No. 616,689. Patented Dec. 27, 1898.

# E. RUETTGERS.

## POCKET KNIFE.

(Application filed Apr. 27, 1898.)

(No Model.)

Fig:1.

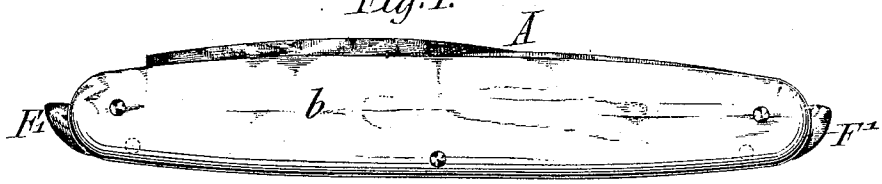



Fig:2.




Fig:3.

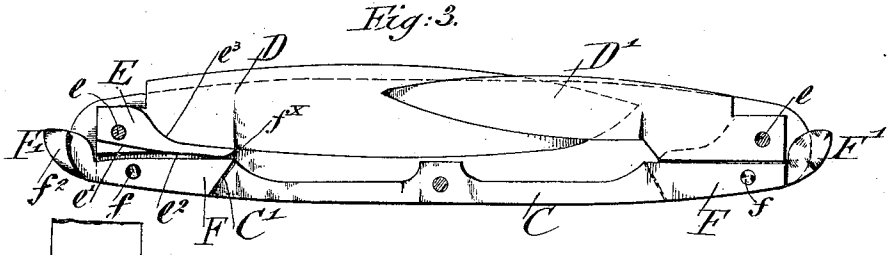



Fig:4.

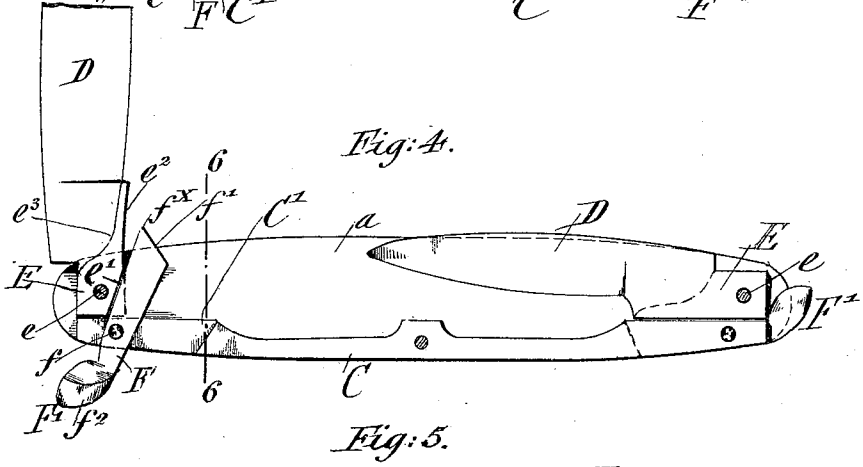
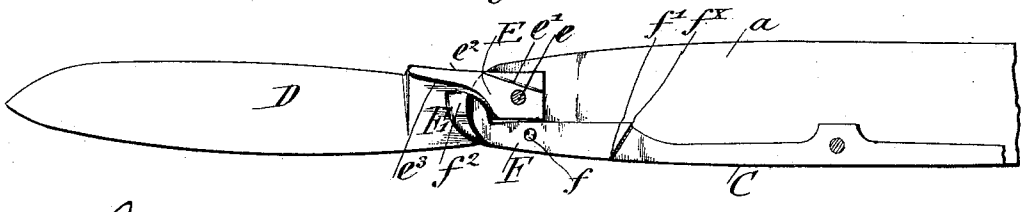



Fig:5.

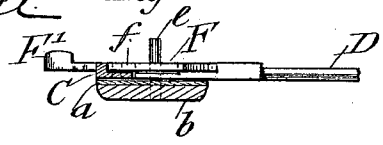



WITNESSES:

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Fig:6.




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# UNITED STATES PATENT OFFICE.

ERNST RUETTGERS, OF NEW YORK, N. Y.

## POCKET-KNIFE.

SPECIFICATION forming part of Letters Patent No. 616,689, dated December 27, 1898.

Application filed April 27, 1898. Serial No. 678,992. (No model.)

*To all whom it may concern:*

Be it known that I, ERNST RUETTGERS, a citizen of the United States, residing at New York, borough of Brooklyn, State of New York, have invented certain new and useful Improvements in Pocket-Knives, of which the following is a specification.

This invention relates to pocket-knives, and particularly to that class of knives in which the folding blades have no thumb slits or notches and in which the blades are opened by means of a pivoted finger-piece, whereby the objection incident to opening the blades by the thumb-nail is overcome.

The invention consists of the handle of a pocket-knife, a blade pivoted thereto, the spring, and an actuating finger-piece separately pivoted on said handle and engaging a portion of the blade, said actuating-piece being received in a recess at the back of the handle, as will be hereinafter described and then particularly claimed.

