Aug. 4, 1970 J. A. FORD ET AL 3,522,621

SPACED CARRIER SYSTEM

Filed Oct. 18, 1967 2 Sheets-Sheet 1

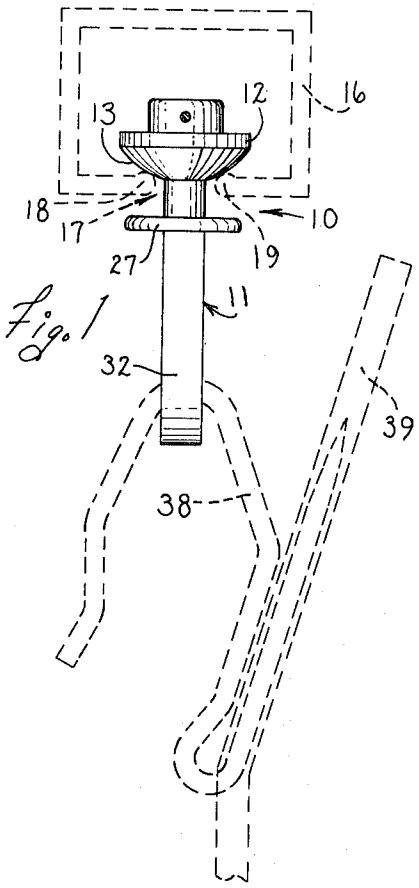

Fig. 1

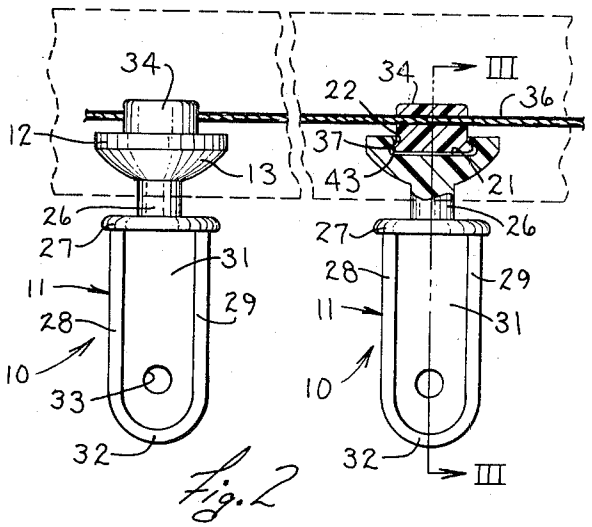

Fig. 2

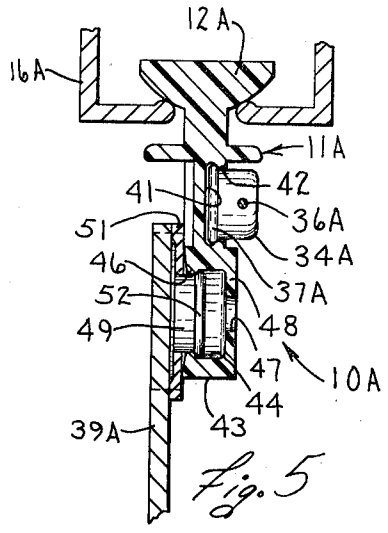

Fig. 5

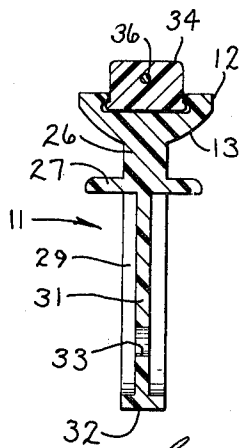

Fig. 3

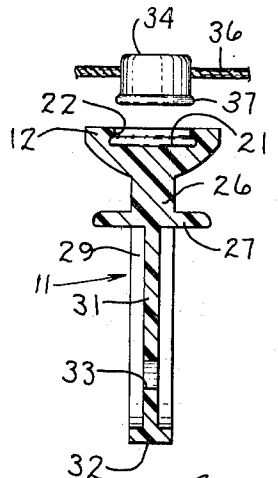

Fig. 4

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SPACED CARRIER SYSTEM

Filed Oct. 18, 1967 2 Sheets-Sheet 2

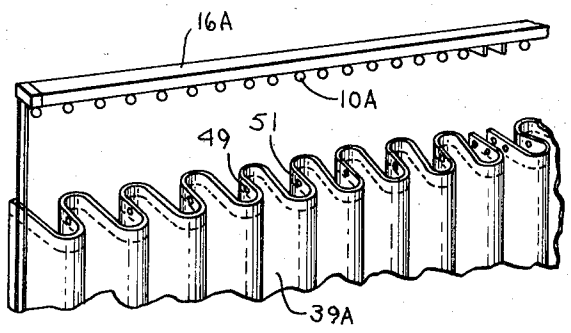

Fig. 9

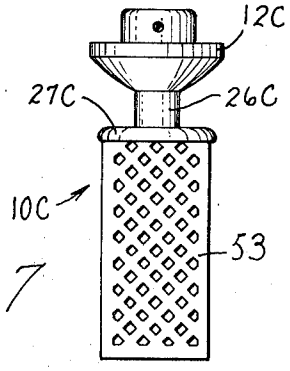

Fig. 7

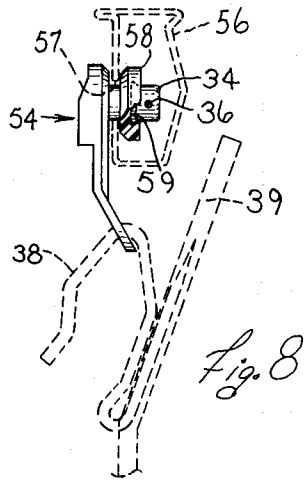

Fig. 8

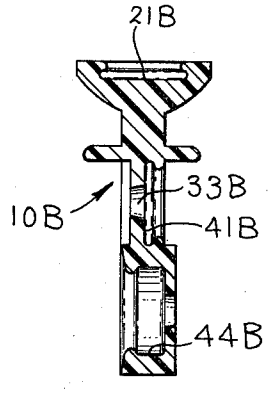

Fig. 6

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3,522,621

SPACED CARRIER SYSTEM

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Int. Cl. A47h 13/14
U.S. Cl. 16—87.4 13 Claims

ABSTRACT OF THE DISCLOSURE

A panel carrier for use in supporting door or drapery material to which is releasably secured at least one of a plurality of members spacedly secured to and along an elongated element, whereby an unpleated panel may be quickly and easily given the appearance of a pleated panel.

FIELD OF THE INVENTION

This invention relates to a carrier for door or drapery material and, more particularly, relates to such a carrier having means thereon releasably receiving and coacting with at least one of a plurality of members spacedly secured to and along an elongated flexible element in order that an unpleated panel may be quickly and easily given the appearance of a pleated panel.

DESCRIPTION OF THE PRIOR ART

Drapery systems have been known for some time wherein a traverse rod is equipped with a plurality of individual drapery carriers which project through a longitudinal slot therein. The individual drapery carriers are slideable with respect to the traverse rod and have openings therein which receive drapery or pleater hooks for supporting the drapery material.

Drapery carrier systems wherein a plurality of individual carriers are interconnected by a flexible element such as a string are also known. It is one purpose of this type of drapery carrier system to maintain a uniform spacing between the carriers when the drapery material is in a closed position and a further purpose to cause the interconnecting string to pull the drapery material closed rather than requiring such pulling force to be transmitted through the drapery material itself.

Said first-mentioned purpose is particularly advantageous in that by controlling the spacing between hangers it in effect provides uniform pleats in the drapery material and eliminates the necessity of providing such pleats by sewing, use of pleater hooks or otherwise. This not only eliminates cost in the making of otherwise conventional draperies but makes convenient the use of materials, such as match-stick material, which are difficult to sew. It is further applicable to use with door units where folds are desired but not pleats and where the appropriate material does not lend itself well to sewing.

Said first mentioned purpose also appears in connection with drapery materials having a strip of tape sewn thereto which has a plurality of snap fasteners secured thereto as illustrated in Pat. No. 3,296,651, issued Jan. 10, 1967. This type of drape is highly desirable for use in hospitals, for example, where frequent laundry is required for sanitary purposes. All that is required to remove the drapes for laundry purposes is to unsnap the drapes from the carriers and yet an attractive pleat is provided as above described.

