May 20, 1952 E. F. WHITE ET AL 2,597,212

FIREARM WITH COMPASS IN STOCK

Filed June 10, 1948

Fig. 1.

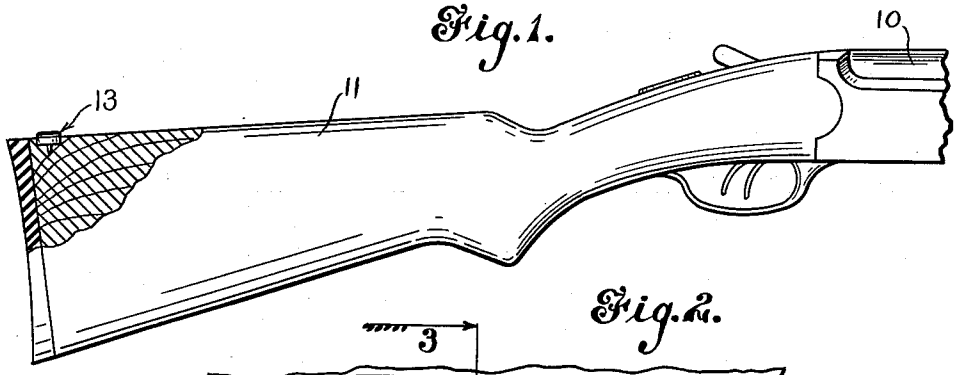


Fig. 2.

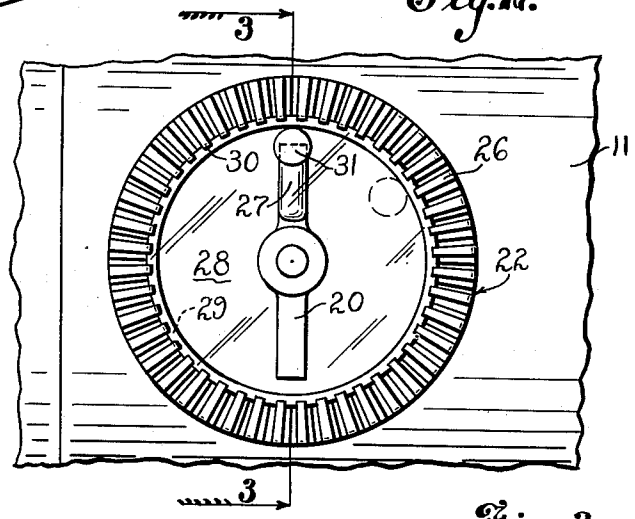
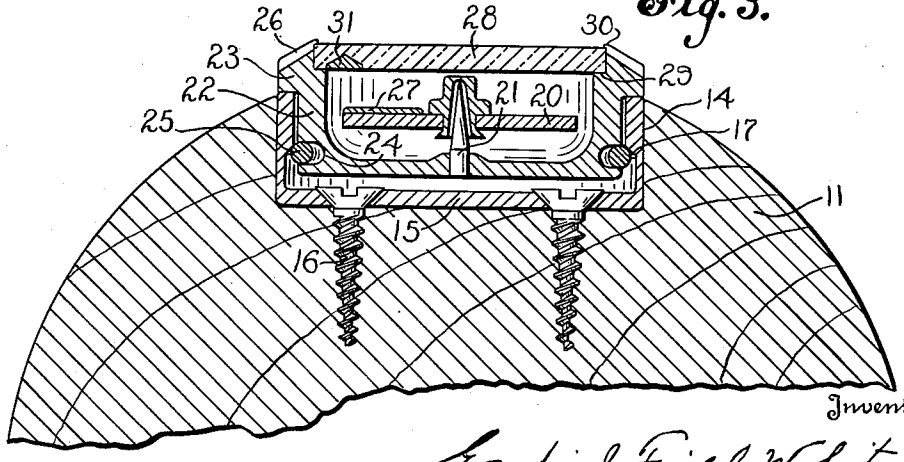


Fig. 3.



Inventors

Ezekiel Field White

and Michael J. La Viano

By

Rockwell & Rockwell

Attorneys

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FIREARM WITH COMPASS IN STOCK

Ezekiel Field White, West Hartford, Conn., and
Michael J. La Viano, Westwood, N. J.

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2 Claims. (Cl. 42—71)

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This invention relates to direction finders, and more particularly to a direction finder associated with a gun or similar device used in outdoor sports and having substantial length, whereby, when pointed in a given direction, this direction may readily be indicated.

It is a common experience for hunters to become lost when hunting in wooded areas where a landmark may not be kept in view. For example, a hunter often leaves his car or other conveyance at some point along a road where he begins to hunt. After the lapse of some time, he suddenly realizes that he not only does not know the general direction in which he is going, but has little or no idea as to the direction to take to return to the point from which he started.

