April 8, 1958 C. W. WESTER ET AL 2,829,660

CANOPY

Filed Jan. 3, 1956 3 Sheets-Sheet 1

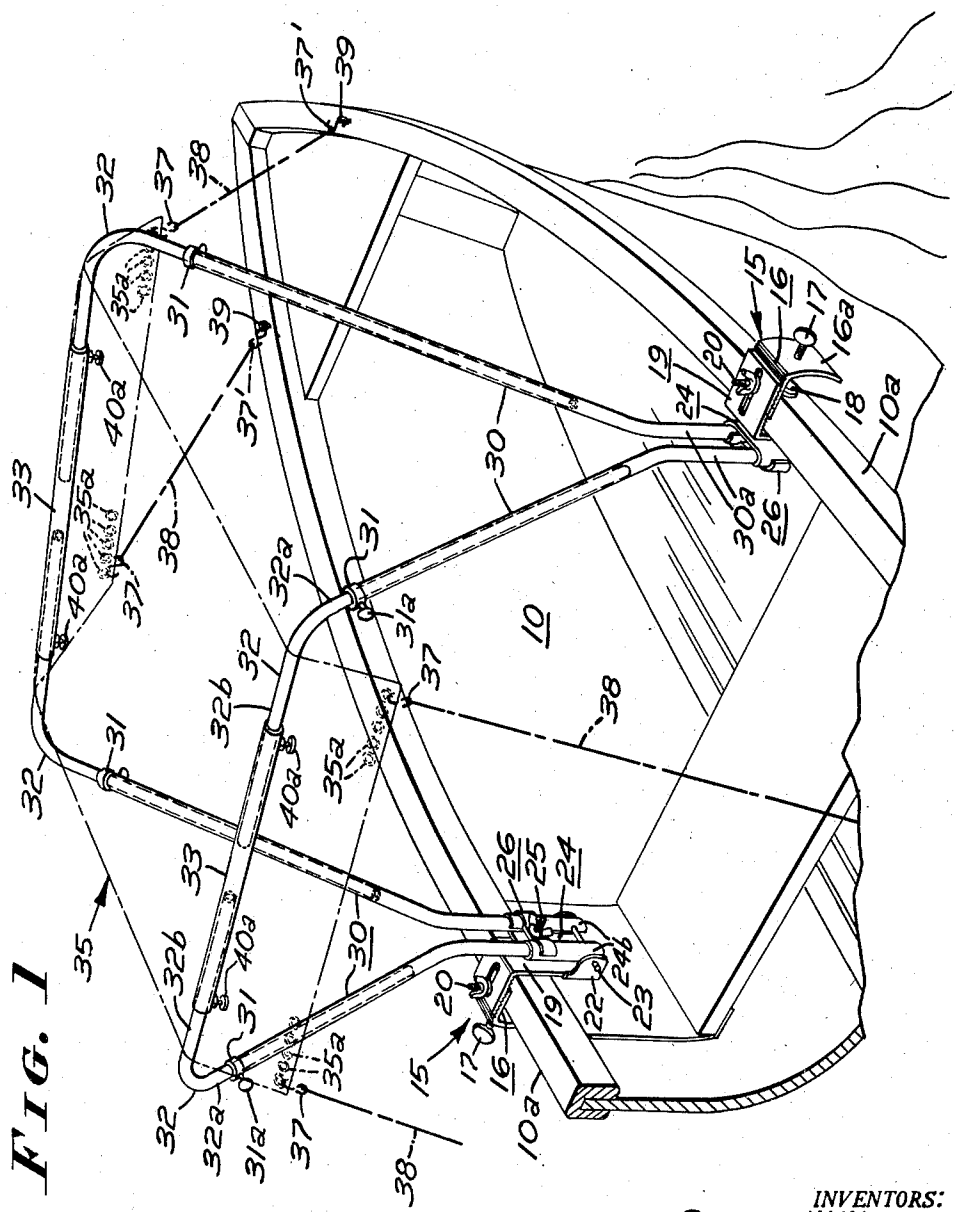


FIG. 1

INVENTORS:
CHARLES W. WESTER
and DAVID M. WALTER
BY
Green, McCallister and Miller
THEIR ATTORNEYS.

