July 26, 1960 C. H. NORDELL 2,946,378

CURTAIN SUPPORT

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FIG. 1

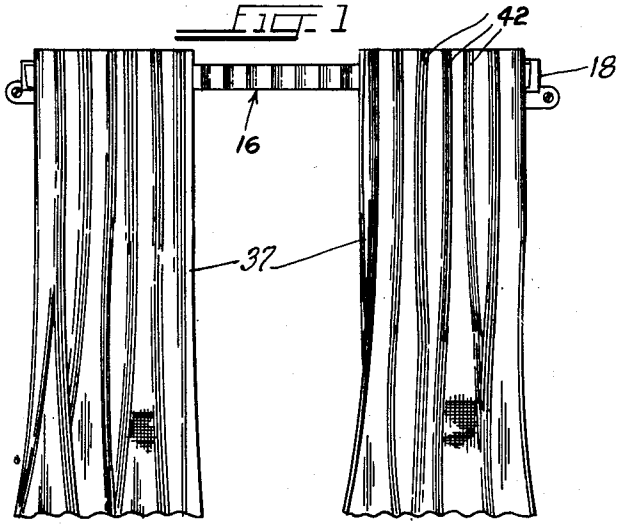


FIG. 2

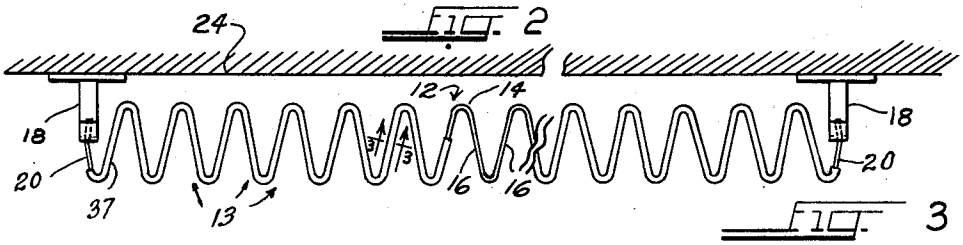


FIG. 3

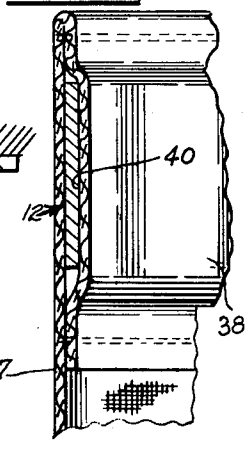
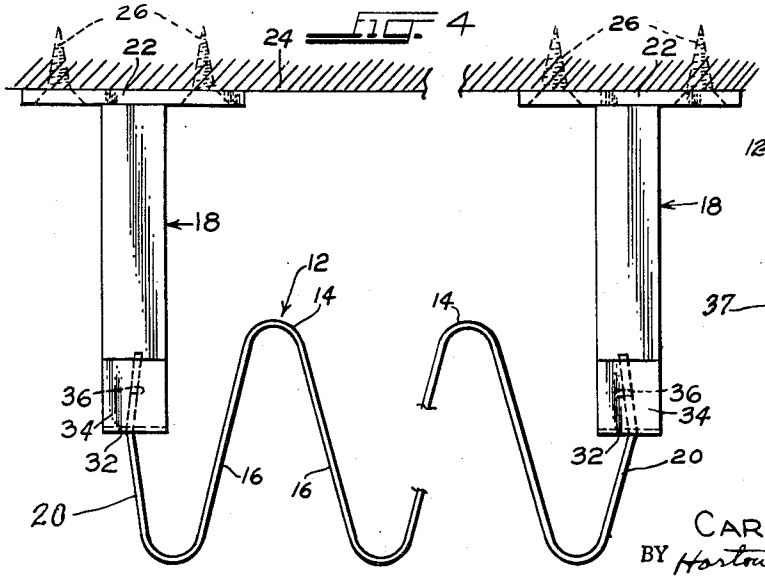


