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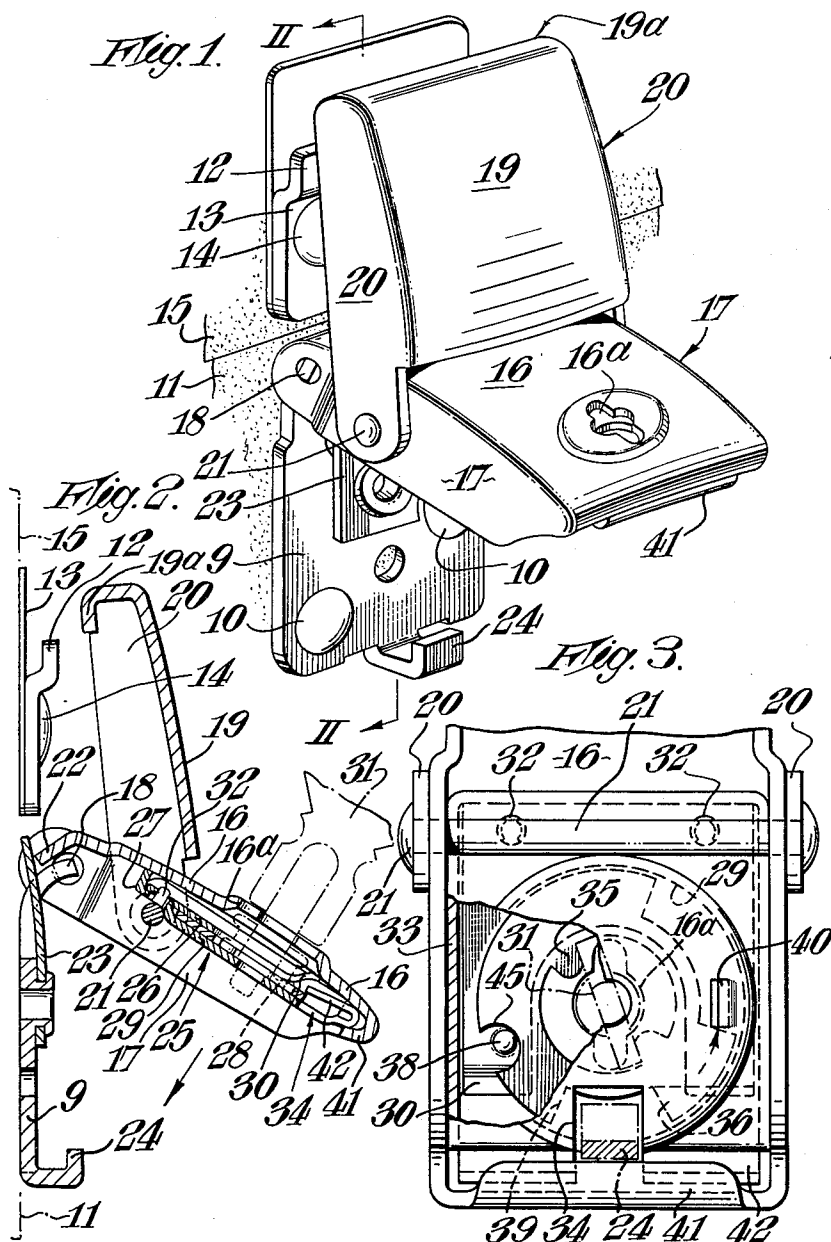
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LOCK MECHANISM FOR LUGGAGE AND THE LIKE

