United States Patent [19]

Akers et al.

[11] **3,779,302**

[45] **Dec. 18, 1973**

[54] **AWNING CONTROL APPARATUS**

[76] Inventors: **Robert M. Akers; Harold L. Westfall,** both of 1536 S. Central, Oklahoma City, Okla.

[22] Filed: **Jan. 22, 1971**

[21] Appl. No.: **108,880**

[52] **U.S. Cl.** ..... **160/68,** 135/5 AT

[51] **Int. Cl.** **E04f 10/06**

[58] **Field of Search** ..... 160/45–83, 243, 309; 135/1 A, 5 R, 5 A, 5 AT

[56] **References Cited**

UNITED STATES PATENTS

3,324,869	6/1967	Duda	135/1 A
3,397,006	8/1968	Grant	135/1 A
3,503,566	3/1970	Travis	135/5 R
2,004,862	6/1935	Gasswint	160/72

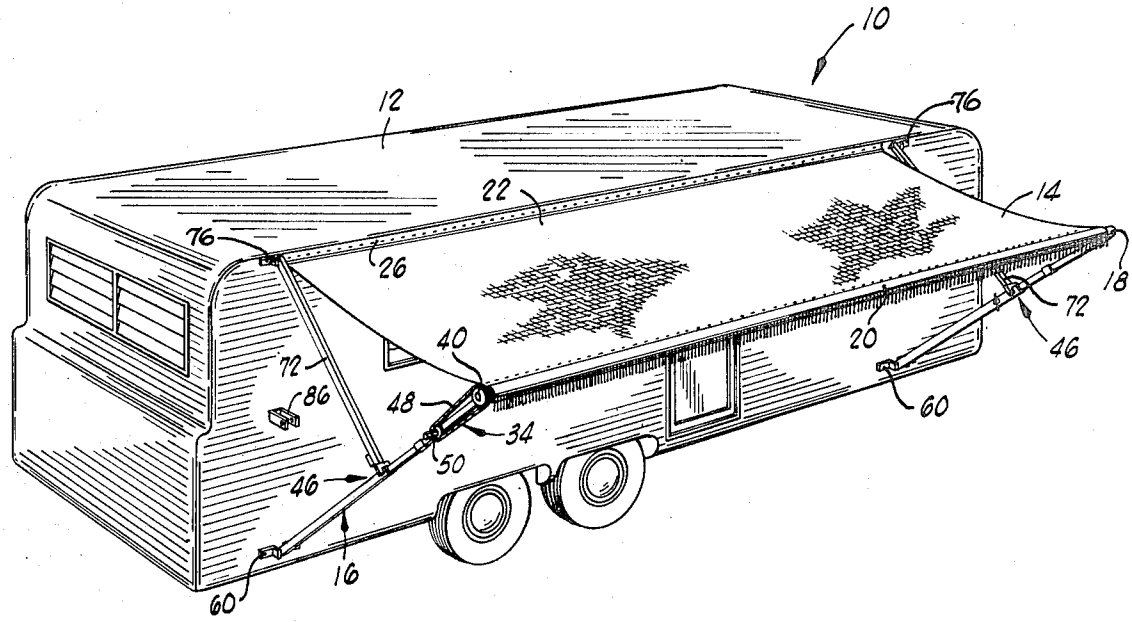
Primary Examiner—Peter M. Caun

Attorney—Dunlap, Laney, Hessin & Dougherty

[57] **ABSTRACT**

An improved awning control apparatus for connection to a support structure wherein the awning is secured to the support structure on one end thereof and to a shaft on the opposite end thereof. The shaft is rollingly supported by a support assembly, having a portion pivotally secured to the support structure and another portion bearingly connected to the shaft. The awning control apparatus includes a drive assembly to rotate the shaft in a storing direction to storingly roll the awning about the shaft, thereby pivoting the shaft and the support assembly generally toward the support structure, and to rotate the shaft in a releasing direction to releasingly unroll the awning from the shaft, thereby pivoting the shaft and the support assembly in a direction generally away from the support structure.

