Oct. 26, 1965 L. J. ARMSTRONG 3,214,121

LATCH FOR MOVIE SCREEN CASING

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FIG. 1

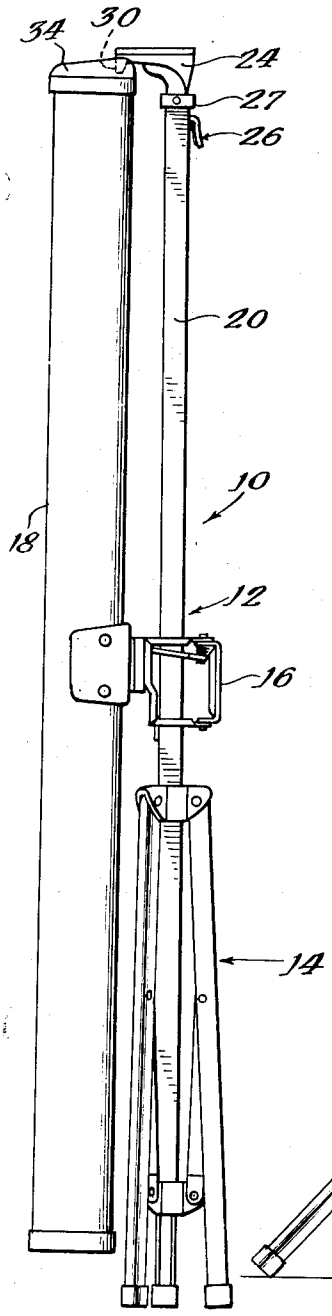


FIG. 2

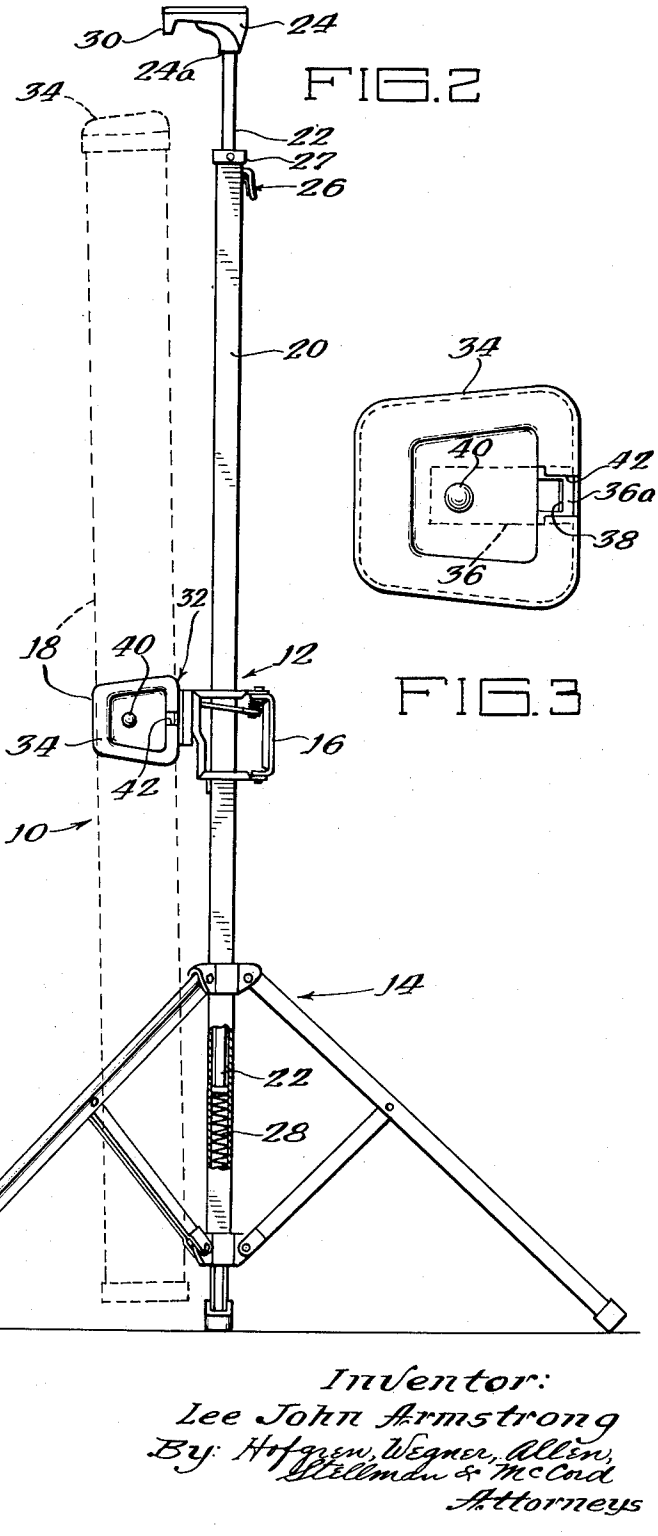


FIG. 3

Inventor:
Lee John Armstrong
