

April 8, 1952

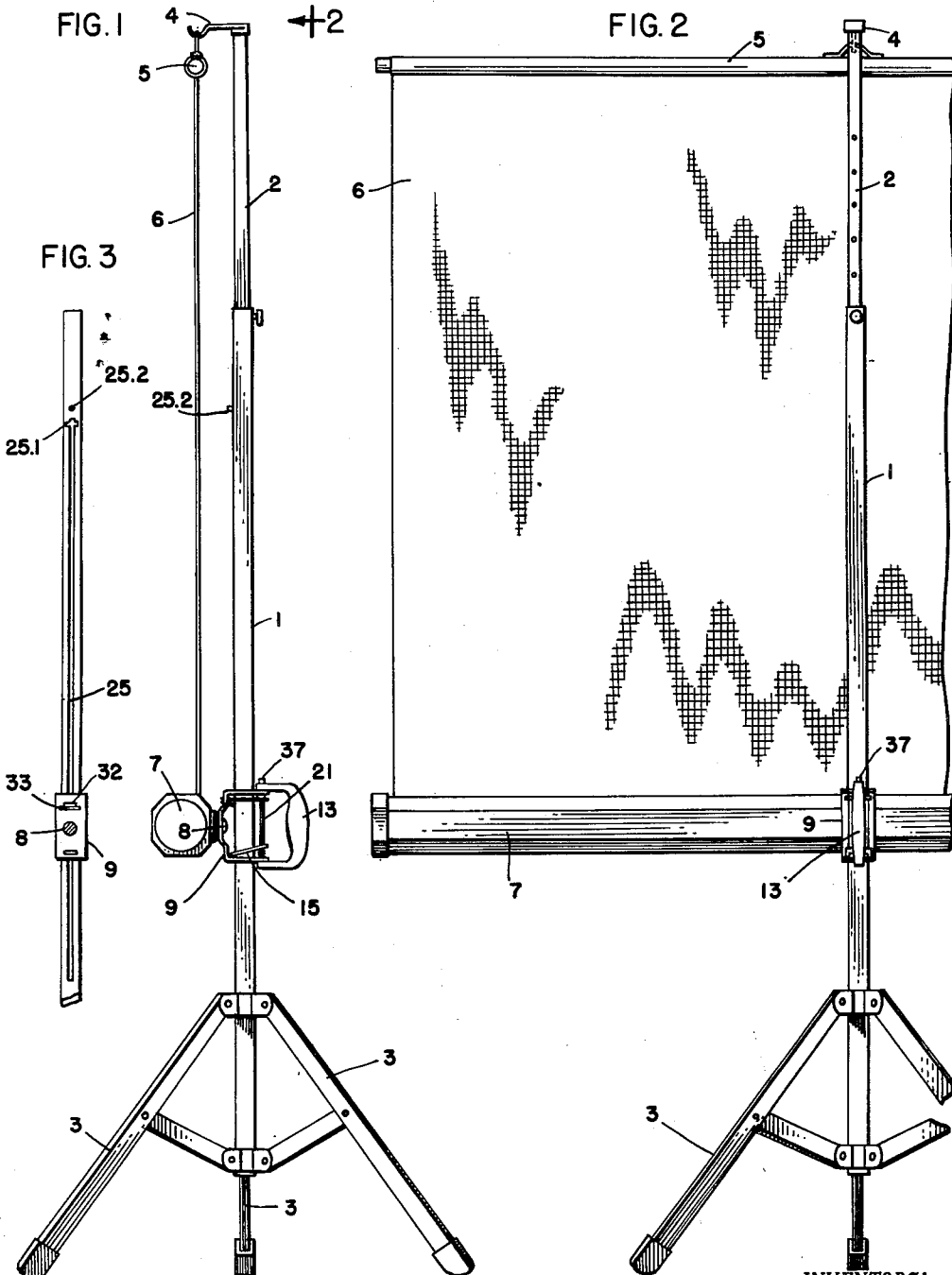
L. J. DU MAIS ET AL

2,591,685

SLIDING BRACKET LOCK

Filed Dec. 4, 1950

2 SHEETS—SHEET 1



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2 SHEETS—SHEET 2

FIG. 4

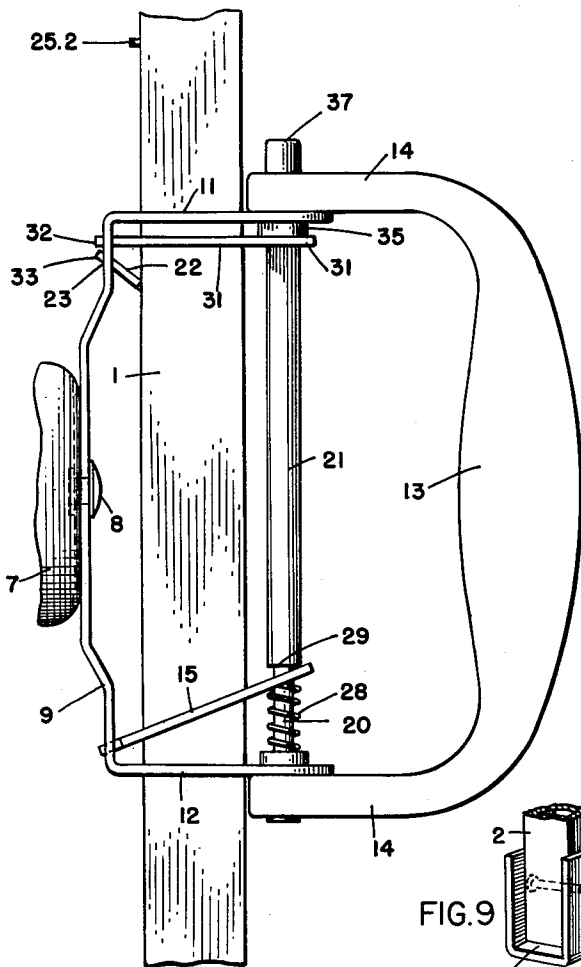


