Feb. 28, 1956 C. L. TRUESDALE 2,736,373

DRAW CURTAIN CONSTRUCTION

Filed Oct. 5, 1951 4 Sheets-Sheet 1

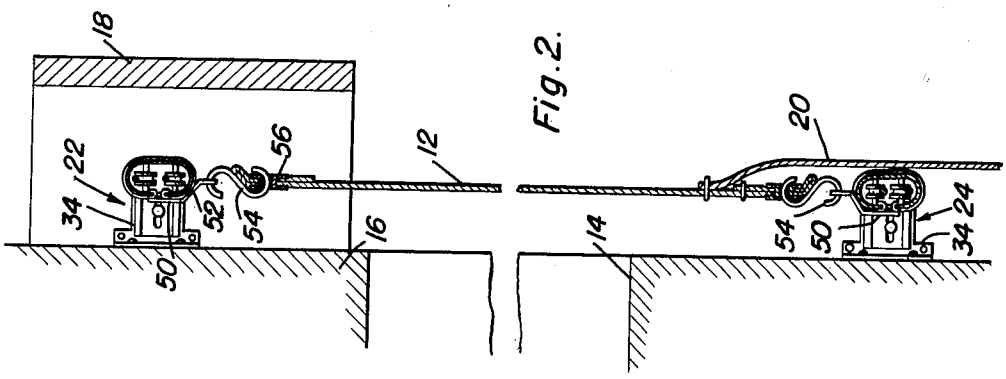


Fig. 2.

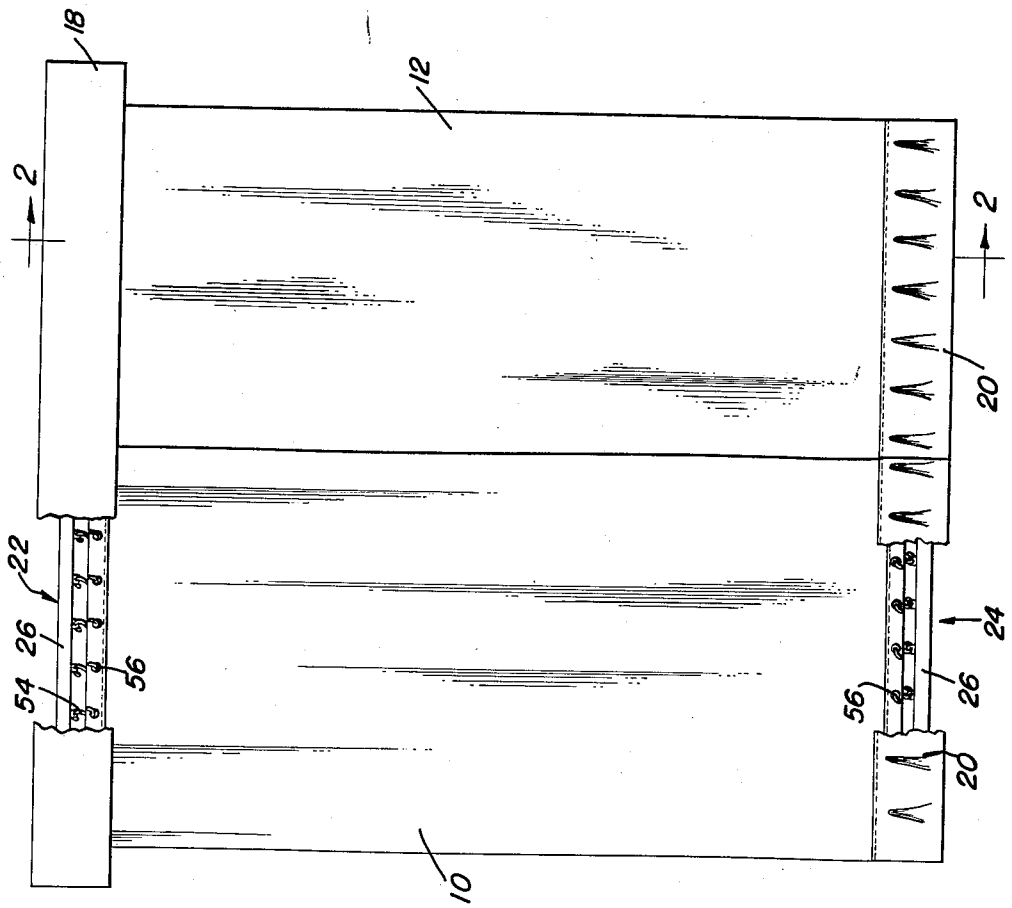


Fig. 1.

