United States Patent [19]

Commiant

[11] **3,856,369**

[45] **Dec. 24, 1974**

[54] **METHOD FOR STOWING-AWAY CASSETTES IN A SUITABLE-HOLDER**

[75] Inventor: **Michel Commiant,** Molenbeek-Saint-Jean, Belgium

[73] Assignee: **Compagnie Generale des Isolants (Cogebi),** Brussels, Belgium

[22] Filed: **Mar. 16, 1973**

[21] Appl. No.: **342,261**

[30] **Foreign Application Priority Data**

Mar. 21, 1972 Belgium 780968
Aug. 18, 1972 Belgium 787724

[52] **U.S. Cl.**..... **312/107,** 206/DIG. 36, 206/387, 220/23.4, 221/75, 312/111, 312/319

[51] **Int. Cl.**.. **B65d 39/00,** A47b 73/00, F16b 12/00

[58] **Field of Search**..... 312/10, 15, 234-234.2, 312/245, 107, 108, 111, 319, 1 R; 206/DIG. 36, 387; 221/87; 220/23.4; 221/75

[56] **References Cited**

UNITED STATES PATENTS

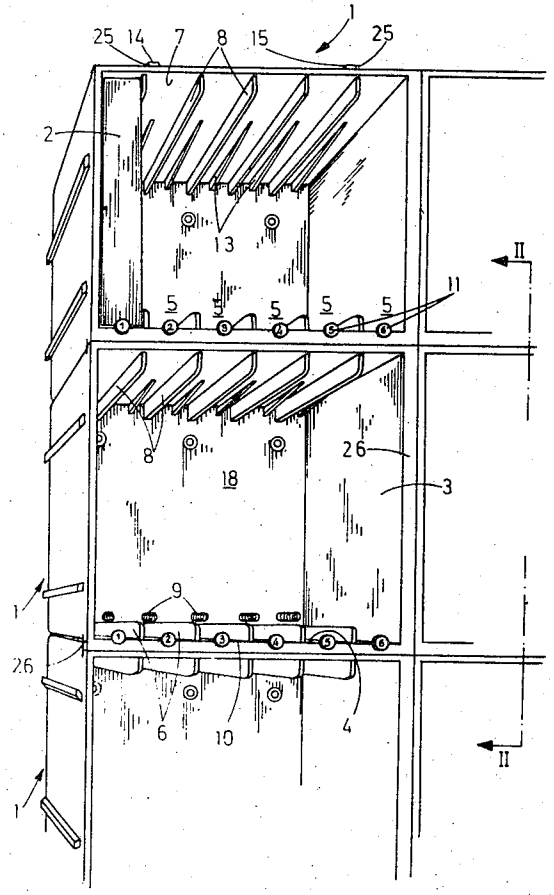
3,371,976	4/1968	Ritz, Jr.	312/245
3,603,478	9/1971	Connan	206/DIG. 36
3,677,396	7/1972	Staar	206/DIG. 36
3,743,372	7/1973	Ruggerone	312/108

Primary Examiner—Casmir A. Nunberg
Attorney, Agent, or Firm—Bacon & Thomas

[57] **ABSTRACT**

A holder for cassettes or similar, formed by a parallelepiped-shape box the front side of which is open and the bottom is divided into parallel compartments for cassettes, which extend at right angle to the open front side, whereby the width and the length of the compartments correspond with the width and length of a cassette, in such a way that a plurality of cassettes may be located next to one another on one small side thereof, inside one and the same holder.

