March 13, 1934. J. RIFKIN 1,950,415

LOCK FOR SEPARABLE FASTENERS

Filed Dec. 5, 1932

Fig. 1.

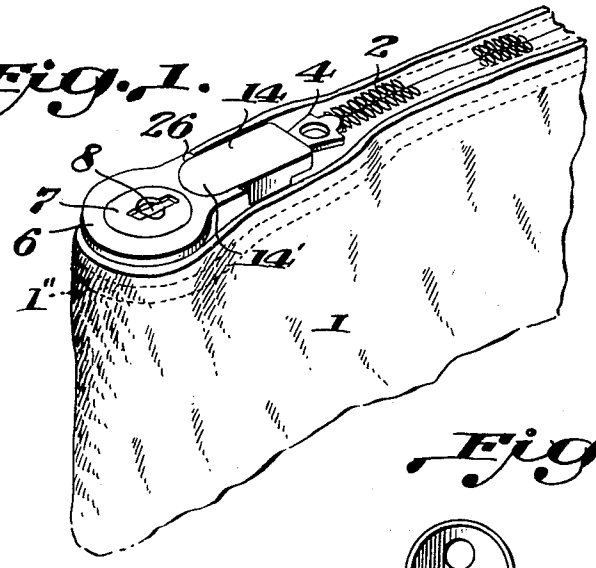


Fig. 2.

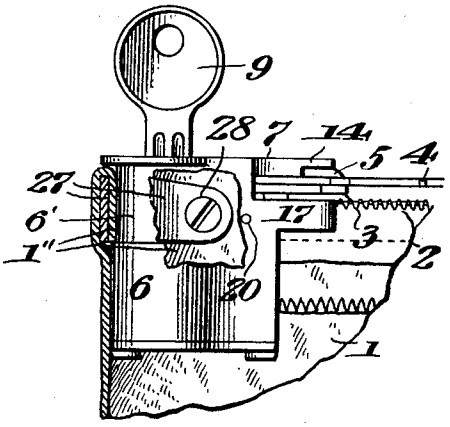


Fig. 7.

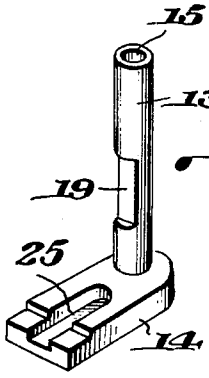


Fig. 3.

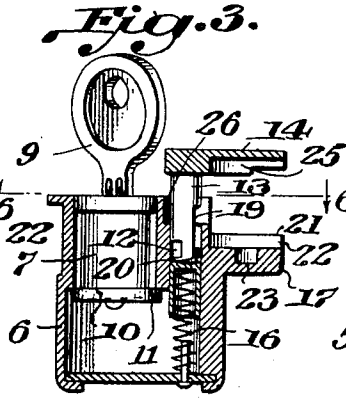


Fig. 6.

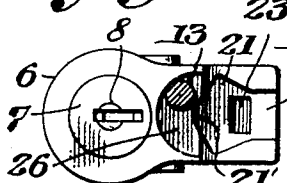


Fig. 4.

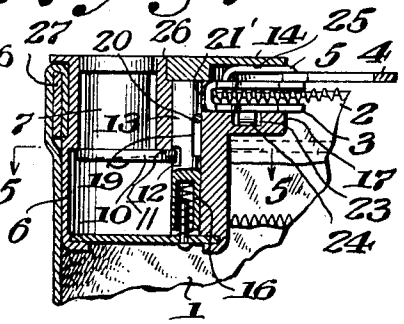


Fig. 8.



Fig. 5.

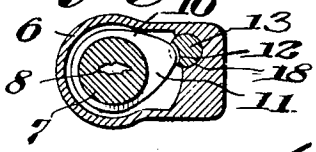
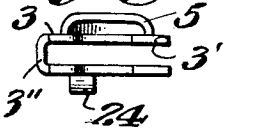


Fig. 9.



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UNITED STATES PATENT OFFICE

1,950,415

LOCK FOR SEPARABLE FASTENERS

Jacob Rifkin, Wilkes-Barre, Pa.

Application December 5, 1932, Serial No. 645,824

12 Claims. (Cl. 70—2)

The present invention is an improvement on that set forth in my application Serial No. 608,298, filed April 29, 1932 and relates, more particularly, to additional means on the slider of the separable fastener and on the jaws of the lock whereby the slider may be more readily positioned in the recess of the fixed jaw of the lock and housed by both the fixed and movable jaws in such manner that greater protection will be afforded against pulling or prying the slider out of the jaws or feeding or working the material of the bag or receptacle through the slider when the latter is locked in closed position.