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Feb. 28, 1956 C. L. TRUESDALE 2,736,373

DRAW CURTAIN CONSTRUCTION

Filed Oct. 5, 1951 4 Sheets-Sheet 2

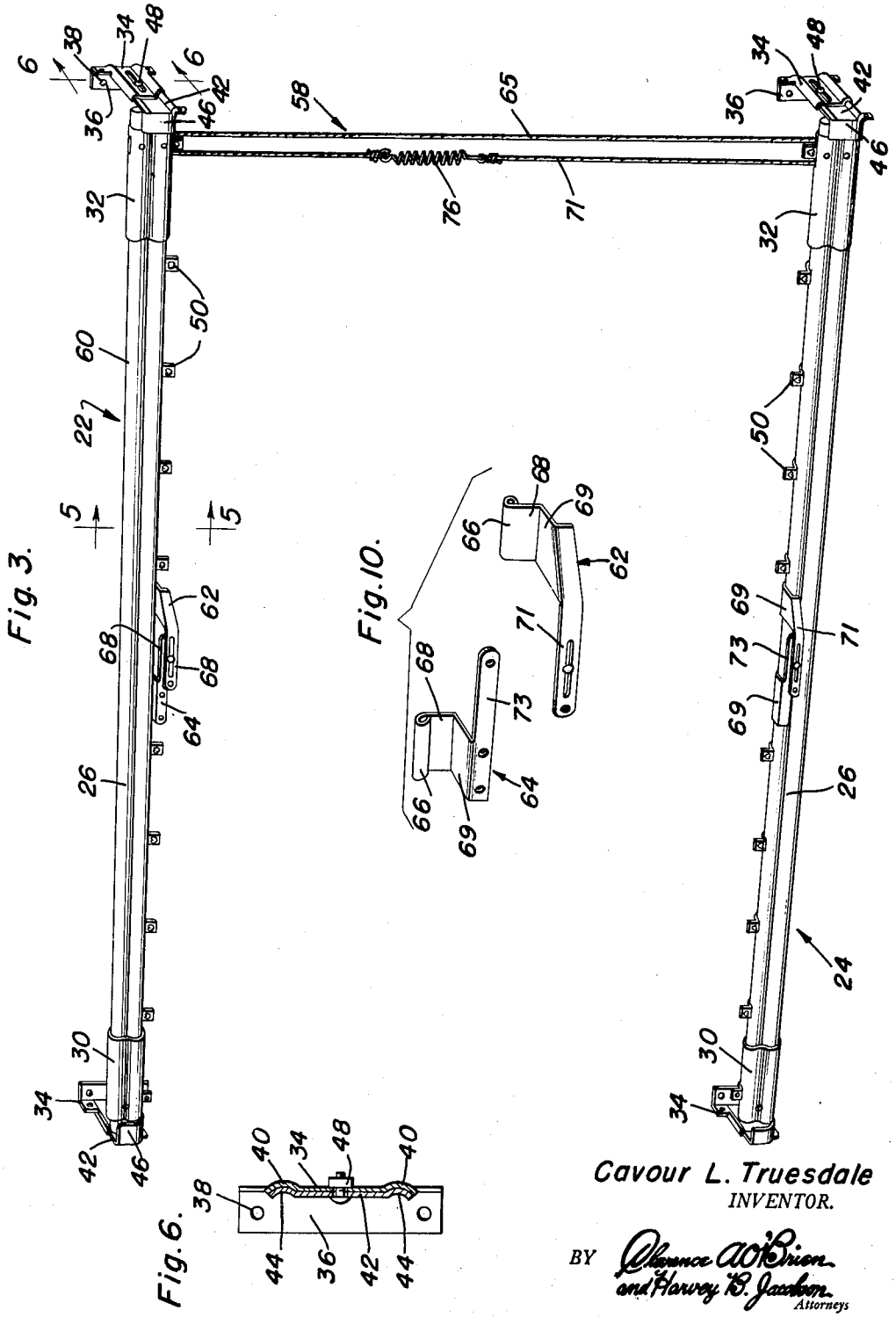


Fig. 3.

