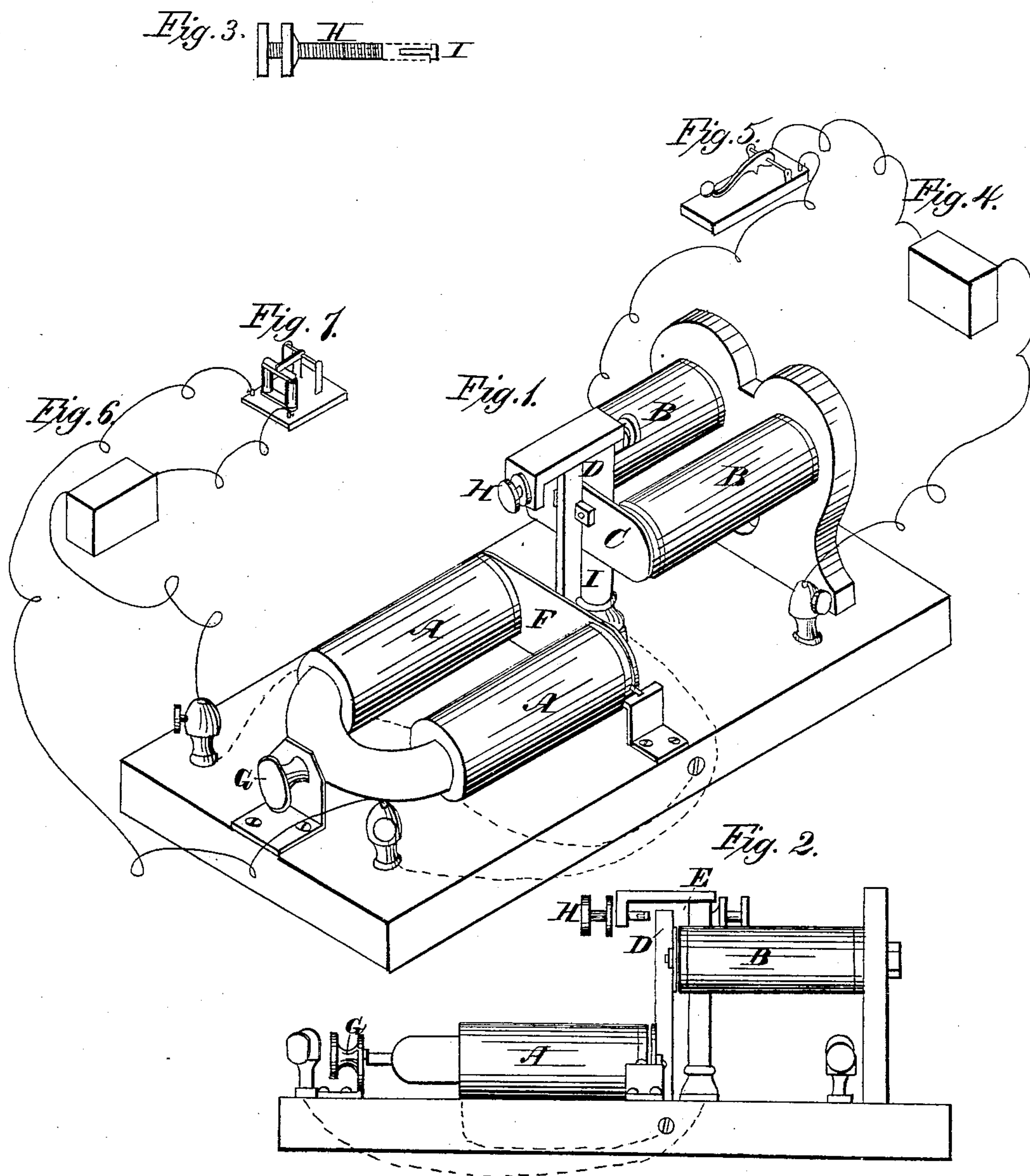


J. M. BROWN.
Telegraphic Relay.

No. 68,838.

Patented Sept. 17, 1867.



Witnesses
S. E. Carpenter

Inventor
J. Milton Brown.

United States Patent Office.

J. MILTON BROWN, OF AUBURN, NEW YORK.

Letters Patent No. 68,838, dated September 17, 1867.

IMPROVEMENT IN TELEGRAPH APPARATUS.

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, J. MILTON BROWN, of Auburn, in the county of Cayuga, and in the State of New York, have invented certain new and useful Improvements in Telegraphs; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

In the annexed drawings, making part of this specification, A A represents an electro-magnet, and B B the relay magnet. F and C represent the armatures of these magnets. The main battery of the line is seen in Figure 4, the telegraphic key is seen in Figure 5, and the battery of the sounder and electro-magnet A in Figure 6. Figure 7 represents the sounder when the old sounder is used.

This machine operates as follows: The current being closed around the receiving-magnet B B, the armature C, with its lever D, is drawn up against the set-screw E, at which point connection is made entire around the back magnet A A. But the armature C being very near the receiving-magnet B B cannot be torn therefrom, as the magnet A A operates on its armature F at a distance. This follows from the law that a magnet acts with a power inversely as the square of the distance. When the current is broken around the receiving-magnet B B the acting magnetism of A A overcomes the residual magnetism of B B, so as to draw the armature C from the receiving-magnet B B. At the same moment connection is broken around A A, but the inertia of D carries it to the set-screw H, in which position it is held by the residual magnetism of A A. The screw G serves to regulate the attractive force of A A by moving said magnet A A nearer to or farther from its armature F. I am aware of a patent being issued March 4, 1862, to G. B. Hicks, in which a magnet in a position similar to that of A A acts in lieu of a spring for the lever D, but in that the electro-magnetism of A A operates on the lever D during its whole passage backward and forward between the screws E and H, (the magnet A A being short-circuited when D touches H.) But in my improvement the electro-magnetism of A A is in operation at no other time than when the armature D touches the set-screw E. The screw G is used to regulate the electro-magnet A, and is only used to obtain a "new temperament" of the instrument after it has been changed from its place on the table or to another table. The two electro-magnets may be at the same or different heights but operate on different armatures. H represents the back abutting-screw, which has secured in or upon its end a piece, I, of ivory, gutta percha, wood, or other non-conducting material, for the purpose of preventing a complete circuit around the electro-magnet A when the lever D strikes the end of said screw. I make, by the arrangement herein represented, a relay that operates through all changes of weather and electricity without being adjusted or altered in the least. It is therefore a great saving of the time and patience of the operator, and causes more accuracy in telegraphic dispatches.

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

The combination and arrangement of the electro-magnets B B, excited by the current of the main line, with the electro-magnets A A, excited by a local current traversing the armature lever D, contact point E, and pillar I, as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 13th day of May, 1867.

J. MILTON BROWN.

Witnesses:

JACOB M. BROWN,

HORACE T. COOK.