FIG. 4



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FIG. 5

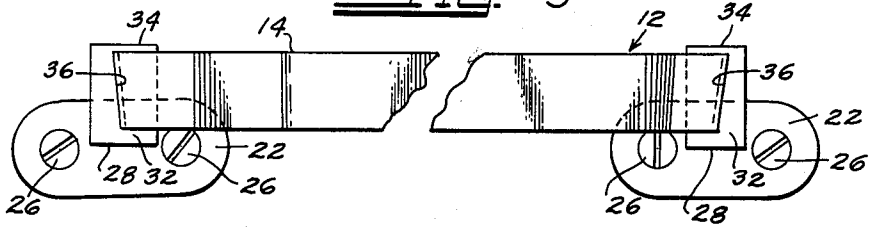


FIG. 6

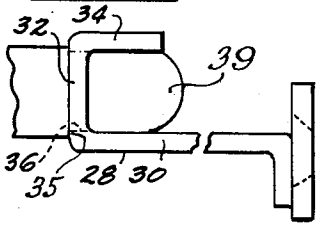


FIG. 7

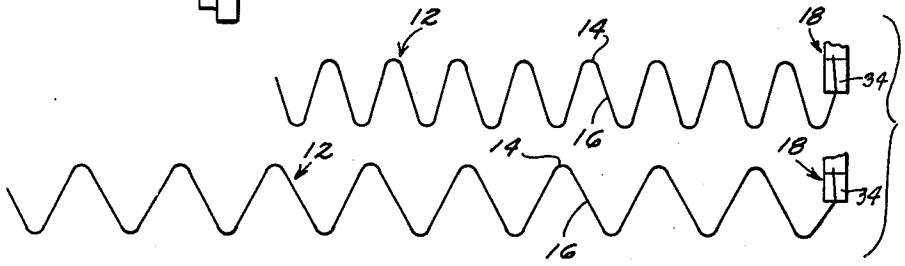


FIG. 9

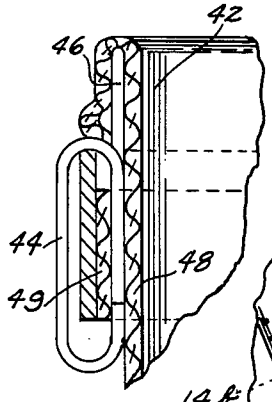


FIG. 8

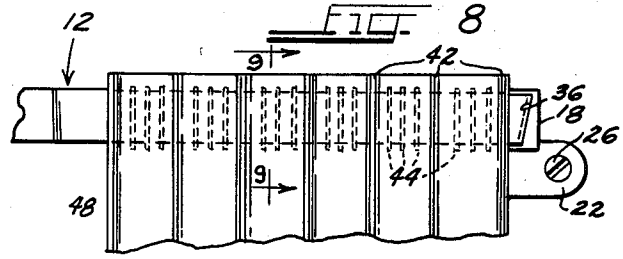
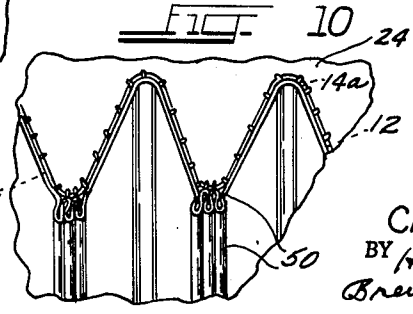


FIG. 10



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United States Patent Office 2,946,378 Patented July 26, 1960

2,946,378

CURTAIN SUPPORT

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Filed June 20, 1957, Ser. No. 666,844

4 Claims. (Cl. 160—348)

The present invention relates to a curtain support.

The invention has to do more particularly with a device for supporting a curtain or drape for covering a window, or covering a wall, or to act as a space divider, or similar purpose.

The device of the invention is included in the broad and generic meaning of "curtain rod" in the sense that such a device is utilized for supporting a curtain, although it is not a rod in the specific meaning of that term as used for example in mechanics, because it is not a straight element but a corrugated or sinuous element, as will appear more fully hereinafter.

The invention relates to a curtain support that is extensible and one that facilitates forming folds in the curtains hung thereon for presenting a full appearance of the curtains.

The curtain support of the invention is made of flexible material, preformed in corrugations, and capable of being adjusted to any of various lengths.

The corrugations of the curtain support form folds in the curtains and it is unnecessary to gather the curtains manually to form the folds. The support is a single integral piece and does not involve telescoping members as was heretofore the manner in which adjustability in curtain rods has been provided.

A main object, therefore, of the invention is to provide a novel curtain support of the kind indicated, namely, a yieldable, corrugated curtain support.

Another object is to provide a corrugated curtain support, in which the corrugations, because of their arrangement, provide unusually great strength whereby to enable use of such curtain rod to span unusually great distances while being supported solely at its ends.

Another object of the invention is to provide a curtain support or rod of the character indicated, together with mounting brackets, in which novel means is provided for mounting the support in the brackets and frictionally retaining it therein.

A further object is to provide a curtain support and mounting brackets therefor and novel means for preventing sag in the support.