By: Hofgren, Wegner, Allen, Stellman & McCord
Attorneys

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FIG. 4

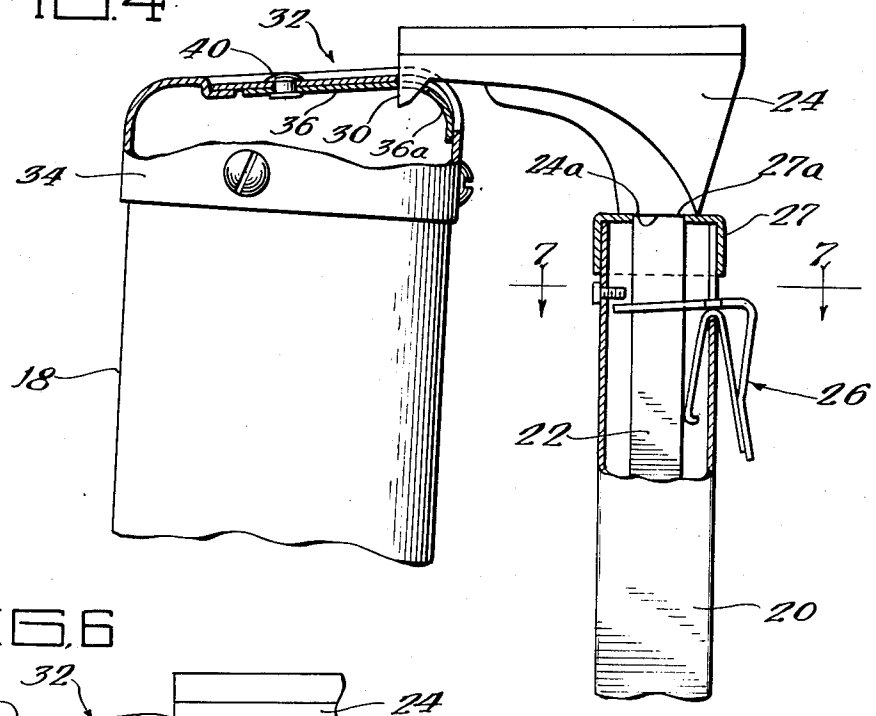


FIG. 6

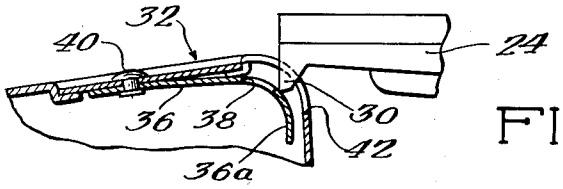


FIG. 5

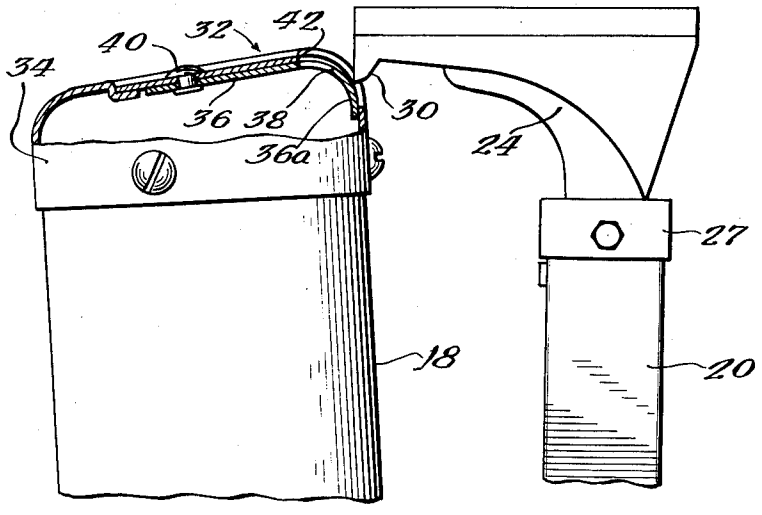
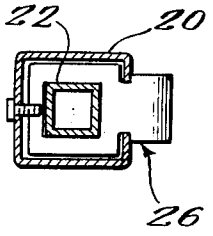