11 Claims, 14 Drawing Figures



PATENTED DEC 18 1973

3,779,302

SHEET 1 OF 3

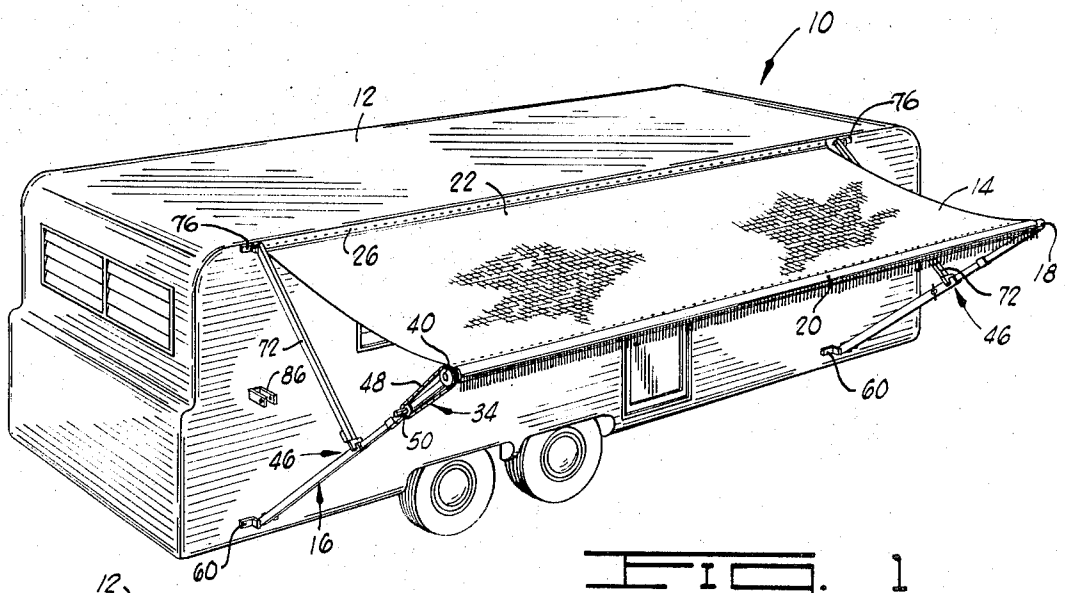


FIG. 1

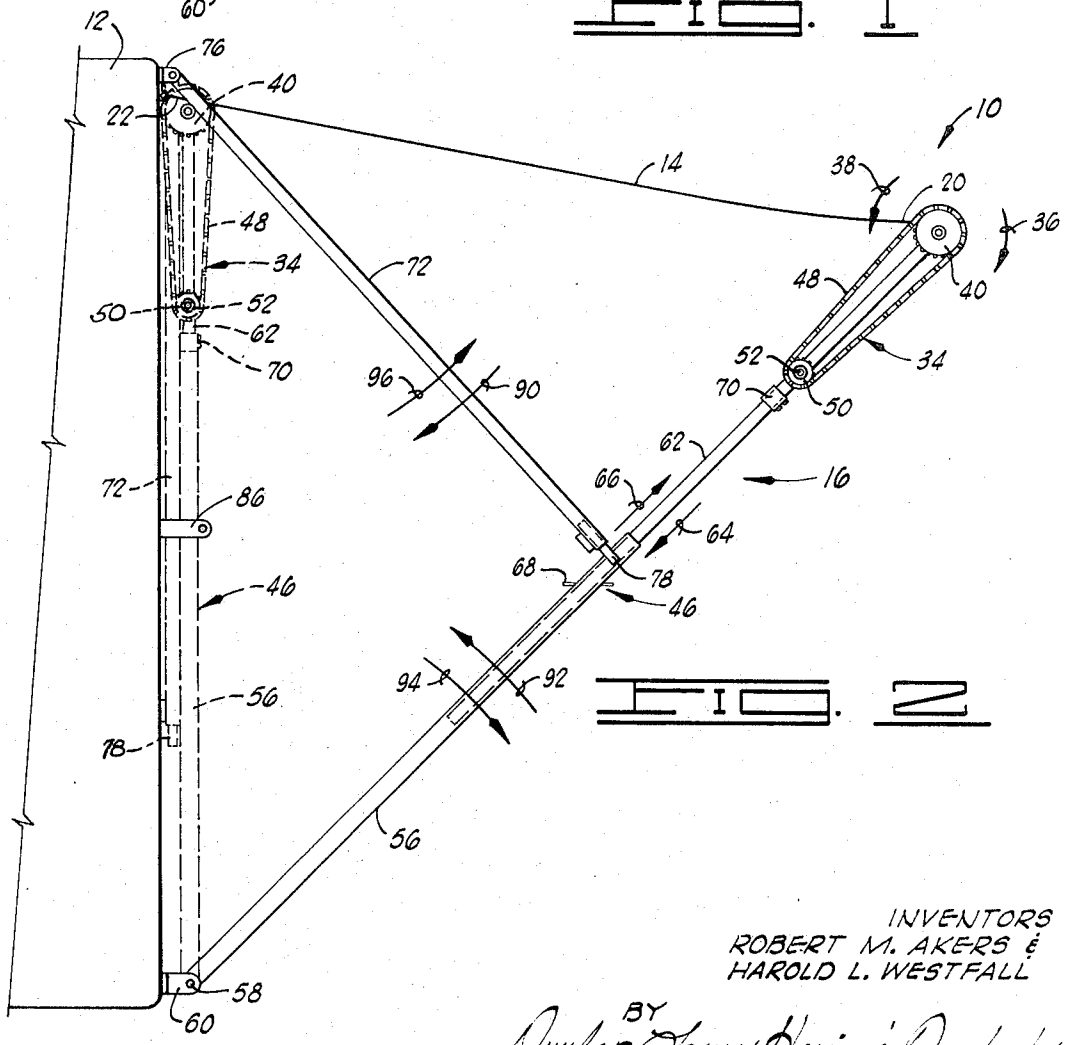


FIG. 2

INVENTORS
ROBERT M. AKERS &
HAROLD L. WESTFALL

BY
Dunlap, Laney, Hessin & Dougherty
ATTORNEYS

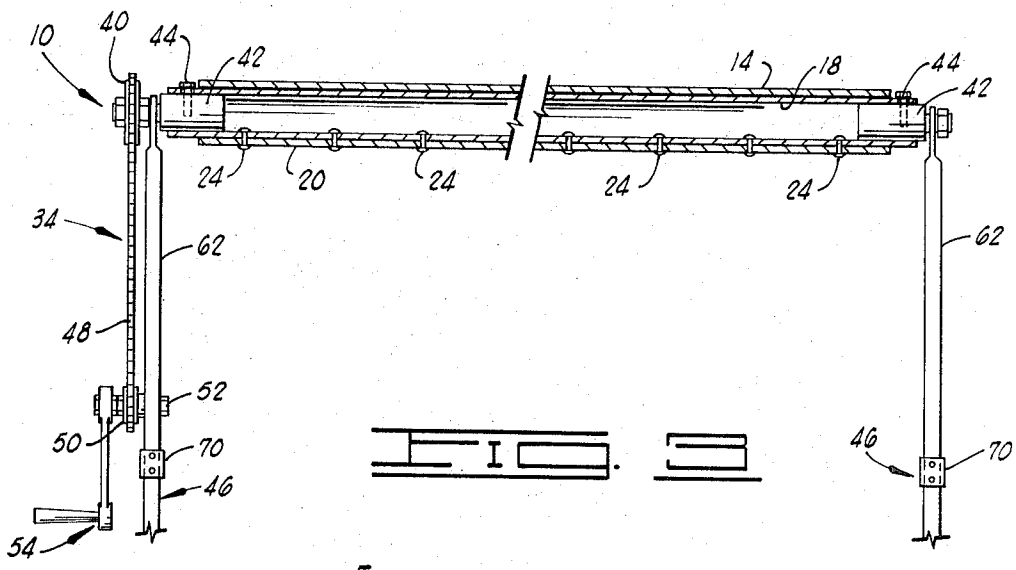


FIG. 3

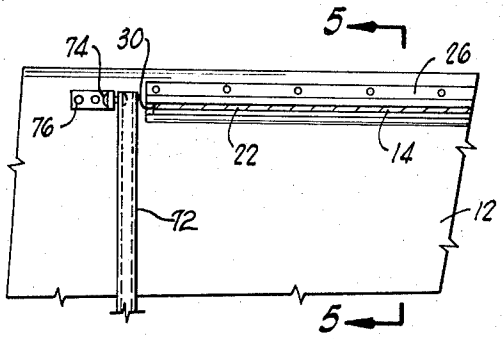


FIG. 4

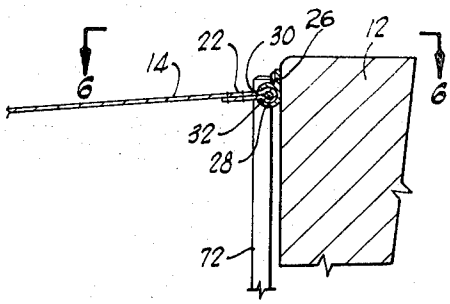


FIG. 5

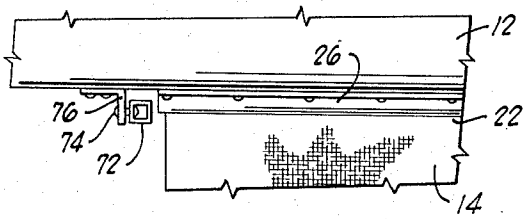


FIG. 6

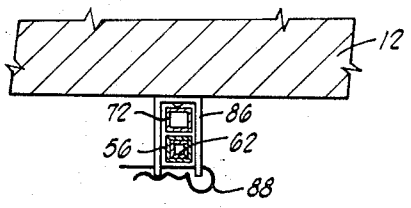


FIG. 7

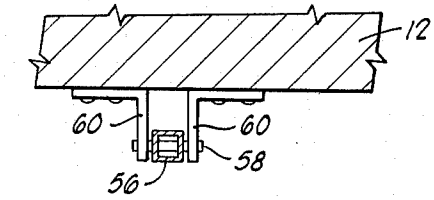


FIG. 8

INVENTORS
ROBERT M. AKERS &
HAROLD L. WESTFALL

BY
Dunlap, Laney, Hessin & Dougherty
ATTORNEYS

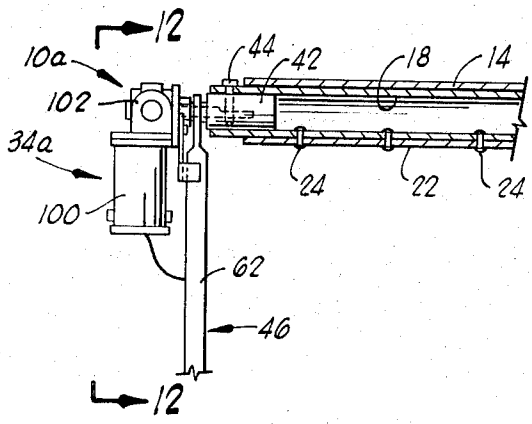


FIG. 11

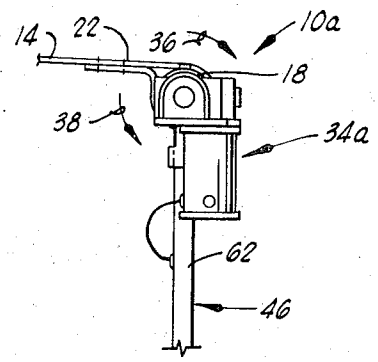


FIG. 12

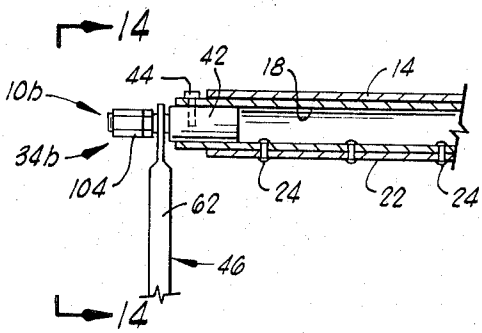


FIG. 13

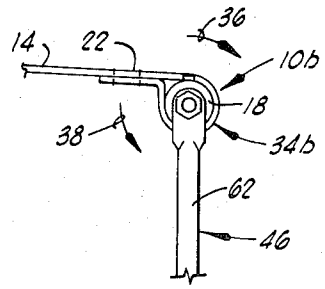


FIG. 14

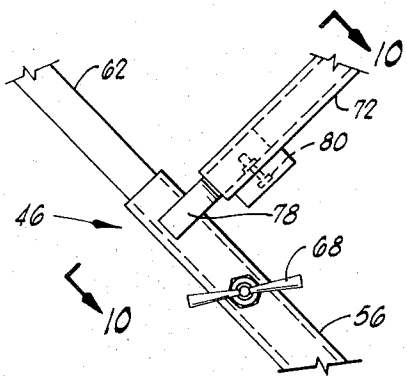


FIG. 9

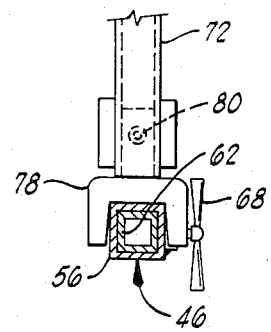


FIG. 10

INVENTORS
ROBERT M. AKERS &
HAROLD L. WESTFALL

BY
Dunlap, Laney, Hessin & Dougherty
ATTORNEYS

AWNING CONTROL APPARATUS

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates generally to improvements in support apparatus for covers and, more particularly, but not by way of limitation, to an awning control apparatus for connection to a support structure.

2. Description of the Prior Art

In the past, various support devices have been developed for supporting an awning in a fully extended position, in a horizontal plane generally above the ground. Some of these support devices have been adapted to be utilized in cooperation with various support structures.

