G. SCHRADE.

POCKET KNIFE.

APPLICATION FILED JUNE 28, 1917.

1,258,150.

Patented Mar. 5, 1918.

2 SHEETS—SHEET 1.

Fig. 1.

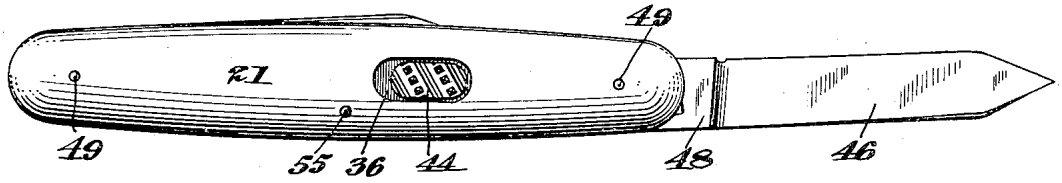


Fig. 2.

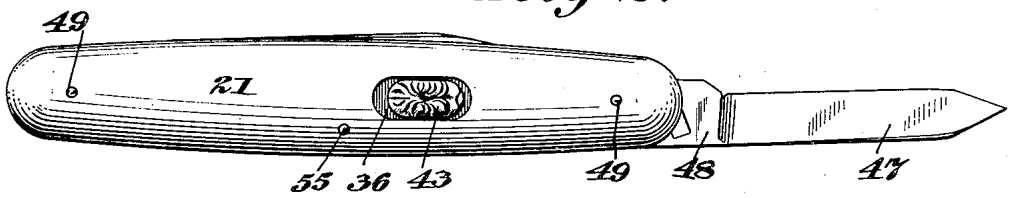
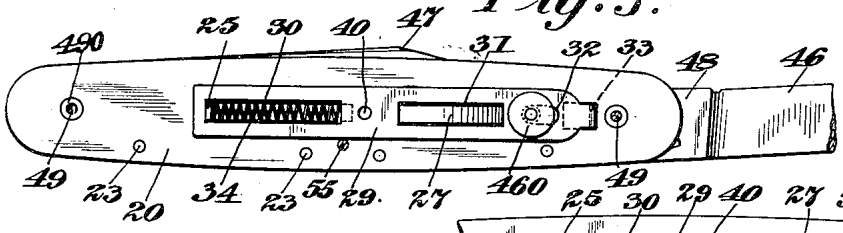


Fig. 3.



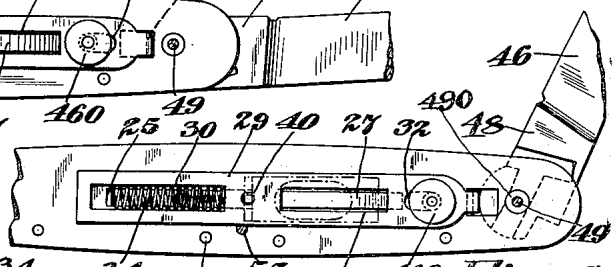


Fig. 3a.

Fig. 4.

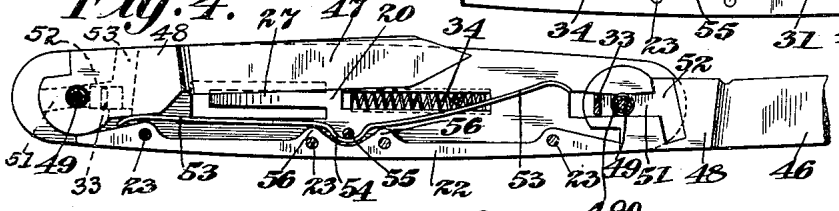
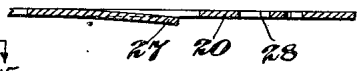


Fig. 15.



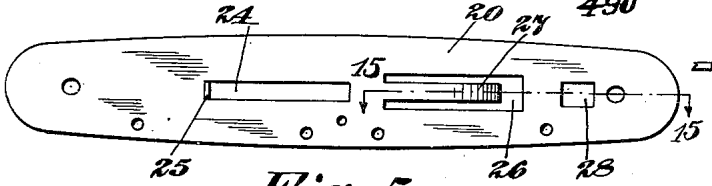


Fig. 5.

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2 SHEETS—SHEET 2.

Fig. 6.

