

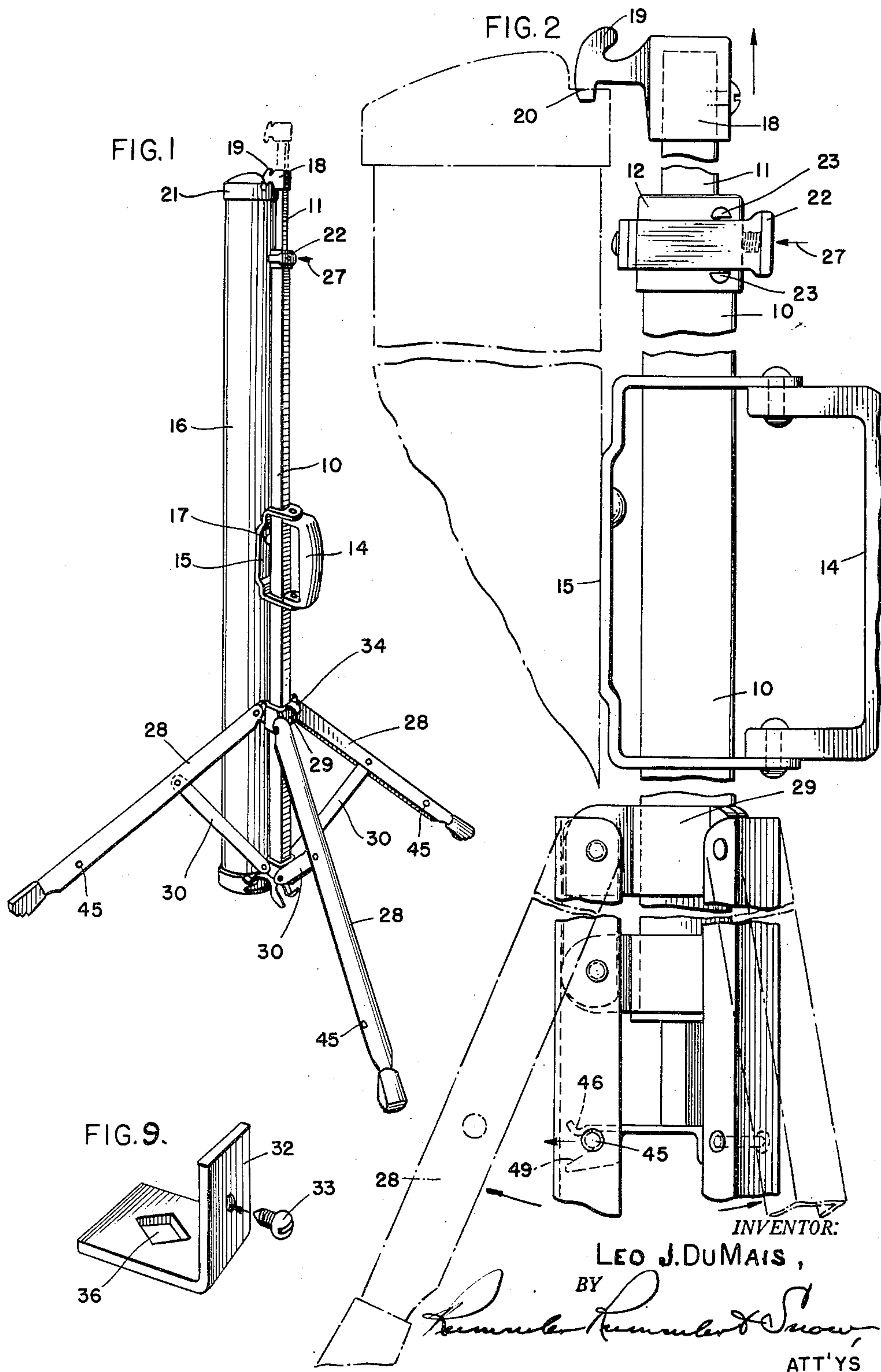
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L. J. DU MAIS
PICTURE SCREEN STAND