The second above-mentioned purpose appears to some extent with any drapery system but is of particular importance where the material is of light or flimsy nature or even with heavier materials when used for extremely long, as auditorium, draperies.

These advantages of interconnecting the hangers have

long been known and various means for so doing have also long been known. However, the practical use of such constructions has been limited in spite of their known advantages because of (1) the expense and/or inconvenience of providing the previously known means for interconnecting the hangers (2) the expense and/or inconvenience of replacing worn connecting means, such as tapes or cords, between hangers and (3) the frequent unsightly nature of such connecting means, especially tapes. These items of inconvenience and/or expense have been applicable to both commercial and domestic making and using of traverse rod draperies.

Accordingly, the objects of this invention include:

(1) To provide a drapery carrier, as aforesaid, which is capable of easy securement to a string for interconnecting a plurality of same.

(2) To provide a drapery carrier wherein a plurality of individual carriers may be easily and quickly interconnected by a string as desired by an operator.

(3) To provide a drapery or door material carrier which will provide in an easy, inexpensive and convenient manner, a pleated appearance to an unpleated panel of material suspended from a plurality of such carriers.

(4) To provide a standard drapery carrier which is usable with or without a string interconnecting a plurality of same.

(5) To provide a drapery carrier, as aforesaid, which is easy to manufacture and simple to use.

(6) To provide a drapery carrier, as aforesaid, wherein the manual procedure of tying a plurality of drapery carriers together has been eliminated.

(7) To provide a drapery carrier system which results in an improved appearance of closed drapes.

(8) To provide a drapery carrier system which is utilizable with presently known traverse rod constructions.

Other objects and purposes of this invention will be apparent to persons acquainted with apparatus of this general type upon reading the following specification and inspecting the accompanying drawing.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a side elevational view of a drapery carrier embodying the invention and arranged for use with a bottom opening traverse rod.

FIG. 2 is a front elevational view of the drapery carrier shown in FIG. 1.

FIG. 3 is a sectional view taken along the line III—III in FIG. 2.

FIG. 4 is a sectional view similar to FIG. 3 wherein the button has been removed from the head and rotated 90 degrees.

FIG. 5 is a sectional view similar to FIG. 3 illustrating a modified embodiment and including a fragment of the rod.

FIG. 6 is a sectional view of a carrier illustrating a modified embodiment.

FIG. 7 is a front elevational view illustrating a further embodiment of the drapery carrier.

FIG. 8 is a side elevational view partially sectioned of a drapery carrier for use with a side opening traverse rod.

FIG. 9 is an exploded view of the embodiment shown in FIG. 5.

Certain terminology will be used in the following description for convenience in reference. The words "front" and "rear" and "upwardly" and "downwardly" will designate directions having reference to FIG. 2, unless otherwise specified, wherein the front of the drapery carrier is shown. The words "inwardly" and "outwardly" will refer to directions toward and away from, respectively, the geometric center of the device and designated parts

thereof. Said terminology will include the words above specifically mentioned as well as derivatives thereof and words of similar import.

SUMMARY OF THE INVENTION

In general, the objects of the invention are met primarily by providing a plurality of drapery carriers having a portion of at least some thereof molded directly to an elongated element to connect such carriers in spaced relationship to each other. Further objects of the invention are met by providing at least some of such drapery carriers with means thereon for releasably receiving and coacting with means attached to such elongated element. The carriers are preferably arranged so that parts thereof can swivel with respect to the elongated element.

DETAILED DESCRIPTION

The drapery carrier **10** comprises a body part **11** which includes a head **12** having a lower surface **13** which is shaped to slidingly engage appropriate rail means. In this embodiment, said lower surface **13** has a generally truncated spherical shape. The head **12**, in this embodiment, is located inside a traverse rod **16** (indicated in dotted lines in FIGS. 1 and 2) which has a bottom opening slot **17** therein. The diameter of the head **12** is greater than the width of the slot **17** so that the rounded edges **18** and **19** of the slot **17** support the head **12** within the track on the truncated spherical surface **13**. This construction permits the body part **11** to swivel 360 degrees about its own vertical axis. The head **12** further includes a cylindrical recess **21** in the upper surface thereof which has an annular lip **22** projecting inwardly adjacent the mouth thereof.

