

No. 631,547.

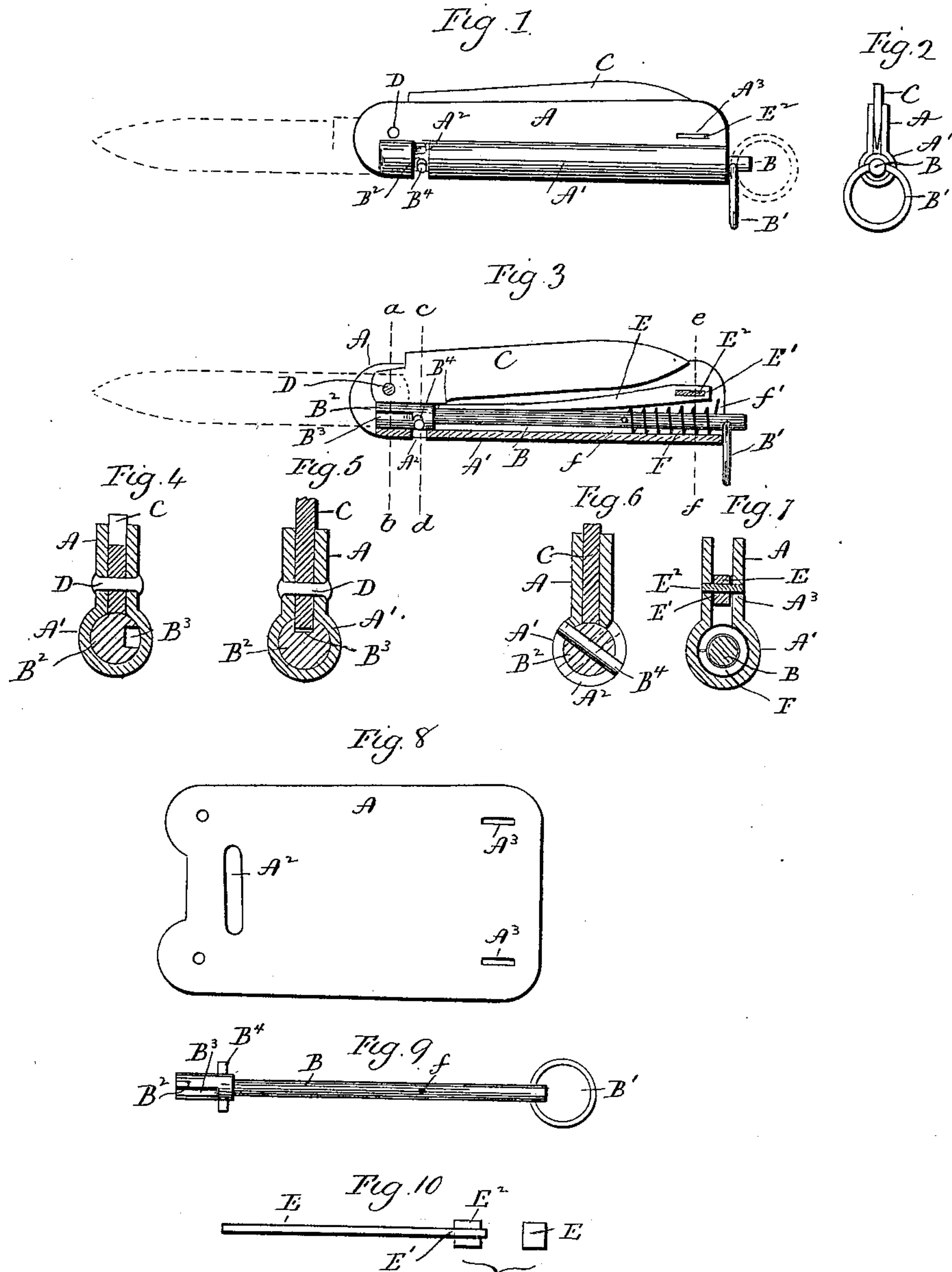
Patented Aug. 22, 1899.

G. W. MILLER.

KNIFE.

(Application filed Jan. 23, 1899.)

(No Model.)



