Aug. 28, 1962 J. H. LAMB 3,051,232

RETRACTABLE COVER ASSEMBLY AND DRAW CORD CARRIER THEREFOR

Filed Feb. 29, 1960

FIG. 1.

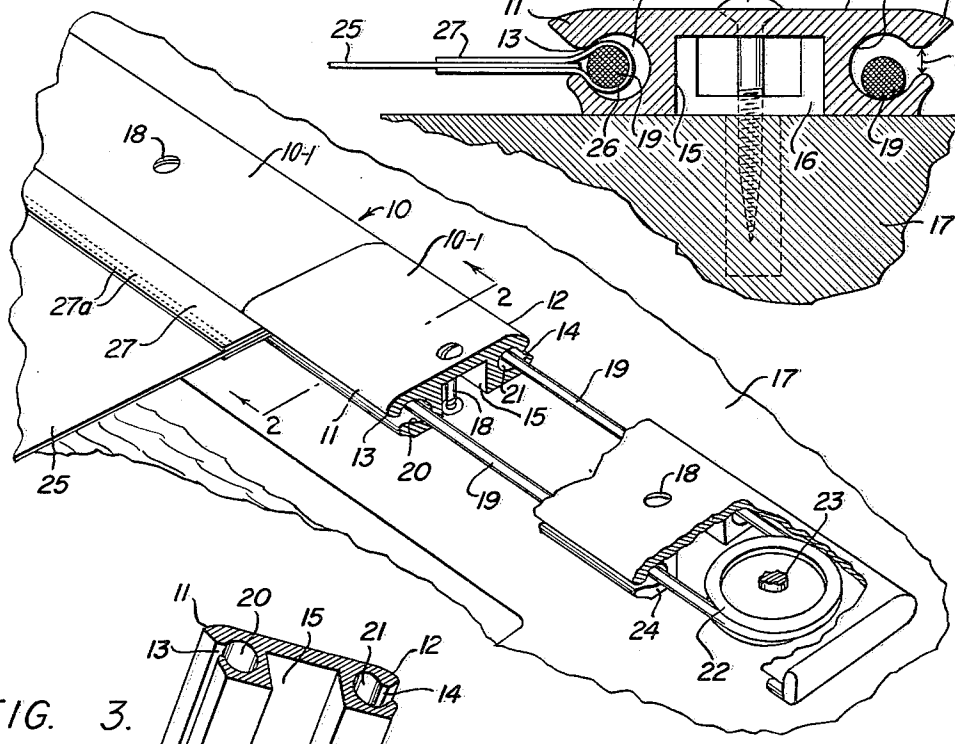


FIG. 2.

FIG. 3.

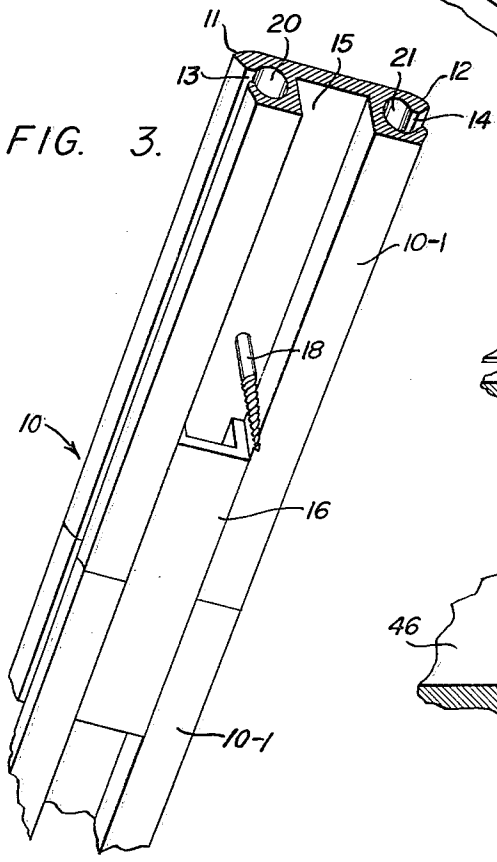


FIG. 4.

