

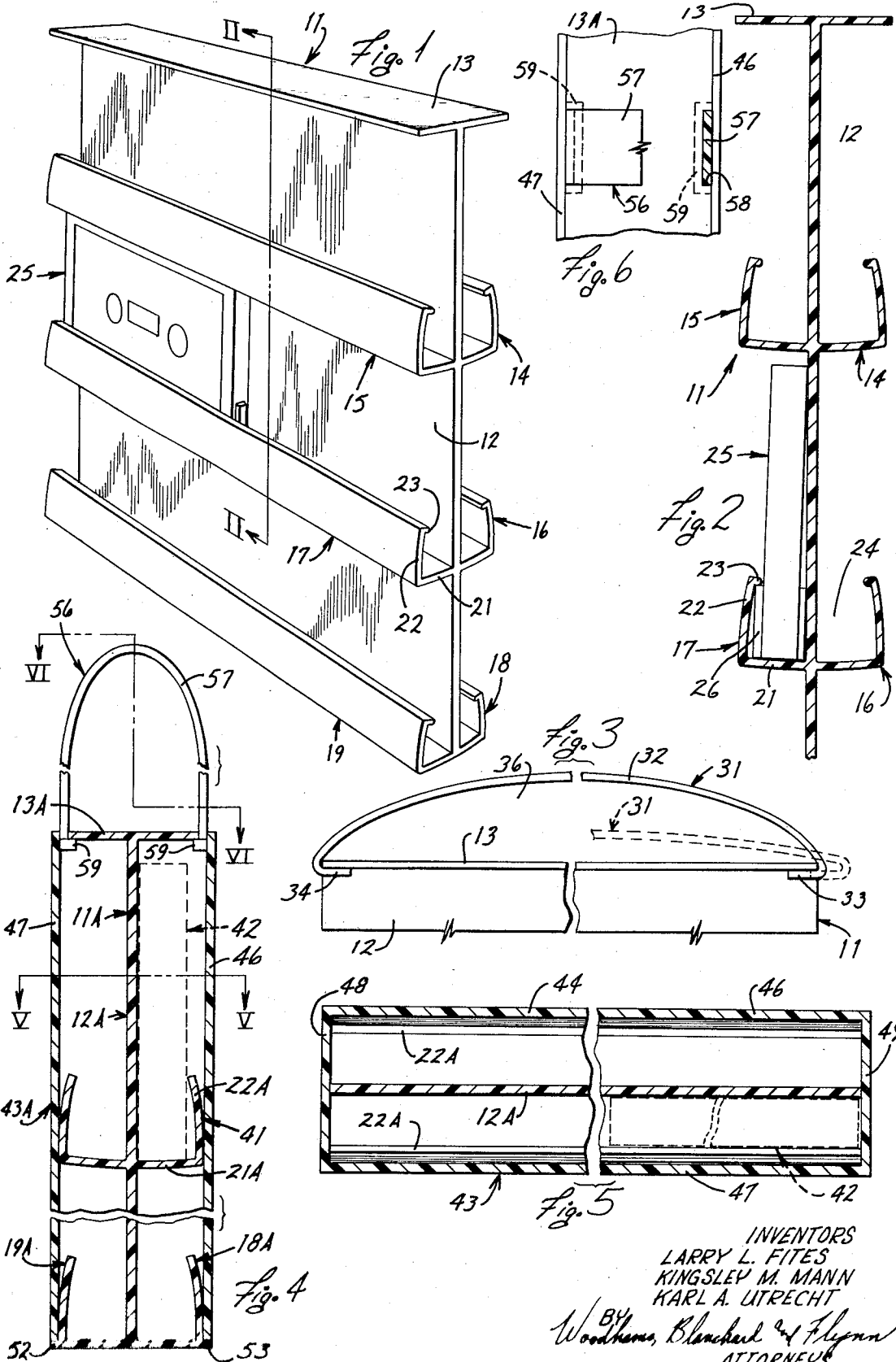
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CASSETTE CONTAINER

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CASSETTE CONTAINER

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ABSTRACT OF THE DISCLOSURE

A device for holding relatively small and substantially flat articles, such as tape cassettes, said device preferably being formed from a substantially stiff but resiliently flexible plastic or metallic material. Said holding device has a flat and preferably rectangular main wall means and a plurality of shelf members having L-shaped cross sections and integral with said main wall means. Said shelf members are spaced from each other and are arranged for receiving and firmly holding an article, such as a tape cassette, with respect to the holding device. Handle means, top wall means and/or cover means may be provided.