Witnesses.
J. H. Murray
Lillian D. Kelley

George W. Miller
Inventor.
By *Ernest H. Hynson*

UNITED STATES PATENT OFFICE.

GEORGE W. MILLER, OF MERIDEN, CONNECTICUT.

KNIFE.

SPECIFICATION forming part of Letters Patent No. 631,547, dated August 22, 1899.

Application filed January 23, 1899. Serial No. 703,040. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. MILLER, of Meriden, in the county of New Haven and State of Connecticut, have invented a new
5 Improvement in Knives; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and
10 which said drawings constitute part of this specification, and represent, in—

Figure 1, a view in side elevation of a knife constructed in accordance with my invention, its blade being shown in its closed position
15 by full lines and in its open position by broken lines; Fig. 2, a view of the knife in end elevation; Fig. 3, a view of the knife in longitudinal section, showing its blade in its open position by broken lines and in its
20 closed position by full lines; Fig. 4, an enlarged view of the knife in transverse section on the line *a b* of Fig. 3, showing the blade in its positively-locked closed position; Fig. 5, a similar view showing the blade in its in-
25 termediate position, through which it passes in being opened and closed; Fig. 6, a view in transverse section on the line *c d* of Fig. 3, showing the stop-pin of the operating-stem in both of its positions; Fig. 7, a similar view
30 on the line *e f* of Fig. 3, showing the mode of securing the knife-blade spring in place; Fig. 8, a detached plan view of the knife-frame blank; Fig. 9, a detached plan view of the operating-stem, together with its ring-like
35 finger-piece and its locking-head and stop-pin; Fig. 10, a detached plan view of the knife-blade spring.

My invention relates to an improvement in that class of pocket-knives in which the blade
40 or blades are opened without the application of the thumb-nail thereto, the object being to produce at a low cost for manufacture a simple, strong, and durable knife composed of few parts and constructed with particular
45 reference to convenience of operation, as well as to form an attractive novelty in this class of articles.

With these ends in view my invention consists in a knife having certain details of construction, as will be hereinafter described,
50 and pointed out in the claims.

In carrying out my invention as herein shown I employ a sheet-metal knife-frame A,

folded into U-shaped cross-sections on its longitudinal center, where it is shaped to
55 form a longitudinally-arranged tubular enlargement *A'*, which not only widens the back of the knife-frame, so as to make the knife more comfortable to the hand, but also provides a chamber for the reception of the op-
60 erating-stem B, one end of which projects from the inner end of the knife-frame and is perforated for the reception of a ring *B'*, which constitutes a finger-piece for the rotation of the stem and also provides for attach-
65 ing the knife to a key-chain or a watch-chain, if desired. The opposite end of the stem is provided with a locking-head *B²*, formed with a clearance-notch *B³*, and with a transversely-arranged stop-pin *B⁴*, the ends of which pro-
70 ject beyond the surface of the head into a transversely-arranged clearance-slot *A²*, formed in the forward end of the enlargement *A'* of the knife-frame, the ends of the said
75 clearance-slot being engaged when the operating-stem is rotated for limiting the rotation thereof in either direction.

The knife-blade C is of ordinary construction and swings upon a pivot D, the ends of which pass through the outer end of the knife-
80 frame and secure the outer ends of the leaves or sides thereof together with the blade between them. A flat longitudinally-arranged knife-blade spring E is located within the said body below the blade in position to be
85 engaged with the tang thereof at a point near where the same merges into the sharpened edge of the blade. This spring is formed at its opposite end with a transverse longitudi-
90 nally-arranged slot *E'*, which receives a leaf-like sheet-metal rivet *E²*, the projecting edges of which pass through narrow slots *A³ A³*, formed in the inner ends of the two leaves of the knife-frame, the said edges of the rivet
95 being headed down upon the outer faces of the said leaves, whereby the inner ends thereof are held together and the spring secured in place. The operating-stem itself is main-
100 tained in its normal or locking position, in which it locks the knife-blade in its open position as well as in its closed position, by means of a spiral spring F, connected at its
forward end with the stem through a transverse opening *f* therein and having its inner
105 end *f'* engaged with the knife-frame, as seen in Fig. 2. When the operating-stem is in its

said normal or locking position, the clearance-notch B^3 of the locking-head B^2 of the stem is out of registration with the edge of the tang of the knife-blade, as shown in Fig. 3, the said tang then riding upon the periphery of the head, which prevents the blade from opening.