The body part **11** further includes a generally cylindrical portion **26** fixedly, here integrally, secured to the lower portion of the head **12** and depends from the lower portion of the generally spherical surface **13** through the slot **17** in the traverse rod **16** and terminates in a flange **27** projecting radially outwardly therefrom. A pair of spaced-apart and parallel projections **28** and **29** are secured to the flange **27** and depend therefrom. The projections **28** and **29** are further interconnected by a web **31** which extends therebetween. The lower ends of the projections **28** and **29** terminate, in this embodiment, in a radial portion **32** interconnecting the aforesaid projections **28** and **29**. An opening **33** is located in the web **31** preferably adjacent the radial portion **32**. The opening **33** receives a drapery hook **38** of the type indicated in dotted lines in FIG. 1 which supports in any convenient manner drapery material **39**.

The foregoing discussion describes what can be considered to be a typical drapery carrier having the novel feature of the recess **21**. The cylindrical recess **21** is designed to receive a generally cylindrical button **34** which is, in this embodiment, secured to an elongated and flexible element such as a string **36**. In this particular embodiment, the button **34** is molded by any convenient process to the string **36** so that it is fixed with respect thereto. An annular bead **37** projects radially outwardly from the button **34** adjacent the lower end thereof. The diameter of the button is slightly less than the diameter of the opening defined by the annular lip **22**. The diameter of the annular bead **37** on the button **34** is greater than the inner diameter of the annular lip **22**, but less than the diameter of the recess **21**. The button **34** is releasably securable in the recess **21** due to the fact that the annular members **22** and **37** are slightly resilient thereby permitting the bead **37** to move into the recess **21** past the lip **22**. The cylindrical construction also permits the button **34** to swivel with respect to the drapery carrier **10**.

ALTERNATE CONSTRUCTION

The words "front" and "rear" will have reference in FIG. 5 to directions to the left and to the right respectively.

FIGS. 5 and 9 illustrate a modified drapery carrier **10A** having a cylindrical recess **41** on the rear side thereof rather than in the head **12A**. An annular lip or rib **42** projects radially inwardly at or near the mouth thereof so that a cylindrical button **34A** having an annular bead **37A** thereon is releasably receivable into the recess **41**. The string **36A** serves the same purpose as stated above, namely connecting a plurality of carriers together.

The body part **11A** further includes a generally cylindrical member **43** which is secured to the lower end of the portion containing recess **41**. A recess **44** is located on the front side of the cylindrical member **43** and has an annular lip **46** projecting inwardly adjacent the mouth thereof. An opening **47** is located in the wall **48** of the recess **44** and is, in this embodiment, coaxial with said recess **44**. The opening **47** can receive a drapery hook **38** of the type indicated in dotted lines in FIG. 1 which supports in any convenient manner drapery material **39**.

However, in this particular embodiment, a button **49** is secured in any convenient manner to an elongated strip of tape **51** (FIG. 9) which is preferably sewn to the drapery material **39A** and which serves as a snap fastener. The button **49** has an annular bead **52** projecting radially outwardly therefrom which permits said button **49** to be releasably securable into the recess **44** in the carrier. That is, the bead **52** is greater in diameter than the inner diameter of the rib **46** to lockingly cause said lip **46** to hold said bead **52** into the recess **44**.

FIG. 6 illustrates a modified drapery carrier **10B** comprising a combination of the embodiments illustrated in FIGS. 1–4 and FIGS. 5 and 9, namely, comprising recesses **21B**, **41B** and **44B** located in the same positions as described hereinabove.

FIG. 7 illustrates a modified drapery carrier **10C** which comprises a head **12C**, a cylindrical portion **26C** and a flange **27C** identical to the respective components illustrated in the embodiment of FIGS. 1–4. In this particular embodiment, however, a web **53** centrally located with respect to the flange **27C**, is integrally secured thereto and depends therefrom. The web **53** is preferably of a perforate construction so that a sewing needle may pass therethrough relatively easily so that the web **53** can be sewn to the drapery material (not shown).

