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Hayward

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[54] **AWNING ASSEMBLIES**

[75] Inventor: **Walter W. Hayward,** Loveland, Colo.

[73] Assignee: **Fawn Hollow Corporation,** Loveland, Colo.

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[52] **U.S. Cl.** ..... **160/45;** 160/22; 160/68; 135/5 AT

[51] **Int. Cl.²** **E04F 10/00;** E06B 7/00

[58] **Field of Search** ..... 160/68, 22, 24; 135/5 AT; 308/173, 177, 182, 21 U

[56] **References Cited**

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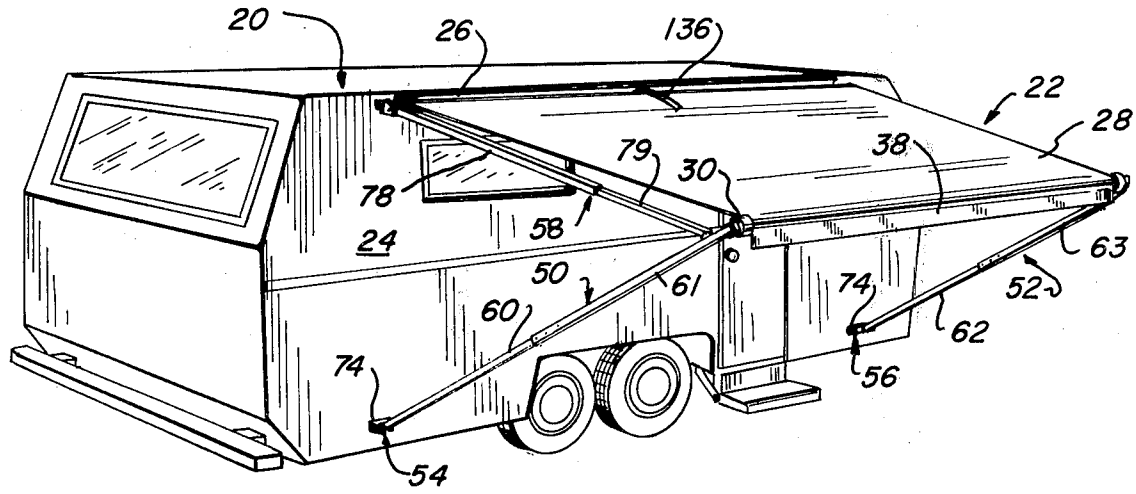
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Primary Examiner—Paul H. Gilliam
Assistant Examiner—Victor N. Sakran
Attorney, Agent, or Firm—Hugh H. Drake

[57] **ABSTRACT**

An awning assembly, particularly suitable for use on the side of a recreational vehicle but also useful on a building, includes a horizontal bar that secures one edge of an awning. The opposite awning edge is secured longitudinally along a cylindrical pipe. Cylindrical recesses in respective opposite ends of the pipe receive roller bearings that are, in turn, received within hubs so as to journal the bearings. A pair of struts are individually secured between the respective hubs and points displaced below the horizontal bar. Arms extend from the bar to the ends of the struts adjacent to the hubs. Both the struts and the arms are selectively adjustable in length. Moreover, the outer ends of the arms are releasably securable either to the upper ends of the struts, so as to hold the awning stretched in a position for use, or at the other end of the struts for storage. Constructional details insure rigidity and security either when the awning is positioned for use or when it is stored.

