June 3, 1969 G. W. BUSH 3,447,195

HIDEAWAY COLLAPSIBLE HANDLE WITH SPRING MEANS URGING THE HANDLE TO COLLAPSED POSITION

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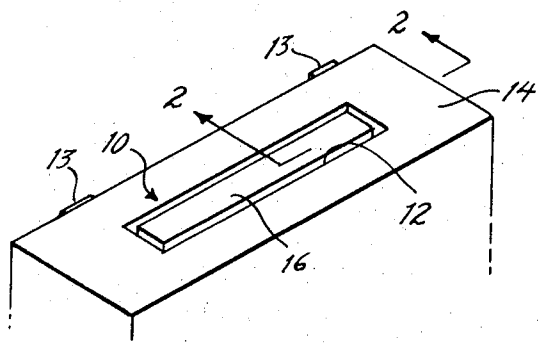



Fig. 1.

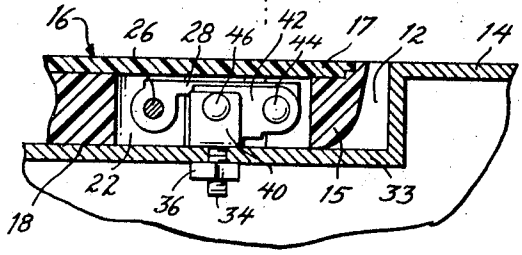



Fig. 2.

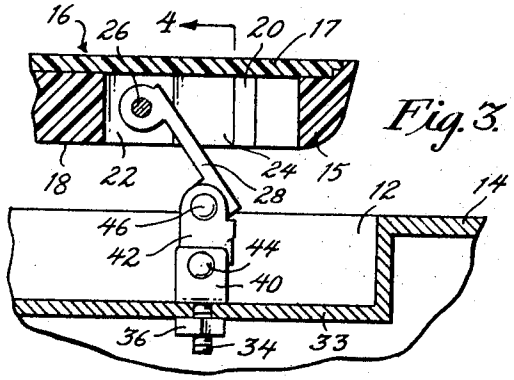



Fig. 3.

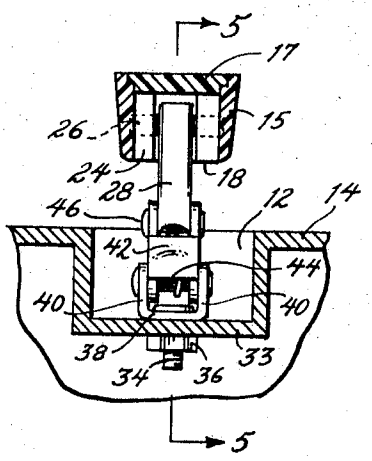



Fig. 4.

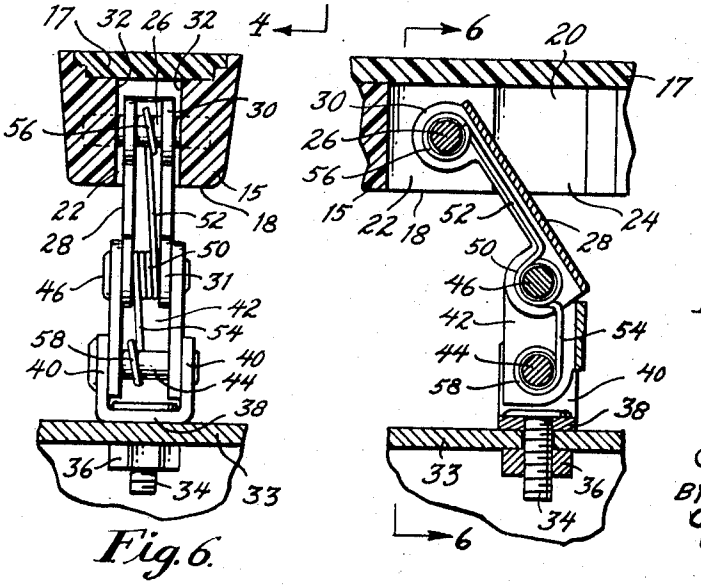



Fig. 5.

Fig. 6.

