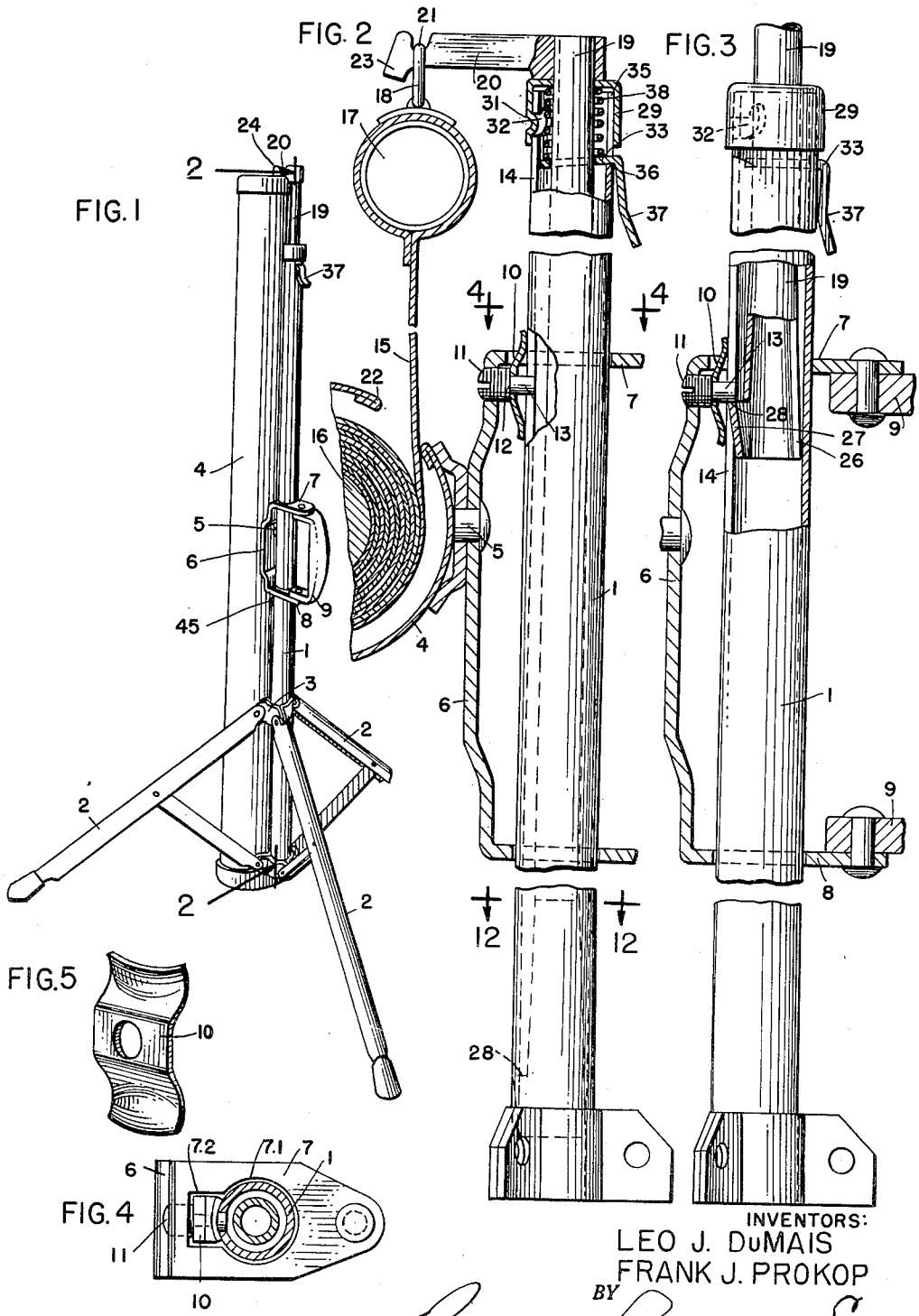
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PICTURE SCREEN STAND

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INVENTORS:
LEO J. DuMAIS
FRANK J. PROKOP

BY

Rummler Rummler & Snow

ATT'YS

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PICTURE SCREEN STAND

Leo J. Du Mais and Frank J. Prokop, Chicago, Ill., assignors to Da-Lite Screen Company, Inc., Chicago, Ill., a corporation of Illinois

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4 Claims. (Cl. 160—24)

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This invention relates to portable picture screen stands and particularly to improvements in the devices which control the variable position of the screen housing on the stand, this application being a division of the copending application Serial No. 215,498, filed March 14, 1951, issued as Patent No. 2,591,686 on April 8, 1952.