In the accompanying drawings, Figure 1 is a side elevation of my improved pocket-knife closed. Fig. 2 is a front view looking toward the blades. Fig. 3 is a sectional side elevation with one of the side plates of the handle removed, the blades being closed. Fig. 4 is a similar view showing one of the blades sprung open by the actuating-piece. Fig. 5 is a similar view, partly broken away, showing the blade fully opened out; and Fig. 6 is a broken detail section on line 6 6, Fig. 4.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A indicates the handle, constructed in the usual manner with side plates *a a'*, which are covered or ornamented by pieces of pearl or other suitable material *b*. Pivoted to the handle A, between the side plates *a a'*, is the usual blade-spring C, which is free at both ends, so as to hold the blades D D' in closed or open position for use. To each blade, at the side of the heel, is fixed a cam-piece E, through which the pivots *e* of the blades pass. This cam-piece is of peculiar shape and is provided at the front of the blade with an incline *e'* and a nearly straight, but slightly concaved, face $e^2$, while at the opposite side from the curved face $e^2$ it is recessed or cut out at $e^3$. Each blade is provided with an actuating finger-piece F, which is fulcrumed on a separate pivot *f*, arranged adjacent to the pivot *e* back of the same and supported by the free end of the mainspring C.

In the closed or open position of the blade the actuating-piece moves into a recess C', formed in one side of the mainspring C, and is provided at its inner end with an incline *f'*, which engages with the inclined end wall of the recess C', while at the other end of the actuating-piece the same is provided with a head F', having a laterally-extended portion $f^2$, which when the blade is closed fits snugly against the end of the handle, as shown clearly in Fig. 1, while when the blade is open the laterally-extended portion of the head also fits snugly against the end of the handle, as shown in Fig. 5, and the head is moved out of the way into the cut-out or recessed portion $e^3$ of the cam-piece E of the blade.

To open the blade, the head F' of the actuating-piece is pressed back, and when sufficient pressure is exerted the blade actuated will, under the action of its spring, spring into position at right angles to the handle, as shown clearly in Fig. 4. In so doing the toe $f^\times$ of the actuating-piece, by reason of the position of its pivot *f* slightly in advance of the pivot *e* of the blade, presses with considerable leverage against the slightly-concave edge $e^2$ of the cam-piece E, so that the blade is opened into the position shown in Fig. 4. In order to move into this position, it is necessary that the cam-piece E have the inclined face *e'*, above referred to, because this inclined or cut-away portion permits the toe $f^\times$ of the actuating-piece to bear upon the face $e^2$ of the cam-piece. This incline *e'* also prevents the headed end of the actuating-piece being snapped in opening the blade and hurting the fingers. The blade being now opened out by the actuating-piece in position at right angles to the handle, in which position it is held by the spring C, the said blade is taken hold of and opened out into using position, (shown in Fig. 5,) in which position the actuating-piece is held firmly and prevented from wabbling by reason of its head F' moving into the recessed or cut-out portion $e^3$ of the cam-piece E and the engagement of its end *f'* with the inclined—that is to say, closed—end of the recess C' in the spring. The blade of the

knife is closed as usual, and when closed the actuating-piece is held firmly in position by the contact of the face $e^2$ of the cam-piece E with the operative end of the actuating-piece.

A great advantage is obtained by fulcruming the actuating-piece on a pivot separate from the blade to be actuated, inasmuch as a greater leverage can thereby be obtained on the blade for the purpose of opening it; also, by hinging the actuating-piece on the mainspring a yielding action is obtained and a binding of the parts is prevented. There are several other minor advantages obtained by my improved construction of pocket-knife—such, for instance, as that the actuating-piece is held in firm position in both open and closed condition of the blade and that by reason of the formation of the headed end of the actuating-piece and its reception in the recessed or cut-out portion of the cam-piece the size of the same is reduced to a minimum, so as not to offer any objectionable protuberances at the ends of the handle.

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

1. In a pocket-knife, the combination, with the handle provided with a mainspring, and a blade pivoted to said handle, of a blade-actuating piece pivoted to said spring, substantially as set forth.

2. In a pocket-knife, the combination, with a handle, provided with a mainspring having a recess, and a blade pivoted to the handle, of a blade-actuating piece pivoted to said mainspring, in said recess, substantially as set forth.

3. In a pocket-knife, the combination with a handle and a blade pivoted thereto, of a blade-actuating piece separately pivoted in juxtaposition to the pivot of said blade and adapted to engage the said blade for opening the same, substantially as set forth.

4. In a pocket-knife, the combination, with a handle, provided with a mainspring, and a blade pivoted to said handle, of a blade-actuating piece pivoted to said mainspring, in a position back of the pivot of the blade, substantially as set forth.

5. In a pocket-knife, the combination, with a handle provided with a pivoted blade having a lateral cam-piece at its heel end, of a pivoted actuating-piece adapted to engage said cam-piece, substantially as set forth.

6. In a pocket-knife, the combination, with a handle having a pivoted blade, and a mainspring having a recessed free end extending back of the pivot of the blade, of a blade-actuating piece pivoted in the recess of said spring and adapted to engage at its operative end with the closed end of said recess, substantially as set forth.

7. In a pocket-knife, the combination, with a handle, a blade pivoted to the handle, and a cam-piece fixed to the side of the heel of the blade, said cam-piece being provided with a practically straight face and an inclined face extending therefrom, of a pivoted actuating-piece adapted to engage said cam-piece, substantially as set forth.

8. In a pocket-knife, the combination, with a handle, a blade pivoted thereto, and a cam-piece fixed to the side of the heel of the blade and provided with a recessed or cut-out portion, of a pivoted blade-actuating piece provided with a head at its outer end adapted to be moved into said recessed or cut-out portion of the cam-piece when the blade is in using position, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

ERNST RUETTGERS.

Witnesses:

PAUL GOEPEL,

GEO. W. JAEKEL.