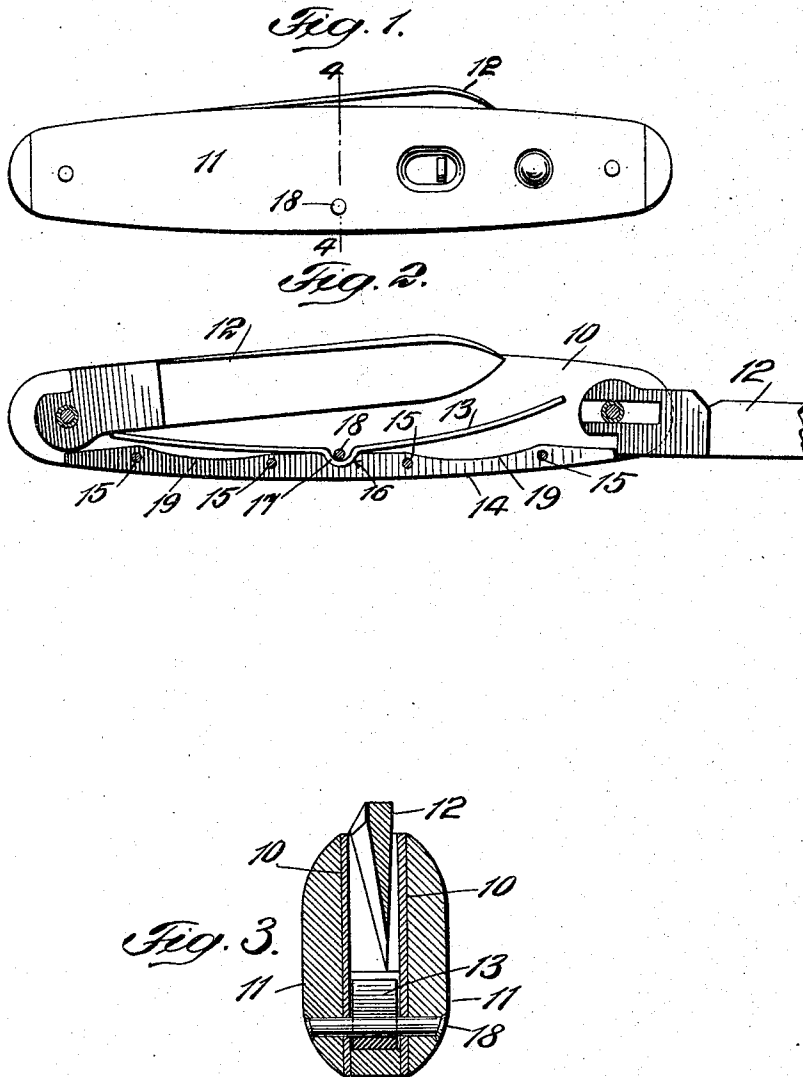


J. L. SCHRADER.
POCKET KNIFE.
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1,185,725.

Patented June 6, 1916.



WITNESSES:
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UNITED STATES PATENT OFFICE.

JACOB LOUIS SCHRADE, OF WALDEN, NEW YORK.

POCKET-KNIFE.

1,185,725.

Specification of Letters Patent.

Patented June 6, 1916.

Application filed March 24, 1915. Serial No. 16,549.

To all whom it may concern:

Be it known that I, JACOB LOUIS SCHRADE, a citizen of the United States, and a resident of Walden, in the county of Orange and State of New York, have invented certain new and useful Improvements in Pocket-Knives, of which the following is a specification.

The invention pertains more particularly to the class of pocket knives having means for locking the blade in its open and closed positions and a spring for causing the closed blade to fly open when manually released from its locking means.

An example of a safety push button pocket knife of the character to which my invention is more especially applicable is illustrated in the patent granted to J. L. and W. Schrade, No. 969,909, dated September 13, 1910, although other patents show modified forms of pocket knives belonging to the type of knife to which my invention relates. In the pocket knife shown in said patent of September 13, 1910, and in all other pocket knives belonging to the same type known to me, there has existed a difficulty which it is the purpose of my invention to remedy and which has not, so far as I know, been heretofore corrected. In this type of knife, the inner edge of the back of the knife, in between the sides of the handle, has been substantially straight and flat except at the center where said back has been slightly recessed to take a bend in the spring with a transverse rivet engaging said bend, and furthermore the spring has been from the central rivet extended toward the ends of the knife handle on such lines as that on the closing of the blade or blades the spring would by the rolling action of the tang of the blade against it be closed down against or close to the inner straight edge of the back. Several difficulties have existed with respect to the knife construction as heretofore produced, and among them it may be mentioned that the spring has not had proper elastic action to insure efficiency, and that by reason of the close proximity of the spring to the inner edge of the back, when the blade is in closed po-

sition, even slight obstruction such as an accumulation of lint, dust or the like from the pocket getting in between the spring and back, has prevented the blade or blades from freely closing as far as proper and interferes with the action of the spring, the whole resulting in the knife mechanism having a harsh and improper action. The objections to which I have referred have existed for a considerable period and have been a source of great annoyance, and the purpose of my invention is to provide a push button pocket knife whose spring although of the same character of metal as heretofore used, is permanently more elastic and efficient than the springs of the prior art and especially more elastic during the first portion of the opening and last portion of the closing movements of the blades, and one in which there is sufficient clearance between the inner edge of the back of the knife and the spring or springs to avoid the difficulties which have heretofore arisen due to an accumulation of lint, dust or the like from the pocket on the inner edge of the back behind the spring or springs.