FIG. 8 illustrates a modified drapery carrier **54** for use with a traverse rod **56** (dotted lines) having a side opening slot **57** therein. The head **58** of the drapery carrier **54** is located inside of the traverse rod **56** and has a recess **59** therein designed to releasably receive a button **34** which is secured to an elongated string **36** in the same manner as set forth hereinabove. It is recognized, of course, that suitable structure could be provided on the carrier **54** so that the button **34** could be releasably receivable into a recess provided on the portion thereof outside of the traverse rod **56**. The carrier **54** supports in the usual manner drapery material **39** secured to a drapery hook **38**.

In all of the above-described embodiments, both the carriers and the buttons are made from a suitable synthetic organic plastic material, preferably one such as nylon which is both easily moldable and has some inherent lubricating properties.

While other methods of fastening the string to the buttons are available, it will be recognized that by fastening the string to the buttons by forming the button around the string in any known manner during the molding of the button, a strong and reliable fastening can be obtained by high-speed production methods which will, in turn, provide a high-quality product at a minimum cost.

OPERATION

In use, the carriers are designed to carry drapery or door material as is widely recognized in the field. While the carriers are usable with or without the buttons **34** and the string **36**, the normal use for the primary purposes of the invention contemplates the fastening of the buttons into the carriers as above described. Such fastening will

be done before the insertion of the hangers into the rod for all forms of the invention shown except that of FIG. 5, while for the FIG. 5 form, and one use of the FIG. 6 form, the hangers may be first inserted into the rod and the buttons applied later, either before or after attaching of the panel **39A**.

Since the button **34** is swivelable with respect to the body part **11**, the carrier **10** will not cause the string **36** to wear unnecessarily because the button **34** can orient itself in at least one plane with respect to the force exerted thereon so as to minimize the nonaxial tension applied to the string **36**. Particularly, the freedom of the button in all forms shown except that of FIG. 5 to swivel with respect to the hanger around a vertical axis permits the hanger to rotate freely as the panel material **39** folds or unfolds during normal operation thereof while the string **36** extends at all times in a straight line along the length of the supporting rod. It is recognized, of course, that a non-axial force on the string **36** at the point where it enters the button **34** will cause a fraying of the string fibers and result in a shorter life thereof.

Furthermore, if the string **36** should break, the string of buttons **34** may be easily removed from the carriers, mended and replaced. In the embodiment illustrated in FIG. 7, this feature is extremely important due to the fact that the carrier **10C** is sewn to the drapery material which makes the removal and replacement of the entire hanger a serious problem.

The drapery carrier **10** further provides two ways of supporting drapery material. The first way is by the hook **38** (FIG. 1) projecting through the opening (FIG. 2) or by such a hook extending through the opening **47** (FIG. 5) or **33B** (FIG. 6). The second way is illustrated in FIG. 5 wherein a button **49** is releasably receivable in the recess **44**. Thus, the manufacturer can reduce the amount of capital required to maintain a supply of many different varieties of drapery carriers due to the fact that one carrier (such as the carrier **10B** illustrated in FIG. 6) permits a number of different ways of securing the drapery material thereto. Furthermore, the drapery carrier **10B** has the added advantage that a user thereof has the choice of where the buttons **34** can be secured. For example, the buttons **34** may be secured to the carrier inside the traverse rod **16** as illustrated in FIGS. 1 and 2 or they may be secured to the carrier outside of the track as illustrated in FIG. 5. This latter securement provides an easily accessible recess which makes replacement easier.

In all of the foregoing it has been assumed that the plastic material is of a type, such as nylon, which will shrink sufficiently upon cooling to clamp itself tightly to the cord upon which it is molded. If a plastic is used which is nonshrinking, then other means may be used to fix the cord to the buttons **34**, such as offsetting, knotting, or looping the cord within the button mold prior to or during molding of the button so that the button when formed will still not be able to move lengthwise of the cord.

Although particular preferred embodiments of the invention have been disclosed in detail for illustrative purposes, it will be understood 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. In a door or drapery material carrier system, the combination comprising:

a traverse rod having at least one slot therein;

a plurality of carriers having a body part projecting through said slot in said rod and movable with respect thereto, one end of said body part positioned within said rod and having head means thereon, said head means being greater in dimension than the width of said slot, the other end of said body part having mounting means secured thereto for supporting said material;

said plurality of carriers having means respectively thereon for releasably receiving a plurality of members secured at spaced intervals to and along an elongated and flexible element.

