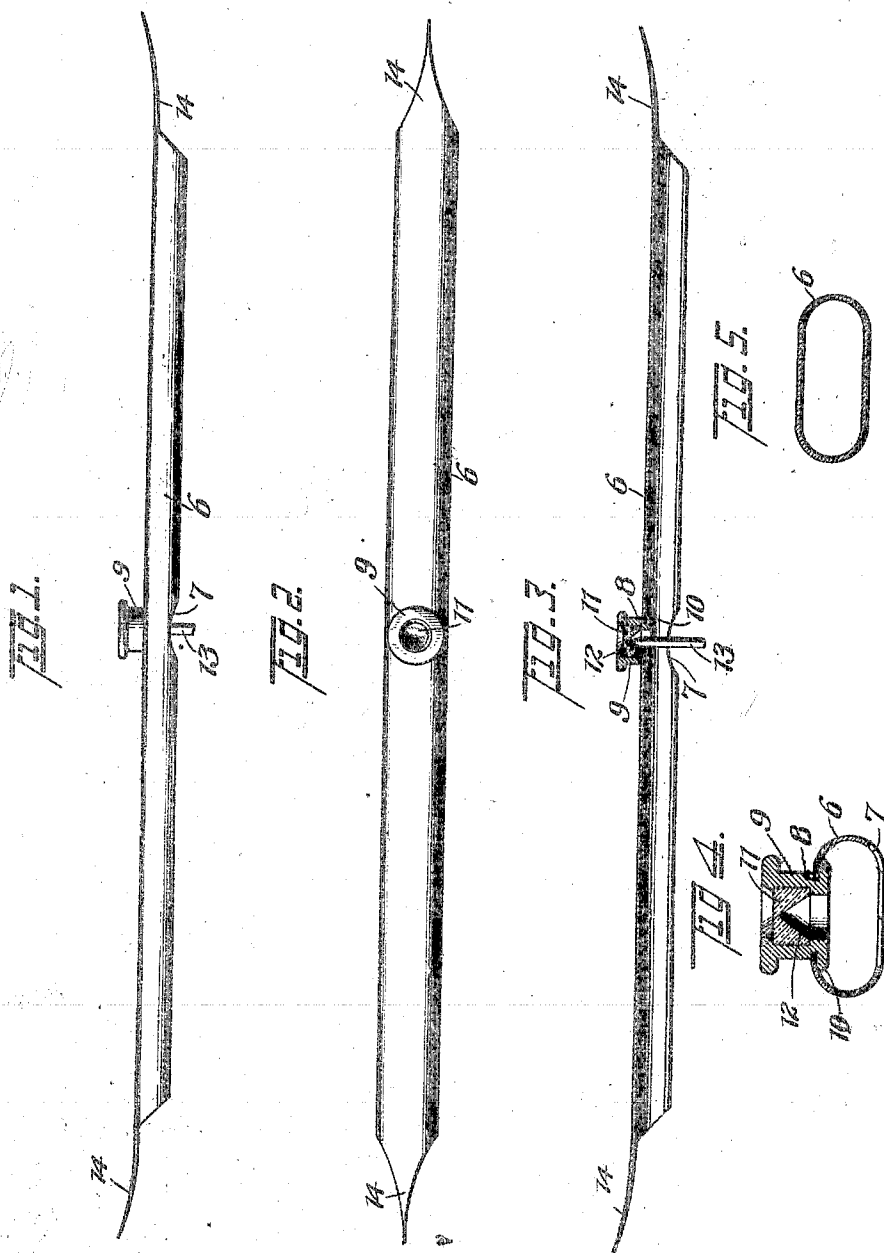


No. 811,248.

PATENTED JAN. 30, 1906.

G. N. SAEGMULLER.
MAGNETIC NEEDLE.
APPLICATION FILED AUG. 24, 1905.



Witnesses.

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MAGNETIC NEEDLE.

No. 811,248.

Specification of Letters Patent.

Patented Jan. 30, 1906.

On filed August 24, 1905. Serial No. 275,613.

To all whom it may concern:

Be it known that I, GEORGE N. SAEGMULLER, a citizen of the United States; residing at Rochester, in the county of Monroe and State of New York, have invented a new and useful Magnetic Needle, of which the following is a specification.