26 Claims, 18 Drawing Figures



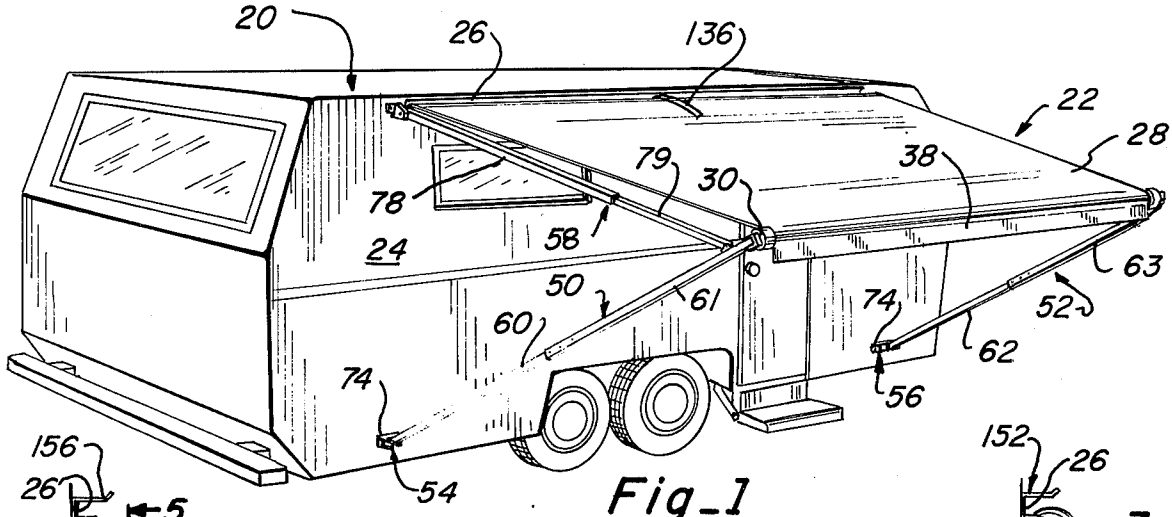


Fig_1

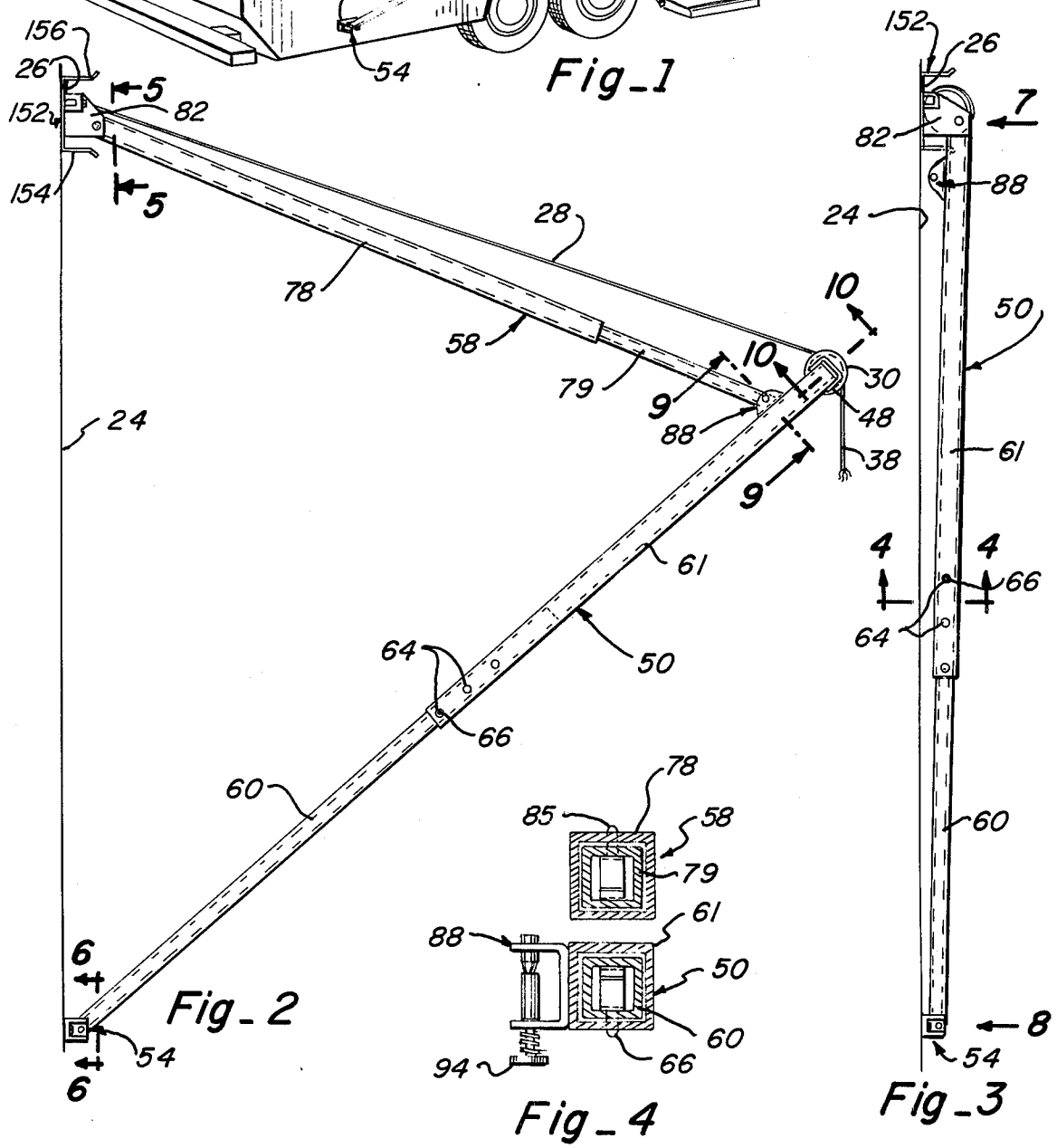


Fig_2

Fig_4

Fig_3

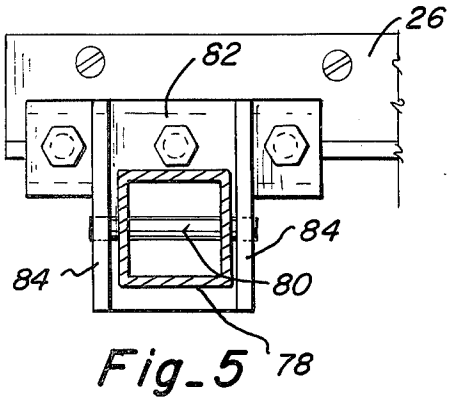


Fig_5

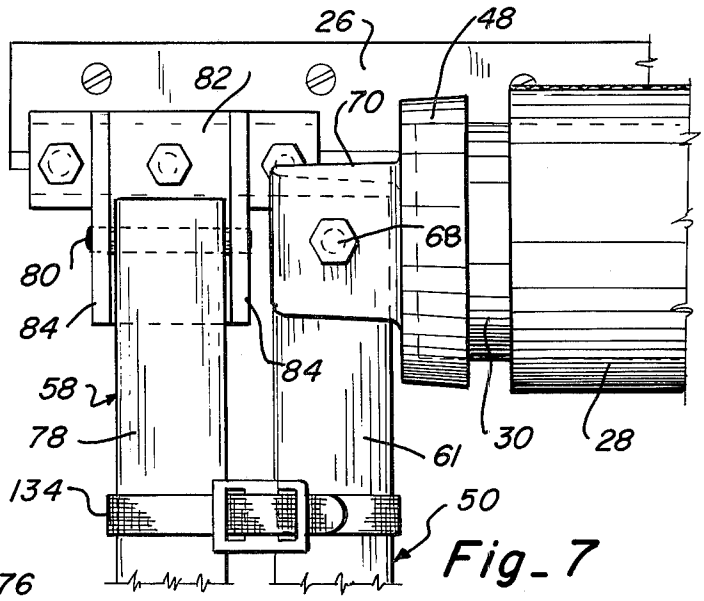


Fig_7

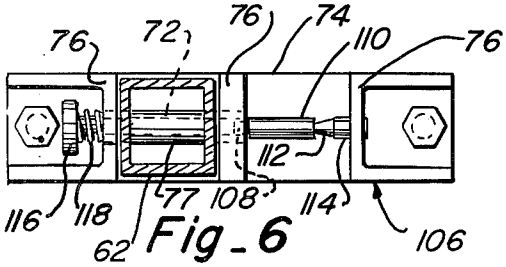


Fig_6

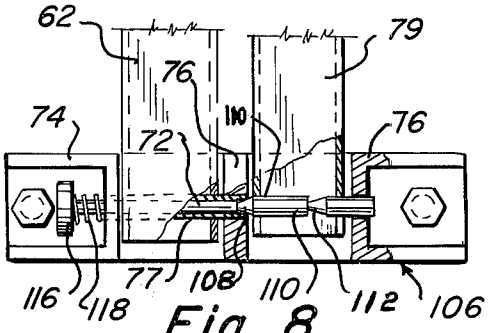


Fig_8

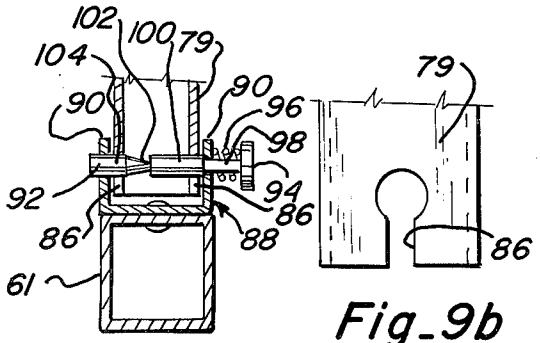


Fig_9a

Fig_9b

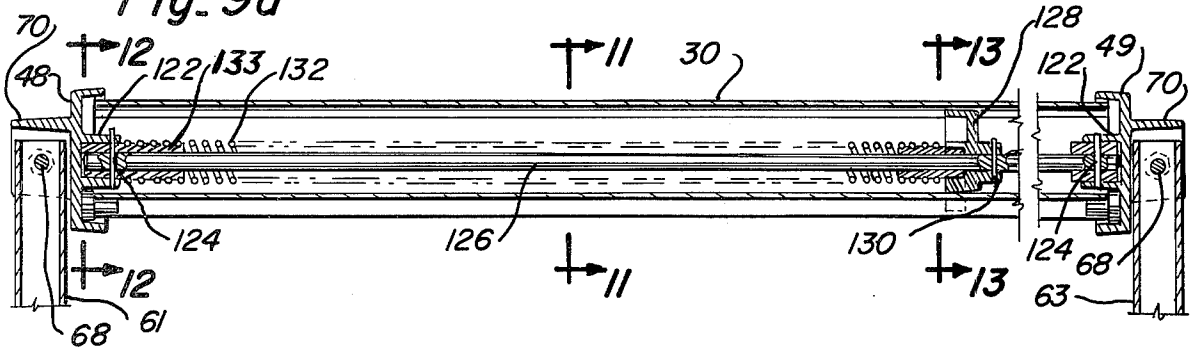


Fig_10

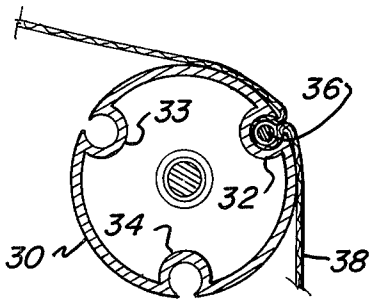


Fig_11

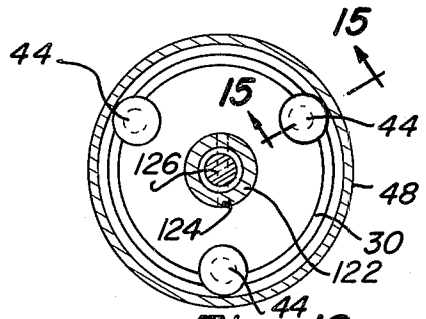


Fig_12

Fig_15a

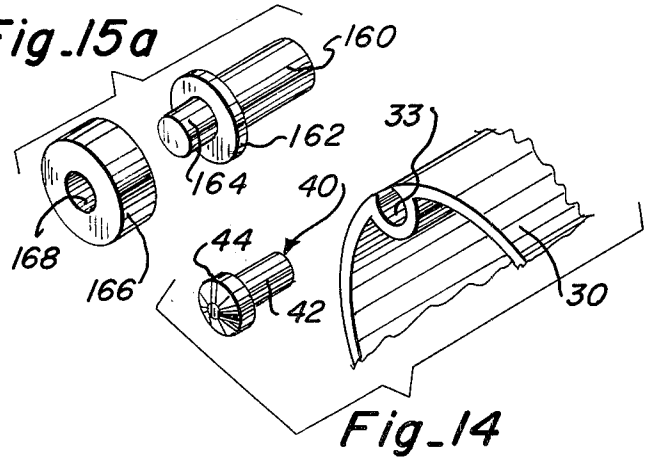


Fig_14

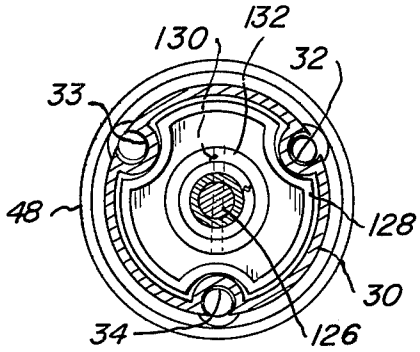


Fig_13

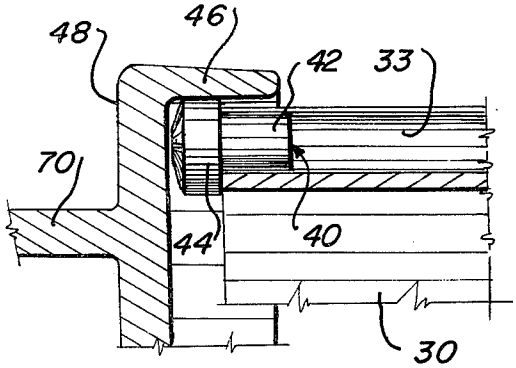


Fig_15

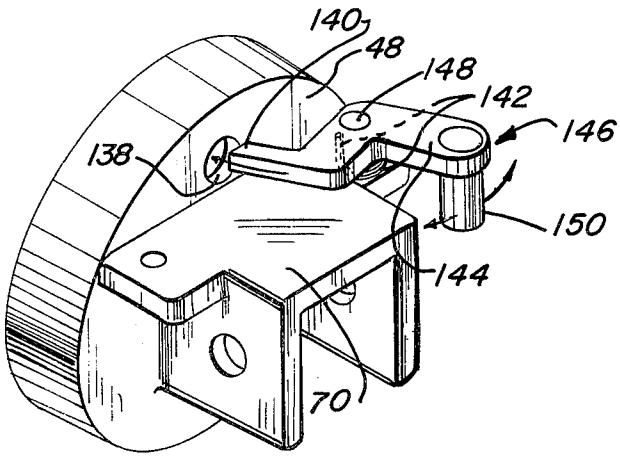


Fig_16

AWNING ASSEMBLIES

The present invention pertains to awning assemblies. More particularly, it relates to a retractable awning assembly suited for use on the side of either a recreational vehicle or a building.

Highways and campsites now abound with a variety of types of recreational vehicles that afford many comforts in living away from home. Such vehicles, of course, include both those of a trailer type and others, often referred to as "campers," that mount in the beds of pickups. Such units, however, are necessarily confined in living space and subject to uncomfortable interior temperatures during periods of hot weather. For those and other reasons, users have been attracted to the addition of some kind of exterior awning under which they can situate themselves when the vehicle is parked.

Most simply, such an awning might take the form of a mere piece of canvas fastened along one edge to the side of the vehicle and supported at its outer corners by upright poles in the manner of a tent. Apparently, however, such an approach, involving the need for disassembling and storing the awning at the end of each different stop, is considered by many users to be inconvenient. Thus, a number of different awning assemblies have heretofore been proposed that mount more or less permanently on the side of the unit and are retractable for storage during traveling between stops. Some of these prior approaches involve a roll-up mechanism for the awning fabric, somewhat like a window shade. Included may be posts or struts that extend from the outer corners of the awning either to the ground or back to a lower point on the side of a trailer or the like. Struts of that kind may include a feature of selectively adjustable length, so that the awning may be arranged in a taut position and varied as to the height of its outer edge.