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# HIDEAWAY COLLAPSIBLE HANDLE WITH SPRING MEANS URGING THE HANDLE TO COLLAPSED POSITION

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U.S. Cl. 16—115 4 Claims

## ABSTRACT OF THE DISCLOSURE

A collapsible handle in which the pivoted links attaching the handgrip to the cover or the well in a cover of a carrying case are confined within recesses in the handgrip when the handle is collapsed and resilient means urging the handgrip into the collapsed position so that if the cover is removed or hinged to an open position the handgrip will remain against the cover or in the well thereof at all times.

This invention relates to a collapsible handle using pivoted linkage of the type shown in Patent Nos. 3,297,120 and 3,289,799. In the former patent the handgrip returns to its collapsed position of its own weight and in the latter patent a resilient means is provided urging the handgrip upwardly away from the carrying case wall and into its raised position. Thus in the case of the former patent if the handle is attached to a hinged or removable cover of a carrying case, when the cover is opened or removed, the handgrip will fall away from it, rattle, and possibly cause damage to the cover. In the case of the latter patent, a catch is used to hold the handgrip against the cover and if the catch should release the handle when the cover is opened or removed, the handgrip will also fall away from it, rattle and possibly cause damage to the cover.

It is the primary object of this invention to overcome this disadvantage by providing a collapsible handle for attachment to a cover or within the well of a cover of a carrying case with resilient means constantly urging the handgrip against the cover or into the well thereof so that when the cover is opened or removed the handgrip stays in place against the cover or in the well.

Another object of the invention is to provide a handle of the character described in which the resilient means urging the handle into its collapsed position and the handgrip against the cover or in the well thereof is in the form of a torsion spring substantially confined in the pivoted links from view thus improving the esthetic aspects of the handle without sacrificing function.

Yet another object of the invention is to provide a collapsible handle which is functional, attractive, relatively simple in construction and easy to assemble.

These and other objects of the invention will become more apparent as the following description proceeds in conjunction with the accompanying drawing, wherein:

FIG. 1 is a fragmentary perspective view of the handle shown collapsed into the well of a cover of a carrying case;

FIG. 2 is an enlarged sectional view taken on the line 2—2 of FIG. 1;

FIG. 3 is a fragmentary group sectional view showing the handle in its raised position;

FIG. 4 is a sectional view taken on the line 4—4 of FIG. 4;

FIG. 5 is a sectional view taken on the line 5—5 of FIG. 3; and

FIG. 6 is a sectional view taken on the line 6—6 of FIG. 5.



Specific reference is now made to the drawings wherein similar reference characters are used for corresponding elements throughout.

The instant handle is generally indicated at **10** and is attached in the well **12** which is provided in a cover **14** of equipment and appliances, such as sewing machines, and other carrying cases. The cover may be entirely removable or hinged to the case as at **13**.

The handle includes an elongated rigid handgrip **16** which may be of any desired contour and may be made of a variety of materials, preferably plastic. The base **15** of the handgrip is a molded hollow unit whereas the top **17** is a plastic sheet sealed ultrasonically thereto. If desired an identifying trademark may be adhered to the top **17**. The base has a lower surface **18** with a pair of elongated recesses or cavities **20** adjacent the ends of the handgrip opening through the lower surface, each recess or cavity consisting of a narrower portion **22** towards the center of the handle and a wider portion **24** towards the end. Mounted in suitable bores in the grip and extending transversely through each portion **22** of the recess is a pivot pin **26**.

An upper link **28** is provided which consists preferably of a channel bar with a pair of spaced upper and lower apertured ears **30** and **31** at its ends which are inwardly displaced from the side flanges of the bar. The pivot pin **26** extends through aligned apertures in the ears **30** so that the link **28** is pivoted around the pin **26**, i.e., around a horizontal axis transverse the handgrip, the ears **30** being disposed in the narrower recess portion **22** and spaced inwardly from the opposite side walls **32** of the recess.