FIG. 7

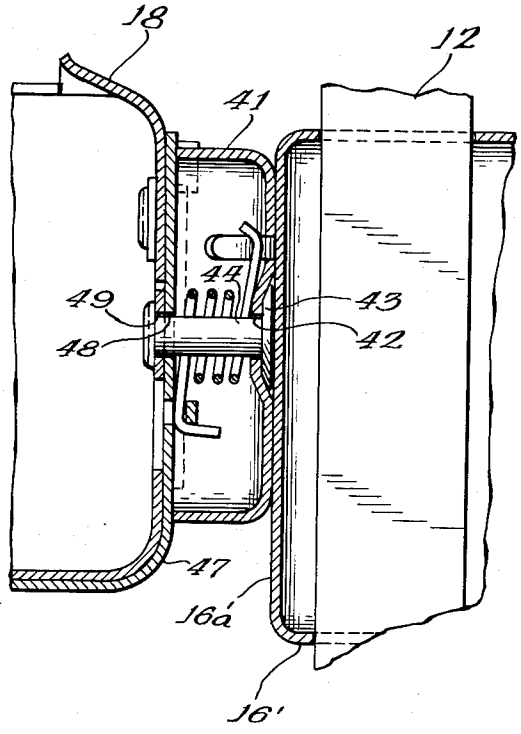


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FIG. 8



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3,214,121

LATCH FOR MOVIE SCREEN CASING

Lee J. Armstrong, Chicago, Ill., assignor to Knox Manufacturing Company, a corporation of Illinois

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8 Claims. (Cl. 248—130)

This invention relates to a portable movie screen device, and more particularly to a new and improved mechanism for securely retaining the casing in closed position parallel to the standard.

With portable movie screens, there has been a constant search to find a better and easier way to retain the screen casing in closed position parallel to the standard. Almost uniformly, the casing has been held in closed carrying position by a stud of the bail support engaging an opening in the end cap of the casing, the stud being held in engagement by a clamping means which adjustably supports the telescoping rod on which the bail support is carried with respect to the tubular standard. The problem of guiding the stud of the bail support into engagement with the well in the end cap of the casing has become more acute in recent years in those screens which utilize internal springs in the standard to affect a "pop-up" action of the telescoping rod in putting the screen device in operative position. When such screens are put away for storage, it has heretofore been necessary to control the clamping means and the casing with one hand while attempting to force the bail support into the well of the end cap of the casing against the somewhat strong action of the internal coil spring. The result is that this is a cumbersome and difficult operation. The present invention obviates all of these difficulties, and for the first time, provides a unique and facile way of engaging the bail support with the end cap of the casing to place the screen device in inoperative position and ready for storage.

The primary object of the present invention is to provide a new and improved structure for detachably securing the bail support to the end cap of the casing.

Another object is to properly position a stop means on the standard so that the telescoping rod can be precisely positioned with respect to the tubular standard so that the bail support and the stud thereon are precisely positioned for engagement with the end cap of the casing.

A further object is to provide a yieldable latch on the end cap of the casing which permits the casing to be moved readily into latching engagement with the stud on the bail support.