April 8, 1958 C. W. WESTER ET AL 2,829,660

CANOPY

Filed Jan. 3, 1956 3 Sheets-Sheet 2

FIG. 2

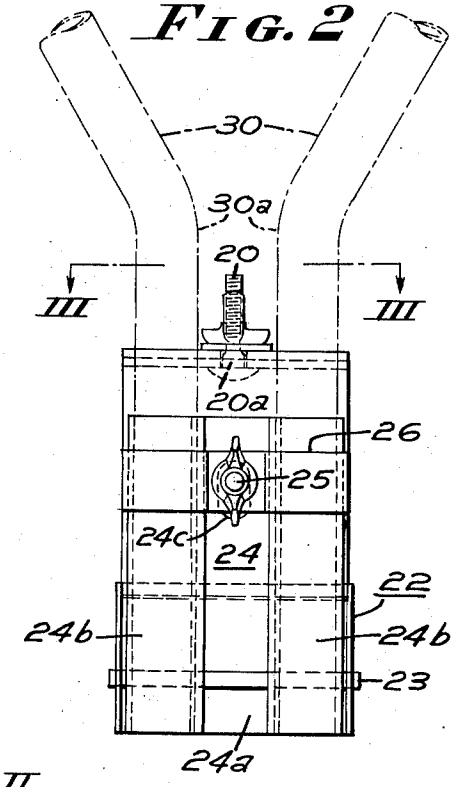


FIG. 3

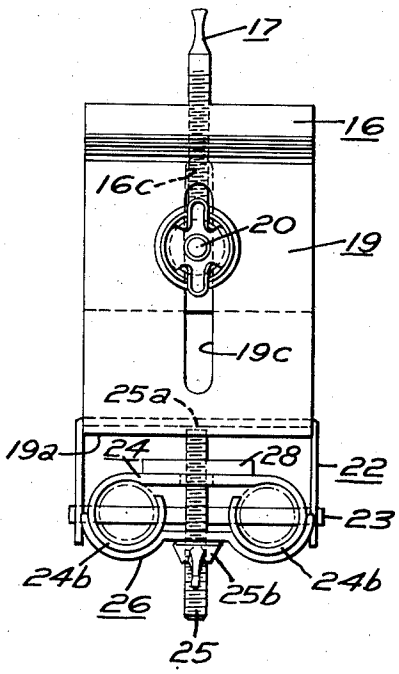
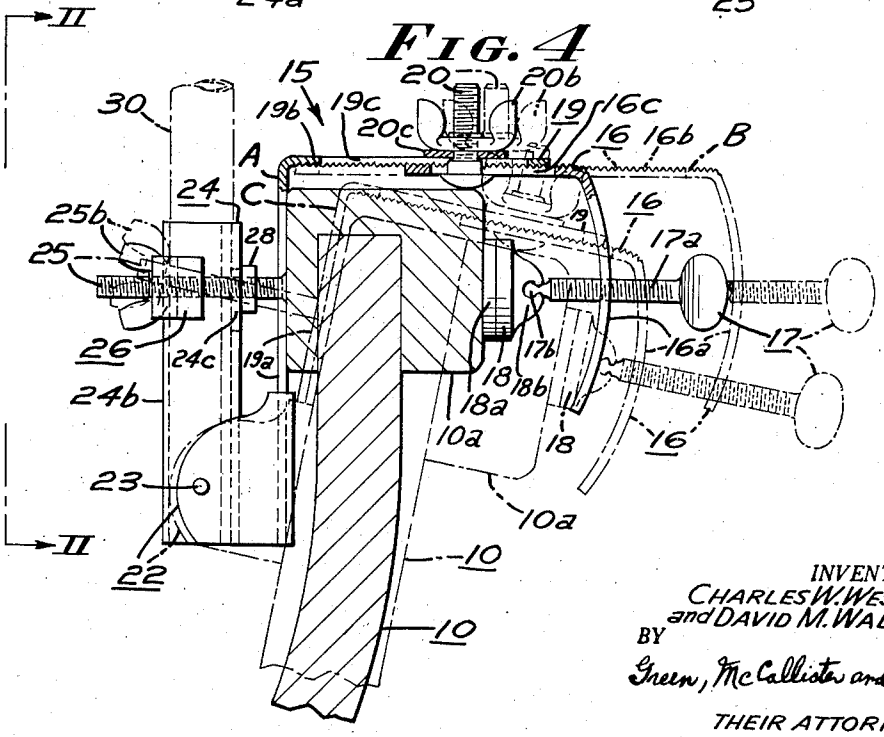


FIG. 4



INVENTORS:
CHARLES W. WESTER
and DAVID M. WALTER
BY
Green, McCallister and Miller
THEIR ATTORNEYS.