2,659,559

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2 Sheets-Sheet 1



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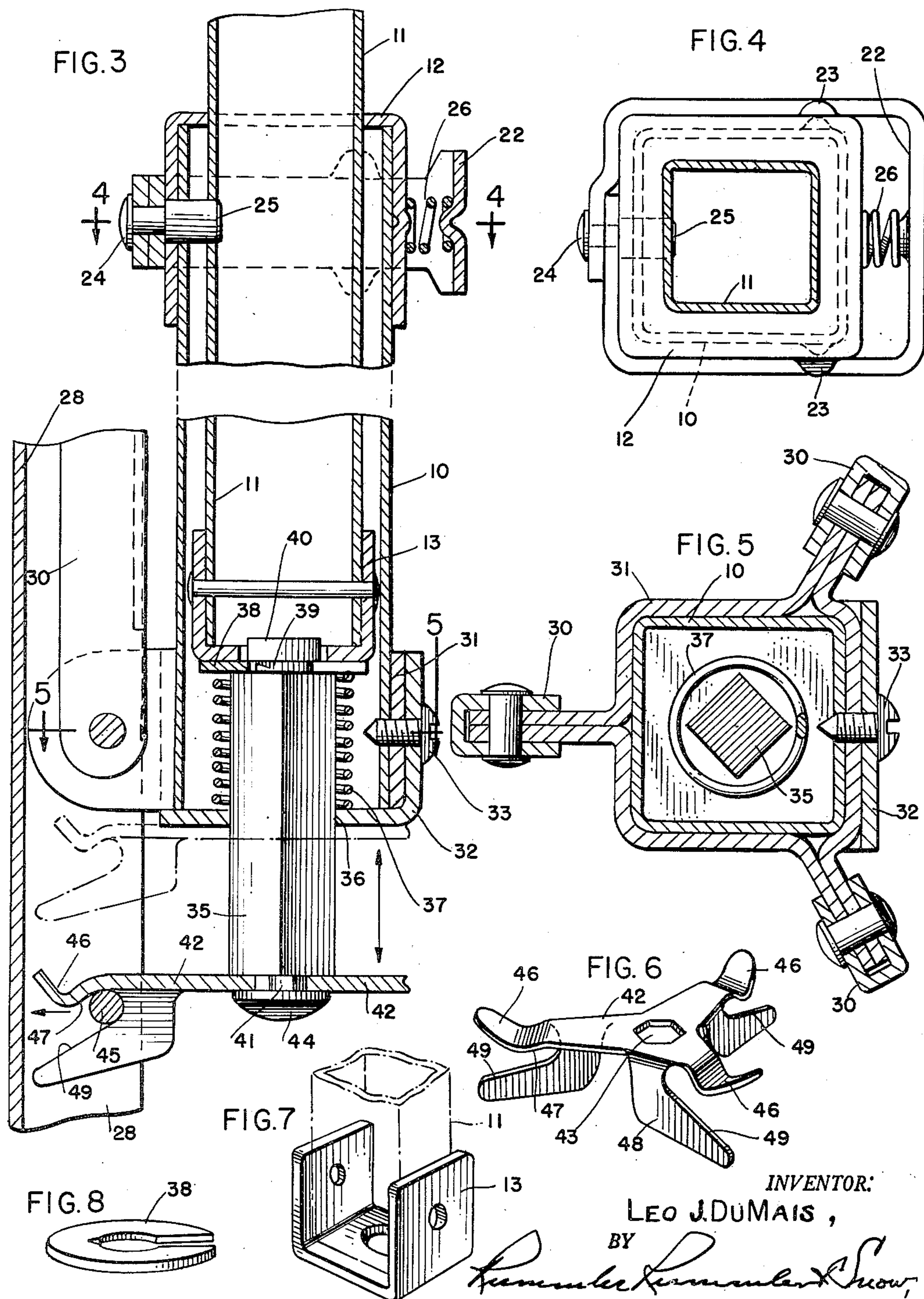
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PICTURE SCREEN STAND

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This invention relates to stands for screens upon which pictures are projected and has particular reference to devices for controlling the disposition of the tripod legs upon which the stand is mounted.

