C. H. WHITE & R. A. LETT.

TAKE-DOWN POCKET KNIFE.

APPLICATION FILED DEC. 8, 1909.

986,334. **Patented Mar. 7, 1911.**

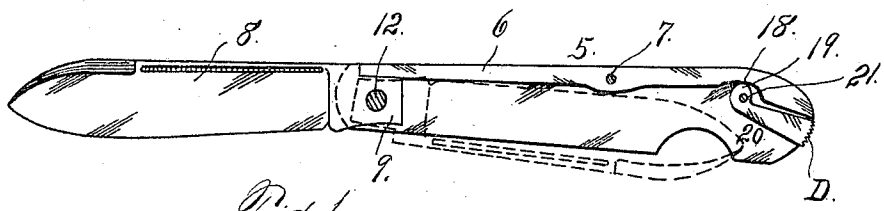

Fig. 1

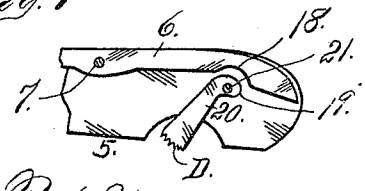

Fig. 2

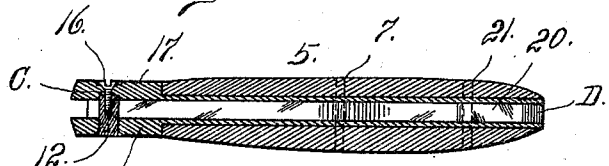

Fig. 3

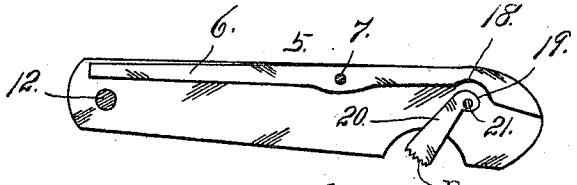

Fig. 4

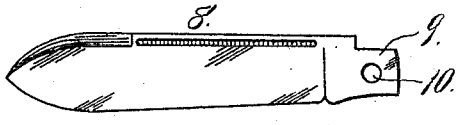

Fig. 5

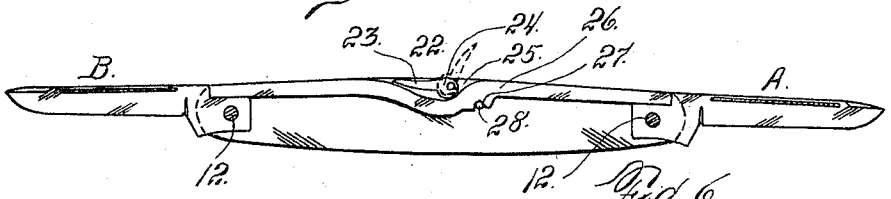

Fig. 6.

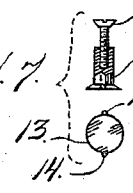

Fig. 7.

Witnesses

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UNITED STATES PATENT OFFICE.

CARL H. WHITE AND ROYAL A. LETT, OF DENVER, COLORADO, ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, TO THE PIOGRAN SALES COMPANY, OF DENVER, COLORADO, A CORPORATION OF COLORADO.

TAKE-DOWN POCKET-KNIFE.

986,334. Specification of Letters Patent. Patented Mar. 7, 1911.

Application filed December 8, 1909. Serial No. 532,125.

To all whom it may concern:

Be it known that we, CARL H. WHITE and ROYAL A. LETT, citizens of the United States, residing in the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Take-Down Pocket-Knives; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

Our invention relates to improvements in pocket knives.

In our improved construction provision is made for readily removing the blades and substituting other blades at will, our object being to make it practicable when a blade is either broken or sufficiently worn as to be no longer useful, to readily remove the said blade and substitute a new blade therefor, thus avoiding the loss incident to discarding or throwing away the whole knife. It usually happens that the handle is the most valuable part of the knife and our improved construction makes it practicable to save the handles and renew the blades alone, thus giving the owner the advantage of having a knife as good as new at a comparatively small expense.

In our improved construction the blades are pivoted upon a pin whose head is countersunk on one side of the knife handle extremity. The opposite extremity of the pin has an interiorly threaded opening adapted to receive a fastening screw which is introduced from the opposite side, the head of the screw being countersunk in the metal plate at the end of the handle.

In order to make it practicable to employ a removable pin of the character just explained, it becomes necessary to remove the tension from the spring or springs which act upon the blades, and to this end we employ a relatively small cam lever, which normally acts upon the spring to give it the necessary tension to hold the blade reasonably rigid when either open or closed. When, however, it becomes necessary to remove the blade, this cam lever is released, thus relieving the blade from the action of the spring's tension and greatly facilitating the removal of one blade and the substitution of another.

Having briefly outlined our improved construction, we will proceed to describe the same in detail, reference being made to the accompanying drawing, in which is illustrated an embodiment thereof.