Another object is to provide a curtain support of the character indicated having the advantageous features that it is made of an integral piece and hence is inexpensive, and is of uniform structure and hence without extraneous elements whereby to enable the use of simple and inexpensive brackets.

Another object of the invention is to provide a curtain support of the character mentioned which may be inserted through different kinds of elements in a curtain, such as a hem or rings secured to the curtain, as desired, with similar effect.

Another object is to provide a curtain support in the use of which a novel arrangement of folds of the curtain may be provided.

Other objects and advantages of the invention will appear from the following detail description taken in conjunction with the accompanying drawings, in which:

Figure 1 is a front elevational view of a curtain support made according to the present invention, in mounted position and supporting a curtain;

Fig. 2 is a top view of the arrangement shown in Fig. 1;

Fig. 3 is a large scale sectional view taken on line 3—3 of Fig. 2;

Fig. 4 is a large scale plan view of a curtain support and brackets for mounting it;

Fig. 5 is a front view of the arrangement shown in Fig. 4;

Fig. 6 is a side view of a mounting bracket, as viewed from the right end of Fig. 5;

Fig. 7 is a diagrammatic view, in plan, of a curtain support in a normal or non-extended position, and an extended position, respectively;

Fig. 8 is a front view of a portion of a curtain support and a curtain hung thereon, in which eyelets are provided on the curtain for receiving the curtain support;

Fig. 9 is a large scale sectional view taken on line 9—9 of Fig. 8, and

Fig. 10 is a semi-diagrammatic top-front view of a curtain support and curtain hung thereon, showing a novel arrangement of pleats.

The curtain support proper, indicated at **12**, is a single integral piece of material, preferably spring steel such as that known as clock spring steel. It is extremely strong, and flexible and yieldable, and may be of any desired dimensions according to the load to be supported thereon and the space to be spanned thereby. The piece of steel is in the form of a uniform strip, having corrugations **13** including return bends **14** and runs **16** between the bends. The runs of the corrugations are disposed generally transversely of the longitudinal direction of the support, although as a practical matter they need not be and preferably are not exactly perpendicular thereto, but are relatively positioned to form an angle of approximately 35° between runs. Such is the normal position of the rod in the preferred form of the invention and as represented in the upper part of Fig. 7. The rod may be extended to any of various lengths greater than its first or normal length, as represented in the lower part of Fig. 7. Actually, the support assumes a normal length less than the intended use length, i.e., it is intended that the support be extended to span a distance greater than the length of the support.

The flexible steel referred to above, namely, clock spring steel, has substantial flexibility and yieldability although, of course, it does have practical limits with respect to these qualities. However, the support may be extended beyond the limit of elasticity without impairing its functions in supporting curtains or draperies. Even though it may be extended beyond its limit of elasticity, it nevertheless tends to retract to a lesser length, and in doing so provides a friction and gripping effect for retaining the support in the position put, in a specific manner referred to hereinbelow. It is within the broader aspects of the invention, however, to anneal the spring steel to provide greater retraction effects, if desired.

The support at its ends has end portions **20** normally extending transversely of the length of the support, or similarly to the runs **16** and themselves forming runs from the longitudinally outermost bends. These two end portions extend in the same direction, for mounting in the brackets **18**.

Each bracket, as shown best in Figs. 4, 5, and 6, includes a base or mounting plate **22** adapted for mounting on the wall **24**. The wall may contain a window to be covered, but it may be that it is an unbroken wall that is desired to be covered. This plate may be conventional, having holes for receiving mounting screws **26**. Secured to the plate **22** by suitable means such as by welding is

an arm 28 which, when the plate 22 is mounted to the wall, extends outwardly from the wall and preferably perpendicularly therefrom. The arm includes a main horizontal segment 30 on the outer end of which is an upstanding segment 32, and from the upper end of the latter segment a return bend or hook-like segment 34 extends. The latter is preferably horizontal or parallel with the lower segment 30. The outer end portion of the arm 28 is provided with a slot 36, formed in the segment 32 extending from the upper surface of the lower segment 30 to the lower surface of the upper return horizontal segment 34. This slot is of minor width for receiving the end of the curtain support and is disposed generally upright in the segment 32, but it is inclined slightly from the vertical (Fig. 5). The slot is also inclined relative to a vertical, fore-and-aft plane, throughout the thickness of the segment 32. These components of inclination of the slot maintain the end portions of the strip forming the support therein, in a novel manner, as described below.

