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L. F. MARKS ET AL

3,566,436

COLLAPSIBLE STRAP HANDLE FOR LUGGAGE AND THE LIKE

Filed April 11, 1969

2 Sheets-Sheet 1

Fig. 1.

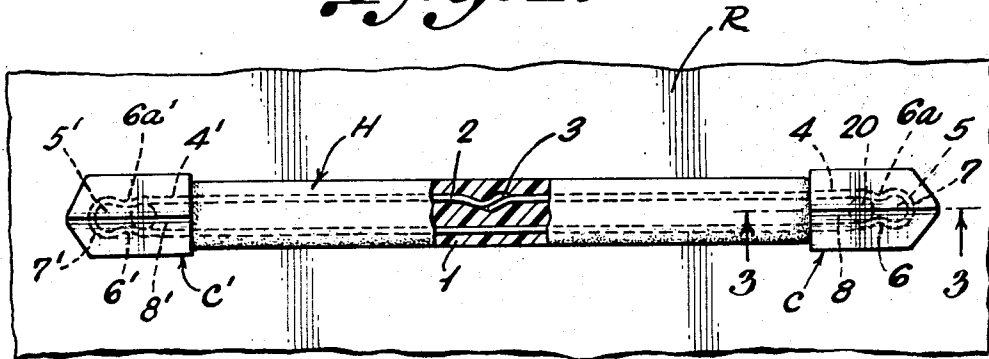


Fig. 2.

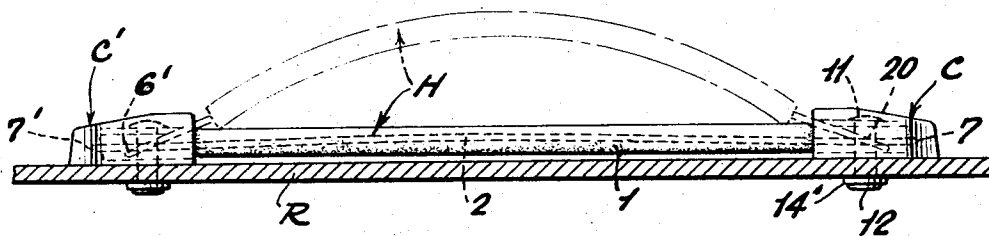


Fig. 3.

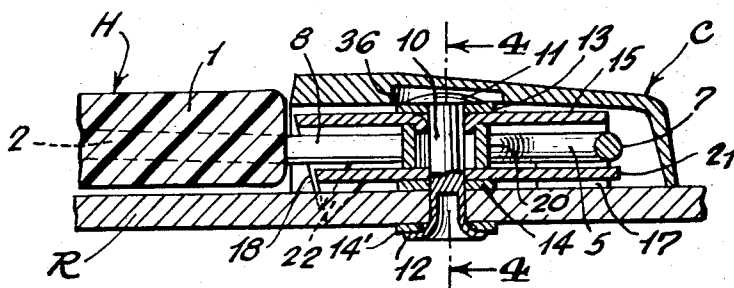
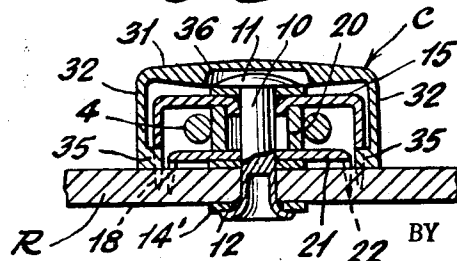


Fig. 4.



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Fig. 5.

