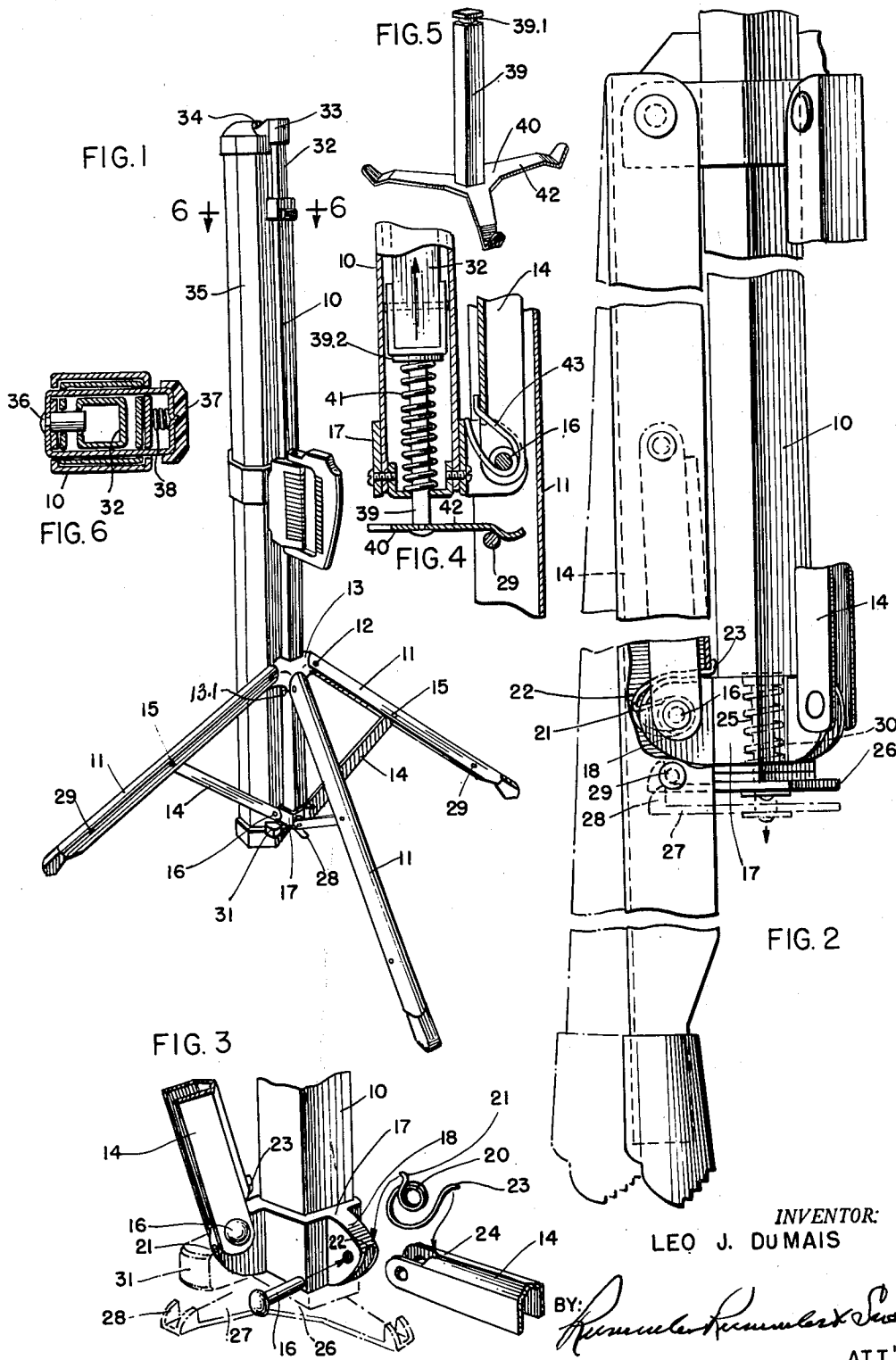


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TRIPOD SCREEN STAND
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TRIPOD SCREEN STAND

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4 Claims. (Cl. 248—171)

This invention relates to stands of the type in which a vertical standard is supported by legs that are collapsible for compact disposition against the standard, and has particular reference to portable screens upon which motion pictures are projected.

