

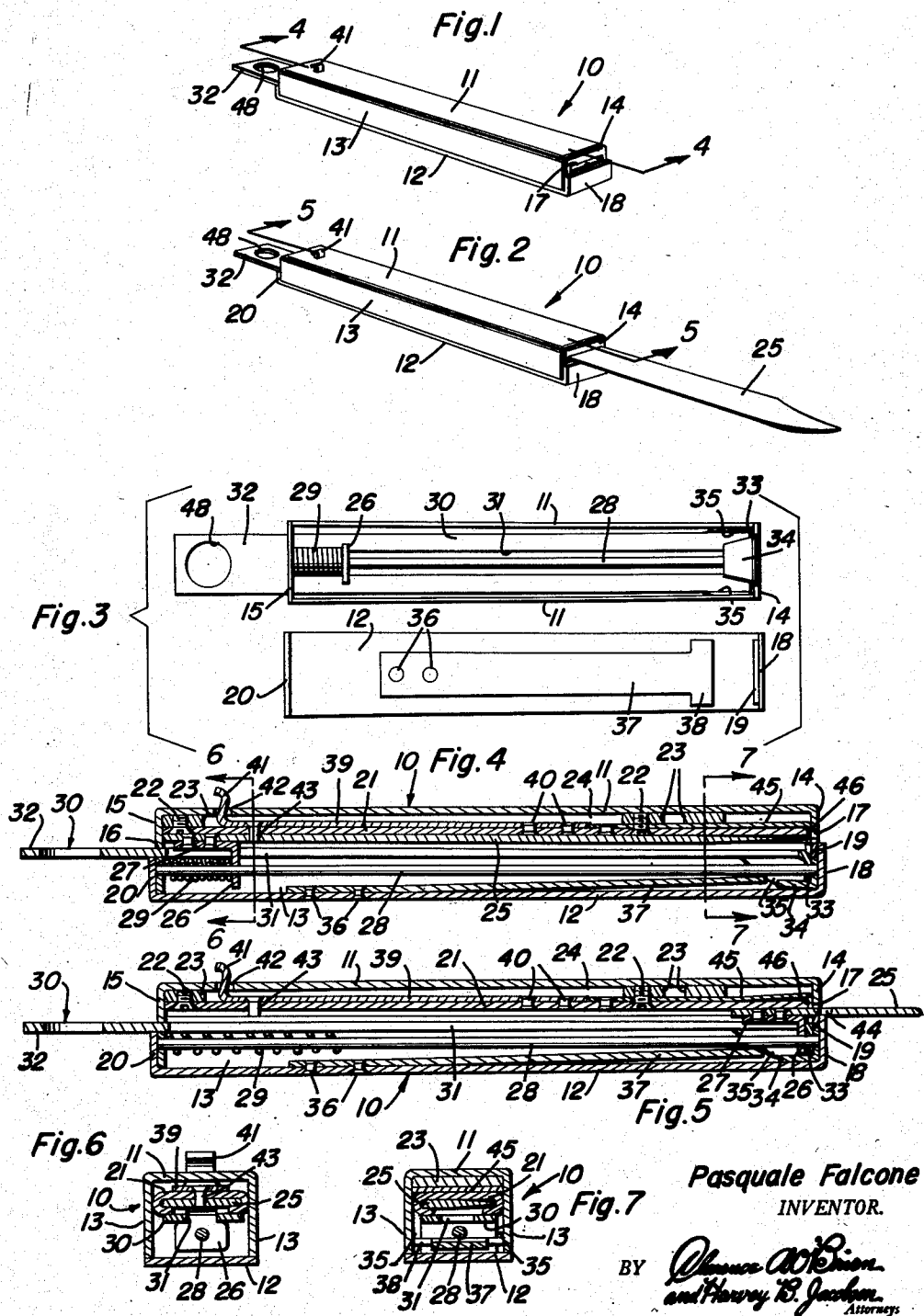
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KNIFE

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KNIFE

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4 Claims. (Cl. 30—162)

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The present invention relates to new and useful improvements in knives of the projectable and retractable blade type and has for one of its important objects to provide, in a manner as hereinafter set forth, a device of this character comprising novel means for positively locking the spring actuated slidable blade in retracted position, thereby insuring safety.

Another very important object of the invention is to provide a knife of the aforementioned character which embodies a unique construction and arrangement whereby the blade will be firmly supported in projected or operative position.

