

Oct. 10, 1944.

G. M. SCHRADER

2,360,165

POCKET KNIFE

Filed June 14, 1944

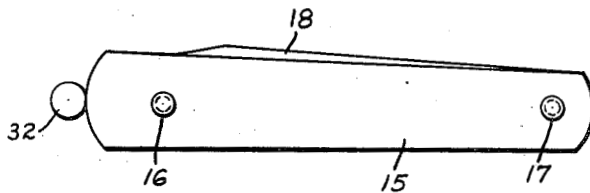


Fig. 1

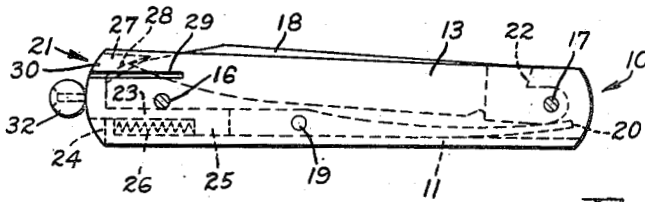


Fig. 2

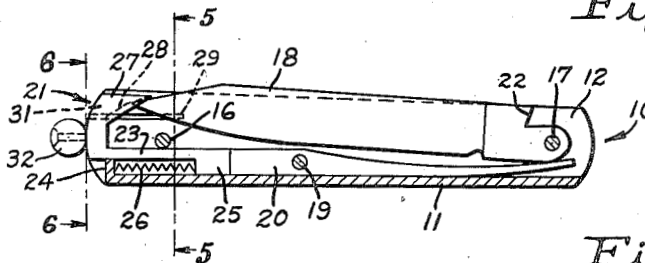


Fig. 3

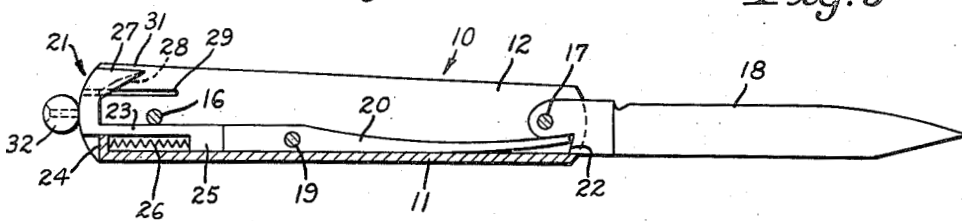


Fig. 4

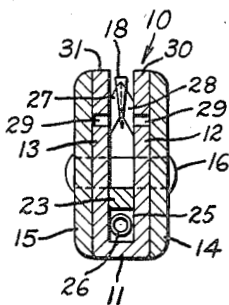


Fig. 5

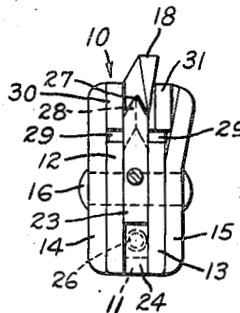


Fig. 6

INVENTOR
George M. Schrader
BY *John H. Hawrah*
ATTORNEY

UNITED STATES PATENT OFFICE

2,360,165

POCKETKNIFE

George M. **Schrade**, Bridgeport, Conn.

Application June 14, 1944, Serial No. 540,236

6 Claims. (Cl. 30-159)

This invention relates to new and useful improvements in pocketknives of the type known as fly-open knives and having one or more blades normally retained in closed position but which are adapted to be opened by a spring when manually released.

An object of the invention is to provide certain safety features in a knife of the character outlined whereby the knife blade will not be casually released because of looseness of the parts or because of carelessness in closing the blade, etc.

Other objects and advantages of the invention will become apparent from a consideration of the following detailed description taken in connection with the accompanying drawing wherein a satisfactory embodiment of the invention is shown. However, it is to be understood that the invention is not limited to the details disclosed but includes all such variations and modifications as fall within the spirit of the invention and the scope of the appended claims.