At predetermined locations of the bottom wall **33** of the well **12** holes are provided through the bottom wall, through each of which extends the shank of a threaded member **34** which receives a closure nut **36**. It will be noted that the threaded member extends into the case beyond the wall **33** only for a distance sufficient to receive the closure nut. The shank is carried by a substantially U-shaped member having a web **38** which bears on the wall **12** and includes a pair of spaced upstanding ears **40**. The horizontal cross sectional contour of the bottom of the web **38** is preferably rectangular so that both bearing members can be properly aligned relative to each other and to the recesses in the handgrip.

A second or lower link **42** also in the form generally of a short channel bar is provided, the lower ends of the sides of which extend between the ears **40** and have apertures which receive a horizontal pivot pin **44** that is carried by the ears **40**. The sides of the other or upper end of the link **42** are apertured and receive therebetween the ears **31** of the first link **28**, which ears carry a horizontal transverse pivot pin **46** thus pivoting the upper to the lower links. It should be noted that the overall length of the first link **28** is less than that of the recess **22** but greater than that of the second link **42**, that the distance between each pair of the ears **30** and **31** is less than the width of the recess portion **22**, that the pin **44** is also shorter than the width of the recess portion **24**, and that the maximum width of the bearing member **38** approximates but is less than that of the recess portion **24**.

A torsion spring is provided for each set of links preferably in the form of a wire coiled as at **50** about the pin **46** and having flights **52** and **54** which extend into the channels of the upper and lower links **28** and **42** and have end portions **56** and **58** which engage the upper and lower pivot pins **26** and **44** respectively, the spring acting to fold the upper link over the lower link and thus urge the handgrip **16** towards and into the well **12** to its collapsed or non-carrying position, in which position the top **17** of the handgrip is substantially flush with that of the cover **14** as seen in FIGS. 1 and 2.

In use, since the length of the handgrip approximates that of the well **12** but is narrower than its width, as seen in FIG. 1, one need merely insert the fingers in the well around the handgrip and raise it, in which case the upper and lower links **28** and **42** extend to generally vertical positions. When the handle is released, the torsion springs pull the handgrip down into the well, the upper links fold over the lower links and become confined in the handgrip recesses **20**, the lower surface **18** abuts or lies closely adjacent the bottom surface **33** of the well, and the top **17** of the handgrip lies substantially flush with that of the cover **14**, so that when the cover **14** is hinged to the open position or even removed from the case, the handle will stay in place recessed into the well.

While a preferred embodiment of the invention has here been shown and described, a skilled artisan may make minor variation without departing from the spirit of the invention.

I claim:

**1.** In combination with a carrying case having a wall, a collapsible handle comprising an elongated handgrip having a lower surface including a flat portion, at least one recess in said grip opening through said flat portion, a pair of links, first means pivotally interconnecting said links, second means pivotally securing one of said links to said grip in said recess, and third means pivotally securing the other of said links to said wall, said recess being dimensioned to encompass said links and said means when said grip is in its noncarrying position with its flat portion flush against said wall and said links are in generally horizontal positions, said grip adapted to be raised so that said links extend in a generally vertical position and said grip is spaced above said wall in its carrying position, and resilient means including a spring connected between said links urging said links in said generally horizontal positions and said grip into said noncarrying position against said wall.

**2.** The combination of claim **1** wherein said spring is wound about said first means pivotally interconnecting said links and includes end portions engaging respectively said second means pivotally securing one of said links to said grip in said recess and said third means pivotally securing said other link to said wall.

**3.** The combination of claim **1** wherein said links are of channel cross section, said resilient means being substantially confined within the channels so that they are hidden from normal view in both the raised and collapsed positions of the handgrip.

**4.** In combination with a carrying case including a wall and a well therein, a collapsible handle comprising an elongated handgrip having upper and lower surfaces and recesses adjacent the ends of the handgrip opening through said lower surface, pairs of pivotally interconnected upper and lower links, means pivoting said upper links in said recesses, means pivoting said lower links in said well, said handgrip being adapted to be raised above said carrying case wall when said links are extended to generally vertical positions, and a torsion spring engaging each of said means pivoting said upper links in said recesses and each of said means pivoting said lower links in said well urging said handgrip into its collapsed position in said well wherein said links overlie each other in generally vertical positions within the confines of said recesses and said upper surface of said handgrip lies substantially flush with said wall of said carrying case.


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U.S. Cl. X.R.

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