Other objects of the invention are to provide a knife of the character described which will be comparatively simple in construction, strong, durable, reliable in use, compact, light in weight, attractive in appearance and which may be manufactured at low cost.

All of the foregoing and still further objects and advantages of the invention will become apparent from a study of the specification, taken in connection with the accompanying drawing, wherein like characters of reference designate corresponding parts throughout the several views, and wherein:

Figure 1 is perspective view of the knife with the blade in retracted position;

Figure 2 is a perspective view, showing the blade in projected position;

Figure 3 is a bottom plan view of the handle and a top plan view of the removable plate, showing the parts separated;

Figure 4 is a view in vertical longitudinal section, taken substantially on the line 4—4 of Figure 1;

Figure 5 is a view in vertical longitudinal section, taken substantially on the line 5—5 of Figure 2;

Figure 6 is a view in transverse section, taken substantially on the line 6—6 of Figure 4; and

Figure 7 is a view in transverse section, taken substantially on the line 7—7 of Figure 4.

Referring now to the drawing in detail, it will be seen that the embodiment of the invention which has been illustrated comprises an elongated handle of metal or other suitable material which is designated generally by reference numeral 10. The handle 10 is formed to provide a housing comprising a top 11, a removable bottom 12, side walls 13 integral with the top, and end walls 14 and 15, also integral with said top 11. The rear or inner end wall 15 has formed therein a transverse slot or opening 16. The forward or outer end wall 14 of the handle 10 has formed

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therein a comparatively large opening 17. At one end, the removable plate 12 of the handle 10 terminates in a right angularly extending flange 18 having fixed thereon a bar or rib 19 which is engageable in and occupies a portion of the opening 17. At its other end, the removable wall or plate 12 terminates in a resilient flange 20 which is frictionally engaged with the end wall 15 for securing this end of the plate 12 to the handle 10.

Mounted longitudinally in the upper portion of the handle 10 is an inverted, substantially C-shaped guide 21. Countersunk screws 22 firmly secure the guide 21 in position. The screws 22 are threaded in spacers 23 which are fixed in any suitable manner in the upper portion of the handle 10. Thus, a space or chamber 24 is provided in the upper portion of the handle 10.

Mounted for longitudinal sliding movement in the guide 21 is a blade 25 which may be of any suitable type. Fixed on the rear or inner end portion of the blade 25 is a depending apertured ear 26. The base or attaching portion 27 of the ear 26 travels between the longitudinal edges of the substantially C-shaped guide 21. The ear 26 travels on a longitudinal rod 28 in the lower portion of the handle 10, the end portions of which are mounted in openings provided therefor in the end walls 14 and 15 of said handle. The aperture in the ear 26 accommodates the rod 28. The flanges 18 and 20 of the plate 12 secure the rod 28 against longitudinal movement. A coil spring 29 is mounted on the rear or inner end portion of the rod 28 for engagement with the ear 26 for projecting the blade 25.

As shown to advantage in Figure 6 of the drawing, the ear 26 is substantially T-shaped and slidably mounted thereon is a blade retracting bar 30. The bar 30 has formed therein a longitudinal slot 31 which accommodates the ear 26. The retracting bar 30 extends slidably through the slot 16 in the rear end wall 15 of the handle 10 to provide a gripping portion, as at 32, which is always exposed. At its forward end, the bar 30 terminates in a right angularly extending apertured flange 33 which is slidable on the rod 28 and which is engageable with the ear 26 for retracting the blade 25.

An inwardly or rearwardly turned resilient lip 34 on the lower portion of the forward end wall 14 of the handle 10 is engageable with the ear 26 for releasably securing the blade 25 in projected or operative position. On its forward end portion, the retracting bar 30 further includes depending side cams or flanges 35. Secured as at 36 on the removable plate 12 of the handle 10 is a

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resilient, substantially T-shaped finger 37, the headed free end 38 of which is engageable behind the cams 35 for frictionally securing the blade retracting bar 30 in forward position.

The chamber 24 in the upper portion of the hollow handle 10 accommodates a resilient blade latch 39 which is firmly secured at 40 on top of the guide 21. At its rear or inner end, the latch 39 terminates in an upstanding lifting handle 41 which is operable in a slot or opening 42 provided therefor in the top 11 of the handle. Fixed on the free end portion of the latch 39 is a depending pin 43 which is operable through an opening provided therefor in the guide 21 and engageable in an aperture 44 in the rear or inner end portion of the blade 25 for releasably securing said blade in retracted position.

