

PATENT SPECIFICATION

(11) 1 540 795

1 540 795

- (21) Application No. 21686/77 (22) Filed 23 May 1977
 (44) Complete Specification published 14 Feb. 1979
 51) INT CL² B65D 21/02
 (52) Index at acceptance
 B8P A
 (72) Inventor CHARLES ROBERT HERK



(54) CASSETTE STORAGE UNIT

(71) We, CRUCIBLE PTY. LIMITED, a Company incorporated in the State of New South Wales, of Unit 927, 22 Central Avenue, Manly, New South Wales 2095, Australia, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a storage device for magnetic-tape cassettes.

Presently known tape storage devices are formed as unitary racks designed to hold a large number of tapes and hence are expensive and occupy a comparatively large area even though storage for only a few tape cassettes is required. It is the object of this invention to provide storage means for tape cassettes which is of a size, or capacity, corresponding to the number of cassettes to be stored, and which may be readily modified to a different capacity.

According to the invention there is provided a storage container for at least one magnetic-tape cassette, said container comprising a shallow rectangular box having two opposite major faces, two opposite ends, a closed longitudinal side wall and an opposite open side; on each of said major faces two locking flanges joined by a stop flange to form a generally U-shaped protrusion, said locking flanges on a first one of said major faces being undercut on their inner, i.e. confronting, side faces and said locking flanges on a second one of said major faces being undercut on their outer, i.e. non-confronting, side faces whereby two adjacent ones of said containers in juxtaposition are interconnected in a row when the adjacent generally U-shaped protrusion on said second major face of one of said two containers is slid within said protrusion on said first major face of the other of said two containers with the undercut side faces of said adjacent protrusions of said two containers mating; and on one of said ends a recessed socket

and on the other of said ends a spigot of approximately similar dimensions to said socket whereby two adjacent ones of said containers in end-to-end alignment are interconnected when said spigot of one of said two containers is plugged into said socket of the other of said two containers; the width of said major faces being less than the width of said cassette whereby said cassette when inserted into said open side of said container protrudes from said container.

Several exemplary forms of the invention are illustrated in the accompanying drawings, in which:—

Fig. 1 is a perspective view of a first and preferred form showing a number of interlocked storage units with a cassette nested in one unit and a second cassette displaced from a unit;

Fig. 2 is an elevation in transverse section of two storage units in interlocked engagement;

Fig. 3 is a plan view of the two units shown in Fig. 2 but displaced laterally from the interlocked position; and

Fig. 4 is a perspective view of an alternative form of storage unit.

A first exemplary form of the invention as shown in Figs. 1, 2 and 3 will now be described in which the unit 6 holds just one tape cassette 7. Each unit 6 comprises a generally rectangular hollow casing dimensioned to receive a standard cassette-in-case 7. It is preferable that the depth of each unit 6 be slightly less than the depth of a standard cassette case 7 so that the latter protrudes and is simple to pull out when required.

The unit 6 may be described as having a front 8, a rear 9, two sides 10 and 11 and two ends 12 and 13. The front 8 of the unit 6 is open to receive and frictionally hold the cassette case 7. The rear 9 of the unit 6 is closed or otherwise provided with means for preventing the cassette case 7 from slipping out the back.

The end 12 of each unit 6 is provided with a shallow female recess 16, and its opposite

50

55

60

65

70

75

80

85

90

95

end carries a male spigot 17 which is a press fit into the recess 16 of another unit 6. Any number of units 6 can be secured together end-to-end by engaging their respective spigots 17 and recesses 16.

The sides 10 and 11 are provided with complimentary interlocking means so that a side 10 of one unit 6 can be interlocked with the complementary side 11 of another unit 6. The side 10 of each unit is provided with two spaced parallel longitudinal flanges 18 formed integrally with said side wall. The flanges 18 are joined at one end by an integral stop flange 19. The outer face 20 of each flange 18 is formed at right angles to the side wall 10, whilst the inner surface 21 is angled slightly to the normal, i.e. undercut.

The opposite side 11 of each unit 6 is also provided with spaced parallel longitudinal flanges 22 joined by a stop flange 23. In this case the inner face 24 of the flanges 22 are normal to the surface 11 whilst the outer face 25 is angled, undercut, in a similar manner to the face 21. The units 6 can be joined laterally by engagement of the flanges 18 and 22 as shown in Fig. 2 with the angled faces 21 and 25 moving in sliding engagement until the stop flanges 19 and 23 come into contact. Fig. 2 shows the flanges 22 slightly closer spaced than are flanges 18. An examination of Fig. 3 will show that the flange 23 is positioned slightly closer to the centre of each unit 6 than the flange 19. This ensures that the ends 12 and 13 of each unit will be in alignment when the flanges 19 and 23 come into contact.