In such a situation, a hunter sometimes employs a compass, but this is unsatisfactory in that the metal of his gun affects the direction in which the needle points unless he sets the gun down and moves some distance away from it to take a compass reading. He then may get a general idea of which direction is north, for example, but it is difficult to keep this direction in mind while he returns to pick up his gun and start upon his return trip. He has more or less lost his bearings upon the return to his gun. In addition, even if he could keep in mind the points of the compass, he would still have little idea as to the direction which should be taken in order to retrace his steps.

In the present invention, we have found that a magnetic needle may be mounted on a gun, for example, particularly on the stock thereof, and preferably at as great a distance as possible from the metallic parts of the gun, and, by using the gun itself with which to point or to indicate a given direction, a hunter may readily determine the direction he is going with reference to a given starting point or the direction which should be taken to return to this point. While the metal of the gun will affect the reading of the needle, this effect will always be the same, and, as in the use of the device reliance is not placed upon the points of the compass, the deflection of the needle by the gun will cancel out, so to speak, and not result in error.

One object of the present invention is to provide a direction finder, such that a hunter, for example, may readily determine the direction in which he is proceeding with reference to a given object, and may also determine the direction which should be taken to return to this landmark.

A further object of the invention is to provide a magnetic needle upon a gun, whereby a user of the gun may, by using the latter as a pointer, readily determine the direction in which he is proceeding with reference to a given landmark.

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A still further object of the invention is to provide a magnetic needle upon a gun in such a position that it may be readily seen by the operator, and provide adjacent the needle a rotatable mark or indicator to indicate the direction in which the needle points when the gun is pointed toward a given object or landmark.

To these and other ends the invention consists in the novel features and combinations of parts to be hereinafter described and claimed.

In the accompanying drawings:

Fig. 1 is a side elevational view of a portion of a gun having our invention applied thereto;

Fig. 2 is an enlarged top plan view of a portion of the gun showing our invention; and

Fig. 3 is a sectional view on line 3—3 of Fig. 2.

To illustrate a preferred embodiment of our invention, we have shown in Fig. 1 of the drawings a gun comprising a barrel portion 10 and a stock 11. Adjacent the rear end of the stock, a magnetic needle enclosed in a suitable case is mounted at the upper side of the stock of the gun, as shown at 13.

As shown more particularly in Fig. 3, a recess or cavity 14 is bored into the gun stock, and, in this cavity, is positioned a cup-shaped housing or shell 15 secured in place by screws or like fastening members 16. It is noted that the interior of the cup member 15 is slightly larger adjacent the bottom thereof, and that this enlarged portion joins the upper portion by a beveled shoulder 17, to which reference will be made hereinafter.

A magnetic needle 20 is mounted upon a spindle or pivot 21, this spindle being fixed in a cup-shaped needle case 22, which member has a cylindrical body portion and a laterally extending flange 23 adjacent its upper end.

Adjacent its lower end, the member 22 is provided with an annular recess 24 in its side wall, and, in this recess, is placed a resilient split ring 25 which has a slight tendency to expand. As shown, the cup-shaped member 22 may be inserted in the member 15 and the spring 25 compressed into the recess 24 to permit the member 22 to be received in the member 15. When it has been inserted to the position shown, and the lower surface of the flange 23 rests upon the upper edge of the cup-shaped member 15, the split ring 25 will lie opposite the annular beveled shoulder 17, so that it will expand outwardly and releasably hold the member 22 in place.

This latter member may be detached by inserting a thin blade, such as a knife blade, below the flange 23 and prying upwardly, so as to overcome the tension of the split ring 25 and force it into the recess 24 and thus permit the withdrawal of the member 22.

The flange portion 23 of the member 22 is slightly beveled at its upper edge, and this beveled portion provided with serrations or teeth 26, which may be engaged by the finger or fingernail of the user, so that the member 22 may be rotated with respect to the member 15, it being understood that the member 22 is rotatably mounted with respect to the member 15 which is fixed to the stock by the screws 16.

The needle 20 may have one end, its north end, for example, painted or colored white, as shown at 27, and the cavity within which the needle lies may be closed by a transparent cover or crystal 28. As shown, this cover 28 rests in an annular seat 29 formed in the upper portion of the member 22, and the upper portion of this member may be peened over slightly, as shown at 30, to hold the cover in place.

An indicator of some kind may be placed on some part of the member 22, so that it may be brought into registration with one end of the needle 20. For this purpose, a mark 31, preferably white, may be provided on the transparent cover 28. This mark may be made in any suitable way, but we have found it satisfactory to provide a recess in the under surface of the plate and a small amount of white paint in this recess. It will be seen, therefore, that, by rotating the mounting member or the needle case 22, the indicator 31 may always be brought into registration with one end of the needle, as shown in Fig. 2, for example, regardless of the direction in which the needle points.