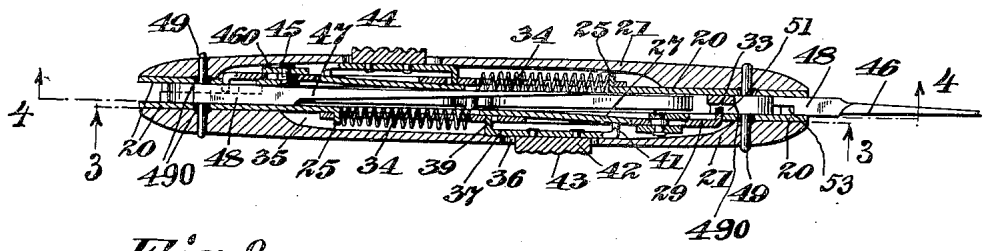
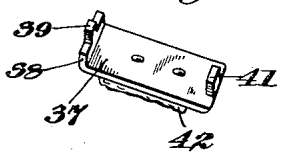


Fig. 8.



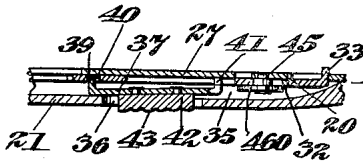
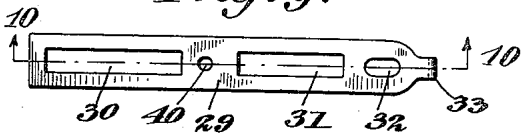


Fig. 7.

Fig. 9.



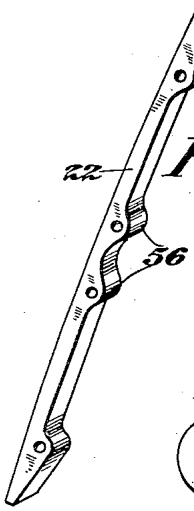


Fig. 11.

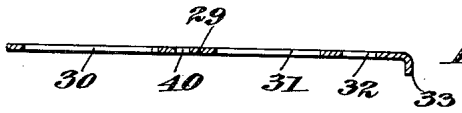


Fig. 10.

Fig. 12.

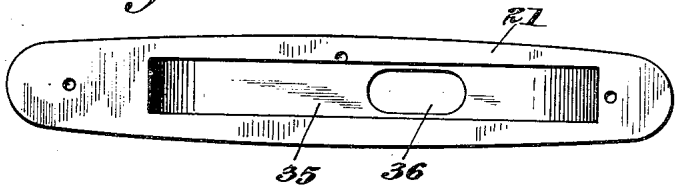


Fig. 13.

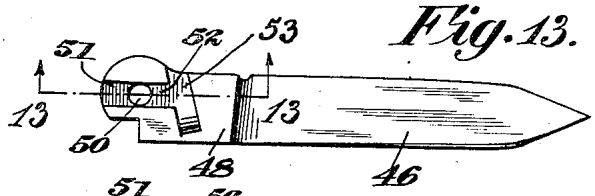
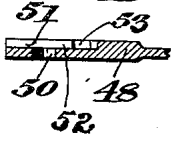


Fig. 14.



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UNITED STATES PATENT OFFICE.

GEORGE SCHRADE, OF NEW YORK, N. Y.

POCKET-KNIFE.

1,258,150. Specification of Letters Patent. Patented Mar. 5, 1918.

Application filed June 28, 1917. Serial No. 177,520.

To all whom it may concern:

Be it known that I, GEORGE SCHRADE, a citizen of the United States, residing at New York, in the county and State of New York, have invented certain new and useful Improvements in Pocket-Knives, of which the following is a full, clear, and exact specification.

This invention relates to pocket-knives of the type in which the blades are released by a push-button and automatically thrown to open position when so released.

One object of this invention is to provide improved means for releasing the blades and for locking them in both open and closed positions. The accidental release and opening of the blades is avoided in the present improvement because each push-button must be pressed in and also moved along the knife, while it is held pressed in, before the blade controlled by said push-button may be released.

Another object is to provide the push-buttons on opposite faces of the knife-handle with means for distinguishing one from the other, whereby the operator after becoming familiar with the design of the push-button which controls each blade, may at a glance know which push-button to operate to release the desired blade.

Other objects will appear as the description proceeds.

The invention will be first hereinafter described in connection with the accompanying drawings, which constitute part of this specification, and then more specifically defined in the claims at the end of the description.

In the accompanying drawings, wherein similar reference characters are used to designate corresponding parts throughout the several views:—

Figure 1 is a side view of a pocket-knife embodying the present invention, showing the larger or pocket blade in open position.

Fig. 2 is a similar view of the reverse side of the knife with the smaller or pen blade open.

Fig. 3 is a longitudinal section taken on the line 3—3 of Fig. 6.

Fig. 3ª is a broken view taken on the same line but showing the positions of the parts when the blade is released.

