June 6, 1939. O. WITTEL 2,161,396

SPRING LATCH FOR LANTERN SLIDE FRAMES

Filed Nov. 17, 1937

Fig. 1.

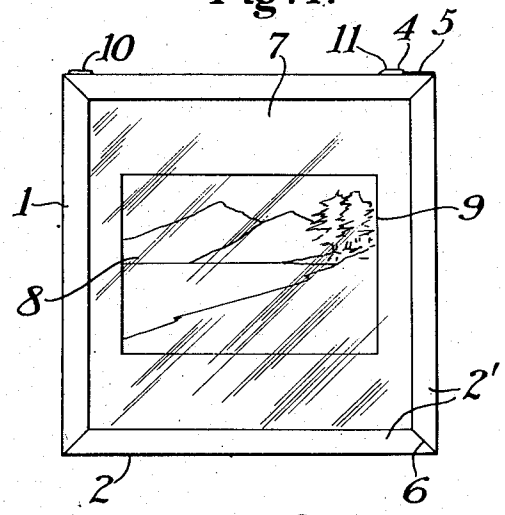


Fig. 2.

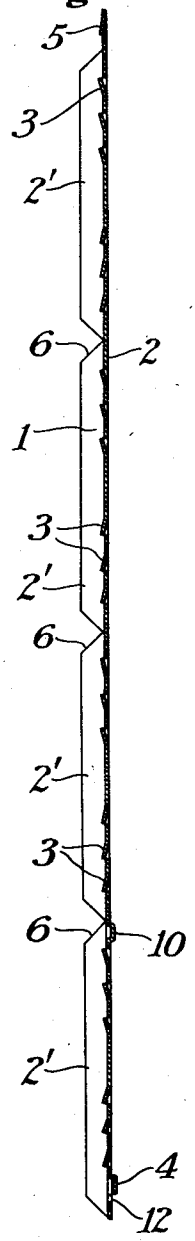


Fig. 3.

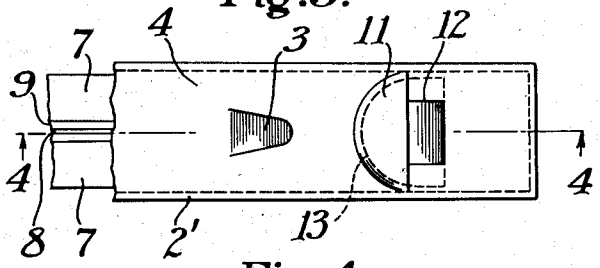
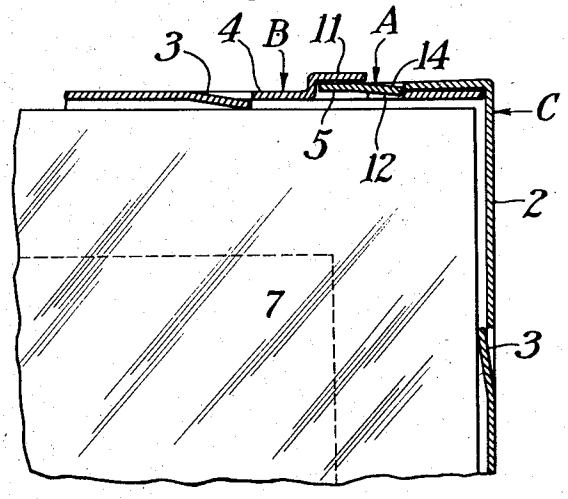


Fig. 4.



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SPRING LATCH FOR LANTERN SLIDE FRAMES

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3 Claims. (Cl. 88—26)

This invention relates to lantern slide bindings and particularly to a metallic lantern slide binding which can be readily attached to and detached from a slide.

One object of my invention is to provide a simple type of snap latch by which a metal lantern slide binding may be held in position to retain the usual pair of glass plates, mask and picture element in place. Another object of my invention is to provide a snap latch which can be readily engaged and released to hold the frame in a fixed position and to provide means in the frame resiliently supporting the slide structure. Still another object of my invention is to provide a device of the class described in which the resilient means for holding the slide structure is so arranged that it facilitates the operation of the latch elements, and other objects will appear from the following specification, the novel features being particularly pointed out in the claims at the end thereof.

It is broadly old to provide a lantern slide binding in the form of a metallic channel member which may have mitered joints so that the channel member may be bent around a lantern slide structure and fastened in place. However, the known types of such bindings have certain disadvantages, particularly as to the application of such bindings to and the removal of such bindings from the usual type of lantern slides.

In referring to lantern slides, I propose to include either a picture element on a single glass plate or such a picture element carried by a glass plate together with a cover glass plate. Frequently the picture elements are carried by a cellulosic base and both sides of the film thus formed are protected by the glass plates and a mask is frequently included with the film negative between the glass plates.

Coming now to the drawing wherein like reference characters denote like parts throughout:

Fig. 1 is a front plan view of a typical lantern slide mounted in a metallic binding constructed in accordance with and embodying a preferred form of my invention.

Fig. 2 is a sectional view through a lantern slide binding member before being applied to a lantern slide.

Fig. 3 is an enlarged fragmentary plan view showing the top of the lantern slide binding spring latch.

Fig. 4 is a section taken on line 4—4 of Fig. 3 showing my improved form of latch element.