The main objects of this invention are to provide improved means for securing the tripod legs in a retracted position in which they lie along and close to the standard for compact disposition when not in use; and to provide improved means for causing the tripod legs to swing apart to their stand-supporting position.

A further object of this invention is to provide an improved relation between the screen housing, the standard, its extension rod and the legs of the tripod, whereby these parts are firmly secured in compact relation to each other for storage and transportation and whereby are all released for convenient erection of the screen and its stand upon the release of a single latch member.

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

Figure 1 is a perspective view of the screen and its stand in which the parts are shown in the positions which they occupy just prior to collapsing the legs of the tripod into their retracted position with respect to the standard.

Fig. 2 is a fragmentary detail, in side elevation, of parts of the device illustrating the manner in which the tripod legs are held in compact relation to the standard.

Fig. 3 is a similar fragmentary view, partly sectional, showing the structure and arrangement of the latching devices.

Fig. 4 is a transverse section of the extension rod latch taken on the line 4—4 of Fig. 3.

Fig. 5 is a transverse section taken on the line 5—5 of Fig. 3.

Fig. 6 is a perspective view of the member which serves as a latch for holding the legs in their retracted relation to the standard and provides cam tracks by means of which the tripod legs are forced apart to their positions of load-supporting relation to the standard.

Fig. 7 is a detail, in perspective, of the cap on the lower end of the extension rod.

Fig. 8 is a detail of a split washer that serves as an abutment for the compression spring that releases the extension rod from its locking engagement with the screen housing and also furnishes the power which forces the tripod legs apart.

Fig. 9 is a detail, in perspective, of the cap on the lower end of the standard.

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In the form shown, the tripod standard and screen housing are of well-known construction with but slight modification for the accommodation of the latching devices of the present invention.

The main standard 10 is a tube having an extension rod 11 telescoping therewith and being guided in its vertical movement by cap 12 on the upper end of the standard 10 and a cap 13 on the lower end of the extension rod which is loosely slidable within the inner walls of the tube 10.

A handle 14 is carried by a bracket 15 on the standard 10, to which bracket the screen housing 16 is pivotally mounted at 17 so as to swing from the position of parallelism with the standard 10, in which it is shown in the drawings, to a position at right angles to the standard. A cap 18 at the upper end of the extension rod 11 has an upturned hook 19, upon which the ball of the screen may be hung, and has a depending finger or prong 20 for engaging a socket in the cap 21 on the end of the screen housing 16. A latch member 22 is mounted on the standard 10 and engages the extension rod 11 for locking the extension rod and housing 16 in the positions in which they are shown in Figs. 1 and 2.

In the form shown, the latch member 22 is in the form of a looped band that embraces the cap 12 and has spaced parallel side portions guided for transverse movement on the cap by lugs 23. The overlapped ends of the band that forms the latch member 22 are secured together by a rivet 24 which is extended to form a latch lug 25 adapted to engage an aperture in the adjacent wall of the tube 11. As will be understood, there may be a number of such apertures spaced apart along the rod 11 appropriately located for engagement with the latch lug 25 in the position in which the parts are shown in the drawings and in various other positions to which the extension rod may be desirably withdrawn from the standard 10 for appropriate support of the screen. A helical compression spring 26 normally urges the latch lug 25 into engagement with the extension rod 11 and yields to permit the latch lug to be withdrawn from such engagement by pressure upon the latch member 22 in the direction of the arrow 27 of Figs. 1 and 2.