April 8, 1958 C. W. WESTER ET AL 2,829,660

CANOPY

Filed Jan. 3, 1956 3 Sheets-Sheet 3

FIG. 7

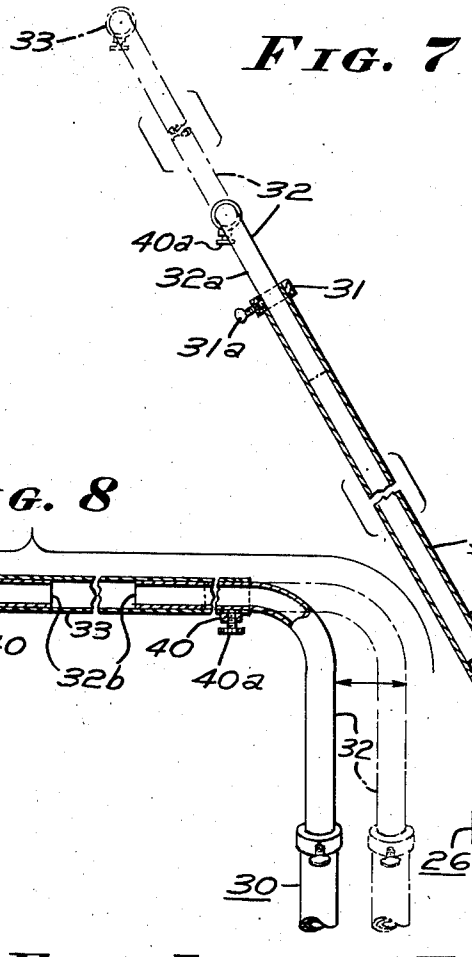


FIG. 8

FIG. 5

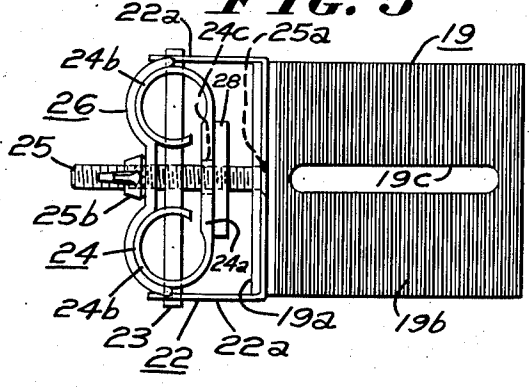
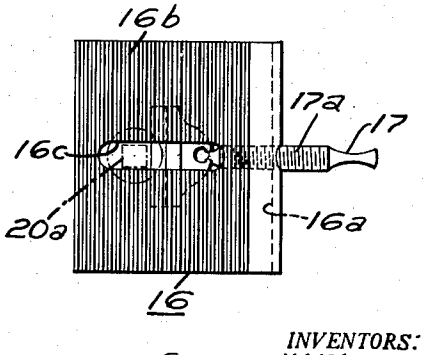


FIG. 6



INVENTORS:
CHARLES W. WESTER
and DAVID M. WALTER
BY
Green, McCallister and Miller
THEIR ATTORNEYS.

United States Patent Office 2,829,660 Patented Apr. 8, 1958

2,829,660

CANOPY

Charles W. Wester and David M. Walter, Library, Pa.

Application January 3, 1956, Serial No. 557,062

5 Claims. (Cl. 135—6)

This invention pertains to a demountable support structure for a canopy and particularly, to an adaptable, demountable and adjustable framework construction and to improved mounting or clamping units therefor.

A canopy for outdoor usage, and particularly for use on boats and like structures, has to be sturdy as well as positive in its positioning, in order to resist storms, winds, etc., without breakage, collapse, or danger of injuring the occupants of the boat. In addition, it should be adaptable so that it will have a universal application to various widths, shapes and sizes of boats.