In the past, these supports have generally comprised a plurality of support legs, which were secured to one end of the awning and supported in the ground. The end of the awning opposite the end thereof secured to the support legs was generally attached to the support structure. In this type of support apparatus, it was generally necessary to disconnect the awning from the support legs, remove the support legs to a remote storing location, and roll the awning in some manner to be storingly supported on the support structure. In some instances, the awning was completely disconnected from the support structure, rolled and then stored.

SUMMARY OF THE INVENTION

An object of the invention is to provide an awning control apparatus for supporting an awning in an extended position relative to a support structure which is economical in construction and operation.

Another object of the invention is to provide an awning control apparatus wherein the drive means not only provides the drilling impetus to roll and unroll the awning, but also provides the driving impetus to move the support connectors to a stored and an operating position, respectively.

A further object of the invention is to provide an awning control apparatus wherein the awning is rolled and unrolled about a shaft in a more uniform and efficient manner.

A still further object of the invention is to provide an awning control apparatus wherein the support connectors provide rigid support for the awning, yet wherein each support connector is readily adjustable to a storing position and to an operating position.

One other object of the invention is to provide an awning control apparatus which can be economically and efficiently supported on a camper-type trailer support structure.

Other objects and advantages of the invention will be evident from the following detailed description when read in conjunction with the accompanying drawings which illustrate the various embodiments of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of an awning control apparatus connected to a camper-type trailer support structure wherein the awning is extended to an operating position with respect to the support structure.

FIG. 2 is an enlarged, side elevational view of the awning control apparatus of FIG. 1, showing a portion of the support assembly and the awning, in an extended or unrolled position thereof and in a stored position thereof, the support assembly being shown in a stored position in dashed-lines in FIG. 2.

FIG. 3 is a partial, front elevational, partial sectional view of a portion of the awning control apparatus of FIG. 1.

FIG. 4 is an enlarged, partial sectional, partial elevational view showing a portion of the interconnection between one end of the awning and the support structure.

FIG. 5 is a view of the apparatus of FIG. 4, taken substantially along the lines 5—5 of FIG. 4.

FIG. 6 is a top elevational view taken substantially along the lines 6—6 of FIG. 5.

