Oct. 31, 1950 W. C. TROY 2,527,860

FIXTURE FOR SUPPORTING AND TRAVERSING DRAPES AND THE LIKE

Filed Jan. 17, 1947

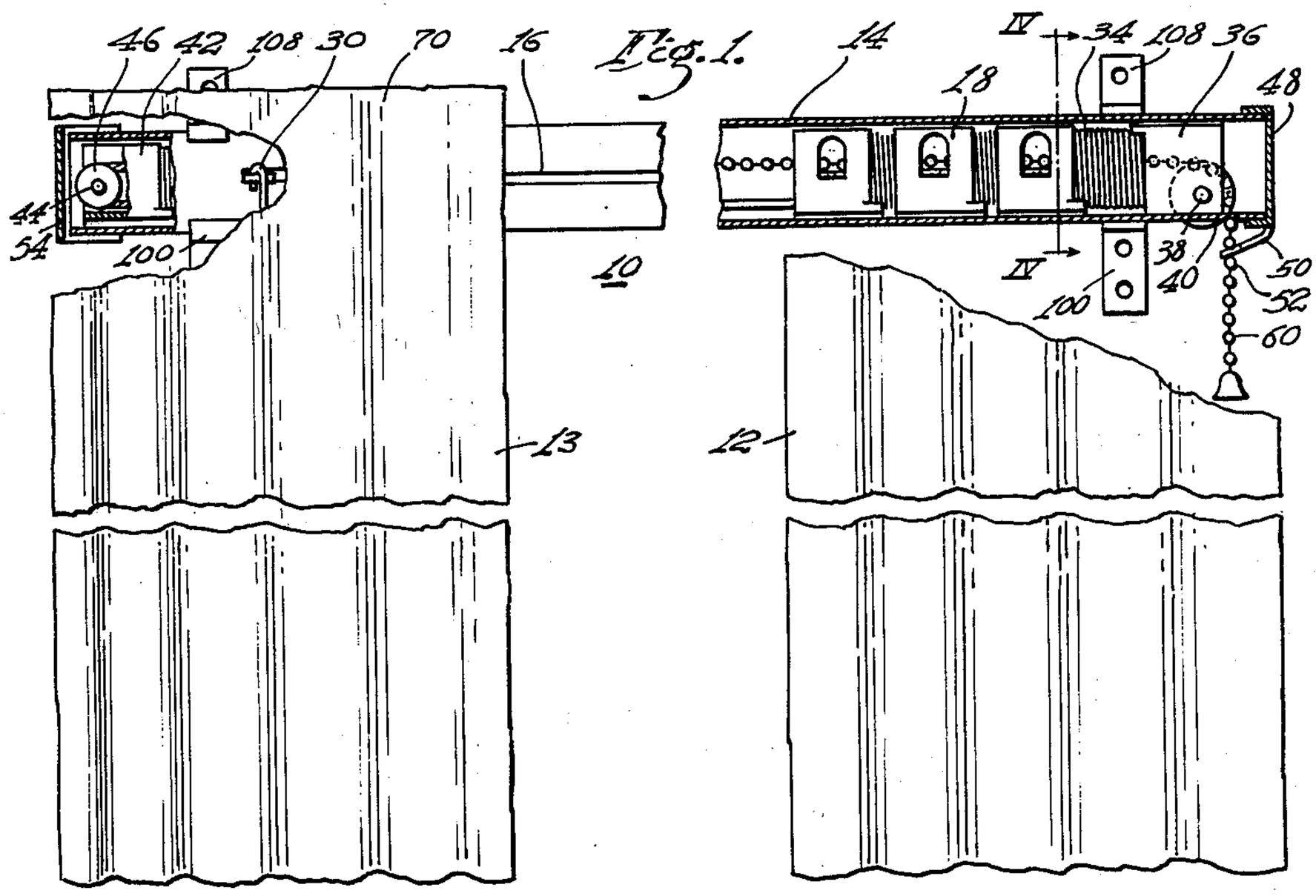

Fig. 1.