Mounted longitudinally on the forward portion of the guide 21 is what may be considered a resilient shield or guard 45 for the blade 25. The guard 45 terminates in a right angularly extending forward end portion 46 which rides on the upper side of the blade 25.

It is thought that the operation of the knife will be readily apparent from a consideration of the foregoing. Briefly, the latch 39 locks the blade 25 in retracted position, the pin 43 engaging in the aperture 44 in the manner shown to advantage in Figure 5 of the drawing. With the blade in closed or retracted position, it will be observed that the spring 29 is compressed between the ear 26 and the inner end wall 15 of the handle 10. The substantially T-shaped resilient finger 37 is engaged with the cams 35 for retaining the retracting bar 30 in forward position in the handle 10. To release the blade, the latch 39 is lifted through the medium of the handle 41 for disengaging the pin 43 from the aperture 44, thus permitting the coil spring 29 to hurl the blade forwardly in the guide 21 to projected position. As hereinbefore stated, the blade is retained in projected position by the resilient lip or element 34 engaged with the ear 26. To retract the blade, the bar 30 is pulled rearwardly, the flange 33 on the forward end thereof engaging the ear 26 on the blade, the resilient finger 37 riding over the cams 35.

As the blade 25 approaches its retracted position, the spring 29 is again compressed by the ear 26, after which the pin 43 engages in the aperture 44 for again locking said blade. The flange 46 of the guard 45 rides on the upper side of the blade and is shaped to accommodate the pointed forward end portion thereof. It will be observed, however, that the blade 25 is not retracted quite far enough to permit the flange 46 of the resilient guard 45 to clear the point of said blade and drop thereover. An opening 48 is provided in the exposed rear end portion 32 of the blade retracting bar 30 to facilitate obtaining a firm grip thereon. As will be readily apparent, access to the hollow handle 10 may be readily had by removing the plate 12.

It is believed that the many advantages of a knife constructed in accordance with the present invention will be readily understood and although a preferred embodiment of the device is as illustrated and described, it is to be understood that changes in the details of construction and in the combination and arrangement of parts may be resorted to which will fall within the scope of the invention as claimed.

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Having described the invention, what is claimed as new is:

1. A knife comprising a hollow elongated handle, a guide mounted longitudinally in said handle, a blade slidable in the guide and adapted to be projected from one end of the handle, resilient means in the handle for projecting the blade, manually operable means for retracting the blade, and means for releasably locking said blade in retracted position, said retracting means comprising a bar slidably mounted in the handle and projecting from the other end thereof, and means operatively connecting the blade to said bar for actuation thereby toward retracted position.

2. A knife comprising a hollow elongated handle, a guide mounted longitudinally in said handle, a blade slidable in the guide and adapted to be projected from one end of the handle, resilient means in the handle for projecting the blade, manually operable means for retracting the blade, and means for releasably locking said blade in retracted position, the last-named means including a resilient latch mounted on the guide, a handle on the latch projecting from the first-named handle, and a pin mounted on said latch, said blade having an aperture therein for the reception of said pin.

3. A knife comprising an elongated hollow handle including end walls having openings therein, a substantially C-shaped guide mounted longitudinally in the handle, a blade slidably mounted in the guide and operable in one of the openings to projected position, a longitudinal rod in the handle, an ear on the blade slidable on said rod, a coil spring mounted on the rod and engaged with the ear for actuating the blade to projected position, a manually actuated bar slidable in the handle and operable in the other opening and operatively connected to the blade for retracting same, and means for releasably securing the blade in retracted position against the tension of the spring.

4. A knife comprising an elongated hollow handle including end walls having openings therein, a substantially C-shaped guide mounted longitudinally in the handle, a blade slidably mounted in the guide and operable in one of the openings to projected position, a longitudinal rod in the handle, an ear on the blade slidable on said rod, a coil spring mounted on the rod and engaged with the ear for actuating the blade to projected position, a manually actuated bar slidable in the handle and operable in the other opening and operatively connected to the blade for retracting same, and means for releasably securing the blade in retracted position against the tension of the spring, the guide having an aperture therein, said blade having an aperture therein for registry with the first named aperture, said means including a resilient latch mounted on the guide, an operating handle on said latch, and a pin on the latch operable in the first-named aperture and engageable in the second-named aperture for securing the blade in retracted position.

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REFERENCES CITED

The following references are of record in the file of this patent:

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