The curtain support or rod is mounted in the brackets by inserting the end portions 20 thereof in the slots 36. The end portions are extended into the slots in direction longitudinally of the bracket arms a suitable amount and preferably to position in which the free ends are positioned adjacent the end edge of the upper segments 34 of the brackets (see Fig. 4). Preferably, shoulders 35 are formed on the end portions 20 for limiting the extent of insertion into the slot, a reduced tongue 39 being thus formed and snugly engaging the segments 30 and 34. The minor transverse width of the slots preferably is just such as to receive the end portions of the support in a free sliding fit, but without undue play. As noted above, the slots 36 are inclined from the vertical and, as will be seen from Fig. 5, they diverge in upward direction. This inclination produces corresponding inclination of the main portion of the curtain support extending longitudinally between the brackets. In other words, the intermediate portions of the curtain support, at least adjacent the brackets, are inclined slightly upwardly from the horizontal and this inclination is continued to a more or less degree toward the middle where the inclination may be actually less and this portion may be nearly or substantially horizontal. However, the inclination of the curtain support portions prevents sagging of the support and this non-sag feature may be provided for in any span of the support within a wide range by predetermining the degree of inclination of the slots.

The inclination of the slots in the other direction noted above, serves to frictionally retain the support in the brackets. The latter inclination is relative to a vertical plane extending in fore-and-aft direction, i.e., in the general direction of the length of the arm 28. The outer end segments or tongues 39 of the end portions 20, when in the slots, thus are bent or deflected out of alignment with the remaining portion by the tendency of the corrugations to contract. This condition creates substantial friction between the end portions of the support and the brackets, such as to normally retain the support in position in the brackets and to withstand substantial forces tending to dislodge it. Preferably, the direction of convergence of the slots is toward the wall, although they may converge or be relatively inclined in the opposite direction. The thickness of the segments 32 provides sufficient dimension, in horizontal direction, to provide the necessary friction and bending effect on the end portions or tongues 39. The tongues 39, since they firmly engage the segments 30 and 34, provide stability of the support against rocking about an axis longitudinally of the support.

The curtain or drape 37 illustrated in Figs. 1 to 3 is provided with a hem 38 forming a loop or passage 40 for receiving a curtain support. The curtain support is threaded through the hem, i.e., the curtain is pushed onto the support linearly along the runs 16 and return bends 14.

The curtain is then in a position in which the hem assumes a simple linear relation along the corrugations. This may be done quite readily by merely using the hand and pushing the curtain onto the support in the same manner that it is done in the use of a conventional curtain rod. In such position on the support the corrugations themselves form folds 42 in the curtain as illustrated in Fig. 1. These folds, as in the case of gatherings or tucks of curtains in the use of conventional rods are not usually maintained throughout the vertical length of the curtain, but merge into one another and in some instances at least partially disappear. However, the effect of the folds at the top of the curtain is similar to folds produced by gathering or pleating the curtain on a straight rod.

The curtain need not be specially dimensioned with respect to the window in the use of the curtain support of the present invention since the folds produced by the corrugations produce an effective foreshortening of the curtain widths, as in the case of manually gathering or bunching the curtains on a straight rod. The support may be used on a window, or across a space, of any width within a wide range of widths, as will be evident from Fig. 7. The curtain support produces the desired folds in the curtain without manually forming the folds.

The curtain support of the invention is also adapted to use with draperies having rings or eyelets, rather than a hem, for receiving the support. The eyelets or rings referred to are of well-known type and are illustrated in Figs. 8 and 9. An eyelet of this character may include a loop 44 of a suitable size and dimension, preferably of oval shape. The loop may be in the form of a coil having one or more turns and one end of the material extending upwardly, as at 46, inserted in the hem at the upper edge of the drape 48. The eyelets may be secured to the curtain additionally or alternatively by other means, such as tape 49 sewed to the drape. The loops 44 are threaded onto the support in a manner similar to that described above in connection with the hem on the curtain. These rings or eyelets are secured to the drape at the desired spacing and in the present instance are spaced along the corrugations of the support at such small distances that they do not bridge corrugations, i.e., the material of the drape follows closely along the linear dimension of the elements making up the corrugations. Hence the folds in the drape are maintained as described above. The rings or eyelets serve as a means for facilitating sliding or feeding the drape onto the curtain rod.