FIG. 7 is an enlarged, sectional view showing the apparatus utilized to secure each support connector and each brace member in a stored position.

FIG. 8 is an enlarged, partial sectional view showing the pivotal connection between one of the support connectors and the support structure.

FIG. 9 is a fragmentary, enlarged, side elevational view showing the interconnection between one of the brace members and one of the support connectors.

FIG. 10 is a view taken substantially along the lines 10—10 of FIG. 9.

FIG. 11 is a partial sectional, partial elevational view of an awning control apparatus, similar to the awning control apparatus of FIG. 1, but having a modified drive apparatus.

FIG. 12 is a view of the modified awning control apparatus of FIG. 11, taken substantially along the lines 12—12 of FIG. 11.

FIG. 13 is a view of a partial sectional, partial elevational view of an awning control apparatus, similar to the awning control apparatus of FIG. 1, but having another modified drive apparatus.

FIG. 14 is a view of the modified awning control apparatus of FIG. 13, taken substantially along the lines 14—14 of FIG. 13.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to the drawings in general, and to FIG. 1 in particular, shown therein and designated by the general reference numeral 10 is an awning control apparatus which is connected to a support structure 12 or, more particularly, connected to a camper-type trailer 12. The awning control apparatus 10 is constructed to move an awning 14 to a stored position and to an extended, assembled position, and to support the awning 14 in these positions. The awning control apparatus 10 includes a support assembly 16, which is connected to the awning 14 via a shaft 18, and to the support structure 12 such that the awning control apparatus 10, including the support assembly 16, is pivoted to a stored position and an operating position as the awning 14 is rolled and unrolled, respectively, about the shaft 18, in a manner to be described in detail below.

The awning 14 is constructed of a relatively flexible material and has a roll end 20 and a support end 22. The roll end 20 is securedly connected to the shaft 18 via a plurality of rivets 24, as shown more clearly in FIG. 3.

The support end 22 of the awning 14 is removably and securedly connected to the support structure 12 via a bar 26, as shown more clearly in FIGS. 5 and 6. As shown in FIGS. 4 and 5, the bar 26 has a hollow portion 28 formed therethrough, and an elongated slot 30

which intersects the hollow portion of the bar **26** and extends between the opposite ends of the bar **26.**

As shown more clearly in FIG. **5,** a portion of the awning **14,** generally near support end **22** thereof, is rolled over a stranded, rope-like member **32** and secured thereabout to form a ridge extending generally along the support end **22** of the awning **14.** The ridged portion of the awning **14,** formed by the rope-like member **32,** is sized to be removably and slidably disposed in the hollow portion **28** of the bar **26.** The slot **30** of the bar **26** has a width smaller than the diameter of the hollow portion **28,** and is sized such that, in an assembled position, as shown in FIGS. **5** and **6,** the awning **14** extends generally through the slot **30.** In this position, the ridged portion of the awning **14** formed by the rope-like member **32** engages a portion of the bar **26** generally adjacent the slot **30,** the bar **26** thereby securedly connecting the awning **14** to the support structure **12.**

The awning control apparatus **10** also includes a drive assembly **34,** which is connected to the shaft **18,** to rotate the shaft **18** in a storing direction **36,** as shown more clearly in FIG. **2,** to storingly roll the awning **14** about the shaft **18.** The drive assembly **34** is also constructed to rotate the shaft **18** in a releasing direction **38** to releasingly unroll the awning **14** from the shaft **18.** It will be apparent to those skilled in the art from the foregoing and from the detailed description below, that since the roll end **20** of the awning **14** is secured to the shaft **18,** the storing direction **36** and the releasing direction **38** are, more particularly, relative directions. The shaft **18** can thus be rotated clockwise or counterclockwise to storingly roll the awning **14** thereabout, the releasing direction of rotation in either event being generally opposite the storing direction of rotation.

The drive assembly **34,** as shown more clearly in FIGS. **2** and **3,** includes a driven gear **40** which is securedly connected to one end of the shaft **18** and, more particularly, securedly connected to a shaft extension **42** which is partially disposed in the hollow portion of the shaft **18** and secured therein by a pin **34.** As shown in FIG. **3,** another shaft extension **42** is secured in the opposite end of the shaft **18** by another pin **34,** a portion of each shaft extension **42** is bearingly connected to a support connector **46.**

As shown more clearly in FIGS. **2** and **3,** an endless chain drive **48** is connected to the driven gear **40** and to a drive gear **50** which is rotatingly supported on a portion of one of the support connectors **46** via a gear shaft **52,** which is securedly connected to a portion of one of the connectors **46.** The chain drive **48** thus provides the interconnection between the driven gear **40** and the drive gear **50.**

As shown more clearly in FIG. **3,** a portion of the gear shaft **52** extends beyond the driven gear **50,** and a hand wrench assembly **54** is removably and securedly connected thereto. The hand wrench assembly **54** is connected to the drive gear **50** such that an operator can rotate the drive gear **50** by gripping and rotatingly turning the hand wrench assembly **54.** The rotating motion of the drive gear **50** is translated to the driven gear **40** via the chain drive **48,** the shaft **18** being thus rotated by imparting rotating motion to the hand wrench assembly **54.**