Filed Sept. 22, 1959

2 Sheets-Sheet 1



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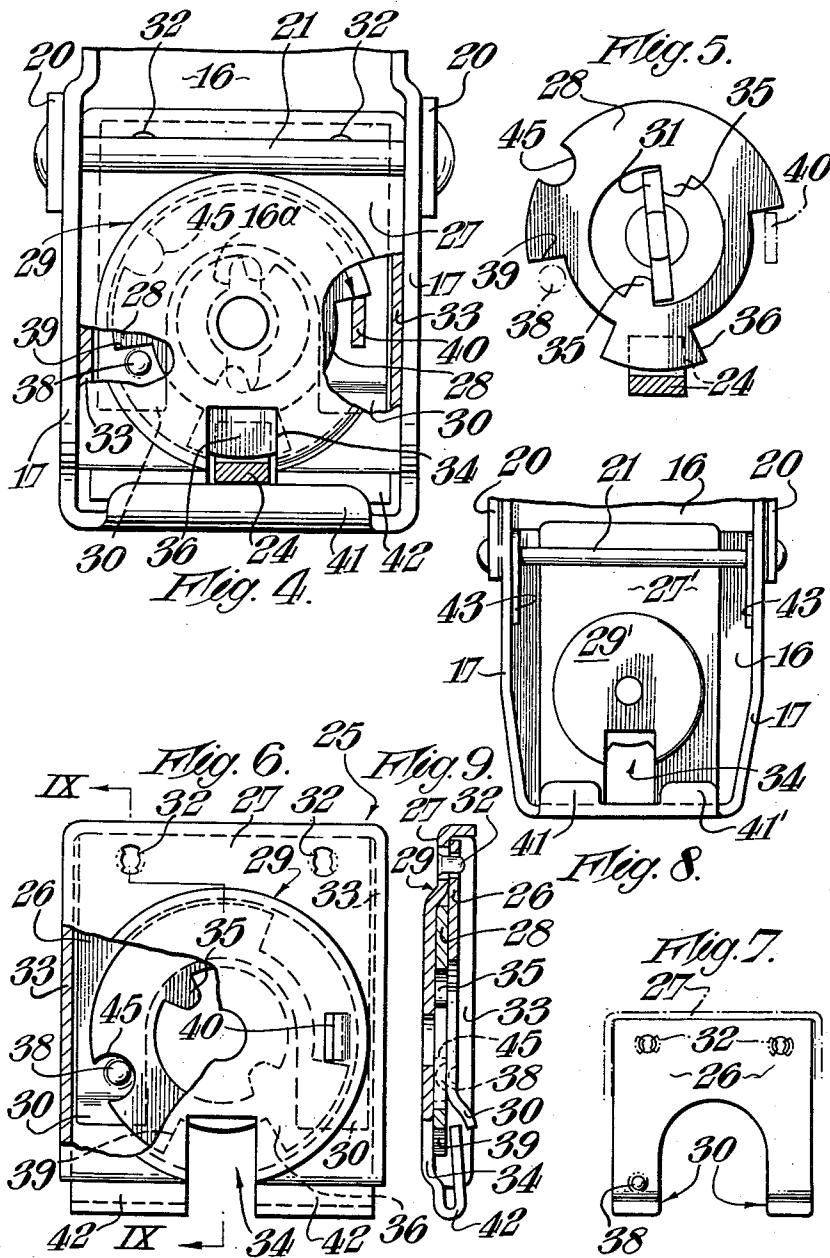
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LOCK MECHANISM FOR LUGGAGE AND THE LIKE

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7 Claims. (Cl. 70-74)

The present invention relates to a key operated locking mechanism which is applicable to fastenings for a wide variety of articles, such as boxes, travel bags, money or cash boxes, portable typewriter cases, and so on, in which the fastening is provided with a hook, lug or the like to be engaged with and disengaged from a rotary locking member of the locking mechanism.

This invention also relates to a spring-loaded hasp fastening for articles above referred to of the kind comprising an attachment plate, a manually operable lever member pivoted thereto and a hasp link pivoted to said lever member, the pivoted end of the lever member having a tongue which engages a blade spring secured to the attachment plate whereby said member is permitted to have a snap action into two predetermined positions consisting respectively of the release position and the fastening position of the hasp link in relation to a catch plate.

The primary object of the present invention is to provide a simple and inexpensive key operated locking mechanism which can be manufactured and assembled by mass production methods and can be assembled to a fastening as above indicated.

A further object of the present invention is to incorporate with the above fastening a very simple and inexpensive key operated locking mechanism for locking the lever member to the attachment plate.

According to the present invention, there is provided a self-contained key operated locking mechanism comprising a front plate and back plate secured together with the key operated rotary locking member rotatably arranged between them, one plate being provided on its inner side with a circular seating for the rotary locking member, and the other plate itself having resilient means adapted to snap engage the locking member at least in its locking position, so as to hold the locking member against accidental displacement.