The main objects of this invention are to provide improved structural arrangements for facilitating the adjustment of the screen stand so as to expose a desired normal area of the screen at various heights above the floor; to provide improved means for holding the screen housing at any desired elevation on the stand and co-ordinating this holding means with the support of the unreeled portion of the screen so that a definite area of the screen surface may be shifted to any desired height by a simple act of elongating or contracting the supporting standard; and to provide an improved and simplified structure for frictionally holding the screen housing in place on the standard and causing it to shift with the extension rod.

A specific embodiment of this invention is illustrated in the accompanying drawings in which:

Figure 1 is a perspective view of the improved screen stand of the general type to which this invention relates.

Fig. 2 is an enlarged detail of parts of the same, partly broken away and partly in section, showing the relation of the standard to its extension rod and to the screen-reel housing.

Fig. 3 is a similar view particularly directed to illustrate the manner in which the reel housing bracket is related to the extension rod.

Fig. 4 is a section taken on the line 4—4 of Fig. 2.

Fig. 5 is a perspective view of the friction spring for the reel housing bracket.

In the form shown in the drawings, the stand comprises a tubular standard 1 which is upright when resting upon its tripod legs 2. The tripod legs are retractible from the position in which they are shown in Figure 1 to a position parallel with the standard 1 by sliding the sleeve 3 upward on the standard. The screen case or housing 4 is mounted on a pivot 5 on a rider which is in the form of a U-shaped bracket 6 having upper and lower flanges 7 and 8 apertured to slidingly receive the standard 1. The flanges 7 and 8 are also connected to opposite ends of a handle 9.

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A bowed spring 10 bears between the front plate of the bracket 6 and the tube 1 in such manner as to hold the bracket 6 by friction at any position at which it may stand with respect to the tube 1. In the form shown, the tension of the spring 10 is adjusted by means of a screw bolt 11 that has a shoulder 12 bearing on the spring 10 and a reduced stud portion 13 that extends through a perforation in the spring 10.

The standard 1 has a slot 14 extending longitudinally from end to end thereof and the stem portion 13 of the screw bolt 11 is made of suitable diameter and length to extend into said slot 14 so as to serve as a spline acting between the bracket 6 and the slotted standard 1 to prevent the bracket 6 from rotating on the standard while being freely slidable along it.

The screen housing 4 is swingable on a pivot 5 from the position of parallelism with the standard 1, in which it is shown in Fig. 1, to a horizontal position crosswise of the standard 1, as indicated in section in Fig. 2. The screen 15 is wound on a reel 16 supported in the housing 4 and has an end slat 17 provided with a bail 18.

The standard 1 has an extension rod 19 that telescopes into the tubular body of the standard 1 and carries at its upper end a bracket arm 20 that is shaped to provide a seat 21 to receive the bail 18 so as to spread the screen in a vertical plane that extends through the slot 22 in the housing 4 through which the screen web passes.

The bracket arm 20 is also provided with a depending lug 23 that cooperates with an appropriate seat 24 in one end of the reel housing 4 when the parts are in the position shown in Fig. 1. The lower end 25 of the extension rod 19 is enlarged in diameter as indicated in Fig. 3, so as to slidingly fit within the inside surface of the tubular standard 1 to guide the extension rod 19 for straight-line, vertical movement. To facilitate the formation of this expanded end portion 25 of the extension tube 19 it may be split, as indicated at 26 in Fig. 3.

A portion of the tube 19 adjacent its lower end is struck out to form a lug 27 serving as a spline that travels in the groove 14 of the standard 1 to prevent relative rotation of the extension

rod 19 within the standard 1. This lug is also shaped to provide an abrupt shoulder 28 at its upper end which, as the extension rod 19 is raised, will come into contact with the stud 13 whereupon the reel housing 4 will be carried along without any further lifting movement of the extension rod 19.

The standard tube 1 is provided with a cap 29 at its upper end, which is perforated to slidingly fit the extension rod 19 for guiding the movement of the latter. In the form shown, the cap 29 has its side wall indented to form an inwardly projecting lug 31 of appropriate form to slidingly fit the slot 14 of the standard 1 and to be turned into a bayonet slot 32 at one side of the slot 14 to lock the cap 29 in place. There is a nipping lever 33 perforated to slidingly fit the rod 19 when the lever 33 is at right angles to the rod 19, and to lock the rod 19 against downward movement when the lever 33 is tilted as in Fig. 2. The lever 33 is seated in a recess 35 in the upper end of the wall of the tube 1 opposite the slot 14, which provides a fulcrum 36 for the lever 33. The arm 37 of the lever 33 extends downwardly along the tube 1 where it can be conveniently pressed by the thumb or finger of the operator's hand.

The nipping lever 33 is normally urged into its tilted position by means of a helical spring 38 which loosely surrounds the tube 19 and bears between the top of the cap 29 and the lever 33. This spring thus performs the function of normally tilting the lever 33 to its gripping position for holding the extension rod 19, and also the function of tending to lift the cap 29, thus holding the lug 31 firmly seated in the upturned end of the bayonet slot 32.