FIG. 5

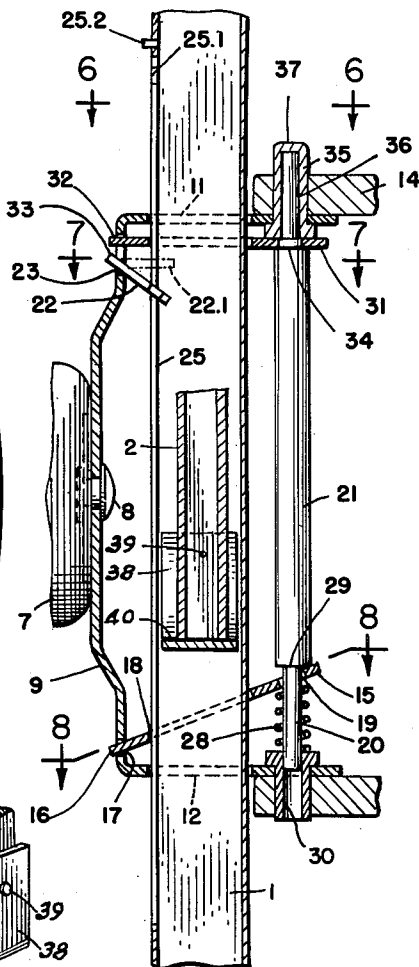


FIG. 9

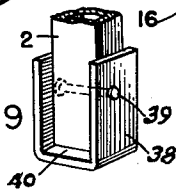


FIG. 6

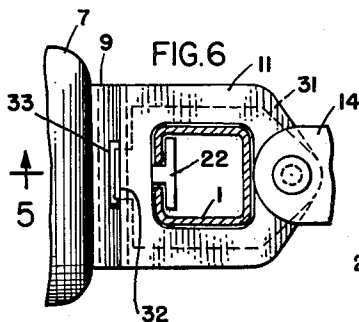


FIG. 7

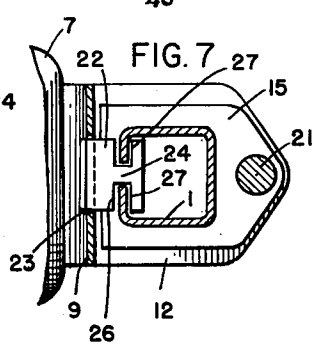
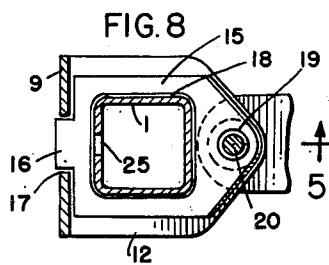


