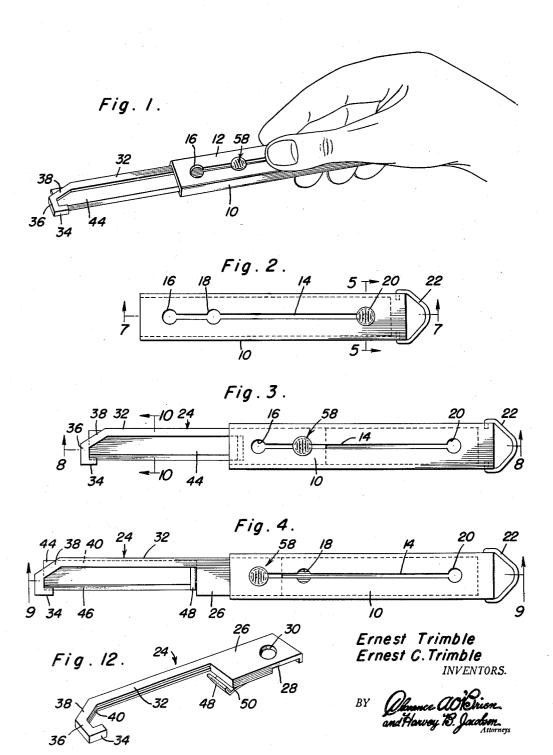
KNIFE USING A DETACHABLE RAZOR BLADE

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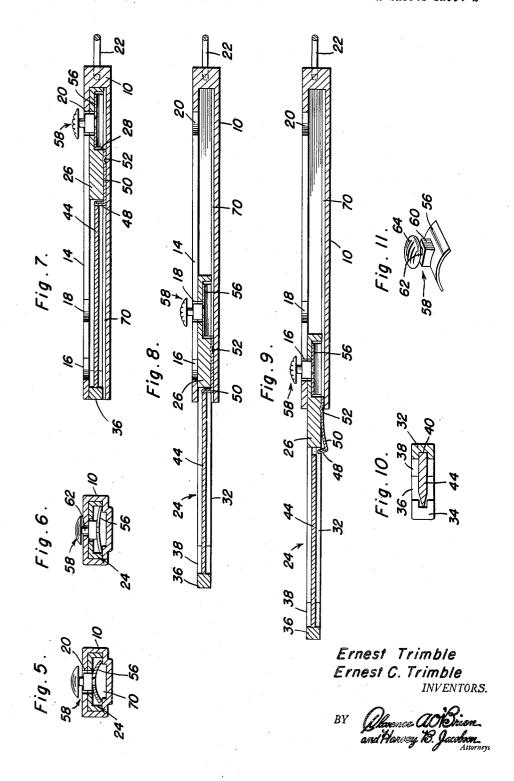
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KNIFE USING A DETACHABLE RAZOR BLADE

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UNITED STATES PATENT OFFICE

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KNIFE USING A DETACHABLE RAZOR BLADE

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3 Claims. (Cl. 30-320)

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This invention relates to novel and useful improvements in pocket or other type of knife con-

An object of this invention is to retain a blade in a holder in such a manner that the blade may 5 be readily removed for sharpening purposes or for the disposal of the old blade and insertion of a new one, to simplify the process of exposing the blade, to slidably mount the holder in an extensible fashion with respect to a housing, the holder 10 extending through one open end of the said housing, and to retain the blade as well as the blade holder supporting the blade in the operative and inoperative position by an improved latching device and also to supply a resilient stop for the 15 blade to limit the movement thereof with respect to the holder of the blade.

Another purpose of this invention is to provide a conventional pocket knife with the added feature of having a holder so constructed that 20 it will permit the insertion and removal of a razor blade or specifically constructed knife blade. The blade is simply placed in a slot provided for that purpose and in preparing the knife for operation the blade automatically becomes firmly 25 seated. Of course, this primary purpose affords the specific object desired of having a knife which will permit razor blades, manufactured for use in safety razors, to be used also as a knife blade. which is readily disposable and replaceable when 30 the cutting edge becomes dull, making sharpening unnecessary and yet enabling the owner of the knife to be assured of a sharp blade.