Fig. 10 illustrates an arrangement of the curtain support and drape for providing a novel effect in pleating or gathering the drape. The curtain support 12 illustrated is the same as that described above and mounted in a similar manner on the wall 24. The bends 14 of the support are, for purposes of identification, in the present instance referred to as inner bends 14*a* and outer bends 14*b* relative to proximity to the wall 24. The drape is arranged on the support with a cluster of pleats or folds 50 at each outer bend 14*b*. These pleats or folds are carried downwardly through the material of the curtain, as illustrated in Fig. 10, and the outer bends 14*b* of the curtain rod are relatively close together with the effect that the plurality of clusters of pleats or folds produce a novel and attractive effect, similar to what is known as a French pleat.

The great vertical dimension of the curtain support and the transverse corrugations therein produce unusual strength which enables a curtain support of this character to be used for spanning great distances while mounting the support solely at its ends. Material of substantial vertical dimension and thickness may be utilized for a curtain support for a distance greater than that which may be easily manipulated by hand, that is, it may be of such strength that it would be difficult to stretch or extend the corrugated strip by hand. In the use of such a support or strip the ends may be supported in brackets

and the corrugations may then be worked by a suitable and known tool for expanding or contracting the individual bends or corrugations for placing the strip or support in its ultimate desired length, or desired tension, when mounted in the brackets. This form of the support may find greater adaptability to use by professional drapers rather than the occasional drape hanger. The support thus constructed and used results in a novel structural device which is of great flexibility from the standpoint of kinds of use to which it may be put.

It will be appreciated that the support may be used also for supporting or suspending a curtain or drape across a space, and not on a wall, for dividing such space into smaller rooms.

In addition to the hem, and eyelets, on the curtain for receiving the support, it will be understood that other means may be used for supporting the curtain on the support.

It will be apparent that other forms and modifications may be devised without departing from the spirit of the invention. Having described and shown various embodiments of my invention for purposes of illustration rather than limitation, what I claim is as follows:

1. A curtain rod for mounting solely between two end brackets comprising an elongated strip of flat steel preformed in corrugated form having return bends and runs between bends extending generally transverse to the linear direction of the strip and the bends formed about axes parallel with the surfaces of the flat sides of the strip, the strip thus formed having a normal operative position in which said runs between bends are disposed horizontally, the strip being sufficiently resilient to be manually extensible a substantial distance in longitudinal direction against the action of said bends and being, in said normal operative position and in any position of extension, of sufficient rigidity as to be self-sustained between said end brackets and to retain said bends therein.

2. A curtain support and bracket assembly comprising a curtain support formed of an elongated resilient strip having preformed manually extensible corrugations therein forming return bends and runs between bends extending generally transversely of the linear direction of the support, the support having flat strap end portions extending generally transversely, and brackets adapted for mounting on a wall, each bracket having a base portion adapted for mounting on the wall and an arm portion extending generally perpendicularly outward from the wall and having a slot in its outer end, the slots in the brackets being inclined vertically relative to each other in diverging directions and the said flat strap end portions of the support being insertable into the openings and when so inserted bent horizontally out of their

normal position whereby they are frictionally held in the openings.

3. A curtain support and bracket assembly comprising a curtain support formed of an elongated resilient strip having preformed manually extensible corrugations therein forming return bends and runs between bends extending generally transversely of the linear direction of the support, the support having end portions extending generally transversely, and brackets adapted for mounting on a wall, each bracket having a base portion adapted for mounting on the wall and an arm portion extending generally perpendicularly outward from the wall and having a slot with a substantial vertical component in its outer end, the two slots diverging in upward direction, said end portions of the support being generally flat and insertable into the slots and when so inserted being bent in upwardly diverging direction out of their normal position whereby an upwardly bending effect is produced on the central portion of the support to prevent sagging thereof.

4. A curtain support and bracket assembly comprising a curtain support formed of an elongated strip of flat steel having preformed manually expandible corrugations including reverse bends disposed about axes parallel with the flat side surfaces, and generally transverse runs between bends, the support having a normal operative position with the side edges of the flat strip disposed vertically and said runs extending transversely of the longitudinal direction of the support, the support also having end portions extending generally transversely of the support and generally in the directions of the runs, and a pair of brackets having base ends for mounting on a wall, each bracket having an arm extending generally perpendicularly from the plane of the wall and a slot in its extended end, the two slots being narrow in transverse direction and having substantial vertical component, and the slots also relatively diverging outwardly from the plane of the wall and upwardly, the said end portions of the support being insertable into said slots and when so inserted being bent in horizontal direction out of their normal position whereby to frictionally retain them in the slots under tension from expansion of said corrugations and said end portions being bent in upward diverging direction whereby to produce an upward bending effect on the central portion of the support to prevent sagging thereof.

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