FIG. 8



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SLIDING BRACKET LOCK

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corporation of Illinois

Application December 4, 1950, Serial No. 199,133

16 Claims. (Cl. 160—24)

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This invention is directed to the improvement of portable picture screen stands of the general type disclosed in the patent to J. T. Heck No. 2,355,799 of August 15, 1944 and the patent to J. T. Heck and L. J. DuMais No. 2,434,071 issued January 6, 1948 and has particular reference to improvements in clamping means for adjustably securing the bracket that carries the screen reel to the post or standard of the screen stand.

The main objects of this invention are to provide an improved construction for the bracket that carries the screen reel housing; to provide an improved form of clamping means whereby such bracket may be adjusted to any position within the limits of its range of movement along the post and may be securely locked in such adjusted position; to provide improved means for releasing such clamping means; and to provide an improved form of such releasing mechanism whereby the release of the clamps is accomplished by the pressing of a button positioned for engagement by the thumb or finger of an operator's hand that grips the handle on the bracket for raising or lowering the screen housing on its standard.

Other objects will appear from the following specification.

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

Figure 1 is a side elevation of a picture screen stand having its bracket structure constructed according to this invention.

Fig. 2 is an elevation of the same as viewed from the rear of the screen.

Fig. 3 is a fragmentary front elevation of the post of the stand and bracket with the screen and reel housing removed.

Fig. 4 is an enlarged, approximately full-sized, side elevation of the bracket member, its handle, its clamping means and clamp releasing mechanism, with the reel housing and posts of the stand indicated fragmentally.

Fig. 5 is a similar view showing the parts thereof in section, taken on the line 5—5 of Figs. 6, 7 and 8.

Figs. 6, 7 and 8 are sectional plan views taken on the lines 6, 7 and 8 respectively of Fig. 5.

Fig. 9 is a fragmentary detail in perspective of the guide cap at the lower end of the extension rod.

In the form shown in the drawings, the stand comprises a longitudinally adjustable upright post, having the shape of a rod and preferably including telescoping tubes 1 and 2 of rectan-

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gular cross section carried by a tripod having foldable legs 3. A hook 4 at the upper end of the post serves as a hanger for the slat 5 at the free end of the screen web 6, which web is mounted on a curtain reel in the reel housing 7 carried by a pivot 8 on a bracket member 9 which is vertically slidable on the tube 1. This pivotal arrangement is such that the screen housing may be positioned either at right angles to the post or in parallel relation thereto. The housing is thus free to tilt on its pivot so that gravity will keep the screen flat, even if it is improperly hung at the top of the suspension rod or has become unevenly stretched.

The bracket member 9 has an upper arm 11 and a lower arm 12 which arms extend at right angles to the body part of the member 9 and are apertured to slidably embrace the walls of the post tube 1. A handle 13 spans the space between the arms 11 and 12 and has arms 14 that are connected to the arms 11 and 12, as shown in Figs. 4 and 5.

A nipping lever 15 is mounted near the lower end of the bracket member 9 and comprises a plate shaped to form fulcrum shoulders and a short arm 16 seated in an aperture 17 in the bracket member 9 and to have an aperture 18 to loosely receive and embrace the post tube 1 in such manner that opposed shoulders on this plate will lock the bracket member 9 against downward movement on the post when the lever 15 is in the inclined position in which it is shown in Figs. 4 and 5, but will allow the bracket member 9 to slide freely along the post tube 1 when the lever plate 15 is moved to a position more nearly at right angles to the tube 1. The lever 15 has an aperture 19 through which the reduced shank 20 of an operating member in the form of a bar 21 extends.