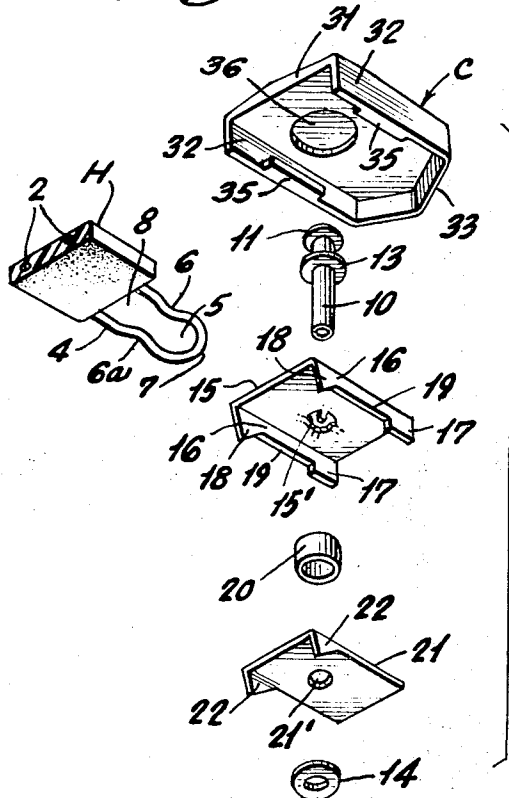


Fig. 6.

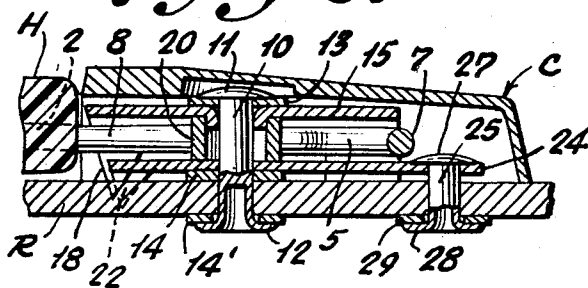


Fig. 8.

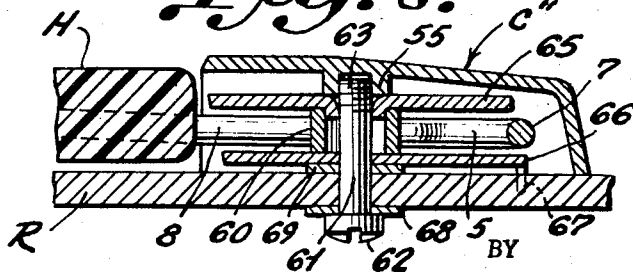


Fig. 7.

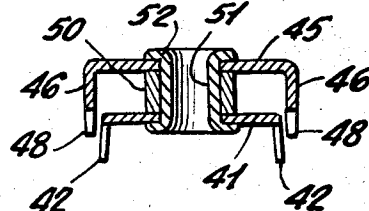
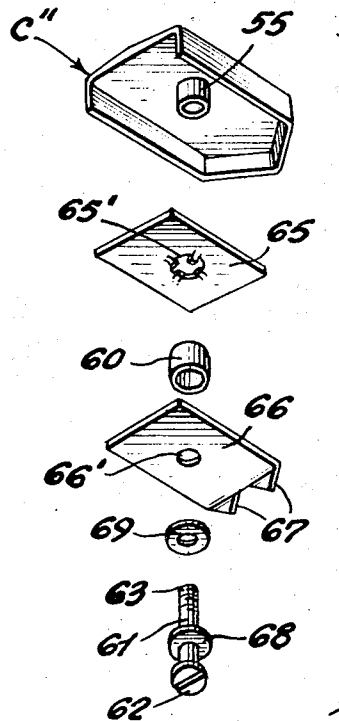


Fig. 9.



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COLLAPSIBLE STRAP HANDLE FOR LUGGAGE AND THE LIKE

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14 Claims

ABSTRACT OF THE DISCLOSURE

A strap handle for luggage and analogous portable receptacle bodies adapted to assume alternate operative and inoperative positions when extended and collapsed, respectively, and comprised essentially of a wire end loop of spring steel extending from each end of the handle in embracing relation to a relatively fixed spacer sleeve of hardened material mounted on the receptacle. Each loop is adapted to assume alternate positions when an intermediate narrowed portion formed therein moves relative to its mounting sleeve, as the loop is shifted inwardly when the body is lifted, to dispose the sleeve at the outer end of the loop, and outwardly when the handle is collapsed to dispose the sleeve between the narrowed portion and the inner end of each loop.

The invention relates to strap handles for portable bodies such as luggage and other receptacles or cabinets for radio receivers, sound reproducers, typewriters, cameras, sewing machines, etc., which may be extended into operative position when these items are carried, and which may be collapsed adjacent to these portable bodies when they are disposed at rest and when it is desirable that the handles exhibit least prominence.