Fig. 10.

Fig. 6.

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Feb. 28, 1956 C. L. TRUESDALE 2,736,373

DRAW CURTAIN CONSTRUCTION

Filed Oct. 5, 1951 4 Sheets-Sheet 3

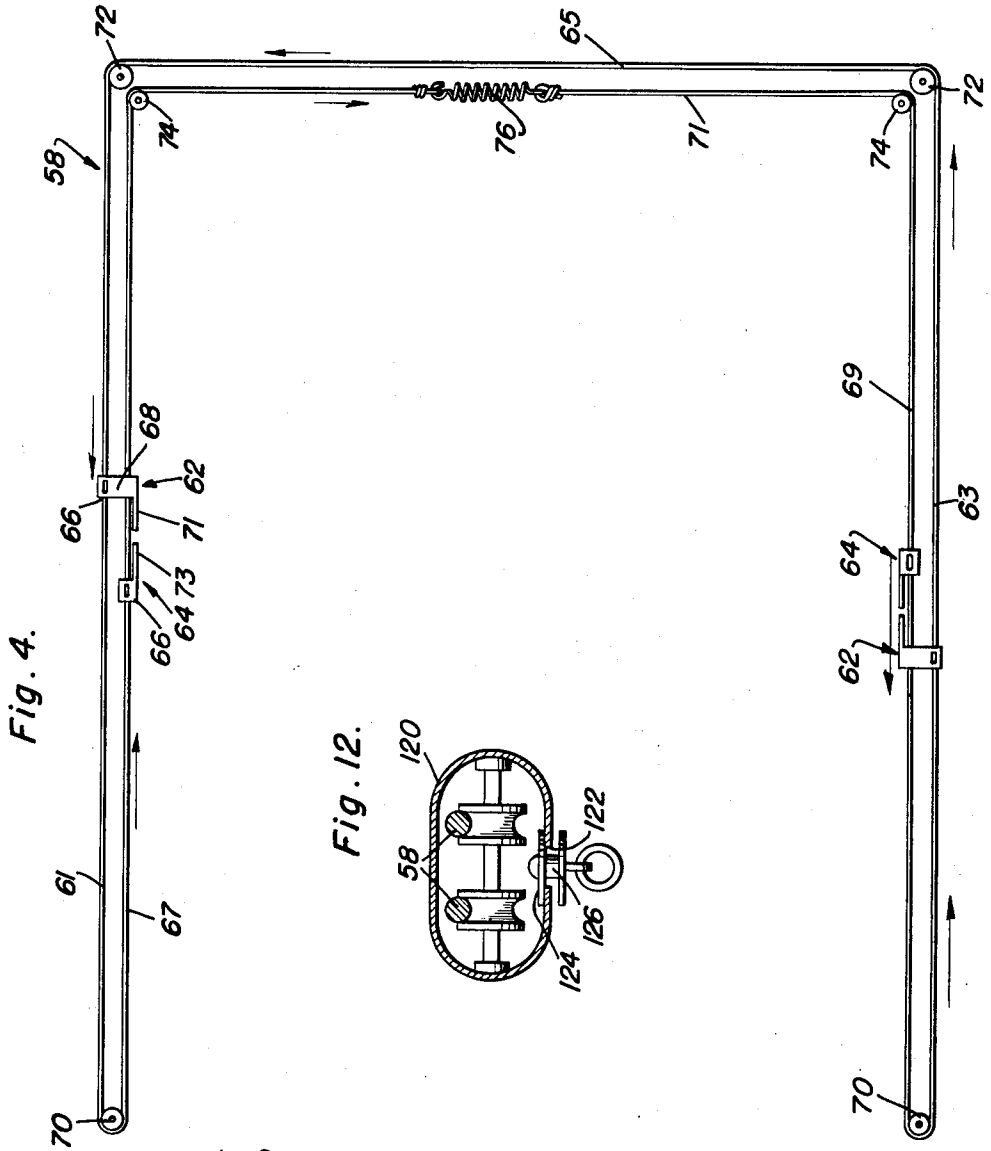


Fig. 4.