By interlocking units 6 end-to-end and/or side to side a wall or battery of units 6 can be built up as required. It is possible to build the wall or battery with the ends 12 or 13, or the sides 10 or 11, or the fronts 8 uppermost. Each single unit 6 may be capable of standing vertically without support but when other units 6 are locked into place horizontally or both horizontally and vertically the entire storage device becomes quite rigid.

Other alternative interlocking means can be used. For example an alternative form of unit 6A is shown in Fig. 4 in which the open end of flanges 18A can face towards the closed rear 9A of said unit, with the open end of the flanges 22A facing towards the open front 8A. It can be seen that both sides of the flanges 18A are undercut and are intended to be gripped between respective pairs of flanges 22A of another unit 6. The two confronting faces of each pair of flanges 22A are also undercut.

It should be clear that the interlocking flanges, or ribs and channels, may be of longitudinally extending or transverse form. It is also feasible, of course, that each unit 6 accommodate more than one tape cassette.

WHAT WE CLAIM IS:—

1. A storage container for at least one magnetic-tape cassette, said container comprising a shallow rectangular box having two opposite major faces, two opposite ends, a closed longitudinal side wall and an opposite open side; on each of said major faces two locking flanges joined by a stop flange to form a generally U-shaped protrusion, said locking flanges on a first one of said major faces being undercut on their inner, i.e. confronting, side faces and said locking flanges on a second one of said major faces being undercut on their outer, i.e. non-confronting, side faces whereby two adjacent ones of said containers in juxtaposition are interconnected in a row when the adjacent generally U-shaped protrusion on said second major face of one of said two containers is slid within said protrusion on said first major face of the other of said two containers with the undercut side faces of said adjacent protrusions of said two containers mating; and on one of said ends a recessed socket and on the other of said ends a spigot of approximately similar dimensions to said socket whereby two adjacent ones of said containers in end-to-end alignment are interconnected when said spigot of one of said two containers is plugged into said socket of the other of said two containers; the width of said major faces being less than the width of said cassette whereby said cassette when inserted into said open side of said container protrudes from said container.

2. A storage container as claimed in claim 1, wherein said generally U-shaped protrusions extend longitudinally of each of said containers.

3. A storage container as claimed in claim 1 or 2, wherein said locking flanges on said first one of said major faces of said container are substantially parallel and are wider apart than said locking flanges on said second one of said major faces.

4. A storage container as claimed in claim 1, 2 or 3, wherein said stop flange on one of said major faces of said container is offset from said stop flange on the other of said major faces to ensure that all containers of a plurality of said containers when interlocked in a row are in alignment.

5. A storage rack for magnetic-tape cassettes comprising a plurality of containers slidably interconnected in plural rows with said rows interconnected by plugging of the containers of one of said rows into corresponding ones of said containers of an adjacent one of said rows; all of said containers being of identical construction with each one of said containers being of shallow rectangular box form having two opposite major faces, two

16



5 end carries a male spigot 17 which is a press fit into the recess 16 of another unit 6. Any number of units 6 can be secured together end-to-end by engaging their respective spigots 17 and recesses 16.

10 The sides 10 and 11 are provided with complimentary interlocking means so that a side 10 of one unit 6 can be interlocked with the complementary side 11 of another unit 6. The side 10 of each unit is provided with two spaced parallel longitudinal flanges 18 formed integrally with said side wall. The flanges 18 are joined at one end by an integral stop flange 19. The outer face 20 of each flange 18 is formed at right angles to the side wall 10, whilst the inner surface 21 is angled slightly to the normal, i.e. undercut.

20 The opposite side 11 of each unit 6 is also provided with spaced parallel longitudinal flanges 22 joined by a stop flange 23. In this case the inner face 24 of the flanges 22 are normal to the surface 11 whilst the outer face 25 is angled, undercut, in a similar manner to the face 21. The units 6 can be joined laterally by engagement of the flanges 18 and 22 as shown in Fig. 2 with the angled faces 21 and 25 moving in sliding engagement until the stop flanges 19 and 23 come into contact. Fig. 2 shows the flanges 22 slightly closer spaced than are flanges 18. An examination of Fig. 3 will show that the flange 23 is positioned slightly closer to the centre of each unit 6 than the flange 19. This ensures that the ends 12 and 13 of each unit will be in alignment when the flanges 19 and 23 come into contact.

40 By interlocking units 6 end-to-end and/or side to side a wall or battery of units 6 can be built up as required. It is possible to build the wall or battery with the ends 12 or 13, or the sides 10 or 11, or the fronts 8 uppermost. Each single unit 6 may be capable of standing vertically without support but when other units 6 are locked into place horizontally or both horizontally and vertically the entire storage device becomes quite rigid.