A second nipping lever 22 is fulcrumed in an aperture 23 in the bracket member 9 and is apertured to form a short narrow neck 24 which extends through a longitudinal slot 25 in the flat front face of the tube 1 providing shoulders 26 and 27 which have nipping engagement with the wall of tube 1 at both sides of the slot 25. The spacing between the shoulders 26 and 27 has such relation to the thickness of the shell walls of the tube 1 that the lever 22 will slide freely in the slot 25 when the lever is in a level position, as shown by dotted lines 22.1 in Fig. 5 and will have clamping engagement with the sides of the slot 25 when it is in the inclined position in which it is shown in Figs. 4 and 5. This lever 22 is normally urged toward its rod

gripping position by gravity. For convenient assembling, the slot 25 is of T-shape at its upper end to provide a cross slot 25.1 through which the nipping lever 22 may be inserted or removed when the slot 25.1 registers with the aperture 23 of the bracket member. A stop 25.2 prevents such registration from occurring inadvertently after assemblage of the parts.

The actuating bar 21 that controls the disposition of the nipping levers 15 and 22 is vertically slidable with respect to the bracket member 9. On the reduced shank portion 29 of the bar 21, a helical spring 28 bears against the lever 15 and urges it against a shoulder 29 on the bar and normally urges the upper lever 15 to its rod gripping position. The reduced shank 29 of the bar 21 slides freely in a thimble 30 seated in the arm 12 of the bracket member 9.

At the upper end of the bar 21, there is a transverse arm 31 which is in the form of a plate, apertured to loosely embrace the tube 1, and which terminates in a lip 32 that rides in a slot in the bracket member 9, being in effect a shoulder on the bar 21 positioned to engage the short arm 33 of the nipping lever 22 in front of the bracket member 9 so as to swing said lever 22 from the position in which it is shown in full lines in Fig. 5 to its horizontal position 22.1. To this end the arm 31 is clamped between a shoulder 34 on the bar 21 and a thimble 35 which is loosely mounted on the reduced shank 36 at the upper end of the bar 21.

The thimble 35 is loosely slidable through the arm 11 of the bracket member 9 and the upper arm 14 of the handle 13 and its upper end 37 serves as a control button in position to be depressed by the thumb of the hand of the operator which is grasping the handle 13 for shifting the bar 21 against the spring 28. Thus when the button 37 is depressed, the lip 32 bears against the short arm 33 of the nipping lever 22 and raises the nipping lever 22 out of gripping engagement with the tube 1; and similarly, the shoulder 29 depresses the nipping lever 15 toward a level position so as to release its grip on the tube 1; thus permitting the handle 13 and the bracket member 9 to be slid freely either up or down along the tube 1 as circumstances may require.

The guide cap 38 on the lower end of the extension rod 2 slides on the walls of the tube 1 so as to properly guide the rod 2 for longitudinal sliding within the tube 1. This cap is fastened to the tube 2 by rivet 39 and being wider than the rod 2, as shown in Fig. 9, spaces the side of the tube which is at the left of Fig. 5 sufficiently far from the slotted front wall 25 to permit of the necessary movements of the nipping lever 22. The cap also provides a shoulder 40 at the lower end of the rod 2 positioned to engage the inner end of the nipping lever 22 to shift it to its released position 22.1 so as to lift the bracket 9 and the parts that it carries when the upward movement of the extension rod 22 requires raising of the housing 7 after the screen has reached the limit of its unwinding from the reel within the housing.

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

We claim:

1. A device of the class described, comprising a rod, a bracket mounted to slide along said rod,

a nipping lever fulcrumed on said bracket, spaced shoulders on said lever selectively gripping and releasing said rod through tilting of said lever, said lever being normally urged into its rod gripping position, and means on said bracket adapted to be actuated for shifting said lever to its released position.

2. A device of the class described, comprising a rod, a bracket slidable along said rod, a nipping lever fulcrumed on said bracket, spaced shoulders on said lever selectively gripping and releasing said rod through tilting of said lever, said lever being normally urged into its rod gripping position, and means on said bracket adapted to shift said nipper lever to its released position, said means comprising a thumb-operable control element.

3. In a picture screen stand, the combination of an upright rod, a screen bracket member vertically slidable on said rod, a nipping lever carried by said bracket member and normally urged to lock said member against downward movement along said rod, a second nipping lever carried by said bracket member and normally urged to lock said member against upward movement along said rod, and means for releasing said nipping levers from their locking position.

4. In a picture screen stand, the combination of an upright rod, a screen bracket member vertically slidable on said rod, a nipping lever carried by said bracket member and normally urged to lock said member against downward movement along said rod, a second nipping lever carried by said bracket member and normally urged to lock said member against upward movement along said rod, means for simultaneously shifting said nipping levers to their released positions, and a control element for actuating said means.