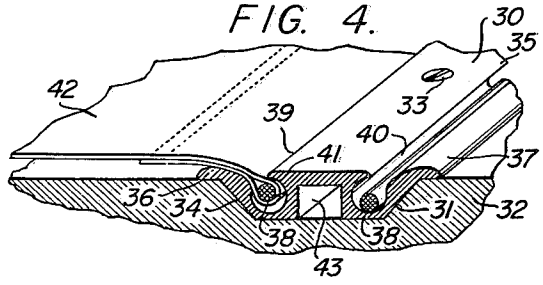
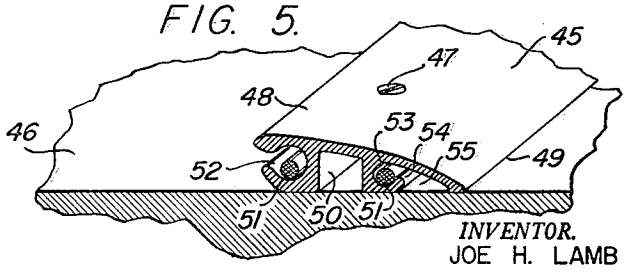


FIG. 5.



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This invention relates to retractable cover assemblies as used for protectively covering swimming pools when not in use, patios when covering is found to be desirable, etc. It is concerned also with structure for holding and guiding retractable covers which are operated by draw cords.

Commercially available covers of the type concerned utilize heavy and cumbersome supporting framework and mechanical components. As a result they are very expensive. Morever, no adequate provision is made for holding the margins of the covering sheet down when the cover is extended.

A principal object of this invention is to provide a draw cord actuated, retractable cover for swimming pools, patios, or the like which is simple and compact, relatively inexpensive, easy to operate, and not likely to get out of order.

In the achievement of this objective, utilizing a cover of flexible sheet material, such as plastic sheeting, I provide guide structure in the form of strips extending along the direction of cover extension and retraction laterally of the cover and serving as carriers for both the cover and the draw cord. The strips each comprise one or more lengths of a rigid structural shape having tubular longitudinal margins which are slit longitudinally to provide respective narrow openings extending continuously along the lengths of said such margins. The lateral edges of the cover are thickened to form respective continuous beads, which are received by and slide within and along the interiors of one of the tubular margins of the respective strips—the cover margins passing through and sliding within and along the narrow slit openings and the breadth of the cover being retained and normally held taut by the beads which are thicker than such openings.

The draw cords are formed as longitudinal prolongations of the beads at the opposite lateral margins of the cover and loop back at corresponding ends of the strips into the other of the tubular margins, passing through and along the interiors thereof to the other ends of the strip where they are available for pulling to extend the cover along the strips.

The rigid structural shapes used for the guide strips are preferably metal or plastic extrusions and are believed to constitute invention in and of themselves.

Several embodiments of the apparatus representing what are presently regarded as the best modes of carrying out the invention are illustrated in the accompanying drawing.

In the drawing:

FIG. 1 represents a fragmentary top perspective view of a typical retractable cover installation embodying the invention;

FIG. 2, a vertical section taken on line 2—2 of FIG. 1;

FIG. 3, a fragmentary bottom perspective view showing a preferred type of alignment-insuring joinder between two separate lengths of the structural shape making up the carrier strip of FIG. 1;

FIG. 4, a fragmentary perspective view, partly in vertical section, of another embodiment of the invention; and

FIG. 5, a similar view of still another embodiment.

Referring to the drawing:

The retractable cover assembly of FIGS. 1–3, which is

particularly useful as a swimming pool cover or as a patio cover, is made possible by elongate carrier strip **10**, there being a strip at and extending along each of the opposite lateral sides of a flexible cover **25**, usually canvas or a sheet of a tough and durable plastic material.

Lateral side edges of cover **25** are formed as beads **26**, which are employed to hold the cover in and between strips **10**. Each of these beads **26** is formed, in this instance, by folding an elongate strip of the cover material or some other suitable sheet material over a portion of the length of a draw cord **19** and stitching or otherwise securing such strip, as folded, to and along the appropriate margin of the cover, see the lines of stitching **27***a*, FIG. 1. The draw card **19** thus extends from an end of the cover as a longitudinal prolongation of the bead.

Carrier strips **10** are advantageously formed from at least one length **10–1** of a rigid, elongate, structural shape having tubular longitudinal margins **11** and **12** which are slit longitudinally by respective, relatively narrow, rectilinear openings **13** and **14** extending continuously along the lengths thereof.

Each shape length **10–1** is configurated to include a longitudinal bottom groove **15** which not only makes for economy of material but also enables the individual lengths to be conveniently joined in precise alignment by means of short channel sections **16**. As so aligned and joined, the separate lengths **10–1** of each strip **10** are secured to mounting base **17** as by means of screws **18**.