Fig. 12.

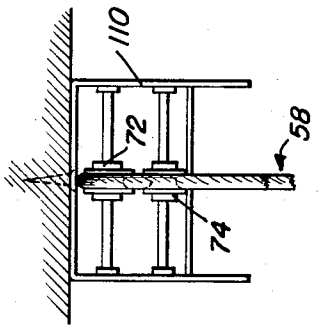


Fig. 7.

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Feb. 28, 1956 C. L. TRUESDALE 2,736,373

DRAW CURTAIN CONSTRUCTION

Filed Oct. 5, 1951 4 Sheets-Sheet 4

Fig. 8

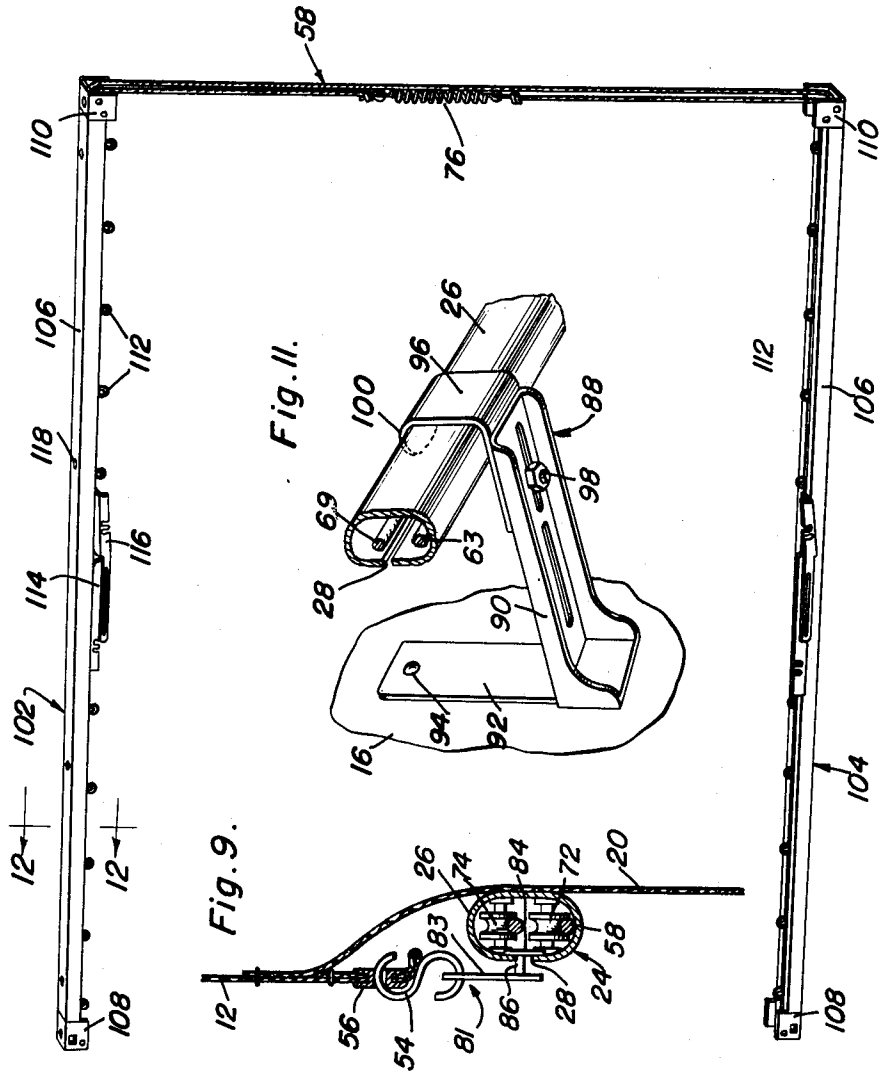
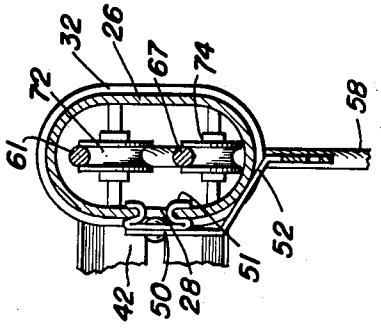


Fig. 11.