Fig. 4 is a section on the line 4—4 of Fig. 6.

Fig. 5 is a detailed view of one of the linings.

Fig. 6 is a longitudinal section of the knife as shown in Fig. 1, taken in the plane determined by the pivots of the blades.

Fig. 7 is a broken sectional view illustrating the initial movement of the push-button inward to release the slide from the resilient tongue on the lining.

Fig. 8 is a detailed perspective view of one of the push-buttons and the slide releasing and sliding member attached thereto.

Figs. 9 and 10 are detailed plan and sectional views of one of the slides, the latter figure being taken on the line 10—10 of the former.

Fig. 11 is a detailed perspective view of the back piece of the knife.

Fig. 12 is a detailed inner face view of one of the mountings or covers of the knife.

Fig. 13 is a detailed face view of the larger blade, showing more clearly the locking grooves and the entrance groove leading to the inner one of said locking grooves in the shank or tang of said blade.

Fig. 14 is a section on the line 13—13 of Fig. 13, and Fig. 15 is a broken section on the line 15—15 of Fig. 5.

Each of the two linings 20 is stamped or otherwise formed from sheet metal to the shape illustrated in Fig. 5, there being two long slots 24 and 26, and one short slot 28 therein. A short lug is turned out at one end of the slot 24, as at 25, and stands substantially at right angles to the lining, while a long tongue 27 is formed in cutting the slot 26, said tongue being resilient and normally standing out from the plane of the lining as shown in Fig. 15.

A back piece 22 is secured by rivets 23 between the linings 20 at the back of the knife, and said linings are covered by mountings 21 each having a cavity 35 in its inner surface to house the blade locking and releasing mechanism, and an opening 36 through which the push-button protrudes. These mountings are held in place by rivets

49 which pass through the usual bushings 490 and constitute the pivots of the blades, and by an intermediate rivet 55 which holds the blade-actuating spring in place, as hereinafter described.

On the outside of each of the linings and arranged in the cavity 35 of each of the mountings 21 there is arranged a blade locking slide 29 having, as best illustrated in Figs. 9 and 10, two long open slots 30 and 31, and a short slot 32. Between the two long slots there is a hole 40, and at one end of the slide a lug 33 is formed by reducing the width of the slide and turning it out substantially at right angles. In assembling, the slot 30 of the slide 29 is placed over the lug 25 at the end of the slot 24 in the lining plate 20, and the lug 33 on said slide is inserted through the slot 28 in the lining. A coiled spring 34 is arranged in the slots 24 and 30 with one end bearing against the lug 25 and the other end abutting against the opposite end of the slot 30. This spring serves to normally hold the slide 29 in locking position and to automatically return said slide to that position after it has been moved and released. To retain the slide in proper working position adjacent the lining, a rivet or pin 45 is fastened to the lining and extends through the slot 32 in the slide, the outer end of said pin carrying a washer 460 which overlies the outer face of the slide at the sides of said slot and holds said slide close to the lining but does not interfere with the movement of the same longitudinally.

The slide 29 is operated by means of a push-button element comprising a member 37 set in the cavity 35 in the mounting 21 below the opening 36, and a push-button 42 attached to the member 37 and projecting through said opening. The member 37 has a bent lug 38 at one end provided with a reduced portion 39 which fits in the hole 40 in the slide 29, while at the other end of said member 37 there is a bent lug 41 which engages the resilient tongue 27 on the lining. Normally, when the blade is locked, the tongue 27 engages the end of the slot 31 in the slide and locks said slide against being moved to releasing position, as shown in Fig. 6. To release the slide, the push-button must first be pushed inward so as to bring it and the member 37 to inclined position, as shown in Fig. 7, said pushing in of the button causing the lug 41 on the member 37 to depress the tongue 27 into the plane of the lining and removing its end from the path of the end of the slot 31 in the slide. While the push-button is held pressed in, it may be moved to slide the slide 29 against the tension of the spring 34 for bringing the lug 33 to blade-releasing position. It will be noted that simply pressing in the push-button will not release the blade, and that the slide cannot be moved to release the blade until the push-button has been depressed and only while it is held depressed.