In order to open the knife, the finger-piece B' is grasped and the operating-stem rotated against the tension of the spring F until the clearance-slot B^3 is brought into registration with the tang of the knife-blade, which is then quickly thrown open by the action of the knife-blade spring E , the force of which throws the blade into its full-open position. During this swift movement of the knife-blade the tang thereof moves into, through, and out of the clearance-slot B^3 , so that when the blade is in its full-open position the tang is entirely out of the said slot, whereby the operating-stem is free to return to its locking position as soon as it is allowed to do so. When the said stem is allowed to return into its said normal or locked position, the clearance-slot is carried out of registration with the tang of the knife-blade, which is thus positively locked in its open position. When now it is desired to close the knife, the operating-stem must be again manually rotated against the tension of its spiral spring to bring the clearance-slot of its locking-head into registration with the tang of the knife, which may then be swung back into its closed position, during which time its tang passes into, through, and out of the clearance-slot, so that when the blade is fully closed it may be positively locked again in that position by permitting the operating-stem to return to its normal position under the action of its own spring. It may be here mentioned, however, that as the knife-blade is brought into its closed position it engages with its spring E , which is placed under sufficient tension for throwing it into its open position when again unlocked.

It will thus be seen that the spring-actuated operating-stem of my improved knife may be employed for releasing the blade when the same is in its closed position to permit the knife-blade spring to act to throw the blade into its open position, in which it is then partially locked by the said stem, which altogether avoids the use of the thumb-nail in manipulating the blade, which is positively locked both in its open and closed positions. It will also be seen that my improved knife as thus constructed is simple, compact, and light, contains but few parts, and those of strong and durable construction.

It is obvious that in carrying out my invention some changes and alterations in the construction shown and described herein may be resorted to. I would therefore have it understood that I do not limit myself thereto, but hold myself at liberty to make such variations therefrom as fairly fall within the spirit and scope of my invention.

Having fully described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. In a knife, the combination with the frame and blade thereof, of a longitudinally-arranged rotatable operating-stem coacting directly with the tang of the blade for positively locking the same in its open and closed positions.

2. In a knife, the combination with the frame and blade thereof, of a longitudinally-arranged rotatable operating-stem provided at its outer end with a locking-head formed with a clearance-slot and coacting with the tang of the blade for locking the same in its open and closed positions.

3. In a knife, the combination with the frame and blade thereof, of a longitudinally-arranged rotatable operating-stem projecting at its inner end from the frame for manual operation, and adapted at its opposite end for direct coaction with the tang of the blade for positively locking the same in its open and closed positions.

4. In a knife, the combination with the frame and blade thereof, of a longitudinally-arranged rotatable operating-stem adapted at its inner end for manual operation and at its opposite end for coaction with the tang of the blade for positively locking the same in its open and closed positions, and provided with a stop which limits its rotation.

5. In a knife, the combination with a sheet-metal frame shaped to form a tubular enlargement on its back, of a knife-blade, a spring for throwing the same into its open position, an operating-stem located within the said enlargement, projecting at its inner end therefrom for manual operation, and provided at its opposite end with a locking-head formed with a clearance-slot, and coacting with the tang of the blade to positively lock it in its open and closed positions.

6. In a knife, the combination with a sheet-metal frame shaped to form a tubular enlargement on its back, of a knife-blade, a longitudinally-arranged knife-blade spring located below the edge of the blade when the same is in its closed position, an operating-stem located in the said tubular enlargement of the frame, from the inner end of which it projects for manual operation, and provided at its opposite end with a locking-head which coacts with the tang of the knife-blade for locking the same in its open and closed positions, a spiral spring applied to the said stem and located within the said enlargement for maintaining the stem in its locking position, and a stop for limiting the rotation of the stem in either direction.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

GEORGE W. MILLER.

Witnesses:

C. C. KIME,
HERMAN HESS.