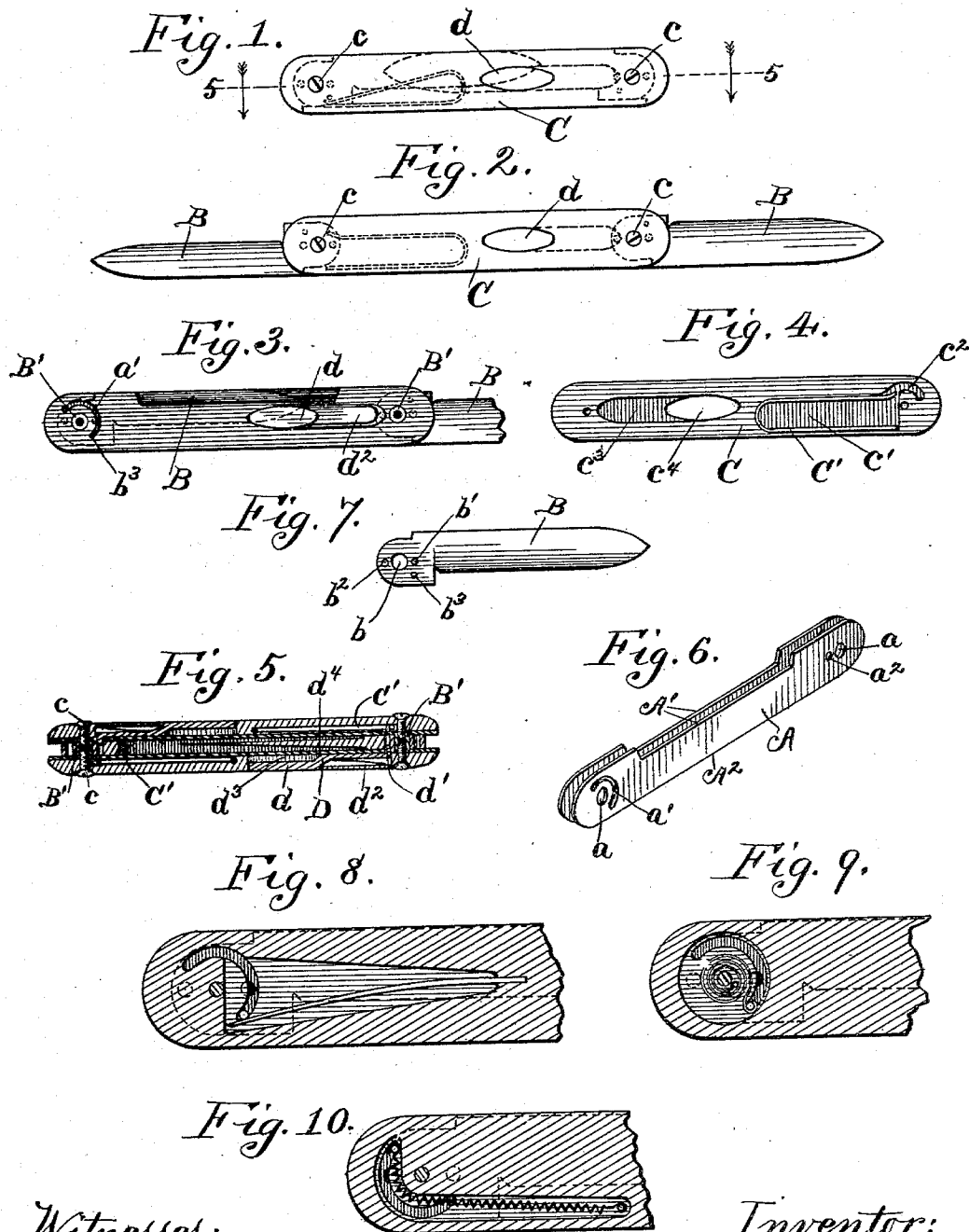


(No Model.)

A. H. RUSSELL.
POCKET KNIFE.

No. 552,928.

Patented Jan. 14, 1896.



Witnesses:

R. J. Jaeger,
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By

Inventor:

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his
Atty

UNITED STATES PATENT OFFICE.

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POCKET-KNIFE.

SPECIFICATION forming part of Letters Patent No. 552,928, dated January 14, 1896.

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To all whom it may concern:

Be it known that I, ALBERT H. RUSSELL, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Pocket-Knives, which are fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a knife embodying my invention in one form; the blades being closed and portions of the internal construction being indicated in dotted lines. Fig. 2 is a similar view, the blades being open. Fig. 3 is a view showing the knife with one cover removed. Fig. 4 is an inner face view of the cover removed. Fig. 5 is a sectional view taken on the line 5 5 of Fig. 1. Fig. 6 is a perspective view of the back and sides detached. Fig. 7 is an elevation of one of the blades detached. Fig. 8 is an enlarged detail sectional view illustrating a modification. Fig. 9 is a similar view showing another modification. Fig. 10 is a similar view of yet another modified form.

My invention relates to pocket-knives, and more particularly to that class known as "automatic" knives, wherein the blade is actuated by a spring and controlled by a detent, so that when the detent is released the spring forces the blade automatically into an open position, the detent locking the blade in either its open or closed position.

My present invention has for its object to provide a construction having superior compactness, simplicity, cheapness, and efficiency; and to these ends it consists in the matters and things which will be hereinafter described, and then specifically pointed out in the appended claims.

In the drawings I have shown my invention applied to a two-bladed knife having a blade pivoted at each end of the handle, but it is obvious that the invention may be applied to a single-bladed knife, although one of its chief advantages is that it may be applied to a knife having more than one blade.