The standard 10 is supported in its upright position, as shown in Fig. 1, by tripod legs 28 that are pivotally mounted on an upper bracket member 29 that is loosely slidable along the standard 10 and that are connected by spreader links 30 to a bracket 31 that is fixed at the lower end of the standard 10 by means of a cap plate

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32 and screw 33. As indicated in the drawings, the legs 28 and the spreader links 30 are of channel shape in cross section. The bracket member 29 is provided with a finger-hold 34 whereby it may be lifted along the standard 10 to collapse the legs 28 of the tripod into a position in which they lie close to and parallel with the standard 10.

The mechanism for holding the tripod legs in their collapsed position and releasing them from this position and projecting them outward toward their load-supporting position comprises a stem 35 which is of rectangular or other prismatic cross section so as to be axially but non-rotatably slidable in the aperture 36 in the cap 32. The stem 35 is surrounded by a helical compression spring 37 that bears between the cap 32 and a projecting abutment shoulder 33 at the upper end of the stem 35. This shoulder is in the form of a split washer 38 seated in a groove 39. The cap 13 at the lower end of the extension rod 11 is apertured so as to clear the head 40 of the stem 35, and to rest firmly on the washer 38; but is freely movable upwardly away from the stem 35.

Rigidly fixed on the lower end of the stem 35 by a rivet shank 41 is a latch member 42, which has spider arms positioned to coact with the tripod legs. To this end the member 42 has a hexagonal aperture 43 snugly fitting the rivet shank 41 so that upon upsetting the rivet shank to form a head 44, the member 42 will be rigidly fixed on the lower end of the stem 35 with its various parts in proper location for coaction with the legs of the tripod, as will hereinafter appear.

Each of the tripod legs 28 has a rivet 45 extending across its channel and serving as a keeper lug positioned to coact with one of the latch tongues 46 on the latch member 42, when the tripod legs 28 are in the retracted position indicated in Figs. 2 and 3 and the stem is in its lowermost position, due to the compression of the spring 37. When the parts are in this position, the keeper lugs 45 will be releasably held against displacement from the member 42 by detent shoulders 47 on the respective yielding spring latch tongues 46. When the extension rod 11 is held in the depressed position in which it is shown in Figs. 1, 2 and 3 by means of the latch 22, the spring 37 will be compressed and the member 42 will be in position for engagement with the keeper lugs 45 of the tripod legs.

In addition to having detent shoulders 47, the latch member 42 is provided with arms 48 which stand in planes at right angles to the plane of the body portion of the member 42 and have inclined edges 49 that serve as cam tracks for engaging the shoulders provided by the respective keeper lugs 45 and forcing the tripod legs 28 apart when the member 42 is lifted by the expansion of the spring 37 upon release of the extension rod 11 from the latch 22.

The operation of the device shown is as follows:

To bring the parts to their collapsed position for storage, after the device has once been set up and is standing on its tripod, the screen housing 16 is first turned on its axis 17 so as to lie along the standard 10, then the cap 13 is depressed by the operator from its normal position, indicated by dotted lines in Fig. 1, to the position shown by full lines in Fig. 1. The finger 20 will then have become seated in the screen housing and the extension rod will have been depressed to allow the latch lug 25 to fall into the corresponding

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aperture in the extension rod 11. The depression of the rod 11 will have retractively compressed and energized the spring 37 and will have lowered the latch member 42 to position for coaction with the keeper lugs 45 on the tripod legs. Then by lifting the finger-hold 34, the operator causes the legs 28 of the tripod to swing to their collapsed position with the keeper lugs 45 engaged behind the shoulders 47 of the spring tongues 46. The device is now ready for storage or convenient transportation.

To set the device up for use, the operator holds it by the handle 14 with the standard 10 in a vertical position and presses upon the latch member 22. Upon release of the extension rod 11 by this latch member, the spring 37 expands and lifts the extension rod 11 sufficiently to carry the lug 20 out of engagement with the screen housing. The expansion of the spring 37 causes the stem 35 to be projected upwardly rapidly until stopped by the engagement of the member 42 with the cap 32.