As mentioned before, the awning control apparatus **10** includes a pair of support connectors **46** and, as shown more clearly in FIG. **2,** each support connector **46** includes a hollow base member **56** having one end thereof pivotally connected to a portion of the support structure **12** via a pin **58,** as shown in detail in FIG. **8.** The pin **58** is connected to a portion of the support structure **12** via a pair of L-shaped flange members **60.**

As shown in FIG. **2,** each support connector **46** also includes a rod member **62,** having a portion thereof telescoped in a portion of the hollow portion of the base member **56,** through one end of the base member **56,** opposite the end of thereof which is pivotally connected to the support structure **12.** The base member **56** and the rod member **62** are each constructed such that the rod member **62** can be telescoped in a generally downwardly direction **64** and in a generally upwardly direction **66** within the hollow portion of the base member **56,** for reasons which will be made more apparent below.

As shown more clearly in FIG. **9,** the support assembly **16** also includes a pair of screw members **68,** each screw member **68** being threaded through a portion of one of the base members **56.** The screw members **68** are sized such that each screw member **68** can be threaded through one of the base members **56,** to a position wherein a portion of each screw member **68** intersects the hollow portion of one of the base members **56** and engages an adjacent portion of one of the rod members **62** to secure that rod member **62** in predetermined telescoped positions within the base member **56,** for reasons which will be made more apparent below.

As shown more clearly in FIGS. **2** and **3,** a stop **70** is secured to a portion of each rod member **62.** Each stop **70** is sized and positioned such that a lower portion thereof engages the end of one of the base members **56,** opposite the end of the base member **56** which is pivotally secured to the support structure **12,** to limitingly position each rod member **62** in a storing position within one of the base members **56,** for reasons which will be made more apparent below.

As shown in FIG. **2,** the support assembly **16** also includes a pair of brace members **72** (only one of the base members being shown in FIG. **2**). Each brace member **72** has one end which is pivotally connected to a portion of the support structure **12** via a pin **74** and an L-shaped flange **76,** each flange **76** being secured to the support structure **12,** as shown more clearly in FIGS. **4** and **6.** The end of each brace member **72,** opposite the end thereof which is pivotally secured to the support structure **12,** is removably connected to one of the support connectors **46** and, more particularly, to one of the base members **56.** Each brace member **72** is pivotably to a bracing position, as shown in FIGS. **2, 9** and **10,** with respect to one of the support connectors **46,** to prevent the rotation of the support connectors **46** in a direction generally toward the support structure **12,** for reasons which will be made more apparent below.

As shown more clearly in FIGS. **9** and **10,** a C-shaped member **78** is removably secured to the end of each brace member **72,** opposite the end thereof which is pivotally secured to the support structure **12,** via a fastener **80.** In one form, each C-shaped member **78** may be constructed of an elastomeric material to reduce sliding friction between each C-shaped member **78** and the base member **56** in engagement therewith.

As shown in FIGS. **1** and **2,** and as shown more clearly in FIG. **7,** the awning control apparatus **10** also includes a pair of C-shaped flanges **86,** each C-shaped

flange 86 being secured to a portion of the support structure 12 and positioned thereon to receive one of the brace members 72 and one of the support connectors 46, in one position of each brace member 72 and each support connector 46. The support assembly 16 is constructed and positioned on the support structure 12, such that each brace member 72 and each support connector 46 can be pivoted in a direction generally toward the support structure 16 to a stored position (shown in dashed-lines in FIG. 2), wherein each base member 72 and each support connector 46 is disposed generally adjacent the support structure 12 and removably disposed in one of the C-shaped flanges 86. Each brace member 72 and each support connector 46 is secured in a stored position within one of the C-shaped flanges 86 by a pin 88.

Operation of FIGS. 1 through 10

The awning control apparatus 10, described in detail above, is constructed to controllingly and uniformly unroll the awning 14 from the shaft 18, to an extended or operating position, as shown in FIGS. 1 and 2, and to securedly support the awning 14 in that position. The awning control apparatus 10 also controllingly and uniformly rolls the awning 14 about the shaft 18, to a position wherein the awning control apparatus 10 is securedly supported in a stored position, as shown in dashed-lines in FIG. 2.

To storingly roll the awning about the shaft 18 and to move the awning control apparatus 10 to a stored position, the operator will initially disengage each brace member 72 from the support connectors 76, and pivot each brace member 72 in a general direction 90 toward the support structure 12, to a position wherein each brace member 72 is disposed generally adjacent the support structure 12. The operator will then disengage each screw member 68 from the respective rod member 62 in engagement therewith, and telescope each rod member 62 in a generally downwardly direction 64, to a position wherein the stop 70 connected to each rod member 62 limitingly engages one of the base members 56, thereby positioning each support connector 48 in a position to be storingly disposed with respect to the support structure 12.

The operator will then secure the hand wrench assembly 54 to the end of the gear shaft 52, opposite the end thereof rotatingly disposed through one of the rod members 62. The operator will then rotate the hand wrench assembly 54 in a direction of rotation causing the shaft 18 to be rotated in a storing direction 36.