5. A device of the class described, comprising an upright rod, a bracket member positioned on one side of said rod and having upper and lower transverse arms apertured to receive and embrace said rod for slidably mounting said bracket member thereon, a nipping lever fulcrumed on said bracket member and apertured to provide opposed nipping shoulders spaced apart and slidable freely along said rod in one position of said lever and gripping said rod in an inclined position of said nipping lever, said nipping lever being normally urged into such gripping position, and finger actuated means mounted on said bracket for shifting said nipping lever to a released position with respect to said rod.

6. A device of the class described, comprising an upright rod, a bracket member positioned on one side of said rod and having upper and lower transverse arms apertured to receive and embrace said rod for slidably mounting said bracket member thereon, a pair of nipping levers spaced apart along said rod, being each fulcrumed on said bracket member and apertured and providing opposed nipping shoulders spaced apart and slidable freely along said rod in one position and gripping said rod in an inclined position of said lever, said nipping levers being adapted to lock said bracket member against movement in respectively opposite directions along said rod, and finger actuated means mounted on said bracket for shifting said nipping levers to their released positions with respect to said rod.

7. A device of the class described, comprising an upright rod, a bracket member positioned on one side of said rod and having upper and

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lower transverse arms apertured to receive and embrace said rod for slidably mounting said bracket member thereon, a pair of nipping levers spaced apart along said rod, being each fulcrumed on said bracket member and apertured and providing opposed nipping shoulders spaced apart and slidable freely along said rod in one position and gripping said rod in an inclined position of said lever, said nipping levers being adapted to lock said bracket member against movement in respectively opposite directions along said rod, and an actuator bar extending between said transverse bracket arms, being slidable longitudinally of said rod and shouldered to engage and shift said nipping levers to their released positions.

8. A device of the class described, comprising an upright rod, a bracket member positioned on one side of said rod and having upper and lower transverse arms apertured to receive and embrace said rod for slidably mounting said bracket member thereon, a pair of nipping levers spaced apart along said rod, being each fulcrumed on said bracket member and apertured and providing opposed nipping shoulders spaced apart and slidable freely along said rod in one position and gripping said rod in an inclined position of said lever, said nipping levers being adapted to lock said bracket member against movement in respectively opposite directions along said rod, one of said nipping levers being normally urged by gravity toward its rod gripping position, a spring normally urging the other nipping lever to its rod gripping position, and finger actuated means mounted on said bracket for shifting said nipping levers to their released positions with respect to said rod.

9. A device of the class described, comprising a tube of uniform cross-section having a flat wall with a longitudinal slot therein, a bracket member mounted on and slidable along said tube and having a body part lying along and spaced outward from said flat wall, a nipping lever fulcrumed on said body part and extending through said slot, shoulders on said lever spaced apart to allow said lever to slide freely along said slot when said lever is in one position and to have nipping engagement with the inner and outer faces of said flat wall when said lever is in an inclined position, and means mounted adjacent to said bracket to control the inclination of said nipping lever.

10. A device of the class described, comprising a tube of uniform cross-section having a flat wall with a longitudinal slot therein, a bracket member having a body part spaced outward from said flat wall and having vertically spaced arms slidably engaging said tube, a nipping lever fulcrumed on said bracket member and extending through said slot, shoulders on said lever spaced apart and having nipping engagement with the inner and outer faces of said flat wall when said lever is in an inclined position with respect to said wall and slidable freely along said slot when said lever is released from such inclined position, and thumb-actuable release means for shifting said lever to a released position.

11. A device of the class described, comprising a rod, a bracket member having a body part spaced from said rod and having arms at opposite ends thereof extending across said rod and apertured to slidably fit said rod, a pair of nipping levers fulcrumed on said body part, having nipping engagement with said rod when in one

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angular position and being slidable freely along said rod when in another angular position relative thereto, said nipping levers being normally urged to lock said bracket member against movement in respectively opposite directions along said rod, a bar extending along said rod and being loosely supported by said bracket arms and longitudinally shiftable between them, and shoulders on said bar engaging and shifting said nipping levers to released positions through movement of said bar.