According to a form of construction of self-contained locking mechanism according to the invention, the backplate made as a sheet metal pressing is formed with integral eyelets which are received in holes in the front plate and riveted over, thereby fastening the front and backplate together and retaining the rotary locking member between them. The backplate is formed with a circular seating in which the sheet metal locking member is rotatably received, and also along one edge with a gap for reception of the hook lug or the like on the fastening.

The locking member consists of a pressed sheet metal ring the bore of which is formed with keywords and the outer perimeter with a projecting locking catch to engage said hook or the like. The front plate, made of springy metal has resilient tongues which exert light pressure on the locking ring, in a direction which is perpendicular to the axis of the ring. One of said tongues has a detent which is adapted to snap engage behind an abutment adjoining the locking catch when the locking ring is turned into the locking position. The backplate is also formed on each side of the gap or groove with inwardly turned over ears which lie over the rim of the locking ring and serve to assist in retaining said ring in its seating between the front and backplate.

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The rotary movement of the locking ring into the key operated unlocking position is limited by a stop which is raised from the backplate and lies in the plane of the locking catch so as to form an abutment for one end thereof.

When the key operated locking ring is turned into the locking position, the locking catch engages the said hook or the like, and the detent snap engages the ring as above described so as to prevent accidental movement thereof.

According to an application of the invention, the self-contained locking device is housed in the rear of the lever member, said device comprising a key operated locking member mounted for rotary movement between front and back plates, one of said plates itself having resilient means adapted to engage said locking member in its respective locking and unlocking positions, so as to hold said member against accidental displacement.

Preferably, the back plate is formed with a circular seating for the locking member, and the front plate is constructed with a spring tongue having a detent for snap engaging with the locking member at selected positions.

For a better understanding of the invention, a self-contained key operated locking mechanism and its application to a spring-loaded hasp fastening is illustrated, by way of example, on the accompanying drawing, wherein:

FIGURE 1 is a perspective view of a hasp fastening in the position of release, incorporating the locking mechanism.

FIGURE 2 is a vertical sectional elevation of FIGURE 1 taken on the dotted line II-II.

FIGURE 3 is a rear view, partly in section, of a part of the lever and illustrating the locking mechanism in the unlocked position.

FIGURE 4 is a view similar to FIGURE 3 showing the locking mechanism in the locked position.

FIGURE 5 is a detail of the locking member incorporated in the locking mechanism.

FIGURE 6 is a sectional elevation of the self-contained locking mechanism.

FIGURE 7 is a detail of a spring incorporated in the locking mechanism.

FIGURE 8 is a rear elevation of a part of the lever incorporating a modification of the locking mechanism.

FIGURE 9 is a section of FIG. 6 taken on the dotted line IX-IX.

As will be observed in the drawing, the toggle fastening comprises an attachment plate 9 which is intended to be riveted at 10 to the body part of a box or the like 11, and a catch plate 12 on a further attachment plate 13 adapted to be riveted at 14 to the lid part 15 of the box or the like. The attachment plate 9 has a manually operable lever 16 formed with opposite side flanges 17 which are pivoted to outwardly turned pivots 18 on the attachment plate 9. A hasp link 19, also formed with opposite side flanges 20, is pivoted at 21 to the lever 16, the free end of the hasp link 19 having a hooked end 19a for engagement with and disengagement from the catch plate 12. The inner end 22 of the lever member 16 is bent into a tongue which engages a blade spring 23 secured to the front face of the attachment plate 9. These components are mass produced as sheet metal pressings.

In operation the fastening is capable of having a snap action into two predetermined positions, namely, the release position illustrated in FIGURES 1 and 2 and the connected position between the hooked end 19a and the catch plate 12, consequent upon the downward pivotal movement of the lever 16, as indicated by the arrow (FIG. 2).

The attachment plate 9 is provided with an upwardly

turned hook 24 which can be engaged with and disengaged from a self-contained key operated locking mechanism indicated at 25 and which is assembled within the flanges 17 of the lever 16 provided with a key hole 16a.

