This invention relates to a combination tool comprising two separate edge tools adapted to be inserted into and used with a common handle.

In the exemplification shown in the drawings, it comprises a sheath knife in which the blade is removable from the handle, and in place of the knife blade, the handle is adapted to receive the tang extending from an axe blade, to form with the handle, an efficient hand axe.

The primary object of this invention is to provide an efficient combination knife and axe, that will be light and compact, and to facilitate the entire combination to be carried in a belt holster or sheath. Other objects and advantages will be obvious to those skilled in the art.

In the accompanying drawings:

Fig. 1 is an elevation of the device showing the interchangeable handle equipped with the knife blade member.

Fig. 2 shows in elevation an axe member which may be inserted into the interchangeable handle.

Fig. 3 is an edge elevation of the axe member to illustrate its construction from plate metal.

Fig. 4 is an end view of this axe member to show its cutting edge in relation to the thickest portion comprising the head.

Fig. 5 is an elevation of the axe with one cheek of the handle removed to show the locking means.

Fig. 6 is an elevation with parts of the handle broken away showing the locking means disengaged with the knife blade in position to be removed.

Fig. 7 is an edge elevation of the handle showing the tang portion of the blade inserted therein.

Fig. 8 is a fragmentary part of the lever comprising the locking means showing its actuating stud.

In the drawings A the interchangeable handle adapted to receive the tang of the interchange able blade members, the axe member is indicated by B Fig. 3 and the knife member by C Fig. 1.

Referring to Fig. 7 showing the handle A and B are companion cheeks formed of any suitable material positioned outside of and secured to the metal lining plates 3 and 4.

The elements 5 and 7 are end guards which with the cheek pieces 1 and 2 and the end guards 6 and 8 are secured to the metal lining plates 3 and 4 respectively.

Interposed between the lining plates 3 and 4 is positioned the locking lever 11, which is normally kept in its locking position by the spring member 9 residing between the lining plates 3 and 4. When in their normal or locked position, the lever 11 and the spring member 9, are positioned flush with the contour of the handle A.

The spring member 9 is centrally mounted upon the rivet 13 and is adapted for slight oscillating movement thereon.

The locking lever 11 is adapted for pivot movement on the rivet 12. On the free end of the lever 11 is positioned the actuating stud 13 by which the locking lever may be moved from its locked position to release the tang member of either the knife or axe blade as may reside within the handle.

In the tang receiving end of the handle there is a through rivet of substantial proportions 14 which engages and enters the slot 17 of the tang 15 of the axe member and the tang 16 of the knife member as either of said members are respectively applied to the handle.

The tang 15 of the axe member has formed on opposite sides thereof the shoulders 20 and 22 and the tang 16 of the knife member has the same formed shoulders 20 and 22, the purpose of which will be more fully set forth.

The spring member 9 coacting with the locking lever 11 form important elements in this invention. In the tang contacting end of the spring member 9 there is formed the end face 19 adapted to contact the like face on the shoulder 20 of the axe tang member, when the axe member is in fixed position within the handle.

Located in the end of the spring member 9 adjacent to the end face 19 is the elongated aperture 25. Positioned within the aperture 25 is the fixed rivet pin 26. The elongated aperture 25 permits the movement of the spring member 9 toward and away from the shank member 15, within the limits of the aperture surrounding the rivet pin 26.

In the tang contacting end of the locking lever 11 there is formed the end face 21, adapted to contact with the like face on the shoulder 22 of the axe tang member, when the locking lever 11 is in locked position.

The locking lever 11 is retained in its locked position by the spring tension of the terminal 23 of the spring member 9, contacting the locking lever 11 at a point near the pivot 12. Located near the terminal 23 of the spring member 9 is the recessed portion 24 adapted to allow free movement to the locking lever 11 after its shoulder located adjacent to the pivot 12 has passed beyond the contact point with the terminal 23 of the spring member 9. Located in the tang contacting end of the handle is the recess 27 within which resides the actuating stud 13, normally.
flush with the surface of the end guard 5, when the locking lever 11 is in locked position.