My invention does not involve any change in the general character of the knife with the exception of those changes in the back and spring necessary to the accomplishment of the purposes of my invention.

The invention will be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which:

Figure 1 is a side elevation of a push-button pocket knife constructed in accordance with and embodying my invention; Fig. 2 is a longitudinal section through the same, the smaller blade of the knife being shown partly broken away and in open position and the larger blade in closed position; and Fig. 3 is a vertical transverse section through the knife shown in Figs. 1 and 2 taken on the dotted line 4-4 of Fig. 1.

In the drawings, referring to Figs. 1, 2 and 3, 10 designates the linings, usually of brass, of the knife handle, 11 the mountings secured on and covering the outer faces of said linings, 12 the blades pivotally secured

in a known manner between the end portions of the sides of the handle, 13 a fly-spring for automatically moving the blades, or either thereof, to an open position when said blades become released from the locking mechanism not specially shown herein and forming no part of the present invention, and 14 the back which is secured adjacent to its middle and end portions by rivets 15 between the sides of the handle and in a recess 16 in which back the curved central portion 17 of the spring is secured by a transverse rivet 18. The back 14 is rigid as distinguished from being in itself a spring for the blades. The employment of a fly-spring having a curved portion 17 seated in a recess in the back and retained by a rivet 18 is not in itself new or separately claimed herein. The back 14 has heretofore had a substantially straight inner edge, but in accordance with my invention the back 14 is recessed outwardly, as at 19, between its center and end portions, the recesses usually extending the full distance between the outer rivets 15 and those rivets 15 adjacent to the center of the back. Outwardly beyond the outer rivets 15 the rigid back 14 is tapered downwardly and outwardly at its end portions as shown in Fig. 3, thereby allowing adequate space for the tang or shank portions of the blades in a handle of neat appearance and not of undue width between its front and back edges. The spring 13 is of leaf character and is firmly held at its central portion on its seat in the back 14, and said spring at its end portions normally extends toward the front edge of the knife handle, as shown at the right hand side of Fig. 2, the tendency of the spring 13 being to take the position at its ends illustrated at the right hand side of Fig. 2, and hence the ends of the spring when the blades are closed in between the linings 10 become engaged at their outer extremities by the shank portions of the blades and pressed inwardly in a direction toward the back 14. As heretofore constructed the end portions of the spring have on the closing of the blades, been pressed into very close relation to the usual straight edge of the back 14 and against any lint or other foreign matter that may have gathered on said edge, the result having been that the spring lost a portion of its efficiency and in addition when lint and the like had accumulated on the back 14, underneath the spring, said spring was for that reason alone prevented from having proper action and the entire action of the knife mechanism was rendered harsh and undesirable. In accordance with my invention I provide adequate clearance between the back 14 and spring 13 to enable the spring to act with suitable elasticity and to protect the spring against the effect of lint and dust which may gather on

the inner edge of the back 14 while the knife is carried in the pocket.

In Fig. 2 I illustrate a construction in which the clearance between the spring 13 and back 14 is secured by forming the recesses 19 in the inner edge of said back. The recesses 19 provide means for receiving the lint, dust and the like which otherwise, in the use of a straight edge back 14, would accumulate on the inner edge of the back below the end portions of the spring and interfere with the efficiency and proper operation thereof. I preferably provide a clearance between the end portions of the spring and the inner edge of the back 14 extending from the central portion of the spring to the outer extremities of said end portions even when the blades are in closed position, as I indicate at the left hand side of Fig. 2, this clearance not only avoiding the effects of dust or the like on the inner edge of the back 14 but leaving the end portions of the spring free to operate with the highest efficiency.

The provision of clearance between the inner edge of the back and the end portions of the spring 13 is of the greatest importance in the type of knife in question, and this construction providing for such clearance has been arrived at after considerable thought and study and with the purpose of remedying the objections which have universally existed arising, as I have discovered, from a too close rolling down of the end portions of the spring against the back on the closing of the blades.

In carrying out my invention I have preserved as closely as possible the general form and construction of the now well-known push button knife while at the same time I have sought to remedy the objections which have long existed due to the construction and arrangement of the fly-springs employed to open the blades. It is of considerable importance, especially in a push button knife, that all the mechanical parts work harmoniously and that the spring may work with ease and not exert any strains on the closing of the blade tending to impair the efficiency of the other portions of the knife. When the spring is free to act with its proper elasticity the force required to operate the locking mechanism for locking the blade closed will be less than if the spring is jammed against the back or against foreign matter accumulated on the inner edge of said back, and in addition when the spring is arranged to properly operate there is less wear and tear on the mechanism of the knife and consequently the period of usefulness of the knife is lengthened.

What I claim as my invention and desire to secure by Letters Patent, is:

A knife of the character described comprising sides, a back riveted adjacent to its middle and end portions between said sides,

a blade and a fly-spring for throwing the blade when the same is released to open position, said back being recessed in its inner edge between the inner and outer rivets securing it to afford clearance between the back and said spring when the blade is in closed position.

Signed at Walden, in the county of Orange, and State of New York, this 22d day of March, A. D. 1915.

JACOB LOUIS SCHRADE.

Witnesses:

ALBERT S. EMBLER,
THOMAS S. DELANEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."