It is the object of the present invention to provide a rugged and reliable construction which is adaptable to economical manufacture and which is capable of use for a long period of time without breakdown or deterioration. The simplicity of the handle and retainer assembly makes possible the resilient retention of the handle in its two alternate positions, no matter what dimensions the handle assumes, even when it is as little as three-eighth inch in width.

The invention proceeds upon the principle of providing a strap handle which is strengthened with a spring steel wire reinforcement, the ends of which reinforcement protrude from the opposite ends of the handle in the form of U-shaped loops which are adapted to engage wear-resistant collar or sleeve couplings affixed to the portable body. The terminal loop at each end of the loop of spring steel wire is constricted at an intermediate portion thereof between the bight of the loop and the end of the handle to provide a resiliently controlled passage for the coupling sleeve between its alternate positions on the opposite sides of the constriction. When the handle is in collapsed position and lies flat adjacent to the portable body, the coupling sleeve is disposed between the end of the handle and the constricted passage, and when the handle is lifted to its arched position, the resilience of the spring steel loop permits the coupling sleeve to travel past the constriction and into the end portion of the loop adjacent to the bight thereof. The handle remains in this raised or arched position until it is depressed intentionally to assume its flattened condition, at which time the inner portion of the loop accommodates the mounting sleeve following its movement past the constricted portion.

Since the only movement between the parts takes place between the relatively fixed wear-resistant mounting sleeve or collar and the spring steel loop engaging it, the

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handle mounting is characterized by a long life with no possibility of breakdown or rapid deterioration.

Other objects and purposes will appear from the detailed description of the invention following hereinafter, taken in conjunction with the accompanying drawings, wherein

FIG. 1 is a plan view of the strap handle affixed to a portable body with the mid-portion of the handle broken away in section;

FIG. 2 is a front elevation of FIG. 1, with the strap handle in operative position indicated in dotted lines;

FIG. 3 is a vertical sectional view along line 3—3 of FIG. 1;

FIG. 4 is a vertical sectional view along line 4—4 of FIG. 3;

FIG. 5 is an exploded perspective view of the components of the coupling assembly for the end of the handle shown in FIGS. 1 to 4;

FIG. 6 is a sectional view similar to that shown in FIG. 3 of a modified embodiment of the mounting assembly;

FIG. 7 is a sectional view of a prefabricated mounting unit for the spacer sleeve presenting a different embodiment from that shown in FIG. 4, to which the handle is connected as part of the assembly;

FIG. 8 is a vertical sectional view similar to FIG. 3, illustrating another embodiment of the invention; and

FIG. 9 is an exploded perspective view of the assembly shown in FIG. 8.

In the drawings is shown a mounting for a strap handle H extending between end caps C, C' on a portable body R, which may be an item of luggage, or a portable radio cabinet, typewriter case, attache case, etc., which may range in weight up to approximately fifty pounds. The handle is adapted to assume alternate positions relative to the portable body between operative and inoperative positions, which are indicated in the drawings. In FIGS. 1 to 3 is shown the relationship of the parts when the handle H is in inoperative position and is designed to rest in close adjacency to the external face of the portable body R. The handle is shifted to its operative position for purposes of portability by lifting the mid-portion of the handle H, as indicated by the position of the handle in dotted lines in FIG. 2.

The handle H may be formed of any suitable material and may be a natural product such as leather, or may be formed of a flat molded strap 1 of flexible synthetic plastic material which is strengthened by the incorporation therein of a unitary wire reinforcement 2 of spring steel cylindrical wire, which extends through the handle adjacent to the longitudinal margins thereof, and the ends of which may be welded at an intermediate point 3.

The wire reinforcement extends beyond each end of the handle to form U-shaped loops 4, 4' with bights 7, 7' at the terminals of the loops at the respective opposite ends. The arms of the loops are indented inwardly at intermediate points thereof 6, 6a and 6', 6a' to subdivide the loops into end portions 5, 5', respectively, adjacent to the bights, and portions 8, 8' between the ends of the handles and the constricted passages of the loops formed by the indentations 6, 6a. The latter are designed to constrict the passage in which a spacer sleeve for the loops may pass as the handle is shifted from its inoperative to its operative position and vice-versa.