The locking mechanism 25 comprises a front plate 26 and a back plate 27 having a rotary locking member 28 interposed between them, the back plate 27 having a circular seating 29 to accommodate the locking member 28; whereas the front plate 26 itself provides resilient means 30 to snap engage the locking member 28 when operated by a key 31 into alternate positions of locking and unlocking. In this way the locking member 28 is held against accidental displacement.

As will be more particularly seen from FIGURES 6 and 7 the front and back plates 26, 27 are constructed as sheet metal pressings and the back plate 27 is formed with integral eyelets 32 which are received in corresponding holes in the front plate 26 and rivetted over thereby fastening the plates together and retaining the locking member 28 between them. The back plate is provided with alike side flanges 33, and along the lower edge with a central gap 34, in which the hook 24 can be received in the fastening position of the fastening.

The locking member 28 consists of a pressed metal ring the bore of which is formed with key wards 35 and the outer perimeter with a projecting locking catch 36 to engage the hook 24. The front plate 26 is made of springy metal and has resilient tongues 30 capable of exerting light pressure on the locking member 28. One of the tongues 30 has a detent 38 which is adapted to snap engage behind an abutment 39 adjoining the locking catch 36, when the locking member 28 is rotated into the locking position. The back plate 27 may be formed on each side of the gap 34 with inwardly turned over ears to lie over the rim of the locking ring thereby to assist in retaining it in its seating 29.

The rotary movement of the locking member 28 is limited by a stop 40 which is pierced from the back plate 27 and lies in the path of the locking member 28 so as to form an abutment therefor. The self-contained locking mechanism 25 is assembled between the flanges 17 of the lever 16, and the lower end of the lever 16 is bent at 41 over a hook 42 of the back plate 27, whereas the pivot pin 21 is utilised for holding the upper part of the back plate 27 to the lever by pressing against the back plate (FIGS. 2, 3 and 4). Alternatively (FIG. 8) the back plate 27' with its circular seating 29' is provided with side flanges 43 which fit within the flanges 17 and further assist in combination with the pivot pin 21 in holding the locking mechanism in position. The lever 16 of the modification of FIG. 8 has a centrally recessed bent-over portion 41'.

It will be appreciated that when the key 31 is operated to turn the locking member 28 into the locking position, the locking catch 36 will engage behind the hook 24. Simultaneously the detent 38 will snap engage the locking ring 28 and prevent accidental movement thereof. In

the unlocked position, the detent 38 snap engages a gap 45 in the locking member 28.

What is claimed is:

1. A self-contained key-operated locking mechanism for hasp fastenings, comprising a front plate made of springy sheet metal and including resilient pressing means, a sheet metal back plate having a central circular seating therein, the front plate and the back plate being secured together, and a rotary key-operated locking ring interposed between said front plate and said back plate and supported in said seating, the said resilient means on said front plate exerting light pressure on the adjoining surface of said rotary locking ring and arranged to retain said locking ring at least in the locking position thereof so as to prevent its accidental movement.

2. A self-contained key-operated locking mechanism according to claim 1, characterised in that the resilient pressing means includes spaced tongues which exert the light pressure on the locking ring.

3. A self-contained key-operated locking mechanism according to claim 1, characterised in that the resilient pressing means includes spaced tongues which exert pressure on the adjoining surface of the locking ring and that the tongues lie in a common plane and at least one of the tongues is provided with a detent adapted to snap engage the rotary locking ring.

4. A self-contained key-operated locking mechanism according to claim 1, characterised in that the locking ring is provided with key wards and with stop means for limiting the angular movement of the ring.

5. A self-contained key-operated locking mechanism according to claim 1, characterised in that a stop pierced on the back plate lies in the path of the locking ring and cooperates with an abutment thereon for limiting the rotary movement of the locking ring.

6. A self-contained key-operated locking mechanism according to claim 1, in combination with a toggle action hasp fastening in which the mechanism is assembled in a recess at the rear of a lever of the fastening, said lever having a keyhole therein.

7. A self-contained key-operated locking mechanism according to claim 6, characterised in that the self-contained mechanism is held in the recess of the lever by a bent-over lower end of the lever engaging an adjoining part of the back plate.

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