It has thus been an object of our invention to devise a new and improved canopy support structure especially suitable for rigorous outdoor usage, such as for boat installations;

Another object has been to provide an improved relatively lightweight adjustable frame and mounting construction that will be readily demountable, adaptable and adjustable to meet general purpose requirements;

A further object has been to devise an improved adjustable frame construction for canopy use as well as to devise improved mounting, supporting or clamping units for such a construction;

These and other objects of our invention will appear to those skilled in the art from the illustrated embodiment of the drawings and the description thereof.

In the drawings, Figure 1 is a perspective view in elevation through a fragment of a boat or base structure on which the canopy frame and mounting structure of our invention may be installed;

Figure 2 is an enlarged fragmental view in elevation taken along the line II—II of Figure 4 (with the gunwale portion omitted for clarity) from an inner side of a clamping or mounting assembly, device or unit employed in accordance with our invention;

Figure 3 is a top plan view on the scale of Figure 2, taken along the line III—III of Figure 2, and illustrating the device or unit of Figure 2;

Figure 4 is a view on the scale of Figures 2 and 3, taken through the boat construction of Figure 1, and endwise of the mounting or clamping unit of Figures 2 and 3; it illustrates how the unit is secured or mounted on a gunwale; the full line position discloses the parts in a desired relationship for the particular shape of gunwale shown, while the dot and dash lines show various positions within which the device is adjustable to meet various installation requirements; in this figure, A shows a vertical position of parts of the unit as applied to a vertical type of gunwale, B shows an extended position of the parts for a thicker or heavier gunwale, and C shows an angular position for a more sloped or differently-shaped type of gunwale;

Figure 5 is a bottom plan view on the same scale as and of one (the inner) part of the unit of Figures 2 to 4;

Figure 6 is a top plan view on the same scale as and of the other (the outer) part of the unit of Figures 2 to 4;

Figure 7 is a fragmental side view in elevation and partial section on an intermediate scale between Figures

1 and 2 and showing the frame structure and the adjustable vertical extensibility and contractibility of members thereof;

And, Figure 8 is a fragmental end view in elevation of a slightly larger scale than Figure 7, showing a portion of the frame structure and its adjustable extensibility and contractibility widthwise or transversely to accommodate a canopy to various sizes of boats.

As shown in Figure 1, a support construction of my invention may be applied to a pair of transversely spaced-apart side support members or gunwales **10***a* at a suitable position along the length of a base structure, such as a boat **10**. To support the construction, we have provided a pair of oppositely-positioned demountable and adjustable clamping or mounting assemblies, devices or units **15** which carry side pairs of Y-shaped upright frame members **30**, angle-shaped bend or corner members **32**, and associated top or horizontal transverse or cross members **33**.

A canopy or cover **35** of canvas, fabric or other suitable material (see Figure 1) is adapted to be positioned to rest over the top of the framework or support structure and has a series of spaced-apart eyelets **35***a* at each of its ends or corners to receive suitable snaps or hooks **37**, so that it may be secured in position by attached guy wires, cables or ropes **38**. The other ends of the cables **38** are looped over hooks or snaps **37'** to engage or cooperate with screw eyelets such as **39** that may be secured at suitable spaced locations along the gunwales **10***a*.

The mounting or clamping units **15** (preferably of metal construction) have two angle-shaped, relatively adjustable parts **16** and **19**. The part **16**, as employed in Figure 1, serves as an outer clamping piece or part. As to its particular construction, see also Figures 4 and 6. The part **16** has an outwardly-rounded or convex vertical portion **16***a* that adjustably carries a threaded-clamping or pressure-applying means such as a thumb screw **17**. As shown particularly in Figure 4, the inner end **17***b* of the thumb screw, beyond its threaded stem portion **17***a*, has somewhat of a spherical or ball shape to pivotally fit within a universal pivot socket portion **18***b* of a pressure head part or element **18**. The part **18** may have an inner bearing surface portion **18***a* to engage against the gunwale or side support member **10***a*; this portion may be of a relatively soft material, such as of a soft metal, a fabric, plastic, rubber, etc., if desired.