6 Claims, 2 Drawing Figures



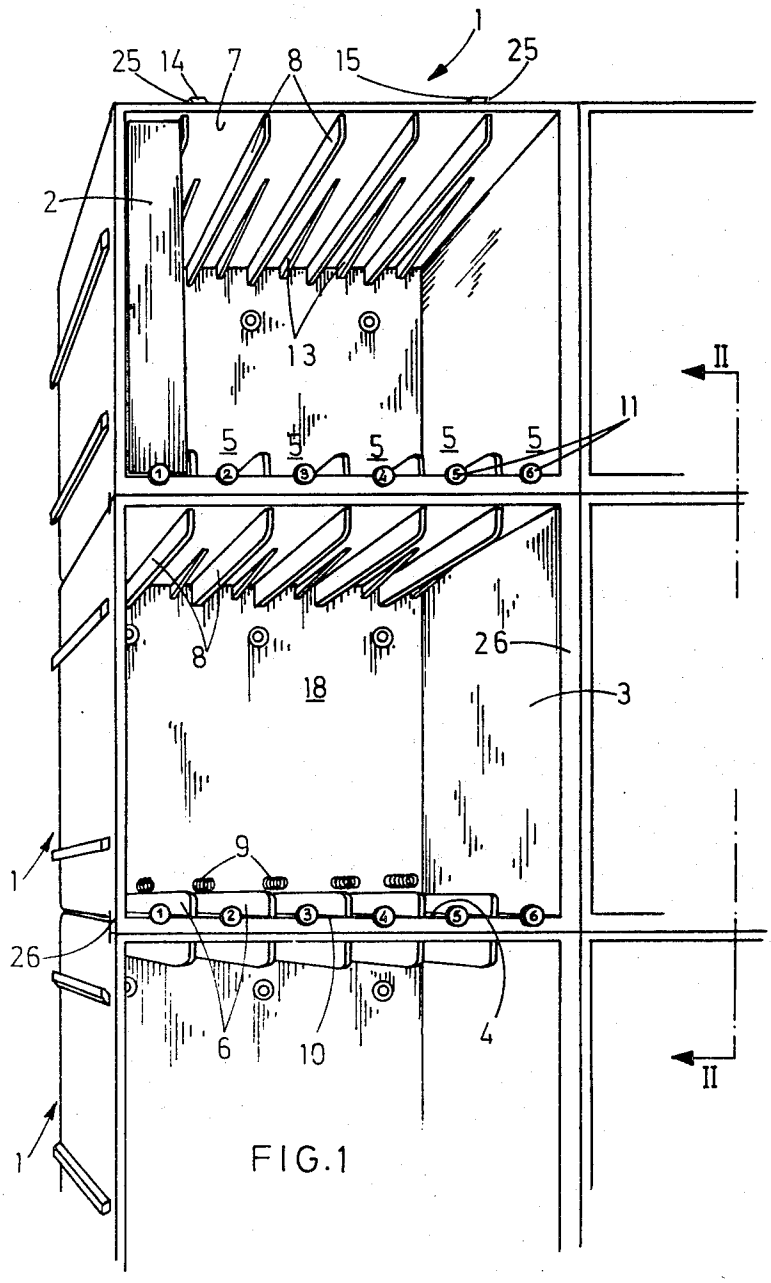


FIG.1

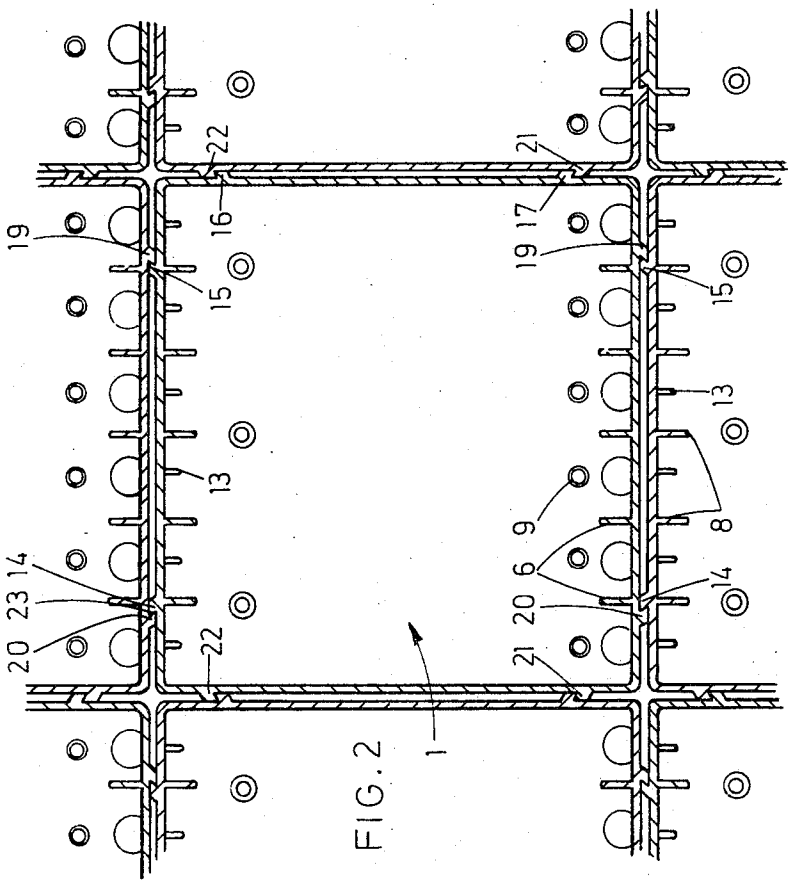


FIG. 2

METHOD FOR STOWING-AWAY CASSETTES IN A SUITABLE-HOLDER

This invention relates to a holder for soundrecording elements and similar, usually called "minicassettes" or "musicassettes."