FIELD OF THE INVENTION

This invention relates in general to a device for holding relatively small and substantially flat articles and, more particularly, to a device for releasably and firmly holding a plurality of tape cartridges or cassettes, said device being easily transportable, simple in construction, durable and inexpensive to manufacture.

BACKGROUND OF THE INVENTION

Persons familiar with the use and storage of relatively small flat articles, such as tape cassettes, have long recognized the need for a convenient, durable and inexpensive device for storing and transporting the articles when not in use. Heretofore, it has been common to place such articles in a box, drawer or other totally closed container so that it was difficult to determine the nature of the article or discriminate between various articles. Particularly, in the case of cassettes, the existing storage devices often result in difficult problems of locating and selecting a particular cassette. Moreover, such existing devices for holding cassettes, for example, are not readily portable. They are either expensive or easily damaged and are not convenient to use.

The invention is described herein with reference to tape cassettes because it was from this environment that the invention developed. However, it will be readily recognized that the holding device embodying the invention can be adapted with little or no modification for use with many types of articles, such, for example, as small books, boxes of transparencies or film tape and the like.

Accordingly, a primary object of this invention is the provision of an easily transportable device for holding relatively small flat articles, such as tape cassettes, so that they can be readily examined in the device while at the same time be protected but readily accessible.

Another object of the present invention is to provide a device, as aforesaid, which is durable, easy to manufacture, light in weight and capable of being easily transported.

Other objects and purposes of this invention will become apparent to persons familiar with this type of device upon reading the following description and examining the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a holding device embodying the invention.

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FIG. 2 is a sectional view taken along the line II—II in FIG. 1.

FIG. 3 is a broken side view of the top portion of the holding device illustrated in FIGS. 1 and 2, the holding device being provided with a detachable handle.

FIG. 4 is a broken central cross-sectional view of a modified device embodying the invention, same being provided with a removable protective cover.

FIG. 5 is a sectional view taken along the line V—V in FIG. 4.

FIG. 6 is a fragmentary sectional view taken along the line VI—VI in FIG. 4.

For convenience, in description, the terms "upper," "lower" and words of similar import will have reference to the holding device as appearing in FIGS. 1, 2 and 4. The terms "inner," "outer" and derivatives thereof will have reference to the geometric center of said holding device and parts thereof.

SUMMARY OF THE INVENTION

The objects and purposes of the invention, including those set forth above, have been met by providing a holding device, preferably extruded from a stiff, but resiliently flexible material, such as plastic or metal, having a main wall means, integral top wall means, and shelf means. In a preferred embodiment, plural shelf members are located on both sides of the main wall means in directly opposed pairs. The free upper edge of each shelf member is preferably positioned so that it can be flexed away from the main wall means at least slightly as the article is moved into a position of being gripped by the member. Thus, the article is securely held by the holding device. Cover means and handle means may be provided to protect the articles stored on the holding device.

DETAILED DESCRIPTION

FIG. 1 illustrates a holding device or holder 11 specifically constructed for holding, storing and/or transporting a plurality of relatively small articles, preferably flat and rectangular articles, such as tape cassettes. The holder 11 includes a main support wall 12, which wall is preferably of a thin, planar and rectangular configuration. A top wall 13 may be fixedly, here integrally, connected to and extends longitudinally along the upper edge of the main wall 12. The top wall 13 is also of a thin, planar and rectangular configuration and is disposed so as to be substantially perpendicular to the main wall 12. The top wall 13 is preferably positioned so as to extend laterally outwardly substantially equal distances on opposite sides of the main wall 12 so that the main wall 12 and top wall 13 thus have a substantially T-shaped cross section.