The knife illustrated in the drawings is fitted with two blades 46 and 47, one being pivoted by means of a rivet 49 at each end of the frame or handle comprising the linings, back piece and mountings. The tang or shank 48 of each blade has a pair of locking grooves 51 and 52 arranged diametrically opposite to each other and in line with the pivot opening 50, as best illustrated in Figs. 13 and 14. When the blade is fully opened, the lug 33 on the slide 29 engages the groove 51, as shown in Figs. 4 and 6, and locks the blade in that position until the push-button is depressed and the slide moved to withdraw said lug from said groove. The tang 48 also has another groove 53 leading in from the inner edge thereof to the groove 52. When the blade is closed, the lug 33 on the slide 29 passes in through said groove 53 to the groove 52, as illustrated in dotted lines in Fig. 4. As soon as the blade is released from closed position, the leaf spring 53 acts to throw said blade outward, as illustrated the Fig. 3a. If the force of said spring is not sufficient to throw the blade to fully open position, this can be done manually, and as soon as it reaches said fully open position, it will be automatically locked as already described.

Each blade is provided with a separate locking and releasing mechanism including a separate push-button element. One of the push-buttons is arranged on each side of the knife-handle, and in order to distinguish the one which controls the larger blade from the one which controls the smaller blade, said push-buttons are finished on their outer faces with different designs 43 and 44, Figs. 1 and 2. These distinguishing designs may be not only different in appearance but also cut deep enough to be distinguishable by touch, so that the operator, when he has become familiar with the design of the push-button which controls each blade, may at once know which of said push-buttons to actuate in order to release the desired blade, even in the dark.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:—

1. In a pocket-knife, the combination with the lining and mounting thereof, of a blade-locking slide, means for holding said slide in locking position, a push-button, and means carried thereby for displacing said slide-locking means and for moving said slide to unlock the blade.

2. In a pocket-knife, the combination with the lining thereof having a resilient tongue normally standing away therefrom, of a blade-locking slide normally engaged by said tongue and retained thereby in posi-

tion to lock the blade, a push-button, and means carried thereby for displacing said tongue and for moving said slide to unlock the blade.

3. In a pocket-knife, the combination with the lining thereof having a resilient tongue normally standing away therefrom, of a blade-locking slide normally engaged by said tongue and retained thereby in position to lock the blade, a push-button, and a member carried by said push-button and having a lug adapted to displace said tongue, said member being connected to the slide for moving the same to unlock the blade when the tongue is displaced.

4. In a pocket-knife, the combination with the lining thereof having a resilient tongue, of a blade-locking slide normally engaging said tongue and retained thereby in position to lock the blade, a push-button, and a member carried by said push-button and having a lug adapted to displace said tongue when the push-button is pressed in, said member being connected to the slide for moving the same to unlock the blade when the tongue is displaced.

5. In a pocket-knife, the combination with a blade-locking slide, of means for normally locking said slide in position to lock the blade, and a push-button mounted to rock for displacing the slide-locking means, and to slide for moving said slide to position for unlocking the blade.

6. In a pocket-knife, the combination with a blade-locking slide having a slot therein, of a resilient tongue normally engaging the end of said slot for locking the slide in position to lock the blade, and a push-button having rocking connection with said slide, said push-button also having a lug to extend through the slot in the slide and engage the tongue for displacing the same to permit said slide to be moved to position for unlocking the blade.

7. In a pocket-knife, the combination with a lining having a resilient tongue, of a blade-locking slide normally engaged by said tongue and retained thereby in position to lock the blade, a spring interposed between the lining and slide for automatically returning said slide to blade-locking position when the blade is fully open or fully closed, and a push-button for displacing said tongue and moving the slide to unlock the blade.

8. In a pocket-knife, the combination with a lining, of a blade-locking slide mounted to move along one face of the lining, said slide having a slot therein, a pin on the lining extending through said slot, a washer on the pin overlying the edge of the slot for retaining the slide in close proximity to the lining, and means for actuating said slide to unlock the blade.

9. In a pocket-knife, the combination with a blade-locking slide having a lug, of a blade having a groove arranged radially with respect to the pivot in the tang thereof and opening on the inner end of said tang to be engaged by the lug on the locking slide when the blade is open, said tang also having a groove arranged diametrically opposite the first groove and designed to be engaged by the locking lug when the blade is closed, said tang also having a third groove arranged transversely to the second groove and leading thereto for the passage of the locking lug to the second groove while the blade is being closed.

10. In a pocket-knife, the combination with a blade-locking slide having a lug, of a blade having a groove arranged radially with respect to the pivot in the tang thereof and adapted to be engaged by the locking lug when the blade is closed, said tang also having a groove arranged transversely to said locking groove and leading thereto for the passage of the locking lug as the blade is being closed, and means for locking the blade in open position.

11. In a pocket-knife, the combination with two blades, of two separate blade-locking devices, each controlling one blade, two separate push-button elements for actuating the respective blade-locking devices, and distinguishing means carried by said push-button elements for the purpose specified.

In testimony whereof I have signed my name to this specification.

GEORGE SCHRADE.