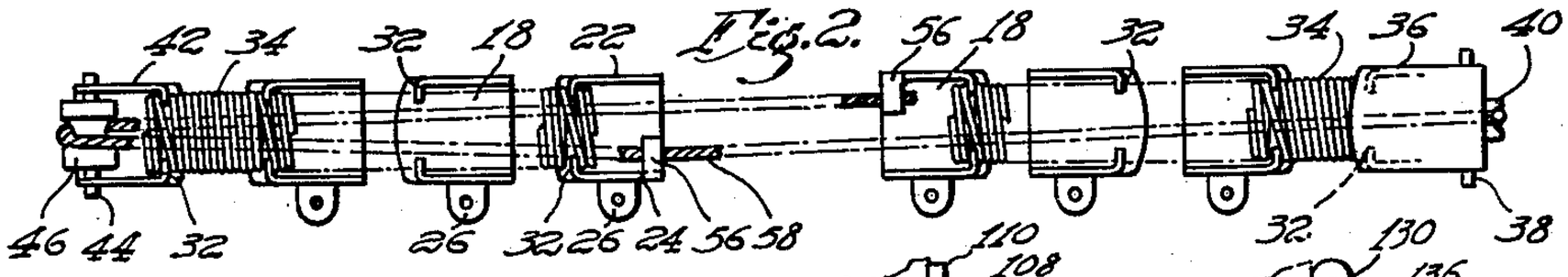

Fig. 2.

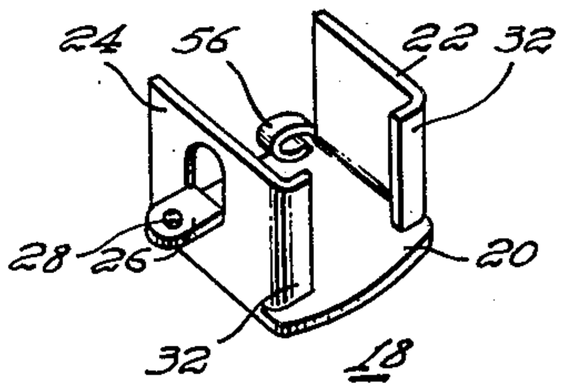

Fig. 3.

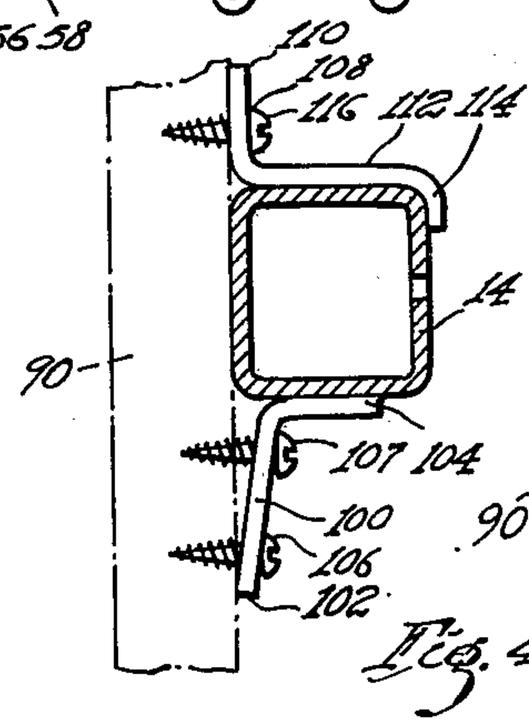

Fig. 4.

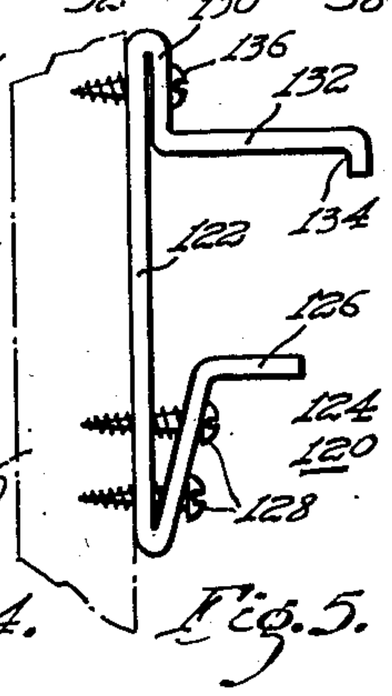

Fig. 5.

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Patented Oct. 31, 1950 2,527,860

UNITED STATES PATENT OFFICE

2,527,860

FIXTURE FOR SUPPORTING AND TRAVERSING DRAPES AND THE LIKE

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Application January 17, 1947, Serial No. 722,553

3 Claims. (Cl. 160—343)

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This invention relates to fixtures suitable for supporting drapes, curtains and the like and for traversing them uniformly to open and closed positions.