In the construction of the axe member it has been found advisable to stamp it out of plate metal of a desired thickness for the shank 29 and the blade portion. This desired thickness was found to be inadequate for a suitable head portion of the axe to make it available for purposes to which the head portion of a hand axe is usually used; and for the purposes of providing a thicker head portion, the metal at the head 30 is put through a swaging process which adds thickness thereto as shown at 31. Other desirable features are the thumb fitting knurled recess 23 on the knife blade to engage the thumb for more effective pressure on the knife. On the straight edge side of the locking lever 11 are graduations in inches to use for accurate measurements.

Operation.—In operative use, the knife blade with handle attached as shown in Fig. 1 is carried in a suitable sheath (not shown). Such sheath also has a companion pocket into which is carried the axe member shown in Fig. 2. When it is desired to remove the knife blade, and substitute the axe member, the operation is as follows: By means of the stud 13 the locking lever 11 is moved outwardly, thereby flexing the spring member 9 sufficiently to allow the locking lever 11 to attain substantially a position at right angles to its former locked position. This permits the movement of the knife blade to rotate on the pivot 14 until the slot 17 of the tang 16 is aligned with the pivot 14 to enable the removal of the knife blade from the handle.

With the handle locking elements in this position the axe member may be inserted in the handle by holding the axe member substantially at right angles to the axis of the handle, and so placing the tang 15 that the slotted recess 17 will receive the pivot pin 14 therein. The axe member is then moved so that the tang member 15 rotates on the pivot pin 14, the periphery of the tang member at 16 being so shaped as to permit of rotation on the pivot pin 14 without encountering resistance by the spring member 9. As the axe member is moved to a position where the contiguous faces 18 and 20 are in close contact, the locking lever 11 is moved to a closed position shown in Fig. 5 with the contiguous faces 21 and 22 in close contact. With the locking lever 11 in the above position, it is held in place by the spring member 9 exerting tension at the terminal 23 against the opening of the lever 11. It will be observed that through the spring tension of the member 9 a bearing contact with the side of the tang 15 is made with the contiguous face of the spring member 9 and a similar bearing contact is made on the opposite side of the tang 15 by the contiguous face of the locking lever 11, thereby producing a spring exerted bearing on both sides of the tang member 15, in addition to the shoulder bearings at 19 and 20 and at 21 and 22.

The same bearing contacts which apply to the tang 16 of the axe member as above detailed apply in like manner to the tank 16 of the knife blade member and obviously the same manipulation of the releasing and locking mechanism as is applied to the axe member applies alike to the knife blade member.

Having described the invention what is desired to secure by Letters Patent is:

1. In a device of the class described, a handle including side members spaced apart, connecting devices between the side members, a spring mounted by one of said connecting devices and positioned between corresponding edges of the side members, a notched and shouldered implement having pivotal movement about one of the connecting devices and limited in movement in one direction by the spring, and a locking lever operable between the end portions of the side members remote from the implement and there engaged by an end portion of the spring, one end of the lever engaging and retaining a shouldered portion of the implement.

2. A structure comprising the elements of claim 1, the other end of the locking lever being shouldered, and the adjacent end of the spring having a portion engaging the shoulder and having a recessed portion permitting swinging movement of the lever without flexing the spring after an initial movement of said lever.

3. A structure comprising the elements of claim 1, one end of the spring being slotted, and means passing through the slot and positioned to retain the spring out of contact with the shouldered implement when the notched portion of the implement is positioned to permit release from the connecting device with reference to which it is movable.

4. A device of the class described, comprising a handle including side members spaced apart, devices connecting the side members, a spring mounted intermediate of its ends by one of the connecting devices, a notched and shouldered implement having swinging movement about one of the connecting devices and limited in movement in the other direction by the spring, and a locking lever co-extensive with the spring and side members of the handle and pivoted between the end portions of the side members remote from the implement, one end of the lever engaging the implement and the other end being engaged by the spring.

5. A device of the class described, comprising a handle including side members spaced apart, devices connecting the side members, a spring mounted intermediate of its ends by one of the connecting devices, a notched and shouldered implement having swinging movement about one of the connecting devices, the spring limiting swinging movement in one direction, an implement-locking lever pivoted at one end between the ends of the side members and there engaged by the spring with its opposite end engaging the implement, and a headed pin on the opposite end of the lever, one of the side members being notched for receiving the pin, with its head countersunk with reference to the surface of this side member.

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