected relation against relative sliding motion during subsequent opening and closing of the container drawers.

It will be appreciated that the tongue-and-groove assembly described permits the containers to be readily stacked together in connected relation, thereby providing a file as-

sembly for the cassettes from which the cassettes may be readily withdrawn by opening the respective drawers in which they are contained.

The housing 8 is desirably formed of a transparent rigid plastic, such as an acrylic plastic to permit the cassette within to be seen and to provide an attractive pack from a merchandising point of view. Adjacent the midpoint of the housing, two laterally spaced, hooklike lugs 42 are provided for supporting an information card (not shown) on which may be written the identity of the particular cassette contained in the container. To facilitate gripping the container when sliding it onto another container, two vertically ribbed finger grips 44 are provided on each of the two sidewalls 21 adjacent the rear ends thereof in a convenient location to be grasped by a person's fingers.

The previously mentioned drawer 18 (FIG. 3) includes a generally horizontal bottom wall 46, vertical forward and rear end walls 48 and 50 and the previously mentioned vertical sidewalls 26. When two containers are in engaged relation, the upper surface 30 of the tongue 28 of the lower container is disposed in flush horizontal relationship with the upper surface of the flanges 22 of the upper container so as to provide a continuous floor surface providing continuous underlying support for the drawer in the upper housing.

The bottom wall 46 of the drawer is provided with a vertically raised portion 52 having a cassettelike outline, to assist in locating the cassette in an appropriate position for withdrawal when the drawer is open. Extending upwardly from the raised portion 52 are two fixed lugs 54 for locating the cassette in place in the drawer. To facilitate lifting the cassette out of the drawer, finger openings 56 are provided in the sidewalls 26.

To assist opening of the drawer, laterally projecting vertically ribbed finger panels 58 are provided at the forward ends of the sidewalls 26. The outer side surfaces of the finger panels 58 are generally flush with the outer surfaces of the sidewalls 21 of the housing 16. Each finger panel 58, which is bounded by a rearwardly facing arcuate edge, is received within a correspondingly contoured opening 60 (FIG. 4) in the sidewalls of the housing.

Closing motion of the drawer within the housing is limited by contact of the edge of the finger panels 62 with the sidewalls of the housing, while inadvertent total removal of the drawer from the housing is restrained by contact of the rear wall 50 of the drawer with a pair of downwardly depending stops 62 secured to the underside of the upper wall of the housing adjacent its forward end. detents open

Another important feature of the invention resides in provision of structure whereby the drawer may be held against inadvertent opening while the container is in single condition yet permit free opening and closing motion once the container has been connected in a stack with other, identical containers. For this purpose the housing is provided with vertical raised projections 70 (FIG. 4) on the inner surface of the sidewalls 21 adjacent the forward end thereof. The projections 70 are snapped into aligned vertical grooves 72 (FIGS. 3 and 5) extending partially into the thickness of the sidewalls 26 of the drawer, when the drawer is in its enclosed position within the housing and act as detents restraining movements of the drawer out of the housing. Such restraint is wanted when the container is in single condition to prevent the drawer accidentally falling open and dropping the cassette out when the container is picked up.

However, once the container is assembled with others into a stack, the possibility of the individual container being picked up in such manner as to permit accidental falling out is less likely and it would be desirable to cause the projections 70 released from the grooves 72 to permit free sliding of each drawer within its housing. As the tongue on one container housing is moved into the groove of another container housing, the previously described distortion of the housing of the upper container moves its sidewalls 24 laterally apart to a sufficient extent to move the projections 70 of the distorted housing out of the grooves 72 of the associated drawer thus freeing the latter for motion (as shown in dotted lines in FIG. 5).

I claim:

1. A container adapted to be releasably secured to an identical, other container, the container comprising,
  - a longitudinally extending, generally U-shaped housing formed of material having at least limited resilience, said housing having an open lower end,
  - a drawer mounted for generally horizontal sliding motion longitudinally of said housing between an exposed position projecting at least partially outside said housing and an enclosed position within said housing,
  - said housing further including,
    - an upper wall;
    - opposed sidewalls fixedly secured to said upper wall; extending downwardly therefrom,
    - opposed horizontal flanges fixedly secured to said sidewalls adjacent the lower extremities thereof extending therealong, said flanges underlying and supporting said drawer; and
    - tongue means fixedly connected with said upper wall adapted to move between and releasably engage the corresponding flanges of the identical, other container to secure said containers together, movement of said tongue means between the flanges of the other container forcing them apart to flexibly distort the housing of the other container thereby resiliently biasing the flanges against said tongue means.
2. A cassette container assembly comprising identical upper and lower cassette containers,
  - each cassette container including,
    - a generally U-shaped housing having,
      - an upper wall;
      - opposed sidewalls fixedly secured to said upper wall extending downwardly therefrom,
      - opposed horizontal flanges fixedly secured to said sidewalls adjacent the lower extremities thereof extending therealong, said flanges underlying and supporting said drawer
      - a tongue fixedly connected with said upper wall;
    - a drawer mounted for generally horizontal sliding motion longitudinally of said housing between an exposed position projecting at least partially outside said housing and an enclosed position within said housing,
    - first and second detents on said drawer and housing respectively, said detents in an undistorted condition of said container engaging each other upon motion of the drawer to the enclosed position thereof and resisting subsequent motion therefrom,
    - said tongue on said lower container inserted between and releasably engaging said flanges on said housing of said upper container to secure said containers together, insertion of said tongue of said lower container between said flange members of said upper container flexing portions of said housing of said upper container sufficiently away from the associated said drawer to move the associated said first and second detents out of engagement, thereby freeing said drawer in said upper container for sliding motion.
3. A cassette container for a tape cassette, the container adapted to be releasably secured to an identical, other cassette container, the cassette container comprising,
  - a longitudinally extending generally U-shaped housing having an open lower end,
  - a generally rectangular drawer having a horizontal bottom wall, said drawer slidably mounted for horizontal motion longitudinally of said housing between an exposed position projecting at least partially outside said housing and an enclosed position within said housing,
  - mounting means connected with said bottom wall of said drawer for releasably mounting a tape cassette within said drawer;
  - said housing further including
    - an upper wall;
    - opposed sidewalls fixedly secured to said upper wall extending downwardly therefrom,

