

T. CHAMPLIN.
COMBINED COMPASS AND KNIFE.
APPLICATION FILED AUG. 9, 1913.

1,115,780.

Patented Nov. 3, 1914.

Fig. 1.

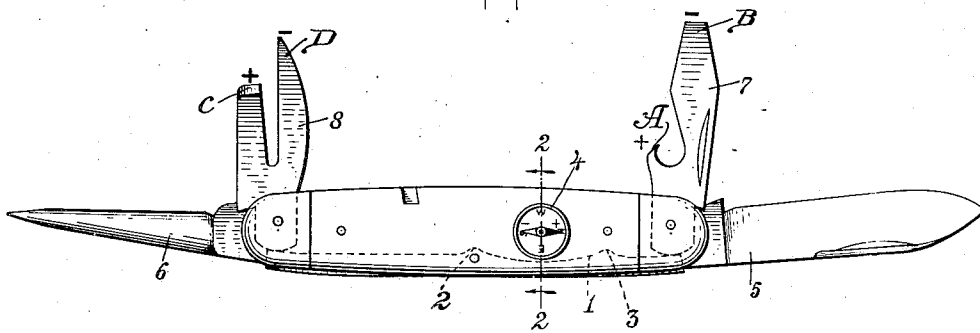
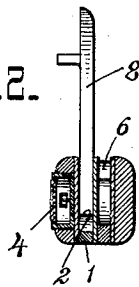


Fig. 2.



WITNESSES:
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UNITED STATES PATENT OFFICE.

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COMBINED COMPASS AND KNIFE.

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Specification of Letters Patent.

Patented Nov. 3, 1914.

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To all whom it may concern:

Be it known that I, TINT CHAMPLIN, a citizen of the United States, and a resident of Little Valley, Cattaraugus county, New York, have invented a new and useful Combined Compass and Knife, of which the following is a specification.

My invention relates to foldable tools such as ordinary pocket knives, of which the blades, springs and rivets may be composed in the usual manner of iron or steel and has for its object the production of a structure in which a compass is combined with a tool of such kind, the compass being so placed and the knife parts being so constructed and arranged that the compass needle is not disturbed or influenced so as to affect the accuracy of the needle.

It has heretofore been proposed to produce a combination compass and knife by making the portions of the knife in proximity to the compass of non-magnetic material. My invention is not concerned with a structure of this kind, it being my object to utilize the ordinary knife materials in the knife construction and to arrange and construct certain of the knife parts so that they may be formed into a horse-shoe magnet, while locating the compass needle within this horse-shoe magnet at a neutral position such that the attraction of the metal parts of the tool are equalized and have no influence upon the compass needle.

In order to make my invention clearly understood I will now describe the construction of the embodiment of my invention shown in the accompanying drawings in which—

Figure 1 represents such embodiment in side view, and Fig. 2 shows a cross-section thereof through the compass.

The body of the knife shown may be constructed in the ordinary fashion but when the back spring 1 in such construction is provided with a projection for the accommodation of a securing rivet as the projection 2, I prefer to provide another projection 3 on the other side of the compass 4 suitably mounted on the side of the knife so as to equalize the attractions of the end portions of the spring for the compass needle. The spring is therefore cut away in proximity to the compass so that the points 2 and 3 at opposite ends of the cut are equidistant from the center of the compass. In this way the attraction of the spring for the needle is equalized so that the spring does not attract

the needle more strongly to one point of the spring than to another point thereof.

The knife may be provided with any desired number of folding blades such as the cutting blade 5, the leather punch blade 6, the screw-driver and bottle-opener blade 7 and the can-opener blade 8. Of these blades preferably two, one at each end of the knife, are slightly magnetized. In the knife shown, the combination screw-driver and bottle-opener blade 7 and the can-opener blade 8 have the general form of horse-shoe magnets and are magnetized to a very slight degree, the legs A and B constituting the positive and negative poles respectively of the blade 7 and the legs C and D constituting the positive and negative poles respectively of the blade 8. The magnetized blades when they are in a suitable position, such as the half-open position shown, form a horseshoe magnet with the back spring 1 and the other blades when fully open, counterbalance each other and are outside of this horse-shoe magnet and thus have no effect upon the accuracy of the needle.

I prefer that the magnetized blades be, as shown, in the form of horse-shoe magnets because when magnetized, they retain such condition indefinitely. The attraction of the point 3 of the spring 1 is counterbalanced by that of the magnet 8 and that of the point 2 by the attraction of the magnet 7, the compass needle being located in what may be termed the magnetic center of these four attractions. The result is that the needle is not more attracted in one direction than in another direction by the knife parts, their total influence being zero, and responds unhampered to the magnetic influences of the earth. In the setting of the compass, the magnetized blades are partly opened so as to extend at right angles to the back spring, thereby forming the horse-shoe magnet, and the other blades, such as the large blade 5 and the belt punch 6 are both fully opened; the tool is then placed in such a position that the handle, large blade and belt punch will extend exactly in a known north and south direction, the blade 5 pointing north. The tool having been thus positioned, the compass is placed in the handle and adjusted by turning its casing until the needle of the compass points to the letter N on the compass dial; the compass is then fixed in this position.

The knife may of course be folded and

carried in the pocket in the usual manner. When it is desired to determine direction, however, the magnetic blades must be opened to half-open position, the other blades being preferably opened to full-open position so as to minimize as far as possible their effect on the needle. When the blades are so positioned and the knife is held with the compass side up the needle will point fairly accurately toward the magnetic north pole of the earth. The knife is now rotated until the blade 5 and the needle come into alinement, at which position the needle and blade 5 will indicate the true magnetic north pole.

I claim:

1. A tool comprising a handle, a member pivoted at each end thereof and adapted to be positioned at right angles to said handle, a spring member secured to said handle and engaging the said pivoted members when so positioned at right angles to the handle, said pivoted members being magnetized, and a compass located in a neutral position on said handle whereby the compass needle will point north and south when the pivoted members have been positioned as described and the handle has been rotated so that its

axis is parallel with the compass needle, substantially as and for the purpose described. 30

2. A tool comprising a handle, a member pivoted at each end thereof and adapted to be positioned at right angles to said handle, a spring member secured to said handle and engaging the pivoted members when so positioned at right angles to the handle, said pivoted members being magnetized, additional members pivoted at the ends of the handle and adapted to be positioned so as to extend outwardly from and in alinement with said handle, and a compass located in a neutral position on said handle, whereby the compass needle will point north and south when the pivoted members have been positioned as described and the handle has been rotated so that its axis is parallel with the compass needle, substantially as and for the purpose described. 40 45

In witness whereof I have hereunto set my hand in the presence of two subscribing witnesses. 50

TINT CHAMPLIN.

Witnesses:

JOHN A. FERGUSON,
FRED A. KLEIN.