In the drawing:

Fig. 1 is a side elevational view of a knife made in accordance with the invention, the blade thereof being in closed position;

Fig. 2 is a similar view but with the near side of the handle or covering removed;

Fig. 3 is a similar view but with the near side of the handle or covering and the near side of the lining removed;

Fig. 4 is a view similar to Fig. 3 but with the blade of the knife in open position;

Fig. 5 is an enlarged sectional view taken as along the plane of the line 5-5 of Fig. 3; and

Fig. 6 is an enlarged sectional view taken as along the plane of the line 6-6 of Fig. 3 but showing the relation of the parts as the blade is moving toward closed position.

Referring in detail to the drawing the knife of the invention is shown as including a transversely U-shaped metal lining member generally designated 10 and comprising a single piece of spring metal bent into the shape shown whereby to include a back wall 11 and parallel side walls 12 and 13 extending substantially at right angles to such back wall. On the outer sides of the walls 12 and 13 are handle or covering members 14 and 15, respectively. These members are secured in place by a pair of spaced rivets 16 and 17 passing entirely through the knife and the rivet 17 also functions as a pivot for a blade 18.

A third rivet 19 passes through the side walls of the lining member 10 and serves to anchor a spring 20 in the inner portion thereof. This spring functions to cause the blade 18 to fly or snap to an open position when the blade is released from a slidable latch member generally designated 21. Additionally the spring 20 functions as a stop means positively limiting the

opening movement of the blade. When the blade is in closed position the spring is acting against the cammed surface at the pivoted end of the blade and when the latter is released, as will be set forth, the spring functions to throw the blade to full open position. In such last position the shoulder 22 at the pivoted end of the blade engages the rear end of the spring 20 as shown in Fig. 4 and further opening movement of the blade is positively prevented.

The slidable latch 21 is mounted in the forward or butt end portion of the knife between the side walls of the lining 10. This latch includes a bar-like portion 23 toward one end resting on the upper edge of an inturned lug 24 formed with the rear wall 11 of the lining and at its inner end having a depending lug 25 of the height of lug 24 and resting on or bearing against the inner surface of wall 11. A small coil spring 26 is disposed in the pocket formed by the lugs 24 and 25, the bar 28, the back wall 11 and the side walls 12 and 13 and bearing at its respective ends against said lugs serves to normally retain the latch 21 in the latching position in which it is shown in the several views of the drawing.

Rivet 16 serves to keep the latch in position as this rivet is substantially against the upper or outer side of the bar 23 and inward movement of the latch under the influence of the spring 26 is limited by engagement of the inner side of the lug 25 with the adjacent end of the blade opening spring 20 as shown. Spaced outwardly from the bar 23 the slidable latch includes a nose or portion 27 having a groove or recess 28 in its under side and opening through its forward end. The opposite outer side portions of the nose 27 are bevelled so that when engaged by the point of a blade, as when closing the latter, the blade will spring sidewise, slightly, to pass the said nose and will then pass under the latter and the outer edge portion of the point of the blade will then enter into the groove or recess 28 as shown in Figs. 2 and 3.

Above the rivet 16 the side walls 12 and 13 are spaced inwardly from the butt end of the knife as at 29 thus providing a pair of spring fingers 30 and 31 located one on each side of the nose 27 of the slidable latch. As the rivet 16 is lower than or inwardly of the slots 29 the rivet does not interfere with any spring action of the fingers 30 and 31. These fingers are free to hug the sides of said nose 27 regardless of the tightness or looseness of the rivet 16.

When the knife blade 18 is in closed position its tip portion or the outer edge of its tip portion is received in the groove or recess 28 and is held in such recess by the constant tendency of the spring 20 to move the blade to open position. Further the spring fingers 30 and 31 are

at such times against the opposite sides of the nose 27 of the latch and tend to hold or maintain the latter in longitudinal alignment with the blade even through the lower butt portions of the lining 10 may not be held tight against the other portions of the latch.

To open the knife it is but necessary to move or draw the latch in a direction outwardly of the butt portion of the knife. For convenience in so moving the latch a small ball 32 is shown attached to the said slide and located beyond the butt end of the knife. When the slidable latch is moved as suggested its nose 27 is drawn beyond the point of the knife blade and the spring 20 acting against the cammed end portion thereof projects it to open position. Now when it is desired to close the blade it is swung toward closed position and its pointed portion engaging one or the other of the bevelled surfaces of the nose the blade is slightly sprung to one side or the other (see Fig. 6).