There is no doubt that many such prior approaches have led to enjoyment by their users. At the same time, however, difficulties have been encountered. A first necessity is that any awning of this type ought to be able to withstand extremely high wind, either when stored for travel or when extended for use. Many responsive efforts to supply the desired ruggedness have, unfortunately, led to designs which are both expensive and cumbersome. In fact, some awning assemblies, that are indeed quite rugged, require at least two persons of significant strength in order to achieve their erection for use. Other approaches necessitate the inclusion of parts which must be detached during storage and stored elsewhere such as in the crowded trailer.

It is, accordingly, a general object of the present invention to provide a new and improved awning assembly which achieves the desired objectives heretofore noted while avoiding the deficiencies already mentioned.

It is another object of the present invention to provide a new and improved awning assembly that is entirely self storing when not in use.

A further object of the present invention is to provide a new and improved awning assembly which may be set up by a single individual having no more than average strength.

It is a specific object of the present invention to provide a new and improved awning assembly that is capable of withstanding high winds whether in its extended or in its stored position.

Still another object of the present invention is to provide a new and improved awning assembly which exhibits high strength while yet being comparatively inexpensive to manufacture and easy to use.

An awning assembly constructed in accordance with the present invention includes horizontal bar means for securing one edge portion of an awning formed of flexible sheet material. A cylindrical pipe has means disposed longitudinally thereof for securing an opposite edge portion of the awning. A pair of sets of cylindrical recesses are individually disposed in respective opposite ends of the pipe with the recesses of each of the sets being distributed around the respective end peripheries of the pipe. Disposed in respective different ones of the recesses are a plurality of roller bearings. A pair of hubs are individually receptive of respective ends of the pipe, with each hub having an inner diameter of a size to journal the bearings. A pair of struts are individually secured at one end to respective ones of the hubs and are individually securable at the other end to respective horizontally spaced points displaced below the bar means.

Other features include a pair of arms that individually extend on respective sides of the awning from the bar means to the respective upper ends of the struts. Desirably, these arms are releasably fastenable to the upper ends of the struts during extension of the awning and also at the lower ends of the struts for purposes of storage. Easing use of the assembly is a clevis-type fastener of special construction.

The features of the present invention which are believed to be novel are set forth with particularity in the appended claims. The organization and manner of operation of the invention, together with further objects and advantages thereof, may best be understood by reference to the following description taken in connection with the accompanying drawings, in the several figures of which like reference numerals identify like elements, and in which:

FIG. **1** is a perspective view of a camping trailer having affixed thereto an awning assembly constructed in accordance with the present invention;

FIG. **2** is a side-elevational view of the awning assembly shown in FIG. **1** as in its extended position;

FIG. **3** is a side-elevational view of the same awning assembly of FIG. **1** but in the closed or stored position;

FIG. **4** is a cross-sectional view taken along the line **4—4** in FIG. **3**;

FIG. **5** is a cross-sectional view taken along the line **5—5** in FIG. **2**;

FIG. **6** is a cross-sectional view taken along the line **6—6** in FIG. **2**;

FIG. **7** is a fragmentary front-elevational view taken as indicated by the arrow **7** in FIG. **3**;