50 Other alternative interlocking means can be used. For example an alternative form of unit 6A is shown in Fig. 4 in which the open end of flanges 18A can face towards the closed rear 9A of said unit, with the open end of the flanges 22A facing towards the open front 8A. It can be seen that both sides of the flanges 18A are undercut and are intended to be gripped between respective pairs of flanges 22A of another unit 6. The two confronting faces of each pair of flanges 22A are also undercut.

65 It should be clear that the interlocking flanges, or ribs and channels, may be of longitudinally extending or transverse form. It is also feasible, of course, that each unit 6 accommodate more than one tape cassette.

WHAT WE CLAIM IS:—

1. A storage container for at least one magnetic-tape cassette, said container comprising a shallow rectangular box having two opposite major faces, two opposite ends, a closed longitudinal side wall and an opposite open side; on each of said major faces two locking flanges joined by a stop flange to form a generally U-shaped protrusion, said locking flanges on a first one of said major faces being undercut on their inner, i.e. confronting, side faces and said locking flanges on a second one of said major faces being undercut on their outer, i.e. non-confronting, side faces whereby two adjacent ones of said containers in juxtaposition are interconnected in a row when the adjacent generally U-shaped protrusion on said second major face of one of said two containers is slid within said protrusion on said first major face of the other of said two containers with the undercut side faces of said adjacent protrusions of said two containers mating; and on one of said ends a recessed socket and on the other of said ends a spigot of approximately similar dimensions to said socket whereby two adjacent ones of said containers in end-to-end alignment are interconnected when said spigot of one of said two containers is plugged into said socket of the other of said two containers; the width of said major faces being less than the width of said cassette whereby said cassette when inserted into said open side of said container protrudes from said container.

2. A storage container as claimed in claim 1, wherein said generally U-shaped protrusions extend longitudinally of each of said containers.

3. A storage container as claimed in claim 1 or 2, wherein said locking flanges on said first one of said major faces of said container are substantially parallel and are wider apart than said locking flanges on said second one of said major faces.

4. A storage container as claimed in claim 1, 2 or 3, wherein said stop flange on one of said major faces of said container is offset from said stop flange on the other of said major faces to ensure that all containers of a plurality of said containers when interlocked in a row are in alignment.

5. A storage rack for magnetic-tape cassettes comprising a plurality of containers slidably interconnected in plural rows with said rows interconnected by plugging of the containers of one of said rows into corresponding ones of said containers of an adjacent one of said rows; all of said containers being of identical construction with each one of said containers being of shallow rectangular box form having two opposite major faces, two



(17)

3

1,540,795

3

opposite ends, a closed longitudinal side wall and an opposite open side; each one of said containers also comprising on each of said major faces two locking flanges joined by a stop flange to form a generally U-shaped protrusion, said locking flanges on a first one of said major faces being undercut on their inner, i.e. confronting side faces and said locking flanges on a second one of said major faces being undercut on their outer, i.e. non-confronting, side faces whereby two adjacent ones of said containers in juxtaposition are interconnected in a row when the adjacent generally U-shaped protrusion on said second major face of one of said two containers is slid within said protrusion on said first major face of the other of said two containers with the undercut side faces of said adjacent protrusions of said two containers mating; each one of said containers also comprising on one of its said ends a recessed socket and on the other of its said ends a spigot of approximately similar dimensions to said socket whereby two adjacent ones of said containers in end-to-end alignment are interconnected when said spigot of one of said two containers is plugged into said socket of the other of said two containers; and the width of said major faces is less than the width of said cassettes whereby

each of said cassettes when inserted into said open side of one of said containers protrudes from said container.

35

6. A storage rack as claimed in claim 5, wherein said generally U-shaped protrusions extend longitudinally of each of said containers.

7. A storage rack as claimed in claim 5 or 6, wherein said locking flanges on said first one of said major faces of each of said containers are substantially parallel and are wider apart than said locking flanges on said second one of said major faces.

40

45

8. A storage rack as claimed in claim 5, 6 or 7, wherein said stop flange on one of said major faces of each of said containers is offset from said stop flange on the other of said major faces, whereby all of said containers in one of said rows are in alignment.

50

9. A storage container for a magnetic-tape cassette substantially as herein described with reference to Figs. 1 to 3, or Fig. 4 of the accompanying drawings.

55

LANGNER PARRY,
Chartered Patent Agents,
High Holborn House,
52-54 High Holborn,
London, WC1V 6RR.
Agents for the Applicants.