In the use of the device, if a hunter is preparing to hunt in a strange country, he may wish to return to his car or some other place of beginning which he may use as a landmark. He would then, on leaving the car or other landmark, walk in the general direction in which he wished to hunt. When he was some distance from this point, but in sight of the point, he would turn and point the gun at the car or other landmark. When the needle had adjusted itself, he would then, by means of the serrations 26, turn the case 22 until the point 31 registered with the north end 27 of the magnetic needle. He would know then that, thereafter, when the gun was pointed in the proper direction to bring this indicator 31 in registration with the same end of the needle, the gun was pointing in the same direction.

The hunter would then proceed checking his direction occasionally by pointing his gun and turning it until it showed that he was proceeding in a direction 180° from that to which the device was originally set. This would mean that he was walking directly away from his car or other point of beginning.

When he had finished his hunting and wished to return, he would then point his gun until the indicating mark 31 registered with the white end 27 of the needle, and he would know that he was then proceeding in the general direction of his car.

The north end of the needle and the indicator 31 may desirably be of luminous material, so that they may be seen readily in the dark.

As is well known, a magnetic needle points toward the magnetic pole rather than toward the earth's pole, and therefore never points toward the true north, but is always subject to a magnetic declination depending upon geographic location of the point at which the reading is taken. Any correction which must be made for this reason to find the true north in the use of a magnetic needle or compass is further complicated where the reading of the needle is affected by surrounding objects, as would be the case where the needle is mounted on a gun, for example.

However, it will be seen that in the present instance no correction is necessary either on account of the magnetic declination or on account of the fact that the direction of the needle might be affected by the barrel or other metallic parts of the gun. The user of the present device is not interested in the true north and south direction, but only in the reading of the needle when the gun is pointed toward the landmark or other place of beginning. As the deflection of the needle, both on account of the position of the magnetic pole and also because of the effect of the metal of the gun, will be the same when the hunter takes his first reading adjacent the place of beginning as it is when he is at the end of his journey and desires to begin his return, the deflection will cancel out, and it is only necessary to so point the gun that the marker or indicator registers with the north end of the needle regardless of the deflection from the true north. The points of the compass are of no significance in the use of the device.

The flange 23 upon the case 22 fits tightly upon the upper edge of the shell 14, so as to make a relatively tight joint between these parts, the flange being urged into contact with the shell by the engagement of the spring ring 25 with the beveled shoulder 17. With this arrangement the device is dust and water resistant, while at the same time readily rotatable by engagement of the knurled or serrated upper surface of the flange by the fingers of the operator. Furthermore, the case 22 may be readily removed by the insertion of a knife blade between the lower surface of the flange 23 and the upper edge of the shell 14. It may also be noted that, as the shell 14 is disposed in a recess or cavity in the stock of the gun, the case is substantially flush with the surface of the gun, and, as the serrated portion 26 of the flange is beveled outwardly and downwardly, there will be little danger of the flange being engaged accidentally by the user and the setting changed.

While we have shown and described a preferred embodiment of our invention, it will be understood that it is not to be limited to all of the details shown, but is capable of modification and variation within the spirit of the invention and within the scope of the claims.

What we claim is:

1. A direction finder comprising a firearm having a stock provided with a recess in its upper surface, a cup-shaped shell bottoming in said recess and secured therein, a case rotatably mounted in said shell, a magnetic needle pivotally mounted in the case, and an indicator fixed upon the case whereby it may be brought into registration with the needle by rotation of the case, said case having a laterally projecting flange overlying the upper edge of the shell, the lateral edge of said flange being flush with the outer periphery of the upper edge of the shell and said flange being roughened upon its upper surface.

2. A direction finder comprising a firearm hav-

ing a stock provided with a recess in its upper surface, a cup-shaped shell bottoming in said recess, securing means extending through the bottom of the shell into the stock to secure the shell in place, a case rotatably mounted in said shell, a magnetic needle pivotally mounted in the case, and an indicator fixed upon the case whereby it may be brought into registration with the needle by rotation of the case, means detachably securing the case in the shell, said means comprising a spring ring carried by the case, said shell having a beveled inwardly facing shoulder engaged by the ring, said case having an annular recess in its side wall in which said ring is mounted, said recess being of sufficient depth to receive said ring and permit removal of the case from the shell, said case having a flange projecting over the upper edge of said shell, said flange having its outer periphery flush with the outer surface of the wall of the shell and said flange being roughened upon its upper surface.

EZEKIEL FIELD WHITE.
MICHAEL J. LA VIANO.

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