FIG. **8** is a fragmentary front-elevational view taken as indicated by the arrow **8** in FIG. **3**;

FIG. **9***a* is a cross-sectional view taken along the line **9—9** in FIG. **2**;

FIG. **9***b* is a fragmentary side-elevational view of an outer end of an arm member shown in FIGS. **2** and **9***a*;

FIG. **10** is a cross-sectional view taken along the line **10—10** in FIG. **2**;

FIG. **11** is a cross-sectional view taken along the line **11—11** in FIG. **10**;

FIG. **12** is a cross-sectional view taken along the line **12—12** in FIG. **10**;

FIG. 13 is a cross-sectional view taken along the line 13—13 in FIG. 10;

FIG. 14 is a fragmentary perspective view of a portion of the apparatus as shown particularly in FIGS. 10 and 12;

FIG. 15 is a fragmentary cross-sectional view taken along the line 15—15 in FIG. 12;

FIG. 15*a* is an exploded perspective view of an alternative for a bearing shown particularly in FIGS. 14 and 15; and

FIG. 16 is a fragmentary perspective view of a modification of a portion of the awning assembly.

While the awning assembly to be described may be used on the side of a permanent house, it is particularly adaptable to a recreational vehicle such as trailer **20** shown in FIG. **1.** As will there be observed, an awning assembly **22** projects outwardly from one wall or side **24** of the trailer.

Secured to side **24** along the upper edge thereof is a horizontal bar **26** that securingly engages one edge portion of an awning **28** which is formed of a flexible sheet material. While awning **28** may be secured to bar **26** by various means, the now-conventional and preferred approach is to welt the awning fabric into a cylindrical recess extending the length of bar **26.** To that end, the awning material is folded into the recess and held therein by a cord threaded through the length of the recess.

At the outer end of awning **28** is a cylindrical pipe **30.** As depicted particularly in FIG. **11,** pipe **31** has three equally-spaced (around its periphery) longitudinally extending cylindrical recesses **32, 33** and **34.** An outer edge portion of awning **28** is welted into recess **32** by means of a longitudinally threaded cord **36.** As shown in FIG. **1,** the balance of the outer edge portion of awning **28** preferably is allowed to hang over pipe **30** as a valance **38.** In a manner known as such, longitudinally extending recess **32** is formed integrally as part of the same aluminum extrusion as constitutes pipe **30.** Similarly, recesses **33** and **34** are also integrally formed as part of the extrusion of the pipe.

As herein embodied, cylindrical recesses **32–34** extend the entire length of pipe **30** so as to be present at and distributed around the respective end peripheries of the pipe. Inserted in the ends of the respective different recesses are a corresponding plurality of roller bearings **40** each of which has a shaft **42** receivable for rolling contact within its respective one of recesses **32–34** and also including an integral enlarged head **44.** Inwardly projecting flanges **46** of hubs **48** and **49** have an inner diameter of a size to journal heads **44** of bearings **40.** Thus, hubs **48** and **49** serve to journal bearings **40** and thereby support the opposing ends of pipe **30** for rotation. Moreover, flanges **46** accept the respective ends of pipe **30** as well as accommodating and forming a bearing race for roller bearings **40.** As shown, the outer face of heads **44** preferably is semiconical so as to reduce drag between bearings **40** and the inwardly facing surface of the associated one of hubs **48** and **49.**

A pair of struts **50** and **52** are individually secured at their upper ends to respective ones of hubs **48** and **49** and also are individually securable at their other ends to respective horizontally spaced points **54** and **56,** on side wall **24,** that are displaced below bar **26.** A pair of arms **58** and **59** individually extend between bar **26** and the upper ends of respective ones of struts **50** and **52.**

Each of struts **50** and **52** includes a respective pair of mutually telescoping strut members **60, 61** and **62, 63.** All of strut members **60–63** preferably are formed from tubular metal stock of rectangular cross-section. Spaced longitudinally along one wall of each of strut members **61** and **63,** near their respective lower ends, are a plurality of apertures **64.** Projecting outwardly through the mating wall of inner strut members **60** and **62** are spring-loaded pins **66.** Depression of one of pins **66** permits telescoping movement between its associated arm members so as to enable selective adjustment of the total length of the respective overall strut and, thus, the height of the outer end of the awning above the ground when in the extended position.

As best shown in FIG. **7** with respect to strut **50,** the upper end portions of strut members **61** and **63** are secured by respective nut and bolt combinations **68** to flanges **70** that project endwise from the corresponding ones of hubs **48** and **49.** The lower ends of each of strut members **60** and **62** are hingedly affixed by means of respective pins **72** to respective brackets **74** individually secured to wall **24** at respective points **54** and **56** (see FIG. **6**). Brackets **74** include outwardly projecting ears **76** each of which includes a horizontally-oriented opening sized to receive pin **72** slidably. Inside each of strut members **60** and **62,** the associated pin **72** is slidable within a transverse sleeve **77** extending between corresponding apertures in the opposing walls of the strut members.

Each of arms **58** and **59** are somewhat similarly composed of a respective pair of mutually telescoping arm members **78** and **79.** Again, arm members **78** and **79** preferably are formed of telescopingly matable tubular stock having a rectangular cross-section. As best shown in FIGS. **5** and **7,** each of arm members **78** is hingedly affixed by a pin **80** to a bracket **82** which is affixed to wall **24** over or in the vicinity of horizontal bar **26.** Bracket **82** includes a pair of outwardly projecting ears **84** in which horizontally aligned holes are formed so as to receive pin **80** slidably.