The present improvements also relate to the construction and manner of operating and locking the movable jaw, whereby the connection between the movable jaw and the body or barrel of the lock is reinforced when the jaw is locked, thus strengthening the locking action on the slider and minimizing the possibility of prying or forcing the jaws apart or prying the slider from between the jaws.

The present improvements also relate to means adapted for opening the movable jaw by spring action when the key is turned to unlock the device, thus rendering the slider quickly accessible when unlocking has taken place, without requiring manipulation of the movable jaw for that purpose.

The present improvements also include special means for locking the movable jaw by a final clamping or compressing action adapted to force the slider of the separable fastener firmly into the recesses in the fixed jaw, thereby to insure proper seating of the slider in the recesses in the fixed jaw.

Other features of the present improvements will appear more fully from the following description and are shown in the accompanying drawing, in which:

Figure 1, is a perspective view showing a part of a bag or pouch provided with an ordinary separable fastener and with the present locking means, the slider of the separable fastener being locked in closed position, and the key removed;

Fig. 2 is a detail view through the parts when in the position shown in Fig. 1, the key, however, remaining in the lock;

Fig. 3 is a cross sectional view of the lock, when open, the key being held against removal when the parts are thus arranged;

Fig. 4 is a sectional view showing the slider locked and illustrating the internal construction of the lock, the key being removed;

Fig. 5 is a cross section on the line 5—5, of Fig. 4, illustrating the manner in which the movable jaw is locked;

Fig. 6 is a combined plan and sectional view on the line 6—6, Fig. 3;

Fig. 7 is a detail view of the movable jaw and its stem in reversed position;

Fig. 8 is a bottom detail view of the slider of the separable fastener; and

Fig. 9 is a side elevation thereof.

The bag, receptacle, pouch, container, or the like, which is of flexible or pliable material, such as cloth, leather, composition material, etc. is shown in conventional form at 1 in Figs. 1, 2 and 4. It will be understood, however, that the present improvements may be applied to any receptacle or container, regardless of the use of which it is intended to be put, and that the outline or shape of the receptacle or container does not enter into the present invention.

The usual separable fastener of the type which at present is well-known to the trade, is shown in conventional fashion at 2 and the slider which engages and disengages the said fastener in a manner well-known to those skilled in the art, appears at 3. Customarily, the slider 3 is provided with a manipulating member 4, which is generally loosely connected to the slider 3 as, for instance, by attachment to a loop 5, carried by the slider 3.

My improved lock for locking the slider 3 when it is in the position asumed after closing the separable fastener 2, has a casing or barrel 6 within which is rotatably mounted, to turn through a slight angle, a rotatable plug 7 having a key hole 8 into which a key 9 may be inserted to control the locking tumblers for said plug.

The rotatable plug 7 carries at its lower end a camming locking disc 10 which is adapted to turn therewith and whose camming part 11 is adapted to be received within a notch 12 in the slidable stem 13 of a movable locking jaw 14.

The stem 13 has a hollow part 15 which receives an expansion coil spring 16 which is supported at its lower end in any suitable manner as, for instance, on the bottom of the barrel or casing 6. When the stem 13 is disengaged from the locking disc 10, the spring 16 snaps the stem upwardly, thus raising the jaw 14 to the position shown in Fig. 3, suitably elevated above a fixed jaw 17 which is an integral part of the barrel 6 and is located below the movable jaw 14. A suitable space is thereby provided for the location of the slider 3 between the jaws 14 and 17, together with the end part of the separable

fastener 2 which has been closed by the said slider 3.

The stem 13 slides in a suitable bore 18 in the barrel 6 and it is provided with an elongated flat part 19 against which bears a pin 20 which prevents the stem from turning in its bore and also limits the travel of the stem 13 and jaw 14.