As the shaft 18 is rotated in a storing direction 36, the awning 14 will be storingly rolled about the shaft 18, thereby moving the shaft 18 and pivotally moving each support connector 46 in a general direction 92, generally toward the support structure 12. In the extended position of the awning 14, as shown in FIGS. 1 and 2, each support connector 46 is disposed such that the natural gravitational forces tend to pivot each support connector 46 in a general direction 94. The pivotal movement of each support connector 46 in a general direction 94 is limited by the awning 14 which is secured to the support structure 12 and to the shaft 18.

The pivotal tendency of each support connector 46 in the general direction 94 causes the weight of each support connector 46 and weight of the shaft 18 to pull the awning 14 in a direction generally away from the support structure 12, thereby maintaining the awning 14 taught as the awning 14 is storingly rolled about the shaft 18. In this manner, the awning 14 is rolled about the shaft 18 in a more efficient and uniform manner.

When the awning 14 has been storingly rolled about the shaft 18, each support connector 46 and the shaft 18 will have been pivoted in a general direction 92 to a stored position, generally adjacent the support structure 12, as shown in dashed-lines in FIG. 2. In this position, each brace member 72 is interposed between one of the support connectors 46 and the supported structure 12, and each brace member 72 and each support connector 46 is so disposed on one of the C-shaped flanges 86, as shown in FIGS. 2 and 7. The pins 88 are then each inserted through each C-shaped flange 86, to secure the brace members 72 and the support connectors 46 in a stored position.

To position the awning 14 in the extended position as shown in FIGS. 1 and 2, the operator will initially remove each pin 88 from the C-shaped flanges 86, and connect the hand wrench assembly 54 about the gear shaft 52, in a manner as described above. The operator will rotate the hand wrench assembly 54 in a direction causing the shaft 18 to be rotated in a releasing direction 38, thereby releasingly unrolling the awning 14 from the shaft 18.

As the awning 14 is releasingly unrolled from the shaft 18, each support connector 46 and the shaft 18 connected thereto will be pivoted in a direction 94, to a position wherein the awning 14 is completely unrolled from the shaft 18 and in a fully extended position, similar to the position of the awning 14 as shown in FIGS. 1 and 2. The operator will then telescope each rod member 62 in a general direction 66, to a position wherein the awning 14 is extended in a generally horizontal plane above the ground as shown in FIGS. 1 and 2. The screw members 68 are then threaded through each of the base members 56, to secure each rod member 62 in an assembled position with respect to each base member 56.

Each brace member 72 is then pivoted in a general direction 96, to a position wherein each C-shaped engaging member 78 engages a portion of one of the base members 56, thereby preventing the pivotal movement of each base member 56 in a general direction 92, as mentioned before.

It will be apparent from the foregoing to those skilled in the art, that the awning control apparatus 10, described above, is constructed to uniformly roll and unroll the awning 14 in a more efficient manner. The various components and assemblies of the awning control apparatus 10 are constructed to cooperate in such a manner that, as the awning 14 is moved to a rolled and an unrolled position, each component and assembly is constructed and positioned to be quickly, conveniently and efficiently secured in a stored position relative to the support structure 12.

Embodiment of FIGS. 11 and 12

The awning control apparatus 10*a*, shown in FIGS. 11 and 12, is constructed similar to the awning control apparatus 10, described before, the salient difference being that the awning control apparatus 10*a* includes a modified drive assembly 34*a*. More particularly, the drive assembly 34a includes an electric motor 100 which is gearingly connected to one of the shaft extensions 42 via a gear box 102. As shown in FIGS. 11 and

12, the motor 100 is secured to one of the rod members 62 and supported in an assembled position thereby.

In this embodiment of the invention, the motor controls (not shown) can be remotely disposed with respect to the drive assembly 34*a*, and thus the awning control apparatus 10*a* can be operated from a remote position in a manner reducing the amount of physical exertion expended by the operator in moving the awning 14 to a storingly rolled or an extended position, as described before.

Operation of FIGS. 11 and 12

The awning control apparatus 10*a*, shown in FIGS. 11 and 12, will operate substantially the same as the awning control apparatus 10, described before. The salient difference with respect to the operation of the awning control apparatus 10*a* will be that the driving impetus to rotate the shaft 18 in a storing direction 36 or a releasing direction 38 is the motor by themotor 100. Since the motor 100 rotates at relatively constant speed, the utilization of the motor 100 will result, not only in an increase in efficiency of operation, but also will substantially increase the uniformity with which the awning 14 is storingly rolled or unrolled about the shaft 18. It should also be noted that the motor 100 can be easily stopped to position the awning 14 at various intermediate positions between the stored position and the extended position thereof, if desired in some applications.