Other objects and advantages will become readily apparent from the following detailed description taken in connection with the accompanying drawings, in which:

FIGURE 1 is a side elevational view of the movie screen device with the leg assembly or leg unit in closed position and the screen casing also held in closed position parallel to the standard;

FIGURE 2 is a side elevational view of the movie screen device with the leg unit in supporting position, the leg unit having been released for outward movement to such supporting position by releasable clamp means operative between the telescoping members to permit upward projection of one telescoping member so as to release the casing at the same time as the releasable leg unit to permit the casing to swing automatically from the dotted line position 90° to a full line position perpendicular to the standard as shown;

FIGURE 3 is an enlarged end view of the end cap of the screen casing of this invention;

FIGURE 4 is an enlarged fragmentary view partially broken away in section showing the bail support latched to the end cap of this invention when the movie screen device is in the position as shown in FIGURE 1 to hold the

screen casing in closed position parallel to the standard;

FIGURE 5 is an enlarged fragmentary view partially broken away in section showing the bail support and end cap of the screen casing prior to engagement with the stud of the bail support adjacent the latch means of the end cap;

FIGURE 6 is a fragmentary view partially broken away in section similar to FIGURES 4 and 5 showing the mutual relationship between the stud of the bail support and the latching means of the end cap as the two are brought together in locking relationship;

FIGURE 7 is a section view taken along the line 7—7 of FIGURE 4 illustrating in greater detail the clamp means and its association with the telescoping rod and tubular member of the standard; and

FIGURE 8 is a section view illustrating structure which may be provided for mounting the casing for movement relative to the standard.

The structure of the present invention is intended primarily for use with movie screen devices such as the device shown and described in my Patent No. 3,164,348, issued January 5, 1965. In such movie screen devices, there is a relatively strong coil spring which must be compressed by the telescoping extension rod in order to position the stud of the bail support in interlocking relation with the end cap of the screen casing. Considerable force is needed to depress the extension rod against the action of the coil spring, and it is somewhat difficult to depress the extension rod, to hold the clamping means disengaged from the extension rod and to position the end cap of the casing properly to receive the stud of the bail support in interlocking relation. The device of the present invention greatly facilitates this operation.

As shown in FIGURES 1 and 2, the movie screen device **10** includes a standard generally designated **12** adapted for support by means of a well known tripod-type leg unit generally designated **14** and having a handle **16** providing a means for grasping the movie screen to carry it about. A screen casing **18** is mounted on the forward face of the handle **16** for pivoting relative thereto in a manner illustrated in FIGURE 8 and in the Petrick et al. Patent No. 3,022,816, entitled "Portable Movie Screen," issued February 27, 1962, so that the screen casing 16 when released from its carrying position parallel to the standard as shown in FIGURE 1 will automatically pivot 90° to its operative position perpendicular to the standard, as shown in bold outline in FIGURE 2.

The standard **12** includes a tubular member **20** which has a telescoping rod **22** slidably received therein. The telescoping rod supports the bail support **24** at the free end thereof and is adapted to be held in varying positions of extended adjustment by means of the clamping means or clamping member **26**. Preferably the clamping member is spring biased in a well known manner so that it must be manually released to allow selective positioning of the telescoping rod. The bail support is adapted to support the free end of the movie screen in a well known manner. The aperture cap **27** on the top of the tubular member has an opening **27***a* of a size to permit the rod to pass therethrough but small enough to cooperate with the enlarged underside **24***a* of the bail support to act as a positive stop for limiting insertional movement of the rod relative to the tubular member

A coil spring **28** is positioned in the lower end of the tubular member The function of the coil spring, as described in the aforementioned Armstrong application, is to cooperate with portions of the leg unit and the telescoping rod so that the leg unit can be held adjacent the standard in a closed position as shown in FIGURE 1, and can be permitted when desired to move outwardly therefrom to a supporting position, as shown in FIG-

URE 2. When the telescoping rod is inwardly inserted in opposition to the action of the coil spring and latched in the position as shown in FIGURE 1, the coil spring, through appropriate means not shown herein, is "set" so that when the standard is raised from the floor the leg unit will automatically come to the closed position as shown in FIGURE 1. Similarly, when the clamping member is manually operated to permit the telescoping rod to move upwardly under the influence of the coil spring, the leg unit is similarly permitted to flare outwardly to the supporting position as shown in FIGURE 2. The detail of the structure and operation for accomplishing the aforementioned leg unit positions is described in detail in the aforesaid Armstrong Patent 3,164,348 and will not be described in greater detail herein.

The bail support **24** is provided with a depending stud or lug **30** at the free end thereof which is of a size to cooperatively fit within the latching means **32** in the screen casing end cap **34** of the casing for holding the casing in its carrying position parallel to the standard, as shown in FIGURE 1.