Due to this sudden lifting of the member 42, the detent shoulders 47 release the keeper lugs 45 and the cam tracks 49, running on the keeper lugs 45, throw the legs 28 outward with sufficient force to carry them to or close to their load-supporting position, whereupon the device can be set upon the floor, the screen housing turned to its horizontal position and the screen attached to the hook 19. Thereupon the extension rod can be lifted to any desirable height and locked in such place by engagement of the latch lug 25 with an appropriate aperture in the extension rod 11.

Although but one specific embodiment of this invention is herein shown and described, it is 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.

I claim:

1. A screen stand, comprising a tubular standard, an extension rod telescoping into said standard, a sleeve slidable along said standard, a plurality of legs located for supporting said standard in an upright position and pivoted on said sleeve, a bracket on said standard spaced from said sleeve, links connecting said legs to said bracket for swinging said legs toward and away from said standard through sliding movement of said sleeve, a stem telescopically slidable in the end of said standard adjacent to said legs, a compression spring normally urging said stem inward along said standard, said extension rod being slidable into position to depress said stem and compress said spring, latch means acting between said standard and extension rod for holding said springs compressed, shoulders on said legs, and cam means on said stem adapted to bear on said shoulders to spread the legs apart through the expansion of said springs upon the release of said latch means.

2. A screen stand, comprising a tubular standard, a pair of bracket members, one being fixed and the other being slidable on said standard, a plurality of legs hinged on one of said bracket members and linked to the other to swing into and out of a collapsed position along said standard, yieldable spring latches acting between said legs and standard to hold said legs in a collapsed position, a stem telescopically slidable into one end of said standard, an extension rod telescopically slidable into the other end of said standard and adapted to engage and depress said

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stem, a compression spring acting between said standard and stem and normally urging said stem inward along said standard, a latch acting between said standard and said extension rod to hold said stem depressed against said compression spring, a shoulder on each of said legs, and cam tracks on said stem shaped and located so as to engage said shoulders and force the legs apart when said extension rod is released by said last-named latch.

3. A screen stand comprising a tubular standard, legs hingedly mounted adjacent one end of said standard and swingable between spread apart positions and collapsed positions against said standard, keeper means on said legs, latch means on said standard shiftable into and out of position for latching engagement with said keeper means, a spring normally urging said latch means out of such latching engagement, a stem connected to said latch means and extending into said standard and an extension rod slidable within said standard and adapted to coact with said stem to shift said latch means into position for such latching engagement against the action of said spring.

4. A screen stand comprising a tubular standard, legs hingedly mounted adjacent one end of said standard and swingable between spread apart positions and collapsed positions against said standard, keeper means on said legs, latch means on said standard shiftable into and out of position for latching engagement with said keeper means, a spring normally urging said latch means out of such latching engagement, cam means connected to and shiftable with said latch means and coacting with said keeper means to spread said legs apart when said latch means are shifted by said spring, and an extension rod slidable within said standard and adapted to shift said latch means into position for such latching engagement against the action of said spring.

5. A screen stand, comprising a standard, a set of legs mounted on said standard to swing be-

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tween a spread apart position and a retracted position along said standard, shoulders on said legs, a stem slidable along said standard adjacent said legs, leg latch means on said stem and movable therewith into and out of position for latching engagement with such leg shoulders, cam tracks on said stem adapted to engage such leg shoulders and spread said legs apart as said latch means are moved out of position for said latching engagement, a spring acting between said standard and stem and normally urging said latch means out of said position for said latching engagement, means for retractively energizing said spring and returning said leg latch means to said latching position, and other latch means on said standard adapted to releasably prevent the movement of said leg latch means out of said latching position.

6. A screen stand, comprising a standard, a set of legs mounted on said standard to swing between a spread apart position for supporting said standard and a retracted position along said standard, yielding leg latch means adapted to coact to releasably hold said legs in such retracted position, cam means on said standard and engageable with said legs and movable to force said legs apart, a spring normally urging movement of said cam means to force said legs apart, and other latch means on said standard interconnected with said cam means and adapted to releasably hold said spring and cam means retracted.

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