Tubular longitudinal margins **11** and **12** guide and support draw cord **19** for movement in and along respective tubular openings **20** and **21** within which the cord may be easily replaced through rectilinear openings **13** and **14**. Draw cord **19** is conveniently looped about pulley **22** for ease of passage from one tubular margin to the other. The pulley **22** is rotatably mounted on a pin **23** extending down from the top of carrier strip **10** in a cross milled portion **24** thereof although, it could be mounted in the open on base **17** for the same purpose.

Each bead edge **26** is adapted for being held within tubular margin **11** of elongate carrier strip **10**. This important feature of the retractable cover assembly is shown in detail in FIG. 2 to be a cover edge bead **26** thicker than rectilinear opening **13** through which cover **25** extends. Draw cord **19** is a longitudinal prolongation of bead **26** advantageously used for moving flexible cover **25** back and forth by sliding the bead longitudinally within the tubular opening **20** of strip margin **11**.

In the embodiment of FIG. 4, elongate carrier strip **30** is substantially contained in groove **31** of base **32** where it is fastened down by screws **33**. Tubular margins **34** and **35** of this arrangement have outwardy extended lower lips **36** and **37**. Draw cord **38** is carried within margins **34** and **35** and looped about a pulley (not shown) for passage from one tubular margin to the other in the same manner as with the embodiment of FIG. 1. The relatively narrow, rectilinear openings **39** and **40** of margins **34** and **35** in this embodiment conveniently open upwardly for easy draw cord **38** replacement therethrough.

The cover edge bead **41** is formed by an edge of flexible cover **42** folded around draw cord **38** and stitched or cemented in place. This cover edge bead **41** is securely held within margin **34**, because it is thicker than rectilinear opening **39**, and is easily slid longitudinally back and forth within margin **34** by draw cord **38** which is a longitudinal prolongation of bead **41**. The lower lip **36** of margin **34** guides and holds flexible cover **42** above base **32**. Bottom groove **43** of carrier strip **30** corresponds to groove **15** in the embodiment of FIG. 1.

In the embodiment of FIG. 5, elongate carrier strip **45** is mounted on base **46** by screws **47**. The rigid, elongate, structural shape of carrier strip **45** presents a relatively

thick tubular margin **48** and tapers transversely to a thin edge **49**. A bottom groove **50**, corresponding to groove **15** in the embodiment of FIG. 1, is provided in strip **45**. Tubular margin **48** holds and guides draw cord **51** and a cover edge bead (not shown) corresponding to bead **41** or bead **26** of the other embodiments. Draw cord **51** may be easily replaced in tubular margin **48** through the relatively narrow, rectilinear opening **52** extending longitudinally the length thereof.

A tubular passage **53** extending longitudinally the length of carrier strip **45** between groove **50** and edge **49** for draw cord **51** return has a relatively narrow, rectilinear opening **54** extending longitudinally the length thereof. Opening **54** provides for replacement of draw cord **51** therein; however, since it opens to longitudinal downwardly facing cavity **55**, strip **45** must be unfastened from base **46** for such cord **51** replacement. Draw cord **51** is looped around a pulley (not shown) for passage between tubular margin **48** and tubular passage **53** in the same manner as with the other embodiments.

Whereas there are here illustrated and described certain preferred constructions which I presently regard as the best mode of carrying out my invention, it should be understood that various changes may be made without departing from the disclosed inventive subject matter particularly pointed out and distinctly claimed herebelow.

I claim:

A retractable cover assembly, comprising an elongate carrier strip formed from a plurality of lengths of a

rigid, elongate, structural shape aligned end-to-end, each of said lengths having tubular longitudinal margins which have respective, relatively narrow, rectilinear openings extending continuously along their lengths, and adjoining end portions of adjoining lengths having bottom channels formed longitudinally thereof and opening into the adjoining ends of said lengths in registering alignment with each other; joint-bridging inserts snugly fitted within the bottom channels of respective sets of adjoining ends for maintaining said lengths and the tubular margins and rectilinear openings thereof in exact alignment; a flexible sheet cover having an edge formed as a bead which is thicker than the width of said openings and is adapted for passage within and along one of said margins; a draw cord forming a longitudinal prolongation of said bead and extending within and along the interior of said one tubular margin and within and along the interior of the other of said tubular margins; and means at one end of said carrier strip about which said draw cord is looped for passage from one of said tubular margins to the other.

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