Embodiment of FIGS. 13 and 14

The awning control apparatus 10*b*, shown in FIGS. 13 and 14, is constructed similar to the awning control apparatus 10, described before, the salient difference being that the awning control apparatus 10*b* includes a modified drive assembly 34*b*. The drive assembly 34*b*, more particularly, includes an adapter 104 which is secured to one of the shaft extensions 42, as shown more clearly in FIG. 13. The adapter 104 is constructed to removably receive the hand wrench assembly 54, in a manner similar to that described before with respect to the awning control apparatus 10.

Operation of FIGS. 13 and 14

The awning control apparatus 10*b*, shown in FIGS. 13 and 14, will operate substantially the same as the awning control apparatus 10, described before, the salient difference being that the driving impetus to rotate the shaft 18 is provided by a modified drive assembly 34*b*. More particularly, the hand wrench assembly 54 is directly connected to the shaft 18 via the adapter 104 and the shaft extension 42, thereby eliminating the need for providing the gears and chain drives, similar to the gears and chain drives of the drive assembly 34, described before. The awning control apparatus 10*b* can thus be constructed in a less costly manner and may be desirable in some applications, particularly smaller sizes of the awning control apparatus.

Changes may be made in the construction and arrangement of the parts or the elements of the various embodiments as dieclosed herein without departing from the spirit and the scope of the invention as defined in the following claims.

What is claimed is:

1. Awning control apparatus for connection to a support structure, comprising:

a shaft, having opposite ends;

an awning, having a roll end and a support end, the roll end of the awning connected to the shaft and the support end of the awning connected to the support structure;

drive means having a portion connected to the shaft to rotate the shaft in a storing direction to storingly roll the awning about the shaft and to rotate the shaft in a releasing direction to releasingly unroll the awning from the shaft; and

support connector means to support the shaft in a storingly rolled position of the awning and in an unrolled position of the awning, comprising:

a hollow base member having one end pivotally connected to the support structure, generally below the connection between the support structure and the awning; and

a rod member having one end portion telescoped in the end of the base member, opposite the end of the base member connected to the support structure, the end of the rod member, opposite the end thereof telescoped in the base member, being pivotally connected to the shaft, the drive means being connected to the shaft and connected to the rod member and supported by the support connector means such that the weight of the drive means, the shaft and the support connector means cooperate with the pivotal connections between the support connector means and the shaft and the support structure to pivotally bias the shaft in a pivotal direction generally away from the support structure maintaining the awning, taut in a storing direction and in a releasing direction of rotation of the shaft.

2. The awning control apparatus of claim 1 wherein the drive means to rotate the shaft is defined further to include:

a hand wrench means removably connected to one end of the shaft.

3. The awning control apparatus of claim 1 wherein the drive means to rotate the shaft is defined further to include:

a driven gear means securedly connected to one end of the shaft;

an endless drive means having a portion thereof connected to the driven gear means;

a drive gear means connected to a portion of the endless drive means; and

a hand wrench means removably connected to the drive gear means to rotate the drive gear means, the rotation of the drive gear means rotating the driven gear means via the endless drive means.

4. The awning control apparatus of claim 1 wherein the drive means to rotate the shaft is defined further to include:

an electric motor drivingly connected to one end of the shaft.

5. The awning control apparatus of claim 1 wherein a ridge is formed on the support end of the awning; and wherein the awning control apparatus is defined further to include; a hollow bar secured to the support structure having an elongated slot formed therein intersecting the hollow portion of the bar and extending between the opposite ends of the bar, the slot having a width smaller than the diameter of the hollow portion of the bar, the ridged portion of the awning removably and slidably disposed in the hollow portion of the bar, a portion of the awning generally near the ridged portion thereof extending through the slot.

6. The awning control apparatus of claim 1 wherein the support connector means is defined further to include:

a pair of support connectors, each support connector pivotally connected to the support structure on one end thereof and bearingly connected to one end of the shaft on the opposite end thereof.

7. The awning control apparatus of claim 6 wherein each support connector includes:

a hollow base member pivotally connected to the support structure on one end thereof;

a rod member telescoped in the hollow portion of the base member through the end thereof opposite the end connected to the support structure, the end of the rod member opposite the end thereof telescoped in the base member bearingly connected to one end of the shaft; and

means to secure the rod member in predetermined telescoped positions within the hollow portion of the base member.

8. The awning control apparatus of claim 7 wherein the means to secure the rod member in predetermined telescoped positions includes:

a screw member threaded in the base member, and having a portion thereof engaging the rod member to secure the rod member to the base member in one position of the screw member; and

a stop secured to a portion of the rod member, the stop engaging the end of the base member, opposite the end thereof connected to the support structure, to position the rod member in a storing position within the base member.

9. The awning control apparatus of claim 6 defined further to include:

means to removably and securedly connect each support connector to the support structure in a stored position thereof.

10. The awning control apparatus of claim 9 defined further to include:

a pair of brace members, each brace member having one end pivotally connected to the support structure and the opposite end thereof removably connected to one of the support connectors, to brace the support connector connected thereto in an unrolled position of the awning and in one position of each brace member, thereby preventing the rotation of each support connector in a direction generally toward the support structure.

11. The awning control apparatus of claim 10 wherein the means to secure each support connector to the support structure includes means to removably secure each brace member to the support structure in a stored position thereof.

* * * * *