The holder 11 is also provided with a plurality of shelf members or shelves, the embodiment illustrated in FIG. 1 being provided with six such shelves 14, 15, 16, 17, 18 and 19. As illustrated, the shelves 15, 17 and 19 are disposed in vertical alignment and in spaced relation on one side of the main wall 12. The holder 11 is also preferably provided with opposed pairs of shelves disposed on the opposite sides of the main wall 12, as illustrated by the pair of shelves 14 and 15. The shelves 14 through 19 are all of identical construction and configuration, and thus only the shelf 17 will be described in detail.

The shelf 17 is basically of an L-shaped cross section and specifically includes a base or horizontal wall 21 fixedly secured, here integrally, to the main wall 12. The base wall 21 extends longitudinally across the width of the main wall 12 and extends laterally outwardly therefrom in substantially perpendicular relationship thereto. The base wall 21 and the top wall 13 are disposed in substantially parallel relationship.

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The shelf 17 also includes a front wall or flange 22 which is fixedly, here integrally, connected to and extends longitudinally along the outer edge of the base wall 21. The flange 22 extends upwardly in approximately parallel relationship to the main wall 12. However, the flange 22 is, as it extends upwardly, preferably canted slightly inwardly relative to the main wall 12 so that the upper edge of the flange 22 is spaced from the main wall 12 by a distance slightly less than the spacing between the bottom edge of the flange 22 and the main wall 12. The flange 22 is constructed of a stiff but resilient material whereby the flange possesses at least limited resiliency or flexibility so that the flange will effectively act as a cantilever leaf spring.

The flange 22 is also provided in the embodiment illustrated in FIGS. 1 and 2, with a small inwardly directed lip 23 fixedly, here integrally, connected to the upper edge thereof. The lip 23 effectively acts as a gripping means for coaxing with an object, such as a cassette 25, as explained in greater detail hereinafter. The shelf 17, in cooperation with the main wall 12, thus effectively forms an upwardly opening pocket or channel 24 adapted to receive therein a portion of a relatively flat object, such as a portion of the cassette 25.

The ends of the shelves are preferably open, as illustrated in FIG. 1, to enable the objects or cassettes to be slideably inserted into or removed from the holder 11. Also, this construction permits extrusion of the holder.

In use of the holder 11 illustrated in FIGS. 1 and 2, same is adapted to have a plurality of relatively flat objects, such as cassettes 25, securely stored thereon. A plurality of cassettes 25 can be stored on each of the individual shelves with the number of cassettes stored on each shelf being determined by the overall length of the holder 11 and the shelf provided thereon. However, the length of each shelf will normally be a multiple of the length of the article stored thereon. Nevertheless, the shelf length can be selectively varied as desired in accordance with the manner in which the holders are to be used and in accordance with the storage facilities provided for the holders. However, in one contemplated mode of use of the holder 11, the holders are preferably adapted to permit storage thereof in conventional modular containers.

When the holder 11 is used with cassettes 25 provided with a shoulder 26 adjacent and extending longitudinally along one edge thereof, said shoulder can be gripped by the flange 22. That is, when a cassette is to be mounted on the holder 11, the flange 22 on one of the shelves, such as the shelf 17, will be resiliently flexed outwardly away from the wall 12, as by being manually gripped, whereupon the cassette 25 can then be slideably inserted into the space 24 by being pushed through the open end of the shelf. After the cassette 25 has been positioned within said space 24, the front wall or flange 22 can be manually released whereby same will then resiliently flex inwardly toward the main wall 12 so as to move into resilient gripping engagement with the cassette 25 between the main wall 12 and the front wall 22. The cassette is thus securely maintained in position and will thus not rattle about or become easily dislodged from the holder. Further, with the cassette securely positioned on the holder 11, the upper lip 23 effectively overlies the cassette shoulder 26 so as to oppose movement of the cassette particularly in the vertical direction.

While the cassettes can be inserted into or removed from the holder by being slid onto the shelves through the open ends thereof, the cassettes can also be inserted into or removed from the holder by being moved vertically relative to the shelves, if so desired. In this mode of operation, suitable vertical spacing is provided between the shelves to enable the cassettes to be inserted into or removed from the shelves in the vertical direction. This later mode of inserting or removing of the cassettes may be preferred when the shelves are of relatively long length and a large number of cassettes are stored on each

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shelf. That is, it enables cassettes located near the center of the shelf to be removed without requiring removal of any other cassettes.