A still further object of the invention is to render the handling of a pocket knife which has 35 a single-edged razor blade removably forming a part thereof carried in such a manner that it is safe in operation because there is no sharp cutting point exposed. However, this necessary and practical sharp cutting point may be supplied to 40serve its usual purpose by simply inverting the blade in the blade holder, thus permitting a portion of the cutting edge to extend through a diagonal cut in the blade holder. The cutting edge continuing the length of the blade and particu- $_{45}$ larly to the exposed end provides the sharp cutting point desired. Of course, if a double-edged razor blade were used as the knife blade, then one of the cutting edges would always extend provide the sharp cutting point. For complete safety the blade, if manufactured especially for this knife, could be cut off diagonally at the end so that no point would extend beyond the blade

press purpose of providing a cutting point rather than a long cutting edge.

Ancillary objects and features of novelty will become apparent to those skilled in the art, in following the description of the preferred form of the invention, illustrated in the accompanying drawings, wherein:

Figure 1 is a perspective view of the preferred form of the invention showing the same in use:

Figure 2 is a plan view of the device shown in the closed position;

Figure 3 is a plan view of the device shown in Figure 1, and showing one operative position of the blade and the blade holder with respect to the housing which maintains the holder;

Figure 4 is a plan view of the device illustrated in an extended position, showing a second operative position of various elements;

Figure 5 is a sectional view taken substantially on the line 5-5 of Figure 2 and in the direction of the arrows;

Figure 6 is a sectional view of the structure of the invention showing the latching device in a preselected position;

Figure 7 is a longitudinal sectional view taken substantially on the line 7-7 of Figure 2 and in the direction of the arrows;

Figure 8 is a longitudinal sectional view taken substantially on the line 8-8 of Figure 3 and in the direction of the arrows:

Figure 9 is a sectional view taken substantially on the line 9—9 of Figure 4 and in the direction of the arrows:

Figure 10 is a transverse sectional view taken substantially on the line 10-10 of Figure 3 and in the direction of the arrows;

Figure 11 is a perspective view of the resilient latch means forming an important part of the present invention;

Figure 12 is a perspective view of the knife holder and resilient stop for the blade.

The present invention is adapted to improve generally on the class of knives which are now commonly known and utilized. The structure of the present invention includes a handle composed of a housing 10 which is substantially rectangular in shape. The top 12 of the housing 10 has a longitudinal slot 14 formed therein with three spaced apertures 16, 18 and 20 respectively through the diagonal cut in the blade holder and 50 provided therein. The slot 14 connects all of the apertures.

There is a bail 22 at one end of the housing to serve its usual and conventional purpose and the other end of the said housing is open. A holder holder unless the blade were inverted for the ex- 55 (Fig. 12) generally indicated at 24 is slidable in

extendable fashion through the open end of the housing 10. The specific structure of the holder may be seen best in this figure and includes a substantially rectangular block portion 26 having a recess 28 in the undersurface thereof and an aperture 30 communicating with said recess. A channel member 32 is fixed to or formed integral with the block member 26 and at one edge thereof. A substantially parallel channel member 34 is formed as a continuation of the said channel 10 member 32 and is connected by right angularly disposed portion or end member 36 and an angularly inclined element 38. The element 38 has a slot or passage 40 extending completely therethrough, while this slot or passage extends only 15 partially through the substantially parallel channel members 32 and 34.

The utility of the channel members and the slot is to accommodate a removably disposed blade 44 which is substantially rectangular in shape. 20 The blade has a sharp edge 46 formed thereon or may be of the double sharp edge type, either type being commonly used in connection with razors. This blade 44 is disposed in the channel or slot of the channel member 34 and in the 25 channel member 32 as is best seen in Figure 4. The inner end of the blade 44 abuts against the flat end 48 of a resilient stop 50 which is fixed to the undersurface of the block member 25 by any suitable means as by a spot weld 52. There is a 30 double thickness of resilient material in the flat end 48 which forms a shim as disclosed in Figure The opposite end of the blade contacts the inner surface of the portion 36 with a corner projecting through the slot 40 in the inclined ele- 35 ment 38 (Fig. 9).

