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1,483,031

D. M. WINANS

ROPE GUIDE DEVICE

Filed July 21, 1923

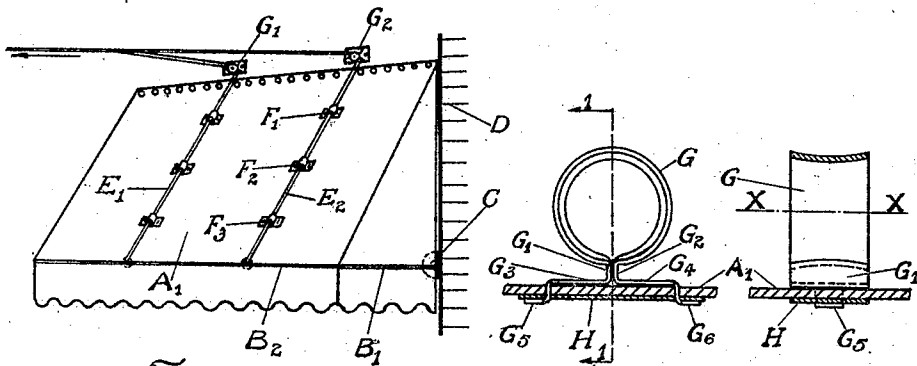


Fig. 1

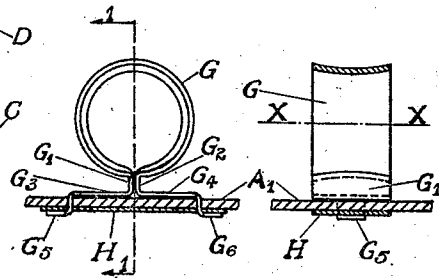


Fig. 2

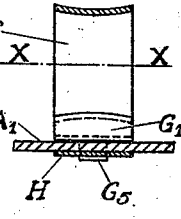


Fig. 3

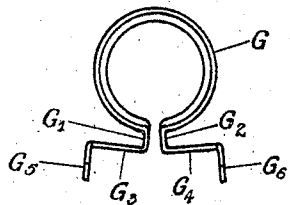


Fig. 4

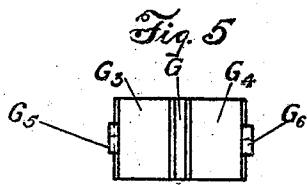


Fig. 5

Fig. 6

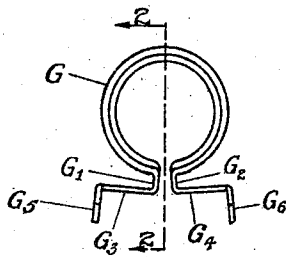


Fig. 7

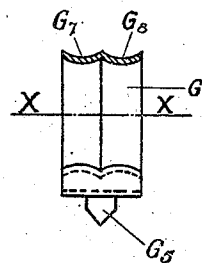


Fig. 8

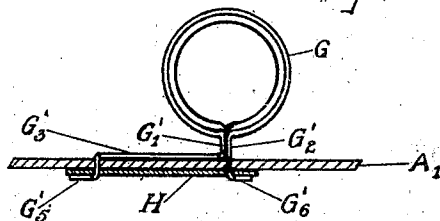


Fig. 9

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UNITED STATES PATENT OFFICE.

DANIEL M. WINANS, OF BINGHAMTON, NEW YORK, ASSIGNOR TO THE BREWER-TITCHENER CORPORATION, OF CORTLAND, NEW YORK, A CORPORATION OF NEW YORK.

ROPE-GUIDE DEVICE.

Application filed July 21, 1923. Serial No. 653,003.

To all whom it may concern:

Be it known that I, DANIEL M. WINANS, a citizen of the United States, and a resident of Binghamton, and the county of Broome, and the State of New York, have invented certain new and useful Improvements in Rope-Guide Devices, of which the following is a specification.

My invention relates to a novel article of manufacture and its object is to provide a simple and inexpensive rope guide for awnings and similar purposes. When applied to an awning fabric, the guide serves to maintain the actuating ropes in proper alignment whenever the awning is raised or otherwise manipulated thereby.

This improved rope guide comprises a loop strap of circular contour which serves as the guide element for the rope. The loop strap is preferably corrugated and the end portions thereof are formed into abutments adapted to close said loop. A further important element of the present invention resides in an integrally formed foot flange for the strap made to bear snugly against the fabric to which it is fastened. The foot flange is provided with clinch prongs that pass through the fabric and engage with a keeper plate disposed upon the opposite side of said fabric.

Embodied herein are also other features of structure and organization designed to facilitate manufacture and the application of said rope guide, all of which will be set forth in detail hereinafter.

Reference is had to the accompanying one sheet drawing which illustrates an example of the preferred form of my invention like characters of reference indicate like parts in the several views, and in which drawings:

Fig. 1., represents an awning equipt with my improved guide device for awning ropes.