This invention relates more particularly to magnetic needles employed in compasses and other instruments of an analogous nature.

The principal object is to provide a needle of very little mass and weight, yet having comparatively great magnetic qualities, making it much more sensitive and positive than the ordinary needle now in common use.

An embodiment of the invention that is at present considered preferable is illustrated in the accompanying drawings; but it will be seen by an inspection of the claims hereto appended that the invention is not limited solely to this embodiment.

In the drawings, Figure 1 is a side elevation of the needle. Fig. 2 is a top plan view of the same. Fig. 3 is a longitudinal sectional view. Fig. 4 is a cross-sectional view through the center of the needle and on an enlarged scale. Fig. 5 is also a cross-sectional view through the needle at one side of the jewel-mounting.

Similar reference-numerals designate corresponding parts in all the figures of the drawings.

In the embodiment illustrated the needle consists of a tubular elongated body 6 of magnetic material and highly magnetized, being preferably sheet metal bent into tubular form with its edges abutted or substantially abutted, as illustrated in Fig. 5. The body is provided in its under wall with an opening 7, and the upper wall also has an opening 8, in which is located a jewel-holding collar 9, the lower end of said collar being upset to provide an annular retaining-flange 10, an annular seat or groove being thereby formed that receives the walls surrounding the opening 8. Secured in the collar 9 is a jewel 11, having in its under side a tapered seat 12, that receives the upper end of a suitable supporting-post, as 13, which post passes freely through the opening 7, said opening being of considerably greater diameter than the post in order to allow the free action of the needle. In the present form of the invention the needle is oblong and elliptical in cross-section. Furthermore,

it is open-ended, being provided with pointed substantially flat terminals 14, projecting beyond the tubular body and arranged to cooperate with the usual scale.

As the magnetism of an article is more nearly proportional to its surface rather than to its mass, it will be evident that this needle has a comparatively great amount of surface, and consequently will have comparatively great magnetic qualities. At the same time its weight or mass is comparatively small, so that it will not only be exceedingly sensitive, but more positive in its action than the ordinary needle, and will thus come to a state of rest in a much shorter period of time. Furthermore, the comparatively great amount of surface is located in a comparatively small space, so that the needle may be employed in the confined places ordinarily allowed in instruments of precision and the like. In this structure a single bearing is provided that permits a practically frictionless movement on the part of said needle.

From the foregoing it is thought that the construction, operation, and many advantages of the herein-described invention will be apparent to those skilled in the art without further description, and it will be understood that various changes in the size, shape, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A magnetic needle, comprising an elongated substantially tubular body having a bearing, the walls of said body being magnetized, and a post-receiving opening aligned with said bearing.

2. A magnetic needle, comprising an elongated, substantially tubular body, the walls of which are magnetized, and a jewel-mounting located in the upper side of the body between the ends thereof.

3. A magnetic needle, comprising a tubular body having pointed ends and having its walls magnetized, an opening in its lower side to permit the passage of a supporting-post, and a bearing-mounting in its upper wall directly above the opening.

4. A magnetic needle, comprising an elongated substantially tubular body, the walls of

said body being magnetized, a bearing carried by the body between its ends, and a supporting-post engaging the bearing and constituting a pivot on which said bearing and the
5 body turn.

5. A magnetic needle, comprising an elongated, tubular body oblong in cross-section and having an opening in its under side for the passage of a supporting-post, the walls of
10 said tubular body being magnetized, and a jewel-mounting located in its upper wall in line with said opening.

6. A magnetic needle, comprising an elongated, tubular body elliptical in cross-section
15 and having an opening in its under side for the passage of a supporting-post, the walls of said tubular body being magnetized, and a jewel-mounting located in its upper wall in line with said opening.

20 7. A magnetic needle, comprising an open-

ended tubular body substantially elliptical in cross-section and having pointed ends, the walls of said tubular body being magnetized, an opening in its under side, and a jewel-mounting secured in its upper wall in line
25 with the opening.

8. A magnetic needle, comprising a tubular, magnetized body having a pointed end, openings in its upper and lower sides, a jewel-holding collar fixed in the upper opening, and
30 a jewel secured in said collar and having a bearing-receiving seat in its under side.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

GEORGE N. SAEGMULLER.

Witnesses:

HENRY FINCKE,

TIMOTHY PARSONS EPPS