In the drawings, A represents the main portion of the handle, comprising the sides A' and back A². These parts are desirably formed in one piece. Apertures *a* are formed

through the sides A' near each end to receive the pivots of the blades B. These pivots B' are hollow and internally threaded to receive the screws *c* that clamp the covers C onto the sides. Each blade B has an aperture *b* to receive the pivot B, and on opposite sides thereof apertures or depressions *b'* *b*² to receive the detent-dog. Each blade is further provided with a pin or projection *b*³ 60 on one side, extending laterally outward through a slot *a'* in the adjacent side A' and projecting beyond the outer face of said side. It will be observed that the slot *a'* is a segment of a circle having the pivot of the blade 65 for its center.

In the inner face of each cover is formed a recess *c'*, in which is placed a U-shaped spring C', lying within said recess and bearing against its wall, said spring having its free end arranged in the path of the corresponding pin *b*³. The recess *c'* terminates in an arc-shaped groove *c*² to accommodate the projecting end of said pin. When the blade is open the pin is at the extreme end of the groove *c*², and in closing the blade said pin comes into contact with the free end of the spring C' and compresses it into the position indicated in dotted lines in Fig. 1. Thus when the blade is free to move the spring C', acting on the pin *b*³, will throw the same automatically into full-open position in an obvious manner.

To control the blade, I employ a detent carried by the other cover, each cover carrying the detent for one blade and the spring for the other in the construction shown. In the inner face of each cover C is formed a recess *c*³, which at its inner end is cut entirely through the cover, forming an aperture *c*⁴. Within this recess lies the detent-lever D, which is provided at one end with a pressure-plate or boss *d*, which extends through and fills the aperture *c*⁴, lying normally flush with the outer face of the cover. At its other end the detent-lever D carries the detent proper, consisting of a pin, projection or dog *d'*, extending inward through a hole *a*² in the side A', and being adapted to engage either one of the recesses or depressions *b'* *b*² of the blade B. This detent is forced into such engagement by means of a spring *d*² in the re-

cess c^3 acting upon the top wall of said recess and the lever D. In practice I prefer to employ a leaf-spring, as shown, attached at one end to the lever and bearing at its other free end against the cover. To obtain a suitable fulcrum and permit the lever D to rock, the end thereof forming the pressure-plate or boss d is undercut, as shown at d^3 in Fig. 5, the edge d^4 of the portion not undercut forming the fulcrum. This is a simple and effective mode of construction, but other modes may be adopted—such, for instance, as bending the lever into the shape shown or pivoting it.

The knife thus constructed is operated in the following manner: The blades being closed, and it being desired to open either of them, pressure upon the plate d will withdraw the detent d' from the aperture or depression b' , when the spring C' , acting on the pin b^3 , automatically throws the blade clear open. When the blade reaches the full-open position, the detent engages the other aperture or depression b^2 , and thus automatically locks the blade in its open position. When it is desired to close the blade, the plate d is again depressed to unlock the blade, and this latter may then be closed in the usual manner, again compressing the spring C' . When the blade is fully closed, the detent again locks it in its closed position.

It will be noted that the blade-operating spring, instead of being in the plane of the blade, is wholly to one side thereof or laterally arranged relatively thereto. This arrangement permits the use of a full-sized blade without any increase in the depth of the handle, while at the same time the blade may be closed down flat and entirely within the handle, presenting no projecting points or shoulder to catch the clothing or render handling unpleasant or dangerous. The inclosure of the blade-operating spring within the recess in the cover serves not only to protect the spring from moisture and dust, but gives room for an efficient spring of large relative size and strength without increasing the dimensions of the handle.

The employment of the pin or projection on the blade as a means for transmitting the power of the spring to the blade gives an increased leverage and a more even application of power. The securing of the spring to the detent-lever, and the mounting of this latter loosely in a recess in the cover, gives a construction of greatly-reduced cost along with ease of assembling without any sacrifice of efficiency. The mode of pivoting the blades

and connecting the pivots and covers not only provides an extra large bearing for the blades, but also enables anyone to readily take apart and assemble the knife, thus facilitating and reducing the cost of repairs.

It is obvious that the details of the construction shown and described may be varied in many ways without departing from the principle of my invention. As an illustration of this I have shown in Figs. 8, 9, and 10 three modifications of the actuating-spring C' . Instead of the U-shaped spring already described I may employ either the single-leaf spring shown in Fig. 8, the volute coiled spring shown in Fig. 9, or the helical coiled spring shown in Fig. 10. Other modifications of this and other features will readily suggest themselves, and I therefore do not wish to be understood as limiting myself to the precise details of construction shown in the drawings and described in the specification.

What I claim is—

1. In an automatic knife, the combination, with a blade having a lateral projection, of a handle comprising a main portion composed of a back and sides, between which latter the blade is pivoted, one of said sides having an arc-shaped slot through which said projection of the blade extends and the other having an aperture for the detent, said handle also comprising separate covers recessed on their inner faces, a blade-operating spring located in the recess of one cover, and a spring controlled detent located in the recess of the other cover and accessible from the exterior thereof, substantially as described.

2. In an automatic knife, the combination, with a handle comprising a back and sides, of a blade pivoted between the sides and having a projection extending through an arc-shaped slot in one of them, a cover recessed in its inner face, and a U-shaped spring located in said recess and having its free end located in the path of said projection, substantially as described.

3. In an automatic knife, the combination, with the main frame of the handle, composed of the back and sides, the latter apertured near each end, of the hollow, internally-threaded cylinders arranged in said apertures, the separable covers, and the screws passing loosely through the covers and taking into the internally threaded cylinders, substantially as described.

ALBERT H. RUSSELL.

In presence of—

LEONARD WATSON,
IRVINE MILLER.