2. In a door or drapery material supporting system, the combination comprising:

a traverse rod having at least one elongated slot therein;

a plurality of hangers slideably carried by said traverse rod and projecting through said slot and including means thereon for supporting said material, at least some of said hangers each having an opening therein;

a plurality of connector members and an elongated flexible member fixedly connected to said connector members with said connector members positioned at spaced intervals along said elongated flexible element;

means associated with said connector members and the openings within said hangers for snapably receiving said connectors into said openings while permitting rotation of said connectors with respect to said hangers and within said openings;

whereby said elongated flexible member may be quickly snapped into connecting relationship with said hangers and may be equally quickly removed therefrom for replacement.

3. The device defined in claim **2**, wherein both said connectors and said openings are of circular cross section.

4. The device defined in claim **2**, wherein both said hangers and said connectors are made of a moldable plastic material which is slightly resilient to permit said snapable interengagement therebetween.

5. The device defined in claim **2**, wherein the connectors are molded onto the flexible member.

6. The device defined in claim **2**, wherein the opening in the hanger is within the rod.

7. The device defined in claim **2**, wherein the opening in the hanger is outside of said rod.

8. In a door or drapery material carrier system, the combination comprising:

a traverse rod having at least one slot therein;

a plurality of members secured at spaced intervals to and along an elongated flexible element;

a plurality of carriers having a body part projecting through said slot in said rod and movable with respect thereto lengthwise of said rod, one end of said body part positioned within said rod and having head means thereon for mounting said body part on said rod, the other end of said body part having mounting means secured thereto for supporting said material;

each of said plurality of carriers and each of said plurality of members having means thereon for releasably coupling same together.

9. In a door or drapery material supporting system, the combination comprising:

a traverse rod having at least one elongated slot therein;

a plurality of hangers slideably carried by said traverse rod and projecting through said slot and including means thereon for supporting said material;

a plurality of connector members and an elongated flexible member fixedly interconnecting said connector members at spaced intervals therealong;

means on at least one of said connector members and said hangers for releasably connecting said connector members to said hangers while permitting a relative rotation therebetween;

whereby said elongated flexible member may be connected into connecting relationship with said hangers and may be disconnected therefrom for replacement.

10. In a door or drapery material carrier system, the combination comprising:

a hollow traverse rod having at least one slot therein;

a plurality of carriers each projecting through said slot in said rod and movable with respect thereto, the portion of said carriers positioned within said rod having head means thereon greater in dimension than the width of said slot, the portion of said carriers outside of the traverse rod having mounting means associated therewith for supporting said material;

an elongated flexible element arranged along said rod;

at least some of said carriers having a portion of each thereof formed from a moldable synthetic organic plastic material and connected at spaced intervals to and along said flexible element by being molded therearound.

11. In a door or drapery material carrier system, the combination comprising:

a hollow traverse rod having at least one slot therein;

a plurality of carrier means each projecting through said slot in said rod and movable with respect thereto, a first portion thereof having head means within said rod greater in dimension than the width of said slot and a second portion of said carrier means outside of the traverse rod having mounting means associated therewith for supporting said material;

an elongated flexible element arranged along said rod;

at least some of said carrier means having a mounting portion of each thereof formed from a moldable synthetic organic plastic material and connected at spaced intervals to and along said flexible element by being molded therearound;

swivel means arranged to permit relative rotatable movement between said second portion and said mounting portion.

12. A carrier body for use in supporting panel material, comprising:

a carrier body having panel mounting means thereon;

an elongated flexible element;

a plurality of members formed from a moldable synthetic organic plastic material and connected at spaced intervals to and along said elongated flexible element by being molded therearound;

means on said carrier body for rotatably receiving and coacting with at least one of said plurality of members.

13. Carrier means for use in supporting panel material, comprising:

a carrier body having panel mounting means thereon;

there being a recess in said carrier body having first resilient lip means located adjacent the edge thereof, said recess being located in the top of said carrier body;

a plurality of buttons secured at spaced intervals to and along an elongated flexible element, each of said buttons having second resilient lip means thereon, one of said plurality of buttons being swivellably receivable into said recess, said first and second lip means being cooperable to releasably retain said button in said recess.

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U.S. Cl. X.R.

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