As shown particularly in Figures 4 and 6, an upper or horizontal portion **16***b* of the parts **16** is serrated to cooperate with under-serrations of an interfitting horizontal or top portion **19***b* of the second or inner clamping piece or part **19**, see also Figure 5. The upper portion **16***b* also has an elongated slotted portion **16***c* therealong to receive and slidably guide a wrench-flat or rectangular neck portion **20***a* of a threaded clamping bolt **20**. In this manner, the bolt **20** is prevented from turning with respect to the part **16** when it is in the position of Figure 4, although it may be slid along the slot **16***c* to adjust its relative positioning.

The other or inner part **19** has a vertical or upright portion **19***a* connected with the top portion **19***b*, so that the portion **19***a* may serve as an inner clamping side or wall for the gunwale **10***a* in cooperation with the pressure head **18** that is carried by the adjustable clamping thumb screw **17**. As shown in Figure 4, to adjust the width spacing between the vertical portions **16***a* and **19***a* of the two parts **16** and **19**, tension on the wing nut **20***b* is loosened by turning it on the threaded portion of the bolt **20** to thus loosen the clamping action of washer **20***c*. This permits the bolt **20** to be slid along the slot

16c of the part 16, as well as along a similarly elongated slot 19c of the part 19.

A U or channel-shaped support bracket portion, member or part 22 is secured to or forms an integral part of the lower end of the vertical portion 19a of the part 19. It has a pair of oppositely-positioned projecting ears 22a that carry a cross-extending, headed pivot-pin or element 23. The ears 22a (see Figure 5) and pin 23 swingably or pivotally mount an upright swing holder, member or part 24, so that it may be employed to carry, clamp, and securely support a pair of substantially parallel lower end portions 30a (see Figure 1) of a pair of vertical or upright frame members 30. The swing holder 24 has a back or connecting wall portion 24a and a pair of horizontally spaced-apart, upright finger-sleeve, leg-receiver or boot portions 24b that are open or slit at their inner edges (see also Figure 3) to provide split-sleeve or cylindrical, somewhat flexible, clamping portions.

A reinforcing, clamping or mounting piece, portion or part 26 is secured (as by brazing or welding) across upper end portions of the sleeves 24b to extend at least partially therearound (see Figures 2, 3 and 5) and carry a threaded-adjustment, swing-position-control means or bolt 25. The means 25, as shown particularly in Figures 3, 4 and 5, is secured at its head portion 25a within the vertical portion 19a of the part 19 to project therefrom and receive a position-adjustment means, such as an elongated nut 28, and a position-securing and clamping means, such as wing nut 25b, along its threaded stem.

The back wall portion 24a of the swing holder 24 has a vertically-elongated slotted portion 24c (see Figures 2 and 4) to bypass the stem of the means 25 which also extends through a hole in the clamping piece 26. It is thus apparent that the swing holder 24 may be adjusted about its pivot pin 23 to always support the members 30 in a substantially vertical relationship, irrespective of variations in the shape of the side support member or gunwale 10a (compare positions A and C of Figure 4). It is also apparent that adjustment for this purpose is accomplished by first moving the elongated nut 28 to a desired position, after the wing nut 25 has been loosened, and then, tightening the wing nut 25 down to simultaneously clamp the holder 24 in the desired position against the position nut 28, as well as to exert pressure on the piece 26 and flex and clamp the split-sleeve portions 24b about the lower end portions 30a of the upright frame members 30.

As shown particularly in Figures 1, 7 and 8, the frame construction comprises the upright side members 30 of tubular construction which, as side pairs, define a Y-shape and may be of light metal, such as aluminum. The upper portions of the members 30 carry collars 31 having securing elements or thumb set screws 31a. The collars 31 slidably and telescopically receive lower or vertical portions 32a of corner or bend-defining tubular connecting frame members 32. The set screws 31a are employed to clamp the members 32 in a desired adjusted vertical relationship with respect to the members 30. The collars 31 may be secured, as by welding, brazing, etc., to upper ends of the upright members 30 to provide an integral construction therewith.

A pair of top sleeve, transverse or horizontal frame members 33 are adapted to telescopically receive horizontal or upper end portions 32b of the members 32. As shown particularly in Figure 8, the sleeve members 33 may be provided with under-secured threaded nuts 40 at each end thereof to adjustably position and receive a threaded-adjustment, thumb-set-screw or securing element 40a. In this manner, the end portions 32b may be clamped in desired vertical and horizontal adjusted positions, see Figures 7 and 8. It will be noted that the lower ends of the cables or lines 38 may be secured directly to the gunwales 10a or to under-ribs, etc.