Fig. 9.

Fig. 5.



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DRAW CURTAIN CONSTRUCTION

Cavour L. Truesdale, Richmond, Va.

Application October 5, 1951, Serial No. 249,893

3 Claims. (Cl. 160—124)

This invention comprises novel and useful improvements in a draw curtain construction and more specifically pertains to a novel supporting and actuating mechanism for a draw curtain for windows and the like.

The primary object of this invention is to provide an improved draw curtain construction for window openings and the like which will greatly improve the certainty with which the draw curtain covers the window opening; will greatly facilitate the actuation of a draw curtain and which shall be of a durable, simple and inexpensive construction, and although easy to install, shall be highly satisfactory in its use.

It is the primary purpose of this invention to provide an improved draw curtain construction wherein the top and bottom edges of a draw curtain may be secured and supported and positively prevented from blowing in a breeze or the like, whereby a window opening may be completely and safely closed by the draw curtain.

A further object of the invention is to provide a draw curtain construction in conformity with the preceding objects wherein the two sections or halves of a draw curtain may be simultaneously moved in coordination with each other between their open and closed positions.

Yet another important object of the invention is to provide an improved draw curtain construction as set forth in the above mentioned objects wherein the curtain or curtain halves are positively moved in coordination in either direction of motion; and are positively guided at all times at their top and bottom edges during such motion.

Yet another object of the invention is to provide a draw curtain construction in conformity with the previously mentioned objects in which the advantages of an endless pull cord are associated with the curtain or curtain sections for operating the same.

A still further additional object of the invention is to provide a pull cord and curtain construction wherein the cord is pretensioned to prevent the development of slack in the cord.

Yet another important object of the invention is to provide a pull cord mechanism for draw curtains wherein a major portion of the pull cord construction is housed within the supporting and guiding members of the curtain and curtain sections.

Still another object of the invention is to provide a pull cord construction for pull curtains wherein the pull cord guide rollers are mounted within the terminal pieces of the guide rails or support members of the construction.

More generally, it is a purpose of this invention to provide a draw curtain construction which by virtue of its positive operation in both directions, the positive securing and guiding of the upper and lower edges of the curtain is especially adapted for such important light excluding functions as a closure for the windows for visual education projects, movies, or the like; blackout curtains and for similar functions.

These, together with various ancillary features and objects of the invention, which will later become apparent as the following description proceeds, are attained by the present invention, preferred embodiments of which have been illustrated, by way of example only, in the accompanying drawings, wherein:

Figure 1 is a front elevational view showing a draw curtain construction in accordance with the principles of this invention, the curtain being shown in its closed position and parts being broken away to show certain features of construction of the invention;

Figure 2 is a vertical transverse broken sectional view taken substantially upon the plane indicated by the section line 2—2 of Figure 1 and upon a slightly enlarged scale, parts being broken away and showing the manner in which the curtain is attached to its supporting members;

Figure 3 is a front elevational view of the arrangement of Figure 1, the top valance and the curtain being moved therefrom and showing in particular the upper and lower support tracks or support member together with their mounting brackets and the draw cord of the device;

Figure 4 is a diagrammatic view of the pull cord construction showing its mounting and the means by which the adjacent edges of the curtain sections are attached to the pull cord for operation thereby;

Figure 5 is a vertical transverse sectional view, taken upon an enlarged scale substantially upon the plane indicated by the section line 5—5 of Figure 3;

Figure 6 is a vertical transverse sectional detail view taken upon an enlarged scale substantially upon the plane indicated by the section line 6—6 of Figure 3 and showing certain structural features of the adjustable supporting bracket of the device;

Figure 7 is an end elevational detail view taken upon an enlarged scale at the upper right end of Figure 8;

Figure 8 is a view similar to Figure 3 but showing a modified construction of the support tracks of the invention specifically adapted for use upon horizontal surfaces such as ceilings and floors and the like;

Figure 9 is a view similar to Figure 2 but showing a modified construction of the lower support members and curtain fasteners slidably mounted therein;

Figure 10 is a group perspective view of a pair of the master or actuating slides of the draw curtain combination;

Figure 11 is a perspective detail view of an intermediate support for the track of Figure 9; and

Figure 12 is a vertical transverse sectional detail view taken upon an enlarged scale substantially upon the plane indicated by the section line 12—12 of Figure 8, showing a modified form of track and slide construction.