In accordance with a preferred embodiment of my invention, as shown in Fig. 1, the lantern slide binding designated broadly as 1 consists of a single sheet of relatively thin metal which is channel-shaped or U-shaped in cross-section. As indicated in Fig. 2, the bottom wall 2 of this channel is preferably equipped with a plurality of spring fingers 3 which may be struck from the metal of the U-shaped member and there are cooperating latch elements 4 and 5 on each end of the channel member which may be brought into engagement to hold the frame in position as will be hereinafter later described. The side portions 2' of the channel members are preferably mitered as at 6, so that they may be folded about the corners of the lantern slide.

This lantern slide may consist of a pair of spaced glass plates 7 between which a picture-bearing element 8 and a mask 9 may be placed, so that this sandwich may be assembled and held together by wrapping the binding 2 around the sandwich, bending the metal strip at the mitered portions 6 and by merely pressing the snap latch elements 4 and 5 together. If desired, a rounded protuberance 10 may be formed on one corner of the frame to inform an operator in the dark as to which side of the frame should be inserted in the lantern.

Coming now particularly to the structure of the snap latch, it will be seen from Fig. 3 that the snap latch element 4 is formed by forming outwardly an arcuate section of the metal 11 to form a guide way and by perforating the metal strip by means of a transverse perforation 12. The metal forming 11 is of a sufficient height to receive a tongue 5 which forms the opposite or complementary shaped snap latch element, this tongue being preferably rounded as indicated at 13 to fit into the guideway 11 and being provided with a downwardly extending projection or protuberance 14 which is adapted to engage an edge of the transverse slot 12 to lock the corners of the frame together.

From Fig. 4 it will be seen that the glass plates 7 are somewhat smaller in size than the outside dimension of the metal binding 1. Consequently, the plurality of spring fingers 3 which are employed and which are cut from the bottom of the channel member 1, resiliently engage the edges of the glass plates so that the frame members are permitted slight movement relative to the glass. This is desirable for a number of reasons: First, the glass plates 7 may be cut to somewhat different outside dimensions so that a single size of metal binding will take care of commercial variations in the sizes of the glass plates forming the lantern slide. Second, the spring fingers 3

are particularly useful because they permit the snap latch structure above described to be easily operated both in fastening the frame on the lantern slide and removing the frame from the lantern slide.

In engaging the latch members, it is only necessary to direct the tongue **5** beneath the guideway **11**, pressing down, if necessary, in the direction shown by the arrow A on the tongue **5**, so that the end of the tongue will pass beneath the end of the forming **11**. This is not always necessary and is only mentioned because actually the metal of which these frames are made is very thin so that the forming **11** only projects above the surface of the metal a distance substantially equal to one thickness of the metal. Pressure applied to the frame along the line C will cause the protuberance **14** to engage an edge of the slot **12** and definitely latch the frame in position with the parts of the lantern slide properly assembled. Since at least two of the parallel sides of the frame are equipped with the spring fingers, the slide is resiliently held in position. In fact, I prefer to equip all four sides of the frame with the spring fingers as shown in Fig. 2. However, it is only necessary to have the sides adjacent the two latches so equipped to provide a flexible latch as described above.

In releasing the frame member from the lantern slide members, pressure may be applied as indicated at B, causing the spring fingers **3** adjacent to the latch element to permit the latch elements to move sufficiently to disengage the protuberance **14** from the transverse slot **12**. The frame can then be removed and a new picture can be substituted, if desired. Thus, it is possible to readily assemble and disassemble various lantern slides in the same frame member and the same frame member can be used repeatedly.

Moreover, the lantern slide members being supported entirely by the side flanges **2'** and the ends of the spring fingers **3** appear to withstand very severe shocks without damage or injury.

What I claim as my invention and desire to be secured by Letters Patent is:

1. A lantern slide comprising in combination a pair of glass plates adapted to retain a picture-bearing element and mask therebetween, and a frame for holding the glass plates together comprising channel shaped members arranged in facing pairs and formed in one piece, at least one of each facing pair of channel members including a plurality of spring fingers formed inwardly from the bottom of the channel members between the sides thereof to engage the edges of the glass plates, one end of the channel member being provided with a snap latch element and the other end of the channel member being provided with a complementary snap latch element whereby the frame may be fastened in place by merely pressing the snap latch elements into engagement by flexing at least some of the spring fingers.

2. A lantern slide comprising in combination a pair of glass plates adapted to retain a picture-bearing element and mask therebetween, and a frame for holding the glass plates together comprising channel shaped members arranged in facing pairs and formed in one piece, at least one of each facing pair of channel members including a plurality of spring fingers carried between the sides of the channel members to engage the edges of the glass plates, one end of the channel member being provided with a snap latch element comprising a transversely notched tongue guideway, the other end including a complementary snap latch comprising a tongue adapted to enter the guideway and a protuberance projecting therefrom and adapted to engage the transversely notched guideway when said tongue is pressed into engagement with the guideway by flexing at least some of said spring fingers whereby said spring finger pressure may retain the tongue in engagement with the transverse notch.

3. A lantern slide comprising in combination a pair of glass plates adapted to retain a picture-bearing element and mask therebetween, and a frame for holding the glass plates together comprising channel shaped members arranged in facing pairs and formed in one piece, at least one of each facing pair of channel members including a plurality of spring fingers to engage the edges of the glass plates, one end of the channel member being provided with a snap latch element comprising a transversely notched tongue guideway, the other end including a complementary snap latch comprising a tongue adapted to enter the guideway and a protuberance projecting therefrom and adapted to engage the transverse notch when said tongue is pressed into engagement with the guideway, both of said latch elements being located adjacent spring fingers in said channel members whereby said channel members bearing said latches may be sufficiently springy to engage and release said snap latch elements.

OTTO WITTEL.