

# A CHACE. Telegraph-Circuit Closer.

No. 57,673.

Patented Sept. 4, 1866.

Fig. 1.

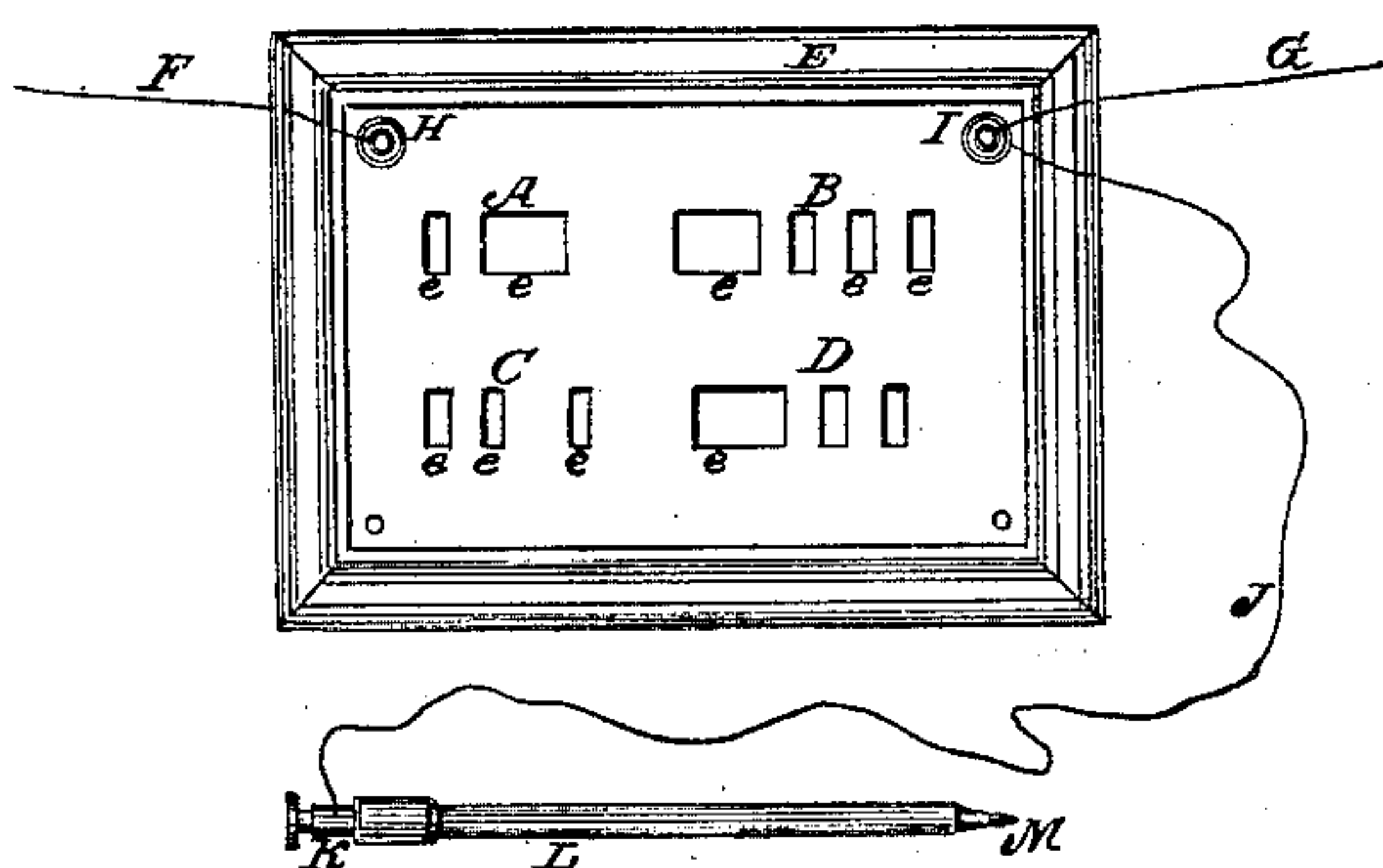


Fig. 2.