Such "minicassettes" or "musicassettes," called for short "cassettes," are usually comprised of small plastic boxes in the shape of a flat parallelepiped with standard size inside which is arranged a recording tape.

Such tapes are usually provided beforehand with a sound recording and at least one of the large surfaces and at least one of the small surfaces of the parallelepiped are provided with the reference. The invention has mainly for object to solve the problems resulting from the stowingaway of the cassettes by means of a suitable holder for said cassettes.

For this purpose, the holder according to the invention is formed by a parallelepiped-shaped box the front side of which is open and the bottom is divided into parallel compartments for cassettes, which extend at right angle to the open front side, whereby the width and the length of the compartments correspond with the width and length of a cassette, in such a way that a plurality of cassettes may be located next to one another on one small side thereof, inside one and the same holder.

Usefully, on the inner side of the box back wall lying opposite the box front side, adjacent the bottom and inside each compartment are provided resilient members which operate at right angle to said back wall, along the compartment lengthwise direction, and on the side opposite said resilient members of said compartments is provided a stop for each compartment, in such a way that when a cassette is located in a compartment, said cassette is clamped between the compartment resilient member and the corresponding stop.

Other details and features of the invention will stand out from the description given below by way of non limitative example and with reference to the accompanying drawings, in which:

FIG. 1 is a perspective view partly in section, of joined holders according to the invention.

FIG. 2 is a cross-section along line II—II in FIG. 1.

In the drawings, the same reference numerals pertain to similar elements.

In FIG. 1 has been shown a plurality of identical holders 1 according to the invention, joined together and which are intended for the stowing of cassettes, more particularly the so-called "minicassettes" or "musicassettes," a single one of which has been shown in 2.

Said holders 1 are comprised of a parallelepiped-shaped box, the front side 3 of which is open and the bottom 4 is divided into identical compartments 5. In the figures, the holders have for example six compartments. The width and the length of said compartments correspond substantially to the width and length of a cassette 2, in such a way that in each compartment such a cassette 2 may be located on one small side thereof, in substantially fitting relation. Two succeeding compartments 5 are separated by low upright partitions 6 which extend from the bottom 4.

The top 7 of box 1 is also provided with short vertically-depending divisions 8 which extend opposite the partitions 6, in the same plane as said partitions, in such a way that the compartments 5 are also bounded on the top side of box 1 and the cassette 2 arranged in some compartment is retained upright.

On the inner side of box back wall 18 adjacent the bottom 4 and in each compartment 5 are provided resilient members which are comprised of coil springs 9 the axis of which extends substantially at right angle to the box front side 3, to thus operate along the compartment lengthwise direction. Said springs 9 are attached to projections 10 which are fast to the back wall 18.

Opposite said springs 9, on that edge 12 of bottom 4 which lies in the box front side 3 are provided stops 11 which extend upwards with respect to the bottom 4, in such a way that when a cassette 2 is located in some compartment and thus the corresponding spring 9 is compressed, the cassette is clamped between said compressed spring 9 and the stop 11 of that same compartment.

On the top 7 are provided between two succeeding divisions 8, guide members which are formed by ribs 13 running parallel thereto, the height of which is highest adjacent the back wall 18 and decreases from such maximum height toward the front side 3 down to substantially nothing halfway between the back wall 18 and the front side 3. The spacing between the bottom 4 and the location where the rib 13 has the maximum height is substantially equal to the length of the long side of the cassette 2 lying upright in the holder. In this way the cassette is thus pressed also downward against the bottom 4 when said cassette is clamped between a spring 9 and the corresponding projection.

The cassette 2 is thereby fixed in position in the compartment 5 thereof, however with the possibility of taking said cassette out easily even when all of the compartments are filled with a cassette. Indeed as the spacing between the bottom 4 and the top 7 is somewhat larger than the length of a cassette upright side, it is possible to raise somewhat the frontmost cassette corner, up to above the stop 11 whereby the compressed spring 9 is released and will push the cassette frontwards. It is thus possible to grip easily the then projecting cassette and to remove the cassette from the compartment.

The mounting on top and next to one another of similar holders is made possible according to the invention by means of attachment means provided on each outer surface of the side walls, of the top and of the bottom. Said attachment means are formed in the particular embodiment shown in the figures, by ribs 14, 15, 16, 17, 19, 20, 21 and 22 at right angle to the front side 3, with a substantially parallelogram-like cross-section, in such a way that a lengthwise surface 23 of said ribs forms an acute angle 25 with the outer surface of that box they are provided on.

On each outer surface are provided two such ribs the acute angles 25 of which are directed either facing one another or away from one another while the spacing between two ribs on one and the same surface and the arrangement of said ribs on said outer surface relative to those ribs on the other box outer surface in parallel relationship with said first surface, are such that by the joining together of two adjacent outer surfaces from two similar boxes, the acute angle of one outer surface rib is reversed relative to the acute angle of the rib cooperating therewith of the other outer surface, whereby both said acute angles engage one another in a hook-like way.