When the jaw 14 is pressed down by hand until the notch 12 is in position to receive the camming part 11 of the disc 10, the key 9 may be turned into axial alignment with the jaw 14, thereby causing the cross sectional wedge shaped or tapered camming part 11 to further press down the stem 13 and to cam down the jaw 14 so that, with the fixed jaw 17, they will house and clamp the slider 3 and the closed end of the separable fastener 2 between them, as shown in Fig. 4. The camming action referred to is brought about by the camming part 11 being of gradually increased thickness so that when the key 9 is turned from its angularly disposed position to the position where it is in line with the axis of the jaw 14, the thinnest part of the cam 11 will first enter the notch 12 and will be followed by the thicker part thereof. When the parts are in the position shown in Fig. 5, the thickest part of the cam 11 is then in the notch 12 and consequently the stem 13 and the jaw 14 are then substantially immovably locked in their lowermost position, as shown in Figs. 2 and 4.

The jaw 17 is provided with a recess 21 of the same general shape as that of the slider 3, that is to say, it has a wider inner part and a narrower entrance, and only slightly larger than the slider so that the slider can fit snugly within said recess, in the manner set forth in my application Serial No. 608,298, after the slider has completely closed the separable fastener 2. When the slider, which is of the same general shape as the recess, is held in the recess, it cannot be pulled out laterally because the wider inner part cannot pass through the narrower entrance part and cannot be lifted out of the recess because it is confined within the recess by the jaws; thus, the slider is firmly held against removal in any direction. The recess 21 has a narrow neck 22 which receives the narrow part 3' of the slider 3. The complete recess 21, 22 accommodates the complete slider 3, 3' and prevents the slider from being pulled or pried out of the recess when the jaw 14 is in the closed position shown in Figs. 2 and 4. The end 3'' of the slider abuts the inner end wall 21' of the recess 21, as shown in Fig. 4, and effectually prevents the separable fastener 2 from being pushed through the slider 3 when the jaws are closed.

To facilitate proper register or fitting of the slider 3 within the recess 21, 22, the present invention embodies a supplemental recess or depression 23 in the jaw 17 to receive a projection 24 on the bottom of the slider 3. When pressing the slider into the recess 21, 22, the projection 24 seeks the depression or supplemental recess 23 and automatically, so to speak, correctly positions the slider so that it will fit within the recess 21, 22 and properly locate itself therein so that when the jaw 14 is pushed down, the slider and the end part of the separable fastener will be housed and clamped. A further improvement resides in the notch or recess 25 in the under face of the movable jaw 14 which receives the loop 5 on the slider, thus housing the loop, cooperating with it, and preventing any lateral shifting of the slider, as best illustrated in Fig. 4.

Another improvement resides in the reinforcement of the movable jaw 14 by the provision of a recess or cavity 26 in the upper part of the body or barrel of the lock, Figs. 1, 3 and 6, which cavity is shaped to conform to the rounded end 14' of the jaw 14. When the movable jaw 14 is depressed, its rounded end 14' enters the recess or cavity 26, as shown in Figs. 1 and 4 and, upon turning the key 9 to lock the jaw 14 in its closed position, the wall of the recess 26 reinforces said jaw and relieves the stem 13 of torsional strains should attempt be made to pry or turn the jaw 14 laterally.

It will be observed, from the foregoing statements, that the present improvements guard and protect the slider 3 and the closed end of the separable fastener 2 and render it very difficult to force any of the parts out of their locked positions.

The same disposition of the lock within the bag or receptacle 1, as proposed in my application Serial No. 608,298, is resorted to so that the lock is contained within the bag or receptacle as distinguished from earlier constructions where a locking device is provided on the outside of the bag or receptacle.

The barrel 6 is disposed inside of the bag or receptacle 1 and is partly embraced by an infolded part 1'' of the material or fabric of said bag or receptacle. The infolded part 1'' is clamped around the barrel 6 by a U-shaped clamp 27 which is secured to the barrel by screws 28, only one of which appears, Fig. 2, the remaining screw being located opposite the screw shown in Fig. 2. The infolded part 1'' of the fabric and the U-shaped clamp 27 are received in a reduced part 6' of the barrel 6, thereby effectually anchoring the lock inside of the bag or receptacle 1.

When the jaw 14 is open, as shown in Fig. 3, the key 9 is in turned or angular position in relation to the jaws 14 and 17 and then remains in the lock and can not be removed therefrom. This prevents loss of the key when the bag or receptacle 1 is open. When the slider 3 is locked, as in Figs. 1, 2 and 4, the key 9 is aligned with the longitudinal axis of the jaws 14 and 17 and should be withdrawn and retained in the possession of an authorized person.