The top wall 13, as illustrated in FIG. 2, preferably extends laterally outwardly through a distance substantially equal to the outwardly extending distance of the shelves to cause the holder to substantially occupy a rectangular space, thereby greatly facilitating the stacking or the positioning of a plurality of holders in adjacent side-by-side relationship. The top wall 13 is also usable as a handle for permitting the holder to be easily manually gripped and supported.

The holder 11 can, if desired, be provided with a separate detachable handle, such as the handle 31 illustrated in FIG. 3. The handle 31 comprises an elongated, flat, flexible strip having an elongated central portion 32 which is disposed above and extends longitudinally along the top wall 13. The opposite ends 33 and 34 of the handle 31 extend around the opposite ends of the top wall 13, the ends 33 and 34 being split or provided with a central slot therein for accommodating the main wall 12 when the ends 33 and 34 extend under the top wall 13. The handle ends 33 and 34 possess sufficient stiffness to remain under the top wall 13 when the center portion 32 of the handle is gripped to carry the holder 11, the handle thus assuming the position illustrated in solid lines in FIG. 3. However if it is desired to remove the handle 31 from the holder 11, then the central portion 32 of the handle is pushed downwardly toward the top wall 13 to assume the position illustrated in dotted lines in FIG. 3, which in turn causes at least one of the ends, such as the end 33, to be moved laterally outwardly from underneath the top wall 13, thereby permitting the handle to be readily detached from the holder 11.

The handle 31 possesses sufficient flexibility to be spaced upwardly from the top wall and to define an opening 36 which permits a person's hand to be inserted therethrough for permitting easy gripping of the handle for carrying the holder. While the handle 31 can be made detachable, it could also be fixedly secured to the container by having the ends 33 and 34 fixedly connected to the underside of the top wall in any conventional manner, as by being bonded or adhesively secured thereto.

MODIFICATION

FIGS. 4-6 illustrate therein further modifications of the present invention, which modifications are usable either singularly or in combination with either the holder illustrated in FIG. 4 or the holder illustrated in FIG. 1.

Particularly, FIG. 4 illustrates in cross section a holder 11A constructed according to the present invention, which holder is of substantially similar construction to the holder 11 illustrated in FIG. 1. Due to the substantial structural similarity between the holders illustrated in FIGS. 1 and 4, the parts of the holder 11A illustrated in FIG. 4 will be referred to by the same reference numeral designating corresponding parts of the holder 11 illustrated in FIGS. 1 and 2, but with the suffix "A" added thereto.

The holder 11A specifically includes a main wall 12A and a top wall 13A which are identical to the corresponding parts of the holder illustrated in FIG. 1. The holder 11A also includes a plurality of vertically spaced, opposed pairs of shelves, such as the shelf 41. The shelf 41 is of similar construction to the shelf 17 in that it includes a laterally extending base 21A and an upwardly extending flange 22A. The flange 22A is of a stiff but resilient material and is canted slightly inwardly toward the main wall 12A substantially in the same manner as described above. However, the upper edge of the flange 22A is not provided with a lip on the free edge thereof. The construction of this shelf is thus particularly suitable for use with a relatively flat article 42, such as a small book, which article will have a width slightly greater than the normal distance between the main wall 12 and the free upper edge of the flange 22A. Thus, insertion

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of the article 42 into the shelf 41 will require a small outward movement of the upper edge of the flange 22A. When the flange 22A is released, it will be resiliently urged into gripping engagement with the adjacent surface of the article 42.

The holder 11A, illustrated in FIG. 4, may also be provided with a removable cover 43 for completely enclosing the holder and the articles stored thereon, thereby providing protection for the articles and permitting the holder to be easily transported while preventing the articles from being dislodged or lost. The cover also provides environmental protection from dust and the like for the articles stored on the holder.