What we claim is:

1. A clamping unit for mounting one side of a canopy framework on a side support member of a boat or similar base construction which comprises, a pair of vertically-projecting clamping parts to fit over the side support member, means for holding said pair of clamping parts together, adjustable clamping means carried by one of said parts and engaging the side support member to secure said parts in position thereon, a swing holder pivotally mounted to project upwardly on one of said parts, said swing holder having at least one upwardly-projecting split-sleeve portion to receive therein an end portion of a side of the framework, adjusting means secured to said last-mentioned part and projecting in a cooperative relationship with said swing holder, means cooperating with said swing holder and said adjusting means to adjust the vertical relationship of said swing holder on its pivot mounting, and means cooperating with said adjusting means to clamp said split-sleeve portion about the end portion of the framework to hold it in position therein.

2. A clamping unit for mounting a canopy framework on side support members of a boat or similar base construction which comprises, an outer angle-shaped clamping part, an inner cooperating angle-shaped clamping part, complementarily-elongated slotted portions along top portions of said inner and outer clamping parts, an adjustable clamping assembly mounted within said slotted portions to hold said inner and outer parts in a desired spaced relationship with respect to each other to accommodate various widths of side support members on which the unit is to be mounted, a clamping thumb-screw adjustably mounted in a vertical portion of said outer part, said thumb-screw having a pivotally-mounted pressure-head to engage against a side of the side support member on which the unit is to be mounted to clamp it against a vertical portion of said inner clamping part, a pair of spaced-apart projecting ears on the vertical portion of said inner clamping part, a swing holder pivotally mounted between said ears and projecting upwardly therefrom, said swing holder having a pair of split-sleeve clamping portions to receive end portions of the framework therein, and means adjustably positioning an upper end portion of said swing holder on its pivot mounting with respect to the vertical portion of said inner clamping part and having means associated therewith to flex said sleeve portions and clamp them in position about the end portions of the framework.

3. A demountable and adjustable sturdy canopy construction to be adaptably secured in an upright position on a pair of transversely spaced-apart side support members which comprises, an upright frame structure having front and back U-frame members in a spaced relation with each other longitudinally of the side support members, each of said frame members having a pair of transversely spaced-apart and vertical side leg portions and an overhead transverse connecting portion, the leg portions of said frame members along each side support member defining an upwardly-spread and a downwardly-converging Y-shaped side leg assembly to carry a substantial horizontal expanse of cover material on the overhead transverse connecting portions; each of said frame members having slidably-adjustable, overhead corner portions and associated position-securing means with its leg and its overhead transverse connecting portions to adjust both the vertical height and the transverse width of said upright frame structure; a pair of mounting units to be secured in a transversely-opposed position on the side support members, each mounting unit having a pair of adjustably-removable side clamps and tightening means to securely clamp them on the side support members, each unit also having a swing holder provided with a pair of horizontally spaced-apart leg-receiver portions to separately receive and support and anchor lower end portions of side pairs of the side leg portions of said frame members, pivot means pivotally mounting said pair of leg-receiver portions as a unit for movement transversely of the side support members, and means to adjust said pair of

leg-receiver portions on said pivot means and secure them in an adjusted position to substantially vertically-align and securely hold the leg portions irrespective of any inclination of the side support members.

4. A canopy construction as defined in claim 3 wherein said means to adjust is secured on one of said adjustable side clamps and has a clamping piece to clamp said leg-receiver portions in position securely about the lower end portions of side pairs of the side leg portions.

5. A canopy construction as defined in claim 3 wherein, a piece of cover material is stretched over the overhead transverse connecting portions of said frame members, the material has spaced eyelets at its corners, and tension cables are adapted to extend from side support members to engage an eyelet at each of the corners and hold the material in a secure position on the frame structure.

References Cited in the file of this patent

UNITED STATES PATENTS

208,564	Bowers	Oct. 1, 1878
282,794	Starling	Aug. 7, 1883
493,305	Sherman	Mar. 14, 1893
1,069,965	Locklin	Aug. 12, 1913
1,376,476	Stepke	May 3, 1921
1,571,543	Fratzke	Feb. 2, 1926
2,689,579	Sartori	Sept. 21, 1954
2,714,387	Meldrum	Aug. 2, 1955