The camming part 11 of the disc 10 enables the key 9 to be used as a manipulating device to cam or force down the jaw 14, after said part 11 has entered the notch 12, if the jaw 14 has not been fully pressed down by the user. This arrangement insures a final pressing or clamping action of the jaw 14 on the slider so that it will be centered and properly engage with the recesses 21, 22, 23, 25 and held in engagement with the slots thereof and with the abutment face 21'.

What I claim is:

1. A locking device adapted for securing the slider of a separable fastener which has a projection, embodying a jaw having a recess which receives and interlocks with both the slider and the projection aforesaid, and means for locking said jaw when said slider and its projection are located within said recess.

2. A locking device adapted for securing the slider of a separable fastener having projections on its upper and lower faces, embodying a pair of relatively movable jaws, each of which has a recess receiving and interlocking with one of the aforesaid projections, and one of said jaws having a recess which receives and interlocks with said slider, said jaws when closed collectively holding the slider and its projections in interlocked relationship to the aforesaid recesses.

3. A locking device adapted for securing a slider of a separable fastener having a projection, embodying a pair of relatively movable jaws, one of said jaws being provided with a recess which receives and interlocks with the slider and its projection, said jaws when closed holding the slider and its projection interlocked with the said recess, and means for locking said jaws in closed relationship.

4. A locking device adapted for securing the slider of a separable fastener having a projection arranged angularly to the plane thereof embodying relatively movable jaws, one of which has a main recess which receives and interlocks with the slider and is also provided with a centering recess which receives the aforesaid projection and insures proper positioning of the slider in the first-named recess and affords additional means to prevent detachment of the slider, the other jaw, serving to retain the slider in the recessed jaw, and means for locking said jaws in closed relationship.

5. A locking device adapted for securing the slider of a separable fastener, comprising a fixed jaw and a slidably mounted jaw movable toward and away from the fixed jaw to close or open the jaws, said jaws having means which define a recess to receive the slider and co-operatively lock and retain the slider within said recess, and means for locking the jaws in closed relationship.

6. A locking device adapted for securing the slider of a separable fastener, comprising a fixed jaw and a slidably mounted jaw movable toward and away from the fixed jaw to close or open the jaws, said jaws having means which define a recess to receive the slider and co-operatively lock and retain the slider within said recess, means for locking the jaws in closed relationship, including a rotatable key-operated locking member having means for closing the slidably mounted jaw, and spring means which automatically opens the slidable jaw when the locking means is released therefrom.

7. A locking device adapted for securing the slider of a separable fastener, comprising a fixed jaw and a slidably mounted jaw movable toward and away from the fixed jaw to close or open the jaws, said jaws having means which define a recess to receive the slider and co-operatively lock and retain the slider within said recess, and means for locking the jaws in closed relationship, including a key-operated camming device co-operating with the movable jaw for the purpose of locking it in closed position.

8. A locking device adapted for securing the slider of a separable fastener, comprising a fixed jaw and a slidably mounted jaw movable toward and away from the fixed jaw to close or open the jaws, said jaws having means which defines a recess to receive the slider and cooperatively lock and retain the slider within said recess, means for locking the jaws in closed relationship, including a key-operated camming device for locking the movable jaw in closed position, and spring means which automatically opens the slidably mounted jaw when the camming means is released therefrom.

9. A locking device adapted for securing the slider of a separable fastener which has a projection, embodying a pair of relatively movable jaws having means for embracing the slider, one of said jaws having a recess to receive and interlock with said projection, and locking means for securing the jaws in closed relationship to maintain the jaws in their embracing relationship to the slider and to maintain the projection in the recess.

10. A locking device for securing the slider of a separable fastener, wherein the slider is provided with upper and lower projections, of relatively movable locking jaws, each of which has a recess to receive and interlock with one of the respective projections when the jaws are closed and the slider is between them, and independently mounted locking means for securing the jaws in closed relationship to maintain the jaws in their embracing relationship to the slider and to maintain the projections in the recesses.

11. A locking device adapted for securing the slider of a separable fastener, embodying a pair of jaws between which the slider may be positioned, said jaws having means to co-operatively lock the slider, one of said jaws being fixed, and the other jaw having reinforcing means to hold it against displacement when closed, and means for locking the jaws in closed relationship.

12. A locking device adapted for securing the slider of a separable fastener, embodying a body having a fixed jaw, a slidably mounted jaw carried by the body which is movable toward and away from the fixed jaw, said jaws having means to co-operatively lock the slider between them, means on the body which re-inforces the slidably mounted jaw when it is closed, and means for locking the slidably mounted jaw in closed position.

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