The cover 43 preferably comprises a sleeve-like member 44 of rectangular cross section, the member 44 having opposed side walls 46 and 47 fixedly, here integrally, interconnected by opposed end walls 48 and 49. The side walls and end walls are all of substantially rectangular configuration and the side walls 46 and 47 are disposed in parallel relationship and are spaced apart by a distance substantially equal to the width of the top wall 13A of the holder 11A.

The cover 43 is adapted to be sleeved endwise down over the holder 11A so as to completely surround and enclose same, thereby completely protecting the articles or cassettes stored thereon. The holder 11A is provided with a pair of flanges 52 and 53 which comprise integral portions of the lowermost shelves 18A and 19A, respectively. The flanges 52 and 53 extend laterally outwardly beyond the vertical flanges of the shelves by a small distance so as to define shoulders which are abutted by the lowermost edges of the side walls 46 and 47 of the cover 43, as illustrated in FIG. 4, when the cover is mounted upon the holder 11A. The cover 43 has a vertical height substantially equal to the height of the holder 11A so that the upper edge of the cover will be disposed closely adjacent the top wall 13A of the holder when the cover is disposed in surrounding relationship to the holder.

The holder 11A, when provided with the cover 43, may be provided with a suitable carrying handle 56. The carrying handle 56 comprises an elongated flat strip of flexible material 57 which is formed into a partial loop to extend transversely of the top wall 13A substantially at the longitudinal midpoint thereof. The top wall 13A is provided with narrow slots or recesses 58 (FIG. 6) on the opposite longitudinal edges thereof, which recesses 58 are disposed substantially at the longitudinal center of the top wall. The recesses 58 have a transverse depth substantially equal to or slightly greater than the thickness of the handle strap 57 for permitting the handle strap to be disposed therein substantially as illustrated in FIG. 6. The opposite free ends of the handle strap 57 are provided with enlargements 59 fixedly secured thereto and adapted to be disposed directly under the top wall 13A for permitting the handle 56 to be securely attached to the holder 11A.

The handle 56 is specifically designed for use in conjunction with the cover 43 since the enlargements 59 of the strap 57 are retained under the top wall 13A by means of the opposed side walls 46 and 47 of the cover, thereby preventing the handle from becoming detached from the holder. However, when the cover 43 is slideably moved upwardly so as to remove same from the holder 11A, then the enlargements 59 can be easily moved laterally outwardly from beneath the top wall 13A to permit the handle 56 to be detached from the holder 11A.

It will be readily apparent, from the above description, that the cover 43 and handle 56 as illustrated in FIGS. 4-6 could also be utilized with a holder having lips adjacent the free edges of the shelf flanges. That is, the holder 11A could obviously be provided with lips, such as lips 23, along the upper edges of the flanges 22A. Similarly, the holder 11A could be utilized with the handle 31 illustrated in FIG. 3.

The holder 11 or 11A is preferably constructed from

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a stiff but resiliently flexible plastic material, such as polyvinylchloride, thereby enabling the holder to be easily and efficiently manufactured, as by extrusion. The holder could also be manufactured from other suitable plastic materials, such as polypropylene. Alternately, the holder could be manufactured from suitable metals, such as by being extruded from aluminum.

The cover 43 is also preferably constructed of a plastic material, such as by being extruded from polyvinylchloride. However, the cover could obviously be constructed of any suitable material, either plastic or metal, since it functions solely as a protective member and is thus subjected to little stress.

The holder according to the present invention, particularly when same is being used for storing cassettes, can also be provided with magnets affixed to the top wall of the holder, whereby the holder is easily secured to a metal object, such as the dashboard of a vehicle. Alternately, the top wall of the holder could be provided with a pressure sensitive adhesive for permitting the holder to be attached to the dashboard of a vehicle.

The holder constructed according to the present invention is obviously adapted for supporting any desired number of articles or cassettes thereon. For example, the overall length of the container and of the shelves provided thereon can easily be selectively varied in accordance with the specific use, thereby permitting either a small number or a large number of articles to be stored on each shelf. Further, the width of the shelf can obviously be varied according to the thickness of the cassette or article stored thereon. The distance between the shelves can also be selectively varied to accommodate cassettes or articles having different heights, and the number of vertically spaced shelves can also be selectively varied to permit the holder to accommodate the greatest number of objects.