Referring now more specifically to the accompanying drawings, wherein like numerals designate similar parts throughout the various views, attention is invited first to the form of the invention illustrated in Figures 1–6. Referring first more specifically to Figures 1 and 2, it will be seen that a draw curtain consisting of a pair of curtain halves or sections 10, 12 is mounted before a window opening indicated at 14, upon a vertical supporting surface 16 such as the wall of a building or the like. Indicated at 18 is a conventional form of valance which encloses the upper portion of the curtain and its supporting mechanism as set forth hereinafter, while the numeral 20 indicates a flexible apron or shield attached to the lower portion of the curtain sections 10 and 12 and depending therefrom to overlie and thus enclose and conceal the lower edge of the draw curtain sections 10, 12 together with a supporting and operating mechanism as set forth hereinafter.

It will readily be appreciated that the invention is not limited to any particular construction of curtain, valance or depending apron or shield.

It is, however, the essential and fundamental purpose of this invention to provide a support means which will positively guide both the top and bottom edges of the draw curtain or draw curtain halves for transverse sliding movement relative to the window opening; will serve to maintain the curtain material taut across the opening despite drafts of air, breezes or the like; and which will serve to house and enclose the draw cord construction attached to the upper and lower edges of the draw curtain for operating the same.

Referring now more specifically to Figure 3, it will be seen that in accordance with this invention there are provided a pair of curtain supporting rails or support members, the upper member indicated by the numeral **22** and the lower member indicated by the numeral **24** being adapted to be mounted respectively above and below the upper edges of a window opening as will be also apparent from Figure 2. These support members consist of an elongated central sleeve portion **26** which may be of any desired cross sectional contour such for example as the oval-shape disclosed in Figure 5, these members being identical for the upper and lower curtain supports, each having a longitudinally medially extending slot **28** therein. The rails **26** are disposed with the slot at the side which is adjacent to the supporting surface **16**, or concealed from view. Terminal pieces in the form of sleeves **30** and **32** are slidingly and telescopingly received upon the ends of the rail pieces **26**. It is contemplated that standard sizes of rail pieces **26** may be stocked, and such pieces may be cut to length in accordance with the size of the curtain construction desired, the terminal pieces **30** and **32** being then applied thereto to provide the requisite length of upper and lower support members of the construction. In some instances, a frictional fit or engagement of the terminal pieces upon the rail **26** may be sufficient and may be relied upon to retain the parts in assembled position, although in other instances any suitable fastening and retaining means may be employed as may be found to be expedient.

The upper and lower support members are mounted upon the walls **16** or other vertical supporting surface by any suitable form of mounting brackets. One satisfactory arrangement of mounting bracket is disclosed in Figure 3, the same including a base portion **34** having an angulated mounting flange **36** thereon, suitably apertured as at **38** for attachment by nails or screws to the vertical supporting surface **16**. The member **34**, as shown in Figure 6, is preferably provided with parallel semicircular channel portions **40** which constitute slides and guides for removable end bracket member **42**, having similarly positioned complementary semicircular channel portions **44** slidably received in the channels **40**. The free ends of the members **42** are provided with socket members **46** for detachably receiving and supporting and securing therein the terminal pieces **30** and **32**.

The members **42** are longitudinally adjustably mounted upon the members **34** as by bolts and slots indicated by the numeral **48**. It will thus be apparent that the brackets may be adjusted and locked in adjusted position to locate the top and bottom rails **22** and **24** at any desired distance from the supporting surface **16**.