In this drawing: Figure 1 is a sectional view of a knife handle, equipped with our improvement. Fig. 2 is a fragmentary view of the same showing the cam in position to release the spring's tension. Fig. 3 is a longitudinal section taken through the handle, cutting the blade-holding pin longitudinally. Fig. 4 is a detail view showing one side of the handle with the cam in the position to release the tension of the spring. Fig. 5 is a detail view of the blade. Fig. 6 is a view illustrating a knife having a blade at each extremity, each blade being removable in accordance with our invention. In this case the cam is applied to the central part of the spring and when released removes the tension from both blades. Fig. 7 is a sectional view taken through the blade-holding pin and its coöperating screw, the latter being shown in elevation. In this view an end elevation of the pin is also illustrated.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate the knife handle; 6 the spring; 7 the fulcrum of the spring; 8 the blade whose shank 9 is provided with a perforation 10 through which a pin 12 is passed; the said pin having a head 13 provided with small locking projections 14 adapted to enter counterpart recesses formed in one of the metal parts 15 of the knife handle. This pin is provided with an interiorly threaded recess adapted to receve a screw 16 which is inserted from the opposite side of the handle and countersunk in the metal part 17. The inner extremity of the pin engages a shoulder C formed in the metal member 17 of the handle around the opening through which the screw 16 passes. By virtue of this construction the pin serves to properly space

the handle members to prevent the pinching of the blade when the screw 16 is tightened.

It must be understood that the invention is not limited to the special construction disclosed for locking the removable pin in place, since we are aware that many modifications are available without departing from the spirit of the invention.

It is evident that in order to detach the blade 8 it is only necessary to remove the screw 16, when the pivot pin will be readily detachable, assuming that the tension is removed from the spring 6. This spring is provided near its rear extremity with a recess 18 adapted to receive the cam extremity 19 of a lever 20 fulcrumed at 21. When the spring is under tension, this cam lever is in the position shown in Fig. 1, the cam acting upon the extremity of the spring remote from that engaged by the shank of the blade. The cam lever and the blade thus serve to maintain the spring under tension and it is evident that by the removal of either of these devices or by the proper adjustment of the cam lever, the tension will be released. Hence, if it is desired to remove the blade 8 for any reason, as for the purpose of substituting a new blade, the cam lever is first thrown to the position shown in Figs. 2 and 4. The tension is thus removed from the spring and the pin 12 may be quickly removed by detaching the screw 16. The blade will then be freed and another blade may be quickly substituted and secured in place by applying the pin 12 and the fastening screw 16. After this is done the cam lever will be returned to the position shown in Fig. 1, when the tension of the spring will again act upon the blade in the usual manner. To facilitate the operation of the cam lever, its outer extremity is knurled or roughened, as shown at D, this knurled extremity being preferably curved to conform to the curve of the rounded end of the handle, whereby the lever extremity is flush with the handle when holding the spring under tension.

In the event that the knife has two blades A and B (see Fig. 6), applied to the opposite extremities of the handle, the shanks of the blades will in this event serve as stops, and the tension is given to the spring by the use of a cam lever 22 having an arm 23, whose cam extremity 24 is concealed within a recess 25 formed in the back of the spring 26. The central portion of this spring is provided with a recess 27, which receives a pin 28 fast in the opposite sides of the knife handle. The cam extremity of the lever 22 acts upon the spring a short distance from the pin, whereby the central portion of the spring is held tightly against the pin. This cam lever, together with the stops afforded by the shanks of the blades, normally holds the spring under tension, assuming that the lever is active in the performance of its function. Attention is called to the fact that in this view, the pins 12 are of the same construction as that shown in Figs. 3 and 7. Now if it is desired to remove either blade A or B, the cam lever is first thrown to the dotted line position, whereby the pressure on the central portion of the spring is relieved and the tension released. The extremities of the spring will no longer act to hold the blades rigid in any position of adjustment, but will render the said blades loose and allow their pins to be easily removed and new blades substituted, after which the cam lever may be again thrown to the full line position, when both blades will be under tension, the same as before.

It must be understood that the invention is not limited to the special construction disclosed for relieving the blade or blades from the tension of the spring, as we are aware that other constructions within the scope of the appended claims may be employed.

Having thus described our invention, what we claim is:

1. A knife having pivoted blades adapted to open and close, a spring normally acting upon the blades under tension, the spring having a recess intermediate its extremities, and a cam lever journaled in the handle of the knife, in the said recess and acting on the spring to release the tension of the spring from the blades, substantially as described.

2. A knife having a pivoted blade at each extremity of the handle, a spring engaging the blades, the said spring having a recess intermediate its extremities and a cam engaging the spring in said recess and adjustable to release the tension of the latter, substantially as described.

3. A pocket knife having pivoted blades adapted to open and close, a spring pivoted between the handle parts of the knife, the said spring engaging the blades at its opposite extremities, and having a recessed portion intermediate its extremities, a cam journaled in the handle of the knife, within the recess, and acting on the spring to release its tension from the blades, for opening and closing the same, substantially as described.

4. A pocket knife having a pivoted blade adapted to open and close, a pin upon which the blade turns, locking members formed on the pin and engaging the handle of the knife, the said pin having an interiorly threaded perforation and a threaded stem entering the perforation, whereby the latter may be removed, a spring engaging the blade, the said spring having a recess, a cam journaled in the handle of the knife in the said recess and acting on the spring to release the tension of the spring from the blade,

whereby the pin may be readily removed, substantially as described.

5. A pocket knife having pivoted blades, a spring acting on the blades, the said spring having a recess intermediate its extremities, means for preventing displacement of the spring consisting of a cam positioned in the recess and in engagement with the spring on one side thereof, the opposite side of the spring having a recess and a pin received by the said recess, the cam being adjustable to release the tension of the spring, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

CARL H. WHITE.
ROYAL A. LETT.

Witnesses:
VIRGINIA I. DAVIS,
JESSIE F. HOBART.