Thus the acute angles **25** of ribs **14** and **15** are directed away from one another and the acute angles **25** of ribs **19** and **20** provided under bottom **4** are facing one another. The same is true for ribs **16** and **17** of the one side wall and for ribs **21** and **22** of the box parallel opposite side wall.

By the joining together of two adjacent outer surfaces of boxes to be assembled, for example of two side wall outer surfaces, the corresponding ribs **16** and **22** as well as the corresponding ribs **17** and **21** of both said boxes are slid over one another in such a way that the angles **25** thereof hook together.

To enable a complete alignment in a simple way of a series of assembled holders or boxes, both vertically and horizontally, and moreover to give to the unit an aesthetic and homogeneous appearance, two succeeding edges of each box open front side have an outer flange **26** lying in said front side plane which projects relative to those outer surfaces it does bound over a distance which corresponds approximately to the height of those ribs **16, 17, 19** and **20** provided on said outer surfaces. The flange thus forms a stop for those ribs **14, 15, 21** and **22,** cooperating with said ribs **16, 17, 19** and **20,** of other boxes mounted on said first box, whereby the boxes may be perfectly aligned and said ribs are completely covered by said flange **26** which connects exactly with the adjacent boxes.

For the present standardized cassettes, the holder inner size is preferably as follows: width: 125 mm; height: 115 mm; depth: 77 mm.

The holder may advantageously be made of plastics, for example, by injection moulding.

The invention is in no way limited to the above embodiments and many changes may be brought therein without departing from the scope of the invention as defined by the appended claims.

I claim:

1. A holder for cassettes, said cassettes being parallelepiped-shaped, said holder comprising a parallelepiped-shaped box whose front side is open and which comprises an inner back face opposite said open front side, inner side faces and inner top and bottom faces, the bottom face being divided into parallel compartments adapted to receive cassettes, said compartment extending at right angles to the open front side, whereby the width and the length of the compartments correspond substantially to the width and length of a cassette, whereby a plurality of cassettes may be stored in adjacent upright positions on one of the sides thereof in said compartments, said box further comprising resilient members provided on said inner back face inside each of said compartments, a rigid stop for each of said compartments opposite each of said resilient members and rigid guide members provided on said inner top face inside each of said compartments, each of said resilient members operating at right angles to said inner back face toward each of said rigid stops whereby when a cassette is disposed in a compartment, said cassette is clamped between the resilient member and the corresponding rigid stop, the rigid guide members being arranged so as to guide a cassette into each of said compartments and retain said cassettes against the inner bottom face thereof.

2. The holder of claim **1** wherein adjacent compartments are separated from one another by bottom partitions which extend at right angles from the inner bottom face up to some height inside the box less than the total height of the box, and separate top partitions which extend at right angles downwards from the inner top face to some distance away from said inner top face opposite the bottom partitions.

3. The holder of claim **2** wherein the rigid guide members comprise separate ribs on the inner upper face of said box extending at right angles from the inner back face of the box to some distance shorter than the depth thereof, the height of said ribs, measured from said inner upper face, being maximum adjacent said inner back face and decreasing to zero from said maximum toward the front side of said box, the distance in each compartment between the inner bottom face of the box and the location where the rib has the maximum height being substantially equal to the length of the side of said cassette disposed upright therein.

4. The holder of claim **1** wherein the outer side faces and the outer top and bottom faces of said box are provided with attachment means for joining together a plurality of said boxes.

5. The holder of claim **4** wherein the attachment means are comprised of two ribs on each of said outer faces at least one lengthwise surface of which forms an acute angle with the outer box face they are provided on, whereby for two ribs on any one of said outer faces, the lengthwise surfaces forming said acute angles are diverging or converging, the spacing between the two ribs on each first outer face and the arrangement of said ribs on said first outer face relative to the two ribs on a second outer face of another box in parallel relationship with said first outer face being such that the acute angles of the ribs on the first outer face are directed opposite to the acute angles of the ribs cooperating therewith on the second outer face, whereby the lengthwise surfaces forming said acute angles engage one another to thereby attach the two boxes together.

6. The holder of claim **5** wherein two succeeding edges of the box open front side are provided with an outer flange lying in the plane thereof which projects outwardly from said edge past the outer face adjacent said edge a distance which corresponds substantially with the height of the ribs provided on said outer face, whereby said flange functions as a stop for the ribs on another box which cooperate with the ribs on said outer face adjacent said edge to attach said boxes together.

* * * * *