As shown in greater detail in FIGURES 4–6, the latching means includes a spring metal clip **36** having an opening **38** therein and secured to the interior of the end cap by means of a rivet **40**. The end cap is similarly provided with an opening **42** which overlies the opening in the spring clip as well as a portion of the free end **36***a* of the clip to permit passage of the stud **30** therethrough for cooperative latching engagement with the latching means.

The pivotal mounting of the screen casing on the face of the handle permits relative lateral movement between the screen casing and the standard when the casing is upright as shown in dotted outline in FIGURE 2. The incline of the casing relative to the standard is exaggerated for purposes of illustration in FIGURE 2. However, the casing pivotal mounting has sufficient "play" so that it can be moved toward the standard in latching engagement with the bail support as subsequently described herein. FIGURE 8 illustrates the structure shown in Petrick Patent No. 3,022,816 for mounting a screen casing to a handle for movement of the casing relative to the standard as shown in full outline in FIGURES 1 and 2 and in dotted outline in FIGURE 2. To this end, a handle member such as **16′** may be provided with a forward mounting face **16***a′* to which a rectangular cup-shaped housing **41** may be spot welded or otherwise secured. The housing **41** preferably is apertured and depressed as at **42** to receive a head **43** of a mounting rivet **44** affording a trunion or pivot shaft for the casing. The open end of the housing **40** is preferably provided with a casing bracket **47** to which the casing is secured by suitable means. The casing bracket **47** is apertured at **48** and the casing is apertured at **49** to receive the mounting rivet **44**, the downward ends of which hold the casing bracket in position against the housing. The remaining structure of the mounting shown in FIGURE 8 is described in detail in the aforementioned Petrick Patent No. 3,022,816. This pivotal mounting is such that, due to the tolerances between the rivet and the apertures **48** and **49** in combination with the length and weight of the casing itself, there is limited "play" of the casing relative to the standard when the casing is upright as shown in FIGURE 1 and FIGURE 2.

When the telescoping member is inserted into the tube the coil spring is compressed to set the retracting mechanism to permit retraction of the tripod. When the standard is lifted from its supporting surface, the tripod moves to a fully retracted position as shown in FIGURES 1, 4 and 5 with the bail support protruding from the upper end of the tubular member The aperture cap **27** cooperates with the bail support to limit the insertion of the rod into the tube and thus positively position the bail support for latching engagement with the end cap of the screen casing. The screen casing is then

brought upright closely parallel to and adjacent the standard and drawn toward the bail support. As shown in FIGURE 5, the stud of the bail support is closely adjacent to the spring clip. Further movement of the screen casing toward the bail support permits the stud **30** to pass through the opening **42** in the end cap and depress the free end of the spring clip, as shown in FIGURE 6. As the movement of the casing toward the bail support continues the stud registers with the opening in the spring clip and the opposition of the stud to the spring is released permitting the spring to become impaled on the stud as shown in FIGURE 4 where it securely latches the stud within the end cap thereby locking the screen casing in an upright position against movement relative to the standard. The bail support and latch are preferably so arranged so that the latch bears upwardly against the underside of the bail support to firmly anchor the bail support in the latching means as shown in FIGURE 4.

This act of latching the stud of the bail support to the end cap of the screen casing is easily accomplished and may be done independently of the act of retracting the telescoping rod in opposition to the relatively strong coil spring since the latching need not be done simultaneously with the insertion of the telescoping rod. Instead, after the rod has been retracted, the operator is free to grasp the screen casing and draw the same toward the standard to permit the stud to ride over the spring clip and latch in the opening therein. In actual practice it has been found that this movement can be accomplished with one hand, such as with the thumb grasping the standard and the fingers grasping the screen casing and drawing the two together with a squeezing movement to effectively latch the screen to the standard.

The foregoing detailed description is given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, for some modifications will be obvious to those skilled in the art.

I claim:

1. A portable movie screen device, comprising: a standard adapted to be supported in an upright position, the standard including an extension member for varying the height of the standard, said extension being provided with a free end; clamping means for securing the extension member in a depressed position and in varying degrees of extended position with respect to the standard; a screen casing pivoted to the standard for movement between an operative position and an inoperative storage position generally parallel to the standard, said casing being provided with limited lateral movement relative to the standard when the casing is in said parallel position; spring means in the standard engageable with the lower end of the extension member when said extension member is in said depressed position so as to normally urge said extension member outwardly of the standard; and yieldable latch means on one end of the casing for detachably engaging the free end of the extension member after the extension member is depressed and the casing is moved to said inoperative position with the latch means substantially laterally aligned with the free end of the extension member, said free end and latch means engaging in locking relation when the casing is moved laterally toward the standard to hold the casing in parallel relation with respect to the standard.