Referring now especially to Figures 2, 3 and 5, it will be seen that a plurality of slides **50** are provided having portions **51** received within the rail members **26**, these slides having angulated mid-portions **52** which are disposed closely adjacent the rails **26** and underlie the central portion thereof. Hooks **54** are connected to apertures in the free ends of the slide portions **52** and to eyelets or grommets **56** mounted in the upper and lower edges of the draw curtain. Thus, the draw curtain is attached to the slides and movable therewith along the tracks.

The curtains are thus slidably and directly secured to the upper and lower support rails by the slides **50** mounted in the slots **28**. Pull cord means **58** for causing sliding actuation of the curtains is mounted and concealed within the hollow rails **22**, **24**.

As shown best in Figure 4, the pull cord **58** is arranged in a U-shaped conformation with inner and outer reaches of the cord. The outer reach consists of horizontal flights or loops **61** and **63** connected by a vertical flight or loop **65**, while the inner reach likewise consists of horizontal flights **67** and **69** connected by a vertical flight **71**. The flights of one reach are disposed in closely parallel relation to those of the other reach as shown.

Pairs of master slides indicated generally by the numerals **62** and **64** are fixedly secured to the pull cord **58** for movement therewith. Slides **62** are secured to the flights **61** and **63** while slides **64** are attached to flights **67** and **69**. These master slides, as shown in Figures 4, 10, include clip portions **66** which embrace and are fixedly secured in any desired manner to the pull cord, and arm portions **68** which extend through the slots **28** and have laterally extending portions **69** with arms **71** and **73** which are attached to the adjacent edges of the two curtain sections **10** and **12**.

As will be readily understood from Figures 3 and 10, the slides **62** and **64** have their arms **71** and **73** laterally offset from each other whereby the two adjacent ends of the curtain sections will be caused to overlap each other in the closed position of the curtain construction.

The rail terminal sleeves **30** of the upper and lower sections are each provided with a guide pulley **70** journaled therein, the other two terminal sleeves **32** being provided with a pair of guide pulleys **72** and **74**, this guide pulley arrangement being shown in the diagrammatic view of Figure 4 and in Figure 5 and supporting the two reaches of the pull cable **58**.

The endless draw cord is entrained over these pulleys as shown in Figure 4 to thus provide upper and lower horizontal portions together with vertical positions. In the vertical flight **71** of the cord there is provided a tension spring **76** which is attached to the ends of the unitary cord to pretension the cord and thus take up any slack in the same.

It will now be apparent from Figures 3 and 4 that the upper and lower support members **22** and **24** house the upper and lower portions of the cord and of the slides carried thereby.

The arrows in Figure 4 indicate the direction in which the various flights of the different portions of the cord move when the cord is moved in one direction. From the arrows, it will thus be seen that the two curtain halves will be moved simultaneously and in coordination in opposite directions to thus open and close the curtains.

As will be now understood, the construction shown in Figure 3 may be employed with or without the valance **18**, and the sections **22** and **24** may be housed or enclosed in any desired manner.

In the embodiment thus far described, the slots for receiving the slide portions **51** are disposed in the inside surface of the upper and lower support members **22** and **24**. This construction is satisfactory for installations in which the length of the support members is not so great that they require bracing or supporting intermediate their ends. Where a construction is desired which is of such length that intermediate bracing or supporting is necessary, the construction of Figure 11 may be employed.

Intermediate the ends, as shown in Figure 11, the rails **26** are provided with supporting brackets **88**, which brackets include a stationary, horizontally disposed support arm **90** having an integral base flange **92** apertured as at **94** for attachment to the vertical supporting surface. This base member of the bracket is provided with a supporting clip **96** which is longitudinally adjustable upon the bracket as by an adjusting bolt **98** receivable in suitable slots of

these members. The bracket, at its outer end, is provided with an inturned edge **100** forming a hook adapted to embrace the support rail as illustrated. The bracket will thus support the rail **26** of either the upper or lower support **22, 24** intermediate its ends, without interfering with movement of the curtains or slides.

A slightly modified slide construction is shown in Figure 9. Here the same rail **26** with slot **28** is provided, the view being that of a bottom support **24**. The two flights of the cable **58** are shown housed therein, extending over the pulleys **72, 74** as previously set forth. The lower portion of the curtain section **12** with apron **20** depending therefrom is likewise shown.