Hence, when the holder is in position as shown in Figure 8 the inner end of the blade is in firm contact with the abutment or shim 48 which is a portion of the resilient stop 50. But, when the 40 device is in an extended position (Fig. 9), the resiliency of the stop urges the spring stop downwardly for ready removal of the blade or for ready insertion of the blade.

vided with a stepped finger member generally indicated at 58 on the convex surface thereof. This stepped member consists of a block 60 having a small stud 62 fixed thereto and a button portion 64 fixed to the stud. Inspection of Figures 5 and 6 shows the disposition of this spring member 56 and also the operation of the stepped member 58. Upon sliding movement of the holder 24, the spring 56 due to its shape and resilienone of the apertures 16, 18 or 20 respectively. In this instance the stepped member is urged through the aperture 20. Hence, the holder, spring member and stepped member 58 cannot move. When it is desired to move the stepped member as well as the other pertinent structure to another position, it is necessary only to depress the stepped member in order that the shank or stud 62 may pass through the relatively restricted passage or slot 14. Then, the entire holder may be moved to a second position.

The opening 20 is used in order to retain the device in the totally inoperative or closed position. The aperture 18 is used in order to retain ting; and the aperture 16 is utilized for the purpose of retaining the device in the full extended position for removal and replacement of a blade.

When it is desired to insert a blade and utilize

tended position as shown in Figure 4. The blade 44 is then placed in the groove or slot 40 and is retained in place as shown in Figure 4. The holder is slid inwardly of the housing and retained in the position as shown in Figure 3, the double thickness of material of the flat end 48 being used as a shim between the inner end of the blade and the front shoulder of the block 26. Then, the knife is in cutting operational position. All that is necessary to close the device is to simply slide the holder to the innermost position, the blade either being removed or retained therein as desired.

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With regard the operation of the resilient stop 50, it slides in the small channel 70 formed in the bottom of the housing. Since the said resilient member 50 is carried for movement with the holder 24, when the holder is moved outwardly sufficiently of the housing to permit the resiliency of the said stop 50 to urge it in the down direction (Fig. 9) the blade may be very easily inserted. The blade is maintained in place firmly by the double thickness end of the stop 50 which is moved upwardly in response to movement of the holder inwardly with respect to the housing. By so doing the resilient stop is urged in an up direction in order to dispose the double thickness end 48 of the stop in abutting relationship with the blade 44 as disclosed in Figure 8.

It is apparent that variations may be made without departing from the spirit of the invention.

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

- 1. In a knife construction a housing having an open end, said housing having an upper and a lower wall and a slot in one of said walls, a knife holder slidably disposed in said housing and slidable through said open end, latching means for said holder slidably disposed in said slot, a blade disposed in said holder in removable relation therewith, a resilient stop supported by said holder and movable therewith, said resilient stop disposed between said blade and a part of A spring steel curvilinear member 56 is pro- $_{45}$ said housing and biased against one wall of said housing by the inherent resiliency of said stop, whereby the stop will be sprung outwardly from between said blade and said part of said housing upon disengagement of at least a portion of said stop with respect to the last-mentioned wall of the housing so that said blade may be removed from said housing.
- 2. Means for supporting a razor blade for use as a pocket knife blade comprising a housing cy, urges the stepped member upwardly through 55 having an end opening, a blade holder extensibly disposed in said housing and movable through said end opening, a recess in said holder, means including a spring disposed in said recess for moving said holder and retaining said holder in selected positions with respect to said housing, said holder including a pair of substantially parallel channel members adapted to cover at least portions of opposite edges of a blade, an end member adapted to abut a part of another edge of a blade, an angularly inclined member fixed to said end member and one of said channel members, said inclined member having a passage therethrough to allow a sharp pointed end of a blade to pass therethrough, and a resilthe device in position for operation such as cut- 70 ient member carried by said holder having an end forming a shim resiliently pressed against an end of a blade.
- In a pocket knife construction of the removable blade type, a housing which constitutes a the knife, the holder is extended to the full ex- 75 handle and includes top and bottom walls fixed

together at their longitudinal edges and having an open end, a holder for a substantially rectangular blade and extensibly disposed in said housing and movable through said open end, means carried by said holder reacting on said 5 holder and said bottom wall and passed through said top wall for moving said holder relative to said housing and for locking said holder in selected positions, means forming a part of said holder for covering portions of the blade includ- 10 ing a pair of substantially parallel channels, means fixed to said channels for retaining said channels in spaced relation and forming an abutment for an end of a blade, a resilient stop carried by said holder forming an abutment for the 15 opposite end of the blade, said stop being disposed between the bottom wall of the housing and a part of said holder operatively engaging a portion of said holder whereby upon movement

6 of said holder inwardly relative to said housing the resilient stop is moved to a position between the blade and a part of the holder to form a

> ERNEST TRIMBLE. ERNEST C. TRIMBLE.

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