Fig. 2., is an elevational side view of my assembled rope guide and keeper plate as mounted upon the awning fabric.

Fig. 3., is a detailed view in section taken along the line 1—1 of Fig. 2.

Fig. 4., shows the constructive details of the keeper plate.

Fig. 5., shows a detail of the loop strap

provided with integral foot flanges and clinch prongs as formed prior to assembling same on the fabric.

Fig. 6., represents a projected bottom view of Fig. 5., and shows further constructive details of the preferred foot flange design.

Fig. 7., shows a modified construction detail of the loop strap.

Fig. 8., is a sectional view taken along line 2—2 of Fig. 7.

Fig. 9., shows a modified foot flange construction and method for fastening the rope guide to the fabric.

Referring first to Fig. 1., the letter A_1 represents the curtain portion of an awning fabric of conventional construction, mounted upon the usual U shaped frame rod with parallel leg portions such as B_1 , hinged at C to a common rear wall structure D . The cross bar B_2 of said frame rod mounts the lower end of the curtain fabric A_1 which then extends obliquely upward and is suitably fastened to the wall structure D at a point above the hinge C , as indicated.

A plurality of actuating ropes such as E_1 and E_2 are tied to the cross-bar B_2 and these ride over their respective pulleys G_1 and G_2 , mounted upon the wall D . These ropes serve to raise or lower said curtain about the hinge C in the customary manner.

Each such rope is provided with a series of assembled rope guides. As applied to the rope E_2 , said guides are designated as F_1 , F_2 , etc., and they hold the rope in proper alignment with respect to the fabric when raising the curtain A_1 . It is preferred to so space the guides upon the fabric that the actuating rope E_2 may readily conform to the folds that occur when the cross-bar B_2 is drawn into its upright position.

Referring now to Fig. 2., which shows in detail an assembled guide device such as was previously designated by the letters F_1 , F_2 , etc. The guide proper comprises a loop strap of circular contour G , which loosely surrounds the rope and allows it to slip freely through said guide strap. This loop strap is preferably formed from a strip of sheet metal bent into a loop or band shape. The end portions of said strap G may be fashioned into abutments G_1 and G_2 by sharply bending the sheet metal away from

its circular contour in an approximately radial direction to the axis of the loop, as shown in Fig. 5.

It is preferred to manufacture the unassembled loop strap so that its abutting faces G_1 and G_2 stand open or apart somewhat as indicated in the last named figure. Formed thus, the resilient loop strap G may readily be sprung together so as to bring the short radial faces G_1 and G_2 into abutment and thus close the loop strap when assembled as in Fig. 2.

As is best shown in Fig. 5, each end of the metal strip forming the described abutments G_1 and G_2 , is further bent outward at approximately right angles to the respective radial faces so as to form the oppositely disposed foot flanges G_3 and G_4 . When the assembled loop strap is sprung together, both of said foot flanges are intended to lie in a common plane and bear evenly and snugly against the fabric A_1 .

The described abutting radial faces G_1 and G_2 are purposely sharply defined herein in order to clearly disclose the type and style of the loop structure underlying the present invention. It will be evident, however, that either or both of said abutments may readily be rounded off to such an extent as to lose the identity of these elements. No serious detriment in the use of the rope guide would result therefrom, since the more essential elements of the present invention reside in the described relation of the loop strap to the foot flange and the mode of fastening same to the fabric.

The foot flanges G_3 and G_4 are each further provided with clinch prongs G_5 and G_6 , respectively, which prongs are preferably formed integrally and sharpened as shown. These prongs are intended to pierce and clinch the fabric A_1 as indicated in Fig. 2.

In order to secure a substantial and stiff tie to the fabric, the foot flanges are made to engage with a common keeper plate H . As shown in Fig. 4, this plate has two slotted perforations H_1 and H_2 , suitably spaced to receive and engage with the clinch prongs G_5 and G_6 , respectively.

It is pointed out that the perforations H_1 and H_2 are so spaced as to require the unassembled abutting faces G_1 and G_2 to be brought together somewhat before the prongs G_5 and G_6 can enter their respective perforations in the keeper plate H . The assembled loop strap G is thus held in a sprung relation by the keeper, whereby the combined clasp structure is locked to give it increased stiffness and stability for the purpose intended.

As shown in Fig. 2, the keeper plate H is mounted on the opposite side of the fabric with respect to the flanges G_3 and G_4 . The plate is made considerably longer than the pitch between the prongs, to reinforce its

grip on the fabric and to serve as a common washer seat against which to clinch the free ends of the prongs G_5 and G_6 .

Referring now to Fig. 3, it will be observed that both edges of the loop strap G are flared to form a dished-shape circular band about the axis $X-X$ which shape extends completely around said strap until it terminates into the abutting faces G_1 and G_2 . This formation of the loop strap constitutes an important feature of the present invention since it allows the rope to slip freely through the contracted center portion of the loop without danger of cutting at the strap edges. Such corrugation of the strap furthermore imparts increased stiffness to the loop structure and prevents undue deformation or gripping of the rope when subjected to a lateral thrust.