opposed horizontal flanges fixedly secured to said sidewalls adjacent the lower extremities thereof extending therealong, said flanges underlying and supporting said drawer; and

a tongue member fixedly connected with said upper wall extending upwardly therefrom for a height generally equal to the thickness of said flanges, said tongue member having,

edge surfaces configured to matingly engage adjacent portions of the corresponding flanges of the identical other container,

said flanges on said upper housing of the container being slidable longitudinally onto the tongue on the housing of the identical other container to bring said flanges into mating engagement with the edge surfaces, thereby securing the containers together.

4. A container, the container adapted to be releasably secured to an identical, other container, the container comprising:

a longitudinally extending, generally U-shaped housing having at least limited resilience,

a generally rectangular drawer having a horizontal bottom wall, said drawer slidably mounted for horizontal motion longitudinally of said housing between an exposed position projecting at least partially outside said housing and an enclosed position within said housing,

said housing further including,

an upper wall;

opposed sidewalls fixedly secured to said upper wall extending downwardly therefrom,

opposed horizontal flanges fixedly secured to said sidewalls adjacent the lower extremities thereof extending therealong, said flanges underlying and supporting said drawer; and

a tongue member fixedly connected with said upper wall extending upwardly therefrom, said tongue having edge surfaces configured to matingly engage adjacent portions of the corresponding flanges of the identical other container, said flanges of said housing of the container being slidable longitudinally onto the tongue on the housing of the identical other container to bring said flanges into mating engagement with the tongue edge surfaces, thereby securing the containers together; and

first and second detents on said drawer and housing respectively, said detents in an unflexed condition of said housing engaging each other upon movement of the drawer to the enclosed position thereof and resisting subsequent motion therefrom, movement of the tongue of the identical other container between said flanges of the container flexing said flanges sufficiently apart to move said detents out of engagement, thereby

freeing said drawer for motion.

5. The container defined in claim 4 wherein said tongue tapers laterally from one longitudinal end thereof to the other, and wherein said flanges define an opening tapering correspondingly to said tongue and being of less width than said tongue, insertion of the tongue on the identical other container between said flanges flexing portions of said housing sufficiently away from adjacent portions of said drawer to move said first and second detents out of engagement to free said drawer for longitudinal movement in said housing.

6. A cassette container as defined in claim 4 further including, cooperating limit means connected with said drawer and on said housing for resisting further motion of said drawer outwardly of said housing after reaching the exposed position.

7. A cassette container as defined in claim 3 further including,

first and second detent means connected with the upper surface of said upper wall and the lower surface of said flanges respectively, said first detent means on the upper wall of the container engaging the corresponding second detent means on the flanges of the identical other container upon relative movement of the containers into the vertical registration to resist subsequent relative motion of the containers thereafter.

8. A cassette container as defined in claim 3 wherein said housing is formed of a material possessing at least limited resilience and wherein said tongue is wider than said groove; said sidewalls of the container being flexed relatively apart upon expansion of said groove by entry thereinto of the tongue of the identical other container.

9. The cassette container defined in claim 4 further including,

raised, ribbed portions extending laterally outwardly of said sidewalls of said drawer adjacent one longitudinal end thereof; and

cutaway portions in said sidewalls of said housing accommodating said ribbed portions on said sidewalls of said drawer in the enclosed position thereof.

10. A cassette container as defined in claim 4 wherein said drawer includes,

spaced opposed, generally vertical, sidewalls secured to said bottom wall extending upwardly therefrom lower walls, said sidewalls of said drawer sliding in abutting contact with said sidewalls of said housing,

and wherein said first and second detents include a recess in at least one said sidewall of said drawer; and a projection secured to said sidewall of said housing extending laterally into said recess in mating relation therewith when said drawer is in the enclosed position and the container is unconnected to any other container.

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