2. The portable movie screen of claim **1** wherein said standard is provided with a stop means for limiting the retraction of the vertical extension member to position the same for latching engagement with the upper end of the casing when the casing is in said inoperative position.

3. The portable movie screen of claim **1** in which the one end of the casing is provided with an end cap having an opening therein, the latch means on said one end of the casing including a spring secured at one end to the interior of the end cap and having a free end pro-

vided with an opening, the free end of the spring underlying the end cap and having its opening in registry with the end cap opening so that the free end of the extension member will engage within the opening of the free end of the spring when the casing is drawn towards the standard.

4. The portable movie screen in claim 3 in which the free end of the extension member is provided with a depending stud, said stud being positioned to deflect the spring of the latch means to engage within the opening of the spring when the casing is moved towards the standard so as to lock the extension member to the end cap.

5. A portable movie screen device, comprising: a standard adapted to be supported in an upright position; a vertical extension member in said standard for extending the height of the standard, said vertical extension member having a free end with a bail support means on said free end and an overhanging depending stud on the free end of the bail support; a coil spring in said standard near the base thereof and opposinng said vertical extension member; clamping means for securing the extension member in different extended positions with respect to the standard; a screen casing having top and bottom ends with end caps thereon, said screen casing pivoted to the standard for movement between an operative position and an inoperative position generally parallel to the standard, said casing being provided with limited lateral movement relative to the standard when in said parallel position; a yieldable latching means on the top end of the screen casing, said latching means including a spring clip secured at one end to the interior of the top end of the casing with the free top end of the spring clip having an opening therein, an opening in the top of the top end cap of the casing overlying the opening in the spring clip and a portion of the free end of the clip, said latching means adapted for co-operative engagement with the depending stud of the bail support when said vertical extension member is inserted inwardly of the standard and said casing is pivoted to said inoperative position with said depending stud and the opening in said cap and said clip in substantial lateral alignment with each other so that said stud may be brought in direct registry with the opening in the end cap when the casing is moved laterally toward the standard to deflect the spring and impale the spring on the stud to lock the casing to the standard.

6. A portable movie screen device, comprising: a standard adapted to be supported in an upright position, the standard including an extension member for varying the height of the standard, said extension member being provided with a free end; clamping means for securing the extension member in a depressed position and in varying degrees of extended position with respect to the standard; a screen casing pivoted to the standard for movement between an operative position and an inoperative storage position generally parallel to the standard,

said screen casing being provided with limited lateral movement relative to the standard when the casing is in said parallel position; and yieldable latch means on one end of the casing for detachably engaging the free end of the extension member after the extension member is depressed and the casing is moved to said inoperative position with the latch means substantialy laterally aligned with the free end of the extension member, said free end and latch means engaging in locking relation when the casing is moved laterally toward the standard to hold the casing in parallel relation with respect to the standard.

7. A portable movie screen device, comprising: a standard adapted to be supported in an operative position, the standard including an extension member for varying the height of the standard, said extension member being provided with a free end; a screen casing pivoted to the standard for swingable movement between an operative position and an inoperative storage position generally parallel to the standard, the screen casing when in said inoperative position having one end positioned for alignment with the free end of the extension member; clamping means for securing said extension member in a depressed position so that the free end of the extension member is in alignment with said one end of the screen casing when the screen casing is swung to said inoperative position; and yieldable latch means on said one end of the casing, for latching engagement with the free end of the extension member when said extension member is prepositioned in said depressed position and said casing is subsequently swung to said inoperative position and aligned with said free end, said latching engagement being effected by movement of the aligned one end of the casing toward the aligned free end of the extension member.

8. The portable movie screen casing of claim 7 wherein said standard is provided with a stop means operative between the extension member and the standard for positioning the free end of the extension member in a preselected depressed position wherein said free end will be in substantial alignment with the free end of the casing when the casing is in said inoperative position.

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HARRISON R. MOSELEY, *Primary Examiner.*