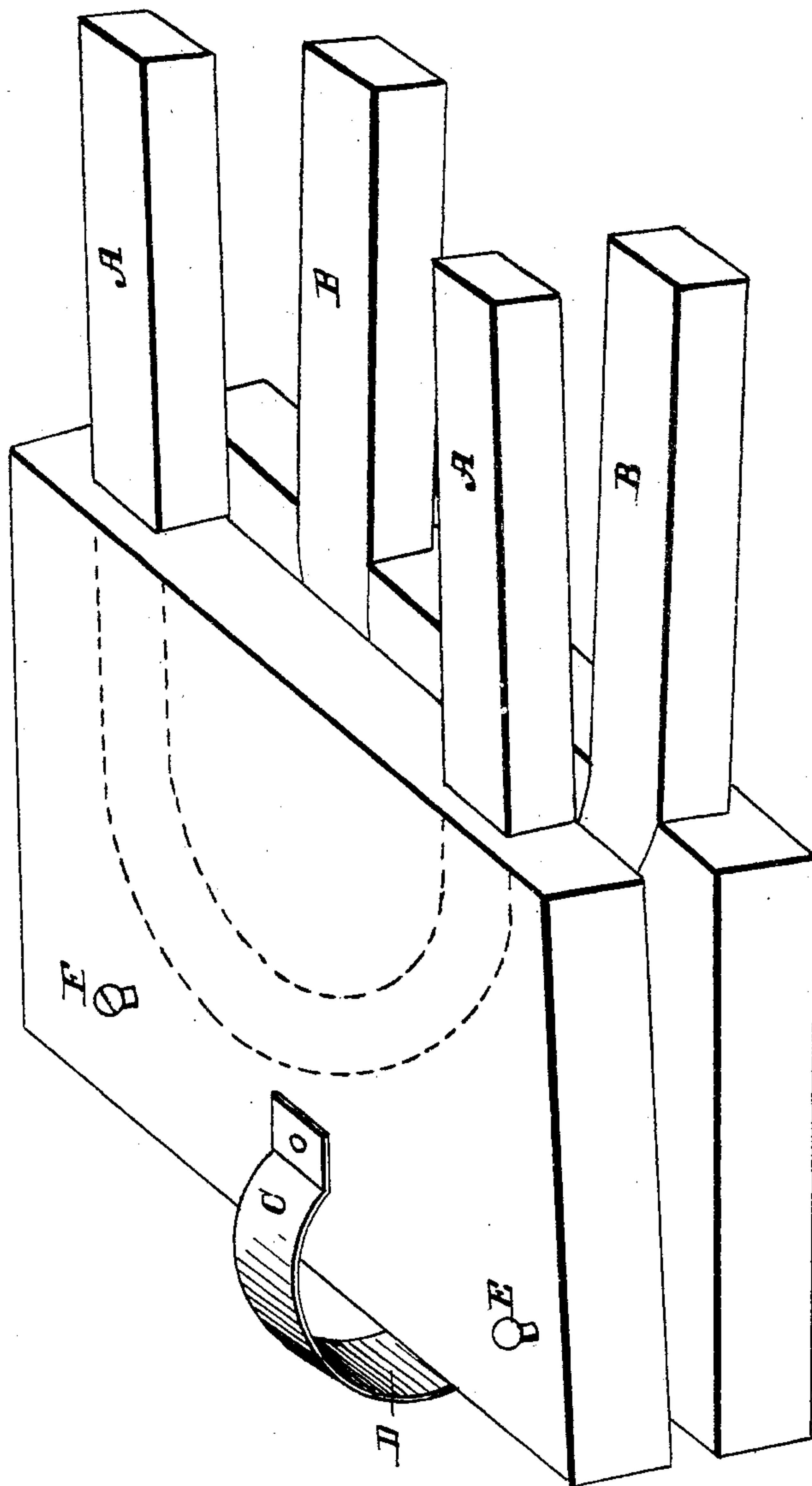


S. CUSTER.
Magnetizing Compass Needles.

No. 66.806.

Patented July 16, 1867.



Witnesses:

Geo. E. Brown
H. W. Beadle.

Inventor.

Saml. Custer

United States Patent Office.

SAMUEL CUSTER, OF SALEM, VIRGINIA.

Letters Patent No. 66,806, dated July 16, 1867; antedated July 12, 1867.

IMPROVEMENT IN MAGNETIZING COMPASS-NEEDLES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, SAMUEL CUSTER, of Salem, in the county of Roanoke, State of Virginia, have invented a new and improved Mode of Magnetizing the Needles of Compasses, and for communicating magnetism generally; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in arranging a combination of magnets, of the horse-shoe form, hinged together, having similar poles in contact; that is, north to north. The hinged arrangement affords an opening between the poles, in which the needle to be magnetized is to be introduced and drawn out alternately. Each end of the needle from its centre must be introduced between the magnets alternately, and so apply same end of needle to similar pole of battery, drawing out parallel to the axis of the magnet, adding pressure to upper magnet, and also moving the needle circularly to the right or left, as the case may be, to avoid the opposite pole. The purpose of a described arrangement is to increase magnetic intensity in the needle, and equally distribute and give direction to the currents of the needle, in order that they may effectually act in concert with and be subject to corresponding increase of the terrestrial magnetic influence, causing an increase in the directive power of the compass-needle. The process of applying the magnet to the needle in an irregular manner, without alternating the manipulations between the poles of the needle, and also the poles of the magnet at right angles to the needle to be magnetized, render the current of the needle irregular and inoperative, producing counter action with the terrestrial current, causing the needles of compasses to be easily affected by local disturbances.

In my improved process I apply the needle to be magnetized between the magnets, both sides in contact at the same time, and drawn out in direction parallel to the magnets, alternately applying the poles between them, in order to proportion the magnetism at the poles.

Having shown, in my description of the above invention, that the purpose of the arrangement of the compound magnets, and the introduction of the needles between them to be magnetized, is to increase magnetic intensity and regularity of currents in the compass-needle, thereby diminishing local disturbances—

In the drawing, A B are the magnets, so arranged in the hinging that similar poles come in contact when closed; C D, the hinge arrangement; E F, the adjusting arrangement of the hinges, in order to cause the inside surfaces of the magnets to be parallel with the bar or needle to be magnetized.

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

1. The combination of a pair of magnets, under the arrangement for opening and closing, after the needle to be magnetized has been introduced, substantially as and for the purpose described.
2. I also claim the adjustment of the hinges, by any mechanical arrangement which will produce the intended effect, substantially as and for the purpose described.

SAM'L CUSTER.

Witnesses:

A. E. HUFF.

W. P. HUFF.