The main objects of this invention are to provide an improved construction whereby the legs, usually three in number, of the stand are readily collapsible as a unit so as to lie along the standard, having improved spring-actuated means for normally urging the legs to a spread-apart position for supporting the standard; and to provide improved latching means for holding the legs collapsible; and to provide improved means for automatic release of leg latching means.

This invention is a specific improvement on the structure of my copending application Serial No. 232,407 filed June 19, 1951, now Patent No. 2,659,559, in which certain features of the leg latching mechanism are described and more broadly claimed.

Two specific embodiments of this invention are shown in the accompanying drawings, in which:

Figure 1 is a perspective view of a portable picture screen stand of the general form to which this invention relates, showing its legs in their spread position for supporting the standard erect and its screen housing turned to and latched in a position parallel with the standard.

Fig. 2 is a fragmentary detail in vertical elevation particularly directed to the construction of one arrangement of the devices for spreading the legs and for latching them in their collapsed position.

Fig. 3 is an exploded perspective view showing details of certain parts of the device of Fig. 2. Fig. 4 is a sectional detail of a modified form of the leg latching mechanism.

Fig. 5 is a perspective view of the leg latching member of the same.

Fig. 6 is a sectional detail taken on the plane of the line 6—6 of Fig. 1 showing a suitable structure for the extension rod holding latch.

In the form shown in the drawings, the stand is of a general form that is the subject of Patent No. 2,591,244, issued April 1, 1952, to the present applicant jointly with Frank Prokop and Hugo Bernzott, for Portable Screen Stand. The present structure comprises an upright standard 10 mounted upon tripod legs 11. The legs 11 are pivotally connected at 12 to a bracket member 13 in the form of a sleeve that is slidable along the standard. The legs 11 are braced in their normal position for supporting the standard upright by spreader links 14 that have their upper or outer ends connected by pivots 15 to the legs 11, and have their lower or inner ends connected by pivots 16 to a bracket 17 that is fast on the lower end of the standard 10. A limit stop 13.1 is provided for limiting the downward movement of the slidable bracket 13 and thus determines the expanded position of the legs 11. The legs 11 and the links 14 are of inverted channel-shape in cross section, as shown in the drawings, for the sake of lightness and appearance.

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In the drawings two forms of mechanism are shown for releasably latching the legs in a collapsed position along the standard for compact storage of the device when it is not in use.

In the form shown in detail in Figs. 2 and 3, bracket 17 is a sheet metal stamping of such form that its hinge lugs 18 appear to be solid when viewed from above, but these are actually of inverted U-shape in vertical section, comprising cheek plates bored transversely to receive the pivot pin 16 and spaced apart to provide a recess closed at the top to house a helical torsion spring 20. This spring is loosely coiled about the pivot 16 with one radial arm 21 bearing against the shoulder 22 on the lug 18, and with its other arm 23 bearing against the shoulder 24 on the link 14. The spring 20 is of unique helical spiral form comprising a plurality of convolutions of like diameter supported on the pivot 16. One end convolution terminates in the arm 21 and the other end convolution is spirally expanded to a considerably greater diameter and terminates in the arm 23, which extends outward and upward around and clear of the shoulder 22 so as to allow the link 14 to swing upward to a position substantially parallel with the standard 10 as shown in Fig. 2. Both arms 21 and 23 are bent inward over the helical convolutions so that their ends are in a common plane at right angles to the axis of the helix.

A stem 25 is vertically slidable into the lower end of the standard 10, and carries at its lower end a latch member 26 in the form of a plate having spider arms 27 with latch hooks 28 at their ends, positioned so as to enter between the side flanges of the channel-shaped legs 11 to engage keeper studs 29, which are formed by rivets, as will be understood. The stem 25 is of non-circular cross section so that it supports the plate 26 in a non-rotatable position, and is normally urged by a compression spring 30 into position for latching engagement with keeper studs 29 when the legs are in their collapsed position. A finger-hold 31 permits the latch to be shifted to release the legs.