However, in place of the slide **50** with portion **51**, previously described, there are provided slides **81**, each having an apertured plate **83** for receiving the curtain fastening hook **54**, a laterally extending stem **86** slidably received in the slot **28** and having a disk or button **84** on its end retained inside the member **26**. The operation of this form of slide will be readily apparent.

The above described constructions are suitable especially for mounting on vertical supporting surfaces such as adjacent windows and the like. In Figure 8 is disclosed a slightly modified construction operating upon the same principles previously set forth by means of which a draw curtain may be secured to horizontal supporting surfaces such as to the ceiling and floor elements of a room or the like. For that purpose, there are provided upper and lower support members or tracks indicated generally by the numerals **102** and **104**, respectively, each of these tracks consisting of a channel member **106** which is U-shaped in cross section. The ends of these channel members are provided with terminal elements **108** and **110** at the opposite ends thereof, the terminal members **108** and **110** being identical with the terminal sleeve members **30** and **32** respectively, except for their shape. As in the previously described terminal members, guide pulleys are provided for supporting the flights of the draw cord **58**. The channel members **106** are disposed with their open sides facing each other whereby the plurality of slides **112** may extend from the open sides for engagement by the previously mentioned supporting hooks by which the curtain is attached to the draw cord. As in the preceding embodiment, master slides **114** and **116** are fixedly attached to the draw cord in the same manner as the master slide of the previously described embodiment.

The closed web portions of the channel members **106** are provided with suitable apertures **118** by means of which the channel members may be secured to a ceiling, a floor or other horizontal supporting surface. By this means, the draw curtain construction may be applied within a window opening between the horizontal top and bottom members of the window frame, or in an analogous environment, as between the frame members of a skylight or the like.

In place of the open channel construction of Figure 8, there may also be employed a slightly modified channel construction of Figure 12. In this form, a channel member of C-shaped cross section is provided as indicated by the numeral **120**, which channel member will, of course, be identical in construction for the top and bottom rails as previously set forth. These channels are provided with longitudinally extending slots **122** upon their adjacent surfaces. Slides **124** are positioned within these channels and have depending neck portions **126** extending through the slots which are apertured for engagement by the fastening hooks by which the curtain is attached thereto.

From the foregoing, it is believed that the principle of this invention will now be readily understood as well as the extreme adaptability of the same to very specialized environments and uses. Accordingly, further explanation of the construction and operation is believed to be unnecessary. Since numerous modifications will readily occur to those skilled in the art after a consideration of the foregoing specification and accompanying drawings, it is not desired to limit the invention to the exact construction shown and described, but all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claims.

Having described the invention, what is claimed as new is:

1. A draw curtain construction for windows comprising a support means, an endless draw cord carried by said support means, a window curtain comprising a pair of sections each consisting of a sheet of a pliable material, fasteners securing each section at its top and bottom to said draw cord, said support means including a pair of horizontally disposed upper and lower hollow members positioned respectively at the top and bottom of a window opening, said draw cord including parallel reaches each of U-shaped configuration, each reach including horizontal upper and lower flights each housed in one of said members, the horizontal flights of each reach being connected at one end by a vertical flight positioned at one side of said window, said members having longitudinal slots therein, said fasteners being disposed in said members and extending through said slots and attached to said sections, said members being closed at their ends by terminal sleeves in telescoping embracing relation, said sleeves having pulleys journaled therein, said draw cord being entrained over said pulleys, openings in said sleeves for said vertical flights, a tension member incorporated in one of said vertical flights for taking up slack in the draw cord, brackets engaging said sleeves for supporting said members, said sections being supported solely by the upper member in depending relation therefrom, the fasteners of the lower member engaging the bottom end of the sections for holding the latter taut.

2. The combination of claim 1 including a single pulley journaled in a sleeve at one end of each member and a pair of pulleys journaled in a sleeve at the other end of each member, the horizontal flights of the pair of reaches in each member being entrained about said single pulley and being each entrained over one of said pair of pulleys.

3. The combination of claim 1 wherein the fasteners for different sections are attached to different flights of the draw cord in each member.

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