In operation, when the device is folded in its minimum size, it will appear as shown in Fig. 1 except that the legs of the tripod 2 will be folded against the sides of the standard 1 by raising the sleeve 3.

To set up the device for use, the tripod legs 2 are first expanded to their load-carrying position and set upon the floor with the standard 1 in vertical position. The operator then presses the lever arm 37 against the side of the tube 1 to release the rod 19 from the grip of the nipping lever 33 and then raises the rod 19 sufficient to release the bracket lug 23 from its interfitting engagement with the end of the screen case 4. The screen housing is then turned to a horizontal position at right angles to the standard 1. The screen is then withdrawn from the casing by means of the bail 18 and the bail is hung into the notch 21 of the bracket arm 20.

The extension 19 is now lifted until the desired length of the screen web is unwound from the reel. When this unwinding has reached the desired maximum extent, the shoulder 28 on the spline lug at the bottom end of the extension rod 19 will come into contact with the spline stud 13 on the bracket 6 and lift the screen housing along without any further upward movement of the extension rod, thus always maintaining this intended maximum area of screen exposure, regardless of the height to which the screen is set above the floor.

The latching effect of the nipping lever 33 is such that the spring 35 automatically locks the extension 19 in any position to which it may have been adjusted while pressure is exerted on the latch arm 37. Pressure upon the arm 37 is required only for lowering the extension rod 19 into the standard 1, since an upward pull upon the rod 19 tends to loosen the grip of lever 33 and relieves the pressure of the spring 35 enough to allow free upward movement of the rod 19.

The pressure of the spring 10 against the side of standard 1 is adjusted by means of the screw 11 so as to hold the rider bracket 6 yieldingly against unintentional slipping along the standard. As seen in Fig. 4 the aperture 7.1 for the passage of the tube 1 through the bracket arm 7 has a recess 7.2 to receive one end portion of the spring 10, thus holding the spring 10 in its proper position for exerting pressure against the standard.

To knock down the device from its set-up position, the screen bail 18 is unhooked from the bracket 20, allowing the spring of the reel to draw the screen web into the case 4. The case 4 is then moved down to its lower position on the standard, as determined by the stop 45 and turned into parallel relation with the standard 1 and then the extension 19 is lowered into the standard until its bracket arm 20 enters the recess at the end of the case to lock the latter in the position shown in Fig. 1. Finally the sleeve 3 is slid upward on the standard 1 to retract the tripod legs 2 against the sides of the standard.

Although but one specific embodiment of the invention is shown and described herein, it will be understood that numerous details of the structure shown may be altered or omitted without departing from the spirit of the invention as defined by the following claims.

We claim:

1. In a picture screen stand, a tubular standard having a slot extending longitudinally in one side thereof, a screen housing bracket slidably mounted on said standard and comprising a face plate having a transverse arm slidably mounted on said standard, said arm having a recess adjacent said slot, a leaf spring seated in said recess and bearing on said standard to frictionally resist the sliding of said bracket thereon, a stud on said bracket having a shoulder bearing on said spring to force same against said standard, said stud extending into said slot, and means on said stud for adjusting the pressure of said spring.

2. In a picture screen stand, a tubular standard having a slot extending longitudinally in one side thereof, a screen housing bracket slidably mounted on said standard and comprising a face plate having a transverse arm slidably mounted on said standard, said arm having a recess adjacent said slot, a leaf spring seated in said recess and bearing on said standard to frictionally resist the sliding of said bracket thereon, a stud threaded into said bracket and extending through said spring and into said slot, a shoulder on said stud bearing on said spring for adjusting its pressure on said standard.

3. In a picture screen stand, a tubular standard having a slot extending longitudinally in one side thereof, an extension rod telescoped with said standard, a screen housing bracket slidably mounted on said standard, a spring on said bracket bearing on said standard and adapted to frictionally hold said bracket in any position along said standard, an adjustable stud bearing between said bracket and spring and extending into said slot, and a shoulder on said extension rod adapted to coact with said stud for shifting said bracket with said extension rod.

4. In a picture screen stand, a tubular standard having a slot extending longitudinally in one

side thereof, an extension rod telescoped with said standard, a screen housing bracket slidably mounted on said standard, a spring on said bracket bearing on said standard and adapted to frictionally hold said bracket in any position along said standard, and adjustable stud bearing between said bracket and spring and extending into said slot, a shoulder on said extension rod adapted to coact with said stud for shifting said bracket with said extension rod, and latch means acting between said standard and extension rod to secure the rod in extended relation to said standard.

LEO J. DU MAIS.
FRANK J. PROKOP.

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