Figs. 7 and 8, show a modification of the loop strap construction in that plural corrugations with the furrows G_7 and G_8 surrounding the loop axis $X-X$, are formed in the sheet metal strap G . Such double corrugation admits of using thinner sheet metal for the loop strap without sacrifice of structural stiffness. The described corrugations also serve to augment the desired spring action when bringing the abutments G_1 and G_2 into engagement while entering the clinch prongs into the keeper plate H .

A further modification in detail of construction relating to the foot flange, is shown in Fig. 9. It will be apparent that the same result in fastening the loop strap G to the fabric A_1 may be attained by the use of a single foot flange G'_3 . In this modified design, the clinch prong G'_5 is formed integral with the flange G'_3 in the manner previously described, while the complementary prong G'_6 may then be formed as a direct extension of the abutment G'_2 without need of a second foot flange.

Either of the described methods for forming the foot flange, admits of making the flange element integral with the loop strap G , and this makes for an inexpensive and substantial guide clasp structure. In this improved construction, an extended integral portion of the loop strap is mounted against the adjacent face of the fabric and this eliminates the separate additional keeper type of plate commonly required for this purpose. It will be seen therefore, that the present device constitutes an extremely simple means for securely attaching loop straps to fabrics or other materials of any kind that may require rope guides and the like. Owing to the use of a common keeper plate of relatively large dimensions, the clinch pressure on the fabric is well distributed and is not likely to be torn loose under ordinary conditions of service.

It will be understood that I do not wish to be limited to the particular construction

set forth, since various changes in the details of my device may be resorted to without departing from the spirit and scope of my invention, heretofore described and more particularly set forth in the appended claims:

1. A guide device comprising a loop strap of circular contour having the ends thereof formed into abutments adapted to close said loop, said strap being corrugated to provide a furrow surrounding the loop axis and extending between said abutments, and an integral foot flange for each of the respective abutments, substantially as described.

2. A guide device comprising an open loop strap of circular contour having the ends thereof formed into abutments adapted to close said loop when sprung together, said strap being corrugated to provide a furrow surrounding the loop axis, a foot flange for each of the respective abutments, a clinch prong for each of said flanges, and a keeper plate adapted to engage with said prongs and hold said loop strap in a sprung relation, substantially as described.

3. A guide device comprising a loop strap of circular contour having the ends thereof formed into abutments adapted to close said loop, said strap being corrugated to provide a furrow surrounding the loop axis, a foot flange for one of said abutments, a clinch prong formed integral with each of said abutments, and a keeper plate adapted to engage with said prongs, substantially as described.

4. A guide device for a fabric comprising a loop strap of circular contour having the ends thereof formed into abutments adapted to close said loop, a foot flange formed integral with one of said abutments and adapted to be disposed upon one side of the fabric, a clinch prong for said flange adapted to extend through said fabric, and a keeper plate for the opposite side of said fabric adapted to engage said prong for the purpose of fastening said flange to the fabric, substantially as described.

5. A guide device for a fabric comprising a resilient loop strap of circular contour having the ends thereof formed into abutments adapted to close said loop when

sprung together, an integral foot flange for each of the respective abutments, a clinch prong for each of said flanges, a keeper plate adapted to engage said prongs and hold said strap in a sprung relation, substantially as described.

6. A guide device for a fabric comprising a loop strap of circular contour having the ends thereof formed into abutments adapted to close said loop, a foot flange formed integral with each of the respective abutments and adapted to be disposed upon one side of the fabric, a clinch prong for each of said flanges adapted to extend through said fabric, a keeper plate on the opposite side of said fabric adapted to engage said prongs for the purpose of fastening said flanges to the fabric, substantially as described.

7. A guide device for a fabric comprising a resilient loop strap of circular contour having the ends thereof formed into abutments adapted to close said loop when sprung together, an integral foot flange for each of the respective abutments disposed in a common plane and adapted to be positioned upon one side of the fabric, a clinch prong for each of said flanges adapted to extend through said fabric, a keeper plate for the opposite side of said fabric adapted to engage said prongs and hold the abutments in a closed relation, substantially as described.

8. In combination with an awning or shade, having a flexible fabric, a guide device comprising a loop strap of circular contour with ends thereof formed into abutments to close said loop, an integral foot flange for each of the respective abutments disposed upon one side of the fabric, a clinch prong for each said foot flanges extending through said fabric, and a keeper plate on the opposite side of said fabric adapted to engage said prongs for fastening said flanges to the fabric, substantially as described.

In testimony whereof, I have herewith set my hand this 13th day of July 1923.

DANIEL M. WINANS.

Witnesses:

NORMAN A. BOYD,
A. E. GRIFFIN.