The blade then engages laterally against one of the spring fingers 30 and 31 and the latter yields outwardly whereby to permit the blade point portion to pass between such finger and the nose 27. As the blade passes under nose 27 it is snapped into the groove or recess 28 and thus held in closed position. When the blade has passed as indicated the finger 30 or 31 (whichever has been pressed laterally) moves back into position against the adjacent side of the nose. Since the fingers 30 and 31 are free to flex independent of the remaining wall portions of the lining 10 it will be clear that the rivet 16 may be tight and yet not make for such resistance to the closing of the blade as to make such operation difficult.

Without such fingers if the rivet is drawn up tight it is difficult to cause the entire side of the lining to flex and permit of movement of the end portion of the knife blade past the nose of the catch or latch 21. The handle or covering members 14 and 15 are of a plastic or the like and yield as suggested in Fig. 6 when one or the other of the fingers 30 and 31 is caused to move outwardly as the blade 18 is being closed. As the side walls 12 and 13 of the lining are against the body portion of the latch and the fingers 30 and 31 are against the nose portion 27 thereof, it will be clear that the latch is supported against lateral movement.

Having thus set forth the nature of my invention, what I claim is:

1. A knife of the class described including lining walls and a spring actuated blade hingedly mounted between said walls and adapted to be closed between them, a longitudinally movable latch adapted to have the free end portion of the blade move by and under the same to lock the blade, means for supporting the latch against lateral movement, means to operate the latch to release the blade, and said latch having a groove opening through its underside and forward end and receiving the outer edge of the free end of the blade when the same is locked to prevent casual relative lateral movement of the latch and blade.

2. A knife of the class described including a lining comprising spaced walls and a spring actuated blade mounted between said walls and adapted to be closed between them, a longitudinally movable latch between said walls at the butt end of the knife and adapted to have the

free end portion of the blade move by and under the same to lock the blade, means to operate the latch to release the blade, a spring finger on one of said lining walls, and said spring finger normally engaging a side of said latch but adapted to flex outwardly to permit the free end portion of the blade to pass by said latch.

3. A knife of the class described including lining walls and a spring actuated blade hingedly mounted between said walls and adapted to be closed between them, a longitudinally movable latch between said walls at the butt end of the knife and adapted to have the free end portion of the blade move by and under the same to lock the blade, means to operate the latch to release the blade, one of said lining walls slotted inwardly from its butt end to provide it with a spring finger, and said spring finger normally engaging a side of said latch but adapted to flex outwardly to permit the free end portion of the blade to pass by said latch.

4. A knife of the class described including lining walls and a spring actuated blade hingedly mounted between said walls and adapted to be closed between them, a longitudinally movable latch between said walls at the butt end of the knife and adapted to have the free end portion of the blade move by and under the same to lock the blade, means to operate the latch to release the blade, a spring finger on one of said lining walls, said spring finger normally engaging a side of said latch but adapted to flex outwardly to permit the free end portion of the blade to pass by said latch, and said latch having a groove opening through its under side and forward end and receiving the outer edge of the free end of the blade when the same is locked to prevent casual relative lateral movement of the latch and blade.

5. A knife of the class described including lining walls and a spring actuated blade hingedly mounted between said walls and adapted to be closed in between them, a longitudinally movable latch between said walls at the butt end of the knife and adapted to have the free end portion of the blade move by and under the same to lock the blade, means to operate the latch to release the blade, one of said lining walls slotted inwardly from its butt end to provide it with a spring finger, said spring finger normally engaging a side of said latch but adapted to flex outwardly to permit the free end portion of the blade to pass by said latch, and said latch having a groove opening through its under side and forward end and receiving the outer edge of the free end of the blade when the same is locked to prevent casual relative lateral movement of the latch and blade.

6. A knife of the class described including lining walls and a spring actuated blade hingedly mounted between said walls and adapted to be closed in between them, a longitudinally movable latch between said walls at the butt end of the knife and adapted to have the free end portion of the blade move by and under the same to lock the blade, means to operate the latch to release the blade, a spring finger on one of said lining walls, and said finger located at a side of said latch and adapted to flex outwardly thereof to permit the free end portion of the blade to pass by said latch.