As shown in FIGS. 3 and 4, as well as in the exploded view shown in FIG. 5, a wear-resistant cylindrical spacer sleeve 20, which may be of treated steel, or any other hardened metal, or of plastic material such as nylon, is mounted between an upper hardened wear plate 15 and a lower hardened wear plate 21. An aperture 15' is formed in the plate 15 and an aperture 21' is formed in

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the plate 21 for accommodating a rivet 10 which also extends through the sleeve 20 and serves to affix the spacer sleeve 20 in place between the head 11 at one end of the rivet and the upset flange 12 at the opposite end of the rivet which extends through the top of the portable body R. Of course, washers 13, 14 and 14' may surround the rivet along the different lengths thereof to maintain securely the connection thereof with the portable body.

As clearly shown in FIGS. 3 to 5, the upper wear plate 15 is provided with lateral flanges 16 having projections 17 at one end thereof and pointed prongs 18 at the opposite end thereof to form lateral recesses 19 therebetween. The flanges 17 rest on the external surface of the portable body while the pointed prongs 18 penetrate therinto. The lower wear plate 21, which is slightly narrower than wear plate 15, (FIG. 4), is also provided with pointed prongs 22 to penetrate the external surface of the portable body to rigidify the hardware assembly and the mounting of the wear-resistant sleeve 20.

A cap or cover C is adapted to be snapped over the mounting assembly and is formed of a top 31 with lateral flanges 32 and an end flange 33 of any desired contour to blend with the shape of the handle and the portable body. Projections 35 extend inwardly from the lower edges of the lateral flanges 32 and are adapted to spring into the recesses 19 formed in the upper wear plate to conceal the hardware assembly which anchors the wear-resistant sleeve 20 and the handle terminal to the portable body R. The covering cap C may be formed of plastic material of any suitable color or thin metal so that the same is sufficiently resilient to conceal the functional hardware components while complementing the ornamental appearance of the assembly. Furthermore, a circular recess 36 may be formed in the inner wall of the top 31 of the cover to accommodate the head of the rivet 10, as shown in FIGS. 3 and 4.

Of course, the assembly shown in FIG. 5 is combined with the circular end of the loop before the rivet 10 is upset and affixed to the portable body, so that the interengagement between the end of the handle and the cylindrical sleeve is a permanent one.

The component parts of the coupling assembly shown in FIGS. 1 to 5 are duplicated at the opposite end of the body R, for interconnecting the loop at the opposite end of the handle with a spacer sleeve in the same manner.

In FIG. 6 is shown a slightly modified arrangement of the assembly. In this embodiment, the lower wear plate 24 is longer than the upper wear plate 15 and is provided with an aperture at the outer end thereof for the purpose of accommodating an auxiliary rivet 25 having a head 27 at one end and which is upset on the other end 28 over a washer 29 to provide a more secure connection of the mounting assembly for the wear-resistant spacer sleeve 20.

In this construction the cover C is lengthened in order to cover the longer mounting assembly including the rivet 25.

If desired, the wear plate in embracing relation with the wear-resistant sleeve and handle loop, may be prefabricated and may be affixed to the portable body as an integral unit, as illustrated in FIG. 7. In this case, the portable sleeve 50 is confined between a lower wear plate 41 and an upper wear plate 45 which are interconnected by an internal rivet 52 to form an integral body. Pointed prongs 42 extend from the lateral edges of the lower wear plate and prongs 48 extend from the lateral flanges 46 of the upper wear plate to penetrate the external face of the portable body to supplement the secure retention of the assembly afforded by a rivet extending through the center of the hollow rivet 51, as shown in the arrangement illustrated in FIG. 4.

Of course, the lateral flanges 46 of the upper wear plate may be formed with the recesses for accommodating the projections extending inwardly from the cover to con-

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ceal the assembly, as is the case with the embodiment shown in FIGS. 1 to 5.