The specific form of leg latching mechanism shown in Fig. 2 is described and claimed in Patent No. 2,591,244, above referred to.

In the form shown in Figs. 4 and 5, the leg latching mechanism is automatically controlled by the position of the extension rod 32 which is telescopingly slidable within the standard 10 and which has a hook 33 at its upper end that engages a recess 34 in the screen casing 35 for holding the latter in parallel relation to the standard 10 when the extension rod 32 is depressed into the standard, as shown in Fig. 1. In this position, the extension rod is releasably locked by a latch bolt 36 seated in a recess in the extension rod 32 and controlled by a button 37 and spring 38.

As indicated in Fig. 4, the lower end of the extension rod 32, when this is in its depressed position, abuts against the upper end of the stem 39 of the latch member 40 to depress the latter against the action of a compression spring 41. The upper end of the stem 39 is provided with a groove 39.1 to receive a split washer 39.2 against which the spring 41 bears.

When the extension rod is in the position for engagement with the screen casing, as shown in Fig. 1, the lower end of the extension rod carries the latch member 40 to the position where it is shown in Fig. 4. In this form the member 40 comprises a plate of resilient material, such as spring steel, shaped to provide an individual tongue 42 shaped for latching engagement with its respective keeper 29 of the leg 11.

The latching end of the tongue is of cam formation such that, when in the position of Fig. 4, it will securely hold the leg in its collapsed position; but due to the resiliency of the tongue the keeper may be cammed into

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and out of engagement with the latch tongue by appropriate force applied to the leg 11.

In operation the latch mechanism of Figs. 2 and 3 will release the legs upon the depression of the button-like finger-hold 31 whereupon the spring 30 shifts the latch tongues or spider arms 27 out of engagement with their respective keepers, whereupon the springs 20 swing the legs to their expanded position.

In the operation of the form shown in Figs. 1 and 4, the arrangement is such that when the extension rod 32 is in the position for locking the screen casing 35 in the position shown in Fig. 1 and the legs are in their collapsed position against the sides of the standard 10, pressure upon the button 37 to withdraw the bolt 36 releases the extension rod 32 and the spring 41 lifts the extension rod so as to remove its hook 33 out of latching engagement with the screen housing and at the same time lifts the stem 39 to carry the latch member 40 out of engagement with the keepers, whereupon the springs 43 throw the legs to their expanded position.

Although two specific embodiments of this invention are 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.

I claim:

1. In a portable screen stand, a tubular standard, legs hinged on said standard and swingable between a spread apart position and a collapsed position, spring means normally urging said legs to such spread position, latch keeper means on said legs, latch means on said standard shiftable into and out of position for engaging said keeper means to hold said legs in collapsed position, spring means normally urging said latch means out of such holding position, an extension rod slidable along said standard, and means operatively connecting said extension rod with said latch means to hold said latch means in such holding position.

2. The combination of claim 6, wherein the keeper engaging latch means comprises an individual spring tongue for each leg, having oppositely inclined cam surfaces for yielding engagement with the keepers on legs of the standard.

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3. In a portable screen stand, a tubular standard, legs hinged on said standard and swingable between a spread apart position and a collapsed position, spring means normally urging said legs to such spread position, latch keeper means on said legs, latch means on said standard shiftable into and out of position for engaging said keeper means to hold said legs in collapsed position, spring means normally urging said latch means out of such holding position, an extension rod slidable along said standard, means operatively connecting said extension rod with said latch means to hold said latch means in such holding position, and latch means acting between said standard and said extension rod for releasably holding said extension rod in such last-named engagement.

4. In a portable screen stand, a tubular standard, legs hinged on said standard and swingable between a spread apart position and a collapsed position, spring means normally urging said legs to such spread position, latch keeper means on said legs, a latch member at the lower end of said standard having a stem longitudinally slidable into said standard and having tongues for individual engagement with said keeper means, an extension rod telescopically slidable in said standard and adapted to engage said stem for holding said tongues in position to engage said keeper means, latch means on said standard for releasably holding said extension rod in such engagement with said stem, and a spring normally urging said stem upward to shift said tongues out of engagement with said keepers.

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