It is desirable to support movable drapes, curtains and the like in such a manner that they are folded into similar neat folds in both open and closed position, or in any intermediate partly open position. Furthermore, the mechanism for traversing the drapes should be simple in construction, easy to operate and reliable. It is well known that many drapery fixtures do not meet these requirements, since they often catch or bunch, requiring considerable tugging to free the drapes or, on occasion, the operator must mount a ladder to untangle jammed parts. The prime object of this invention is to provide a drapery fixture capable of satisfactorily meeting these requirements.

Another object of this invention is to provide a fixture for supporting and traversing drapes, curtains and the like uniformly by means of a single operating element.

A further object of the invention is to provide a fixture for traversing drapes, curtains and the like easily without binding or bunching of the drapes.

A still further object of the invention is to provide supporting brackets for supporting a tubular fixture with an overhang at any desired location.

Other objects of the invention will in part be obvious and in part appear hereinafter.

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description and drawing, in which:

Figure 1 is a broken view in elevation partly in section,

Fig. 2 is a top plan view showing the arrangement of the operating elements of the fixture,

Fig. 3 is a view in perspective of one of the slider elements of the fixture,

Fig. 4 is an enlarged sectional view taken on line IV—IV of Fig. 1 showing the supporting bracket, and

Fig. 5 is a side elevation view of a modified form of supporting bracket.

Referring to Fig. 1 of the drawing, there is illustrated the fixture **10** arranged for supporting and traversing two drapes **12** and **13** to open and closed position. The fixture **10** comprises a tubular member **14** of non-circular cross section, preferably having at least two flat sides, and more specifically being of polygonal cross

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section. It has been found that the square tube shape shown in the drawing is particularly suitable. The tube **14** is provided with a longitudinal slot **16** in the front vertical face extending from substantially one end of the tube to the other. Disposed within the tube **14** are a plurality of slider members **18** fitting closely, but freely for relatively easy longitudinal movement. A right-hand group of slider members supports the right drape **12** and the left drape **13** is supported on a corresponding left-hand group of slider members. The number of slider members **18** is determined by the number of points of support deemed desirable for each of the drapes **12** and **13**. Furthermore, if the drapes in open or gathered position are to have a large number of folds, then a proportionately large number of slider members will be employed. If the drapes are to fold with a few relatively large folds, then a smaller number of slider members may be employed.

Referring to Fig. 3 of the drawing, there is illustrated in more detail one of the slider members **18**. Each slider member comprises a flat bottom **20** and two flanged sides **22** and **24** fitting at least three of the sides of the square tube closely but slidably. The front flanged side **24** is provided with a lug **26** formed by punching and striking out a portion of the side. The lug is perforated at **28** for supporting one drape hook **30**. The lug **26** is so proportioned and positioned as to slide freely in the longitudinal slot **16** preferably, though not necessarily, without contacting the sides of the slot. The weight of the drape is transmitted through the lug **26** to the flanges **22** and **24** and bottom **26** which butt against the walls of the tube **14** without binding. The flat sides of the tube cooperating with the bottom **20** and sides **22** and **24** resist twisting of the slider under the weight of the drape. The sliders will reciprocate easily in the tube even under heavy loads.

Each slider member **18** is provided with a pair of inwardly projecting tab means **32** for fitting between the helices of an extension helical spring **34**. In fitting between the helices the tab means **32** separate them a distance equal to the thickness of the tabs. It has been found that it is necessary to have the tabs **32** fit into the spring **34** at two diametrically opposite portions, in order to prevent kinking or warping of the spring with a resultant undesirable binding action occurring. The spring **34** in unstretched condition is of a diameter slightly less than the distance between the slider walls **22** and **24**. The

slider members may be slipped readily over the spring **34** between helices at regular intervals prior to placing the sliders and coil spring within the tube **14**.