FIGS. 8 and 9 illustrate a variant embodiment of the invention which utilizes a bolt rather than a rivet and which serves to facilitate the dismantling of the parts if such as desirable. In this case, the wear-resistant spacer sleeve 60 is embraced between an upper wear plate 65 and a lower wear plate 66, the latter of which is fitted with piercing prongs 67. The wear plates 65 and 66 are provided with openings 65' and 66', respectively. The cover C' is formed with an internally threaded socket 55 which is adapted to have the free threaded end 63 of the bolt 61 engage therewith to interconnect the mounting assembly for the sleeve by rotating the head of the bolt 62 into the threaded socket 55. Of course, washers 68 and 69 may surround the bolt 61 to secure the parts together and to maintain them in this secure relation without undue wear.

The spacer sleeves may be affixed to the portable receptacle or case in many other ways, so long as they are embraced by the U-shaped loops of spring wire which project beyond the ends of the strap handles for rendering the case or receptacle readily portable.

We claim:

1. A strap handle for a portable case adapted to assume extended and collapsed positions relative to the latter, comprising

- (a) a wire reenforcement on the interior of said strap handle,
- (b) a closed loop forming an integral part of said wire reenforcement extending from the end of the handle,
- (c) coupling means for said handle affixed to said case for permanent engagement with said loop,
- (d) said loop constituted by an integral U-shaped terminal of spring steel wire projecting from said end of the handle with inwardly directed indentations in the arms thereof between said end of said handle and the bight of said loop, to define a narrowed yieldable passage for said coupling means between said arms on the opposite sides of said indentations, and
- (e) said coupling means adapted to rest between said bight and indentations in the extended position of the handle, and between the end of the handle and indentations in the collapsed position of the handle.

2. A strap handle as set forth in claim 1, molded of flexible plastic resinous material with the wire reenforcement embedded therein adjacent to the longitudinal marginal edges thereof, and with the closed loop extending from each end of the handle.

3. A strap handle as set forth in claim 2, wherein the loops of spring steel are of circular cross-section.

4. A strap handle as set forth in claim 1, wherein the coupling means for said handle is a cylindrical sleeve of hardened material.

5. A strap handle as set forth in claim 2, wherein the coupling means for said handle comprises a cylindrical wear-resistant metallic sleeve and a retaining assembly therefor, fastened to the external face of said case, and a cover overlying said loop, sleeve and retaining assembly at each end of the handle.

6. A strap handle as set forth in claim 5, wherein said retaining assembly for said wear-resistant sleeve comprises a pair of apertured plates extending transversely to said sleeve at the opposite ends of the latter with a cylindrical fastener extending through said sleeve and apertures.

7. A device as set forth in claim 6, wherein each of said plates is provided with pointed prongs for penetrating said external face of said case.

8. A device as set forth in claim 7, wherein said cylindrical fastener is a riveted member extending between the internal face of said case and the outermost face of said plates.

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9. A device as set forth in claim 8, wherein the apertured plate remote from the case is provided with a pair of downwardly extending flanges having notches at the free edges thereof, and said cover is provided with inwardly extending lugs adapted to spring into engagement within said notches.

10. A device as set forth in claim 8, wherein the apertured plate adjacent to the case is longer than the outer plate and is provided with another aperture, and an additional rivet extending through said last-mentioned aperture and case for reenforcing the fastening characteristics of said retaining assembly.

11. A strap handle as set forth in claim 5, wherein said retaining assembly for said wear-resistant sleeve comprises a prefabricated assembly of a pair of apertured plates extending transversely to said sleeve at the opposite ends of the latter, and a hollow rivet integrating said sleeve and plates at the boundaries of said apertures, with a cylindrical fastener extending through said hollow rivet.

12. A device as set forth in claim 11, wherein each of said plates is provided with pointed prongs for penetrating said external face of said case.

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13. A device as set forth in claim 12, wherein said cylindrical fastener is a riveted member extending between the internal face of said case and the outermost face of said plates.

14. A device as set forth in claim 6, wherein said cylindrical retainer is a threaded bolt extending between the internal face of said case and said cover, said cover having an internally threaded projection for receiving the free threaded end of said bolt.

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U.S. Cl. X.R.

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