While the holders 11 and 11A as illustrated are both provided with opposed pairs of shelves, that is with shelves on opposite sides of the main wall, it will be readily apparent that the holder according to the present invention could also be provided with shelves on only one side of the main wall if so desired. Still further, the shelves on opposite sides of the main wall need not be disposed in directly opposite pairs since the shelf spacing on one side of the main wall could be different than the shelf spacing on the other side of the main wall, whereby the holder would be adaptable for storing articles or cassettes of different heights.

Although a particular preferred embodiment of the invention has been disclosed in detail for illustrative purposes, it will be recognized that variations or modifications of the disclosed apparatus, including the rearrangement of parts, lie within the scope of the present invention.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A device for holding a plurality of relatively flat articles, such as cassettes, comprising:

a planar, relatively stiff, sheet-like main wall means adapted to be disposed in a substantially vertical position;

top wall means fixedly secured to said main wall means and extending laterally outwardly therefrom; and

a plurality of laterally spaced and substantially parallel resilient shelf means for releasably supporting and resiliently gripping relatively flat articles, each said shelf means being fixedly secured to said main wall means and extending longitudinally thereof and in the same direction as said top wall means;

each said shelf means including base wall means fixedly secured to said one side of said main wall means and extending laterally outwardly therefrom, and flange means integral with the outermost longitudinal edge of said base wall means, said flange means extending upwardly toward said top wall means and

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cooperating with said main wall means for resiliently but releasably gripping said article between said flange means and said main wall means.

2. A device according to claim 1, wherein a plurality of said shelf means are fixedly secured to said one side of said main wall means in laterally spaced and substantially parallel relationship. 5

3. A device according to claim 1, wherein a plurality of said shelf means are fixedly secured to said main wall means, at least one pair of said shelf means being disposed directly opposite each other on opposite sides of said main wall means. 10

4. A device according to claim 1, wherein each shelf means has a substantially L-shaped cross section: wherein each base wall means is substantially perpendicular to said main wall means and each flange means normally converges slightly relative to said main wall means as it extends in a direction away from said base wall means to resiliently and grippingly engage an article supported on said shelf means. 20

5. A device according to claim 4, wherein the upper edge of said flange means has a small integral lip which extends inwardly toward said main wall means and lengthwise along said flange means. 25

6. A device according to claim 1, including handle means detachably connectible to said top wall means and readily manually engageable for transporting said device.

7. A device according to claim 6, including cover means adapted to surround and enclose said device for protecting the articles stored thereon. 30

8. A device according to claim 7, wherein said cover means comprises a sleeve of substantially rectangular cross section into which said holder is slideably inserted, said top wall means and the lowermost base wall means closing the open ends of said sleeve. 35

9. A device according to claim 1, extruded in one piece from a suitable plastic or metallic material.

10. In combination, a tape cassette comprising a narrow boxlike housing having a shoulder on one side thereof, and an extruded plastic holder for releasably holding said cassette, said holder comprising: 40

a planar main wall having at least one longitudinal resilient shelf member secured thereto, said shelf member having a base wall oriented at substantially

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a right angle with the plane of the main wall, said shelf member further having an upright flange at its outermost edge which is canted toward the plane of the main wall and has an inwardly extending lip on its upper edge, which lip is adapted to overlap the shoulder on the tape cassette so that the tape cassette is pressed against the main wall and positively held by said lip against movement away from said base wall, said cassette being positioned on or removed from said shelf member by resiliently flexing said upright flange outwardly away from said main wall.

11. A package for holding a plurality of recording tapes, comprising:

an extruded plastic holder having a substantially planar main wall and a plurality of spaced, parallel and resilient shelf members secured to said main wall, each shelf member being substantially L-shaped and having a base wall substantially perpendicular to said main wall and an upright flange integral with the outer edge of said base wall, said flange converging with said main wall in a direction away from said base wall; and

a plurality of cassettes, one for each tape, snugly and slidably receivable between said main wall and a flange, the portion of said flange engaged with said cassette being resiliently distorted slightly by said cassette away from said main wall.

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