One end of each coil spring **34** is held in a fixed position within the tube **14** by a terminal member. The assembly of the sliders, coil springs and terminal members is shown in detail in Figure 2 of the drawing. At the right-hand end of the fixture is a terminal member **36** which conveniently is an inverted slider member without a lug, though the terminal member may take any other desirable configuration. The tab means **32** on the terminal member **36** passes between diametrically opposite helices of the spring with at least two turns of the spring being engaged. The terminal member **36** is fixed by the pin **38** carrying the pulley **40**, the pin passing through the walls of the tube **14** thereby fixing it with respect to the tube. At the left end of the tube is another terminal member **42** which may be similar in shape to a slider member, but having no tab thereon, the left end terminal member being fixed by the pin **44** passing through it and the walls of the tube. The pin **44** carries a second pulley **46**.

The right-hand open end of the tube **14** is provided with a closure **48** which may be affixed to the tube by means of a machine screw or other suitable retainer. The closure **48** has a depending lip **50** provided with a wedge shaped slot **52** whose use will be described hereinafter. The left-hand end of the tube **14** may be closed by a U-shaped cap **54** conveniently held in place by the pin **44** passing through the legs of the U. The pins **44** and **38** may be cotter pins.

Referring to Fig. 2 of the drawing in particular, there is illustrated the flexible cord mechanism for operating both right and left-hand groups of the slider members. The innermost sliders attached to each of the coil springs **34** are provided with a clamping portion **56** suitable for engaging an operating cord **58**. The end of the cord **58** is attached to the innermost slider member **18** on the right-hand spring, then passes through the left-hand spring **34** over the pulley **46**, then returns within the same coil spring for engagement at the clamping portion **56** of the innermost slider member on the left-hand spring and then passes through the right-hand spring to the pulley **40**. It terminates as a beaded chain **60**. The chain **60** is adapted to be held by engagement of the beads in the tapered slot **52** in the lip **50** in any position of adjustment.

It will be apparent that on disengaging the beaded chain **60**, as shown in Fig. 1, from the slot **52** and pulling downwardly on the chain, the cord **58** will pull the terminal slider **18** attached to the left-hand spring thereby extending the entire spring. Each of the sliders in the left-hand group will move in accordance with the extension of the spring, in an amount proportional to their distance from the terminal **42**, and, accordingly, the lugs **26** will be separated an equal distance from each other and thereby the left-hand drape **13** will be spread into an open position. The end of the cord **58** passing over the pulley **46** will also be moved and will pull on the end slider **18** attached to the right-hand spring to extend the spring and similarly separate each slider member of the right-hand group, thereby spreading the right-hand drape **12** a similar amount. The chain **60** may be pulled any selected distance and then fixed in such position by passing the beaded chain into the wedge slot **52**. If it is desired to

open the drapes, the chain **60** is simply pulled and swung clockwise out of the wedge slot **52** to be released and the contracting tendency of the springs will pull each set of sliders to the ends of the tube, thereby gathering the drapes.

The traversing fixture shown in Fig. 1 has proved to be of an extremely simple and reliable construction. In one test, the mechanism was operated 8,000 times, which is an amount equal to better than 10 years normal service, with complete satisfaction.

Because of the flat sided cooperating construction of the tube **14** and slider members **18** and the resulting feature of easy longitudinal sliding without twisting or binding even with heavy drapes, the drape supporting lugs **26** extend laterally thereby making a compact fixture. Accordingly, only a short stiff heading **70** on the drapes **12** and **13** will be sufficient to conceal completely the tube **14** when the drapes are drawn. Furthermore, the exposed portions of the fixture **10** consist of only the tube **14** and chain **60**, thereby it is not inartistic even when the drapes are opened. The fixture is easily cleaned since it does not gather dust readily.

It will be appreciated that while the mechanism shown in Figs. 1 and 2 is adapted for handling two drapes or curtains or the like simultaneously, it may be desirable to employ a similar mechanism for opening and closing a single curtain, for example a shower curtain. In that case, only a single unit corresponding for example, to the right half of Fig. 1 alone, comprising a single spring **34** and the desirable number of slider members **18** will be placed within a tube. Furthermore, for use in showers or the like, the longitudinal slot **16** need not be placed in a vertical or side surface of the tube **14**, but may be located so that the slot is at the bottom thereof.

Referring to Fig. 4, there is illustrated a support for holding the tube **14** of the fixture in position on a wall **90**, window frame or the like. The support comprises cooperating lower bracket **100** and upper bracket **108**. The lower bracket **100** is provided with a vertical arm **102** which may be fastened by means of screws **106** and **107** to the wall **90**. A horizontal flange **104** is formed at an angle of greater than 90° to the vertical arm **102**. An angle of 100° to 105° has been found satisfactory. The bracket **100** is initially fastened by the screws **106** and **107** to a position where the flange **104** is horizontal.