12. A device of the class described comprising a rod, a bracket member disposed at one side of said rod and having spaced transverse arms extending across and loosely embracing said rod for sliding engagement therewith, a pair of nipping levers fulcrumed on said bracket member for locking same against movement in respectively opposite direction, and each having a pair of shoulders for nipping engagement with said rod in one angular position of said levers and for disengagement therefrom in another angular position of such respective levers, an actuator bar extending along said rod and being mounted on said bracket and longitudinal reciprocally movable between said arms, shoulders on said bar engaging and tilting said nipping levers to their disengaged positions when said bar is moved in one direction, and a spring normally urging said bar in the opposite direction.

13. A device of the class described, comprising an upright tubular rod of rectangular cross-section having a longitudinal slot in one wall thereof, a bracket member spaced outward from said slotted wall, a pair of arms fixed on said member, being spaced apart vertically and apertured to embrace said rod for slidably connecting said bracket member thereto, a nipping lever fulcrumed on said bracket, extending through said slotted wall and having shoulders spaced apart and gripping said wall and locking said bracket against upward movement when said lever is tilted downward from its fulcrum and releasing said wall when said lever is raised, said nipping lever being normally urged by gravity to its gripping position, a second nipping lever fulcrumed on said bracket member, embracing said tube and having shoulders spaced apart and gripping said rod and locking said bracket against downward movement when said second lever is tilted upward from its fulcrum and releasing such grip when lowered, an actuator bar extending along said rod and being longitudinally reciprocally movable between said arms, a shoulder on said bar bearing downward on said second nipping lever releasing its grip, an arm fixed on said bar and extending over and beyond the fulcrum of said first mentioned nipping lever and having a shoulder bearing on said lever and releasing its grip on said tube wall through downward movement of said actuator bar, and a spring normally urging said second nipping lever and actuator bar upward on said bracket.

14. A picture screen stand, comprising an upright tube of uniform rectangular cross-section having a longitudinal slot in its front wall, a bracket plate spaced in front of said wall in substantially parallel relation thereto, vertically spaced flanges on said plate extending horizontally rearward, being apertured to slidably embrace said tube and extending rearward therefrom, a nipping lever having a neck extending through the slot in said wall, said lever having spaced laterally extending shoulders at the ends of said neck clampingly engaging said wall when said lever is inclined downwardly, and said lever

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being extended to a point forwardly beyond said bracket plate, said plate being slotted to provide vertically opposed shoulders between which said nipping lever is loosely fulcrumed, said nipping lever being normally urged by gravity to its wall clamping position, a second nipping lever apertured to slidably embrace said tube and having spaced shoulders for clamping engagement therewith when such lever is inclined upwardly from its fulcrum, said plate being slotted to provide vertically opposed shoulders between which said second lever is fulcrumed, an actuator bar disposed vertically between said tube and handle, being vertically reciprocally movable between said bracket flanges and extending upward through the upper flange and being manually depressible, an arm fixed on said actuator bar and extending forward above said first mentioned nipping lever to provide a shoulder in front of said plate to tilt such lever to a released position through a downward movement of said actuator bar, a shoulder on said actuator bar engaging said second nipping lever releasing its grip on said tube through such downward movement of said actuator bar, and a spring normally urging said actuator bar and second nipping lever upward.

15. In a picture screen stand, an upright tubular rod, an extension rod telescopingly slidable within said tubular rod, a screen bracket member vertically slidable along said tubular rod, a nipping lever carried on said bracket member and normally urged to lock said member against upward movement on said tubular rod, and a

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shoulder on said extension rod engageable with said nipping lever to release said lever through the upward movement of said extension rod.

16. A device of the class described, comprising a tube of uniform cross-section having a flat wall with a longitudinal slot therein, a bracket member mounted to slide along said tube and having a body part lying along and spaced outward from said flat wall, a nipping lever fulcrumed on said body part and extending through said slot, shoulders and a neck therebetween on said lever said neck sliding freely along said slot when said lever is in one position and said shoulders having nipping engagement with the inner and outer faces of said flat wall when said lever is in an inclined position, said nipping lever being normally urged into its nipping position, an extension rod telescopingly slidable within said tube, and a shoulder on said extension rod engageable with said nipping lever through the movement of said extension rod along said tube to release said lever.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,382,025	Raven	Aug. 14, 1945
2,434,071	Heck	Jan. 6, 1948