Analogous to apertures **64** and pin **66,** each of arm members **78** has a series of longitudinally spaced apertures that face inwardly as viewed in FIG. **1.** Projecting toward and through the mating wall of each arm member **79** is a spring-loaded pin **85.** As before, depression of one of pins **85** permits telescoping movement of its associated arm members so as to enable selective adjustment of the total length of the respective overall arm and, thus, the amount by which the outer end of the awning extends away from wall **24.**

At the lower end of each of arm members **79** is a part of a releasable fastener which generally is of the clevis type. To that end, a pair of inwardly-enlarged slits **86** extend inwardly from the lower end of each arm member **79** and are disposed in horizontally aligned space-opposed relationship of the tubular walls of the arm member. Affixed near the upper end of each of strut members **61** and **63** is a bracket **88** that includes a spaced pair of ears **90** which project toward the corresponding one of brackets **82.** Horizontally aligned in each of ears **90** are respective holes of a size to receive slidingly a locking pin **92.** Affixed on one end of pin **92** is a button **94** biased outwardly, together with pin **92,** by a compression spring **96** coiled around the pin and spaced between the button **94** and the adjacent one of ears **90.** Proceeding away from button **94,** pin **92** has a first necked-down portion **98,** an increased-diameter

portion **100**, a second necked-down portion **102** and a final increased-diameter portion **104**. Necked-down portions **98** and **102** have a diameter such as to be accepted within the beginning and narrower respective portions of slits **86**, while enlarged portions **100** and **104** have a diameter so as to fit within the respective inward enlargements of slits **86** while being too large to enter or exit through the more narrow entrance and exit portions of slits **86**. To engage or disengage the lower end of arm member **79** from bracket **88**, the user simply depresses button **94** so as to align necked-down portions **98** and **102** with the corresponding ones of slits **86** and thereby be able to move arm member **79** toward or away from strut member **61** or **63**. Preferably, the transistion between necked-down portion **102** and enlarged portion **104** of pin **92** is somewhat gradually tapered as illustrated. That tapered section facilitates alignment of pin **92** within the inward enlargements of slits **86**.

A similar fastener **106** is incorporated at each of points **54** and **56**. As best shown in FIGS. **6** and **8**, pin **72** is integrally extended through an additional one of ears **76** with respective ones of those ears being spaced apart to receive the lower end of arm member **79**. Analogous to fastener **88**, the extension of pin **72** includes, in succession from one end, a necked-down portion **108**, an increased-diameter portion **110**, another necked-down portion **112** and a final increased-diameter portion **114**. Again, necked-down portions **108** and **112** are spaced apart and sized to be accepted within the more narrow portion of the respective ones of slits **86**, while increased-diameter portions **110** and **114** are sized so as to be accepted within the inward enlargements in slits **86** but too large to pass through the more narrow portions of those slits. At one end of pin **72** is a button **116** shaped so as to be conveniently grasped by the user. A compression spring **118** is coiled around pin **72** between the adjacent one of ears **76** and button **116**. In the form as shown, the user merely depresses button **116** in order to align necked-down portions **108** and **112** with slits **86** so as to permit engagement or disengagement of the lower end of arm member **79** from bracket **74**. Facilitating that operation is a tapered section joining necked-down portion **112** and increased-diameter portion **114**.

Turning now particularly to FIGS. **10**, **12** and **13**, it will be observed that pipe or roller-tube **30** includes a roller-shade type of spring assembly. Thus, each of hubs **48** and **49** integrally includes an inwardly projecting cup **122** that is staked by a pin **124** to a respective opposite end portion of a rod **126** which extends longitudinally through tube **30** and connects hubs **48** and **49**. Intermediate the ends of rod **26** and carried on the rod is a spider **128** staked by a pin **130** to rod **126** and secured around its periphery to the inner wall surface of pipe **30**. The spider periphery includes relieved areas to receive the corresponding walls of recesses **32–34**.

Wrapped around rod **126** and individually secured at its respective opposite ends to spider **128** and the facing one of cups **122** is a coil spring **132**. To eliminate slippage or breakage under stress, the respective end portions of spring **132** are threaded onto corresponding sleeves **133** carried upon the respective portions of rod **126** and also staked in place by pins **124** and **130**. Of course, the direction of winding of the turns of spring **132** is such that, as pipe **30** rotates while the awning is being extended, spring **132** is tightened. During installation of the awning assembly, spring **132** desirably is pre-set with an initial degree of tighting when the awning is in its rolled-up position. This helps to assure that the awning is retained against wall **24** when in its stored position. The overall resilience and length of spring **132** is selected, in view of the weight of the other components in the awning assembly, to be such that, when released from its stored position, pipe **30** will rotate and permit the awning material to be unrolled to the fully extended position of the awning.

As detailed in FIG. **10**, only one such spring assembly is shown. While that may be satisfactory in the case of smaller awnings, a wider awning (and, thus, longer roll tube or pipe **30**) preferably is equipped with a pair of the spring assemblies. That is, a second coil spring **132** and spider **128** are identically associated with hub **49** so as to be a mirror image of the spring assembly illustrated in FIG. **10**. In that case, rod **126** need not extend between the pair of spiders **128**.

Beginning with the awning assembly in its extended position as shown in FIG. **1**, it will be observed that it is but a simple matter to cause the awning material to be rolled up and the entire assembly placed in the storage position suitable for travel. The user need only unfasten the lower ends of arm members **79** from brakets **88** and, for secure storage purposes, refasten those lower ends at fasteners **106**. Assuming pin **66** to be positioned in other than the uppermost ones of holes **64**, he then depresses that pin and telescopes the struts together until pin **66** is engaged within the upper one of holes **64**. At this point, assisted by the action of coil spring **132**, he depresses pins **85** and swings the corresponding ones of struts **50** and **52** toward the trailer wall while, at the same time, spring **132** causes the awning to be rolled up. When the rolled-up awning abuts the side of trailer wall **24** at horizontal bar **26**, he preferably ties the corresponding struts and arms together by means of a buckled strap **134** secured, as by riveting, to each of arm members **78**. Since, at this point, arms **58** and **59** are effectively pinned at both ends to trailer wall **24**, the use of strap **134** serves effectively to tie struts **50** and **52** also to the trailer wall. An additional strap **136**, secured to horizontal bar **26** at its center, then preferably is wrapped around the rolled-up awning and buckled down. All components of the awning assembly are then securely stored so as to permit travel of the vehicle unit.

On subsequently parking the vehicle unit and desiring to use the awning, the user need only unbuckle straps **134** and **136**, swing the awning assembly outwardly to the extended position, raise the outer edge of the awning to its desired height by means of depression of each pin **66** until inserted into the selected one of openings **64**, and unfastening the lower end of arm members **79** from brackets **74** and then refastening those lower ends to the corresponding brackets **88**. By depressing pins **85**, the arms then are adjusted to the desired amount of extension. The resultant assembly is extremely rugged. For example, a large adult may swing from pipe **30**, with the awning assembly unit in its extended position, without causing collapse or otherwise damaging the assembly. By virtue of its mode of construction, the awning assembly is both extremely durable and, yet, quite easy to manipulate. When in the extended position, the arm and strut arrangement permits the assembly to withstand the effects from substantial winds. When the awning is in its stored posi-

tion, it is even more resistant against the possibility of damage arising from the effects of winds, whether caused by nature or high-speed travel of the vehicle unit.

Notwithstanding the use of straps **134** and **136,** it has been found that the ends of pipe **30,** when the awning assembly is in its stored position, tend to deflect outwardly away from trailer wall **24** under some conditions of wind resistance as the associated vehicle unit is traveling at higher speeds. To limit such deflection, an arrangement as particularly illustrated in FIG. **16** preferably is additionally included. That is, an aperture **138** is formed through hub **48** (and identically in hub **49**) so as slidably to receive a stub **140** the inner end of which is positionable so as to be in the path of recesses **32–34** and thereby in the path of roller bearings **40.** A coil spring **142** is tensioned between an external surface of hub **48** and an arm, adjacent to stub **140,** of a bell crank **146** pivoted on a pin **148.** Pin **148** is staked into an ear on flange **70,** and spring **142** is arranged so that stub **140** is normally urged outwardly to a position in which its inner end is not in the path of recesses **32–34.** Secured at the end **144** of bell crank **146,** opposite stub **140,** is a downwardly depending leg **150.** Upon movement of the awning assembly to its stored position, leg **150** engages the external surface of bar **26** or some other suitable abuttment in the vicinity of bar **26** on the side of trailer wall **24.** In operation, then, movement of pipe **30** to its storage position causes abuttment of leg **150** effectively against the side of the trailer so that stub **140** is driven inwardly of hub **48** and thus disposed between successive ones of recesses **32, 33** or **34.** Accordingly, pipe **30** is then able to rotate only somewhat less than **120°** for the embodied case of three equally spaced ones of the recesses. In turn, that limits any outward movement of the ends of pipe **30** to a rather minimal extent. It should be observed that the arrangement of the assembly including bell crank **146** and the ears on flange **70** is such that the same parts may be used at either end of pipe or roll tube **30.**

Further in resistance to wind effects, FIGS. **2** and **3** depict the addition to the awning assembly of a semi-enclosed housing **152** which receives the rolled-up awning when in the storage position. Housing **152** is in the form of an elongated U-shaped channel **154** that is affixed to wall **24** with its bite portion disposed under bar **26** so that its legs project outwardly to receive and embrace the stored awning roll. To facilitate receipt of the awning roll within housing **152,** the outer ends of the legs of channel **154** may flare apart as indicated at **156.** Such a housing has been particularly successful in overcoming wind effects in a situation in which the awning is mounted on a building wall under an overhanging eave that tends to captivate the wind.

As shown in detail in FIGS. **14** and **15,** one-piece bearings **40** turn in the respective ones of recesses **32–34.** To minimize wear and reduce friction, the bearing depicted in FIG. **15***a* preferably is substituted for each of bearings **40.** This revised bearing features a shank **160** that terminates in a radially projecting integral collar **162** followed by an integral spindle **164.** A cylindrical roller **166** has a central aperture **168** that is slidingly received on spindle **164.** Roller **166** preferably is formed of a self-lubricating plastic and has the same outer diameter as head **44** of roller **40** so as to be received within the hub flanges as previously described. In this case, however, shank **160** is assigned a diameter such that it must be forced into the respective one of recesses **32–34.**

While a particular embodiment of the invention and a possibly desired modification thereof have been shown and described, it will be obvious to those skilled in the art that changes and modifications may be made without departing from the invention in its broader aspects, and therefore, the aim in the appended claims is to cover all such changes and modifications as fall within the true spirit and scope of the invention.

I claim:

1. An awning assembly comprising:

horizontal bar means for securing one edge portion of an awning formed of flexible sheet material;

a cylindrical pipe having means disposed longitudinally thereof for securing an edge portion of said awning opposite said one edge portion;

means defining a pair of sets of cylindrical recesses individually disposed in respective opposite ends of said pipe, the recesses of each of said sets being distributed around the respective end peripheries of said pipe;

a plurality of roller bearings individually disposed in respective different ones of said recesses;

a pair of hubs individually receptive of respective ends of said pipe and each having an inner diameter of a size to journal said bearings;

and a pair of struts individually secured at one end to respective ones of said hubs and individually securable at the other end to respective horizontally-spaced points displaced below said bar means.

2. An awning assembly as defined in claim **1** in which the wall of said pipe is formed to include a plurality of longitudinally extending indented cylindrical slots the respective ends of which constitute said recesses.

3. An awning assembly as defined in claim **2** in which said opposite edge portion of said awning is folded into one of said slots, and an element is disposed inside the fold within said one slot to secure said opposite edge portion to said pipe.

4. An awning assembly as defined in claim **1** in which each of said bearings includes a shaft received into a respective one of said recesses and an integral enlarged head the external perimeter of which engages the interior perimeter of the respective one of said hubs.

5. An awning assembly as defined in claim **4** in which said shaft is of a diameter to be slidably received within said one recess for rotation therein.

6. An awning assembly as defined in claim **4** in which the surface of said head, opposite said shaft and facing said hub, is of semi-conical shape.

7. An awning assembly as defined in claim **1** in which each of said bearings includes a shaft, of a diameter to be grippingly received within a respective one of said recesses, and in which said shaft integrally terminates in a radially extending collar integrally beyond which is a spindle, and a cylindrical roller rotationally mounted on said spindle with the external perimeter of said roller engaging the internal perimeter of the respective one of said hubs.

8. An awning assembly as defined in claim **1** in which a rod extends lengthwise through said pipe and is connected at one end to a respective one of said hubs, a spider is disposed on said rod intermediate the ends of said pipe, and a spring is coiled around said rod and connected at its opposite ends between said spider and said one of said hubs.

9. An awning assembly as defined in claim 8 in which first and second sleeves are carried on said rod and individually affixed respectively to said one hub and said spider, and in which opposing end portions of said spring are individually threaded upon respective ones of said sleeves.

10. An awning assembly as defined in claim 8 in which the wall of said pipe is formed to include a plurality of longitudinally extending indentations, and in which the periphery of said spider is shaped to include a corresponding plurality of relieved areas respectively received by said indentations.

11. An awning assembly as defined in claim 1 in which each of said struts includes a pair of mutually telescoping members adjustably interconnectible in determination of strut length.

12. An awning assembly as defined in claim 1 and which further includes a pair of arms individually extending between said bar and the regions of the respective ends of said pipe, each arm being fixed at one end with respect to said bar and at the other end with respect to the end portion of the respective one of said struts near to said pipe.

13. An awning assembly as defined in claim 12 in which all of said arms and struts are selectively adjustable in length.

14. An awning assembly as defined in claim 12 in which said arms are hingedly fixed at both ends thereof, said struts are hingedly securable at said other ends thereof, and all of said arms and struts are selectively adjustable in length.

15. An awning assembly as defined in claim 12 which includes a first pair of first fastener parts individually disposed at respective ones of said one ends of said struts, a second pair of first fastener parts individually disposed adjacent to respective ones of said other ends of said struts, and a pair of second fastener parts, lockingly matable respectively with either of said first or second pairs of said first fastener parts, disposed individually at respective ones of said other ends of said arms.

16. An awning assembly as defined in claim 15 in which each of said arms is of tubular cross-section, each of said second fastener parts includes a space-opposed pair of slits having inwardly enlarged portions and extending in the walls of said arms from said other ends of said arms, each of said first fastener parts includes a pin having necked-down portions to accept entrance into said slits and increased-diameter portions to accept said enlarged portions, and spring means on said pin for biasing said increased-diameter portions into alignment with said slits.

17. An awning assembly as defined in claim 16 in which one of said increased-diameter portions tapers gradually into the adjacent one of said necked-down portions.

18. An awning assembly as defined in claim 16 in which one end of each of said pins extends individually through one of a corresponding other end of a respective one of said struts as a hinge-pin therefor.

19. An awning assembly as defined in claim 1 which further includes locking means disposed at one of said hubs for automatically preventing rotation of said pipe upon positioning of said pipe adjacent to said bar.

20. An awning assembly as defined in claim 19 in which said locking means includes an opening in said one hub, a stub receivable in said opening and insertable therethrough in the path of said bearings, a member pivoted to swing said stub into said path upon abuttment against the region of said bar, and a spring for biasing the inner end of said stub out of the path of said bearings.

21. An awning assembly comprising:

horizontal bar means for securing one edge portion of an awning formed of flexible sheet material;

a cylindrical pipe having means disposed longitudinally thereof for securing an edge portion of said awning opposite said one edge portion;

a pair of hub assemblies individually mounting respective ends of said pipe for rotation thereof;

a pair of struts individually secured at one end to respective ones of said hubs and individually securable hingedly at the other end to respective horizontally spaced points displaced below said bar means;

a pair of arms individually extending between said bar and the regions of the respective ends of said pipe, each arm being hingedly fixed at one end with respect to said bar and coupled at the other end with respect to the end portion of the respective one of said struts near to said pipe;

a first pair of fastener parts individually disposed at respective ones of said one ends of said struts;

a second pair of first fastener parts individually disposed adjacent to respective ones of said other ends of said struts;

and a pair of second fastener parts, lockingly matable respectively with either of said first or second pairs of said first fastener parts, individually disposed at respective ones of said other ends of said arms.

22. An awning assembly as defined in claim 21 in which each of said arms is of tubular cross-section, each of said second fastener parts includes a space-opposed pair of slits having inwardly enlarged portions and extending in the walls of said arms from said other ends of said arms, each of said first fastener parts includes a pin having necked-down portions to accept entrance of said slits and increased-diameter portions to accept said enlarged portions, and spring means on said pin for biasing said increased-diameter portions into alignment with said slits.

23. An awning assembly as defined in claim 22 in which one of said increased-diameter portions tapers gradually into the adjacent one of said necked-down portions

24. An awning assembly as defined in claim 22 in which one end of each of said pins extends individually through one of a corresponding other end of a respective one of said struts as a hinge-pin therefor.

25. An awning assembly as defined in claim 21 which further includes locking means disposed at one of said hubs for automatically preventing rotation of said pipe upon positioning of said pipe adjacent to said bar.

26. An awning assembly as defined in claim 25 in which said locking means includes an opening in said one hub, a stub receivable in said opening and insertable therethrough in a position to block rotation of said pipe, a member pivoted to swing said stub into said opening upon abuttment against the region of said bar, and a spring for biasing the inner end of said stub out of said position.

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