The upper bracket **108** comprises a vertical portion **110** to be fastened against the wall **90**, a right angled horizontal arm **112** fitted to extend over the top side of tube **14**, and a lip **114** to clamp over the edge to hold the tube **14** when screw **116** is tightened.

A method of employing the support is to fasten the lower bracket **100** to the wall **90** to a position where the flange **104** is horizontal, the tube **14** being then rested on it, and then to fasten the upper bracket **108** in place by screw **116**. The lowermost screw **106** will have but little play, while screw **107** will have considerable travel before it is snug. By driving screws **107** and **106** the bracket **100** will be drawn in to the wall **90** and the horizontal flange **104** will cam up the tube **14** tightly against bracket **108**.

Fig. 5 of the drawing illustrates a modified form of unitary support **120** functioning similarly to that of Figure 4. The support **120** comprises a back portion **122** to fit against a wall or frame. A lower bracket portion is formed from an up-

wardly bent portion 124 disposed at an angle of 10° to 20° to the back 122 and carrying a horizontal flange 126 forming an angle of from 100° to 110° thereto. Screws 128 are applied to the bent portion 124 both to fasten the support to the wall as well as to draw the bent portion towards the back portion. From the upper end of the back portion 122 is an upper bracket portion comprising a parallel downwardly extending vertical portion 130 having a horizontal arm 132 and a lip 134 for holding a tube in place when screw 136 is applied to the vertical portion 130.

It will be apparent that the angle between flange 104 and arm 102 or flange 124 and arm 126 in Fig. 5 may be varied within a considerable limit—to as much as 135°. Also, the bracket 108 in Fig. 4, or the upper horizontal arm 132 in Fig. 5, may be shaped to conform to the shape of the tube 14 if it has other than a square section.

The tube 14 may overhang the supports of Figs. 4 and 5. This enables the drapes 12 and 13 to completely conceal a window or other opening.

Since certain changes may be made in the above apparatus and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matters shown in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

I claim as my invention:

1. In a fixture for traversing drapes and the like, in combination, a tube provided with a longitudinal slot, a single extension helical spring disposed within the tube, means for fixing one end of the helical spring adjacent one end of the tube, a plurality of slider members disposed about the helical spring and fitting the interior of the tube with a relatively easy longitudinal sliding fit, each slider member having a bottom portion conforming to and resting on the tube and flange portions conforming to and fitting the sides of the tube for carrying the load of a drape, each slider member having a pair of inwardly extending tab means passing between and detachably affixed to the helices of the spring at two points on diametrically opposite portions thereof, the tab means providing for movement of the slider member in correspondence with the expansion and contraction of the helical spring, a lug attached to each slider member extending through said slot for supporting a flexible drape member for longitudinal motion, and a flexible pull member attached to a slider member nearest the free end of the helical spring.

2. The fixture of claim 1 wherein the tube has a polygonal cross-section and the bottom

and the flange portions of the slider members are of similar polygonal cross-section.

3. A fixture comprising, in combination, a tube having two opposed flat sides and provided with a longitudinal slot, two extension helical springs disposed within the tube, one spring being adjacent to and attached to one end of the tube and the other spring attached to the other end of the tube, means adjacent each end of the tube for fixedly attaching an end of the spring adjacent said end, a plurality of slider members disposed about each helical spring, the slider members having wall portions fitting the major cross-section of the interior walls of the tube closely with a relatively easy longitudinal sliding fit, the wall portions of the slider members fitting against and cooperating with the flat sides of the tube to withstand twisting, each slider member having a pair of inwardly extending tab means passing between and detachably affixed to the helices of the spring at two points on diametrically opposite portions thereof, the tab means connecting each slider member to the spring for movement in correspondence with the expansion and contraction of the spring, a lug attached to each slider member extending through said longitudinal slot, a flexible member connected to the terminal slider member adjacent the free end of each spring, a pulley disposed at one end of the tube, and the flexible member passing from the point of connection to the terminal slider on the spring fixed to the end of the tube opposite the pulley, over the pulley and returning, thence to the terminal slider on the spring adjacent the pulley and thence to the opposite end of the tube to a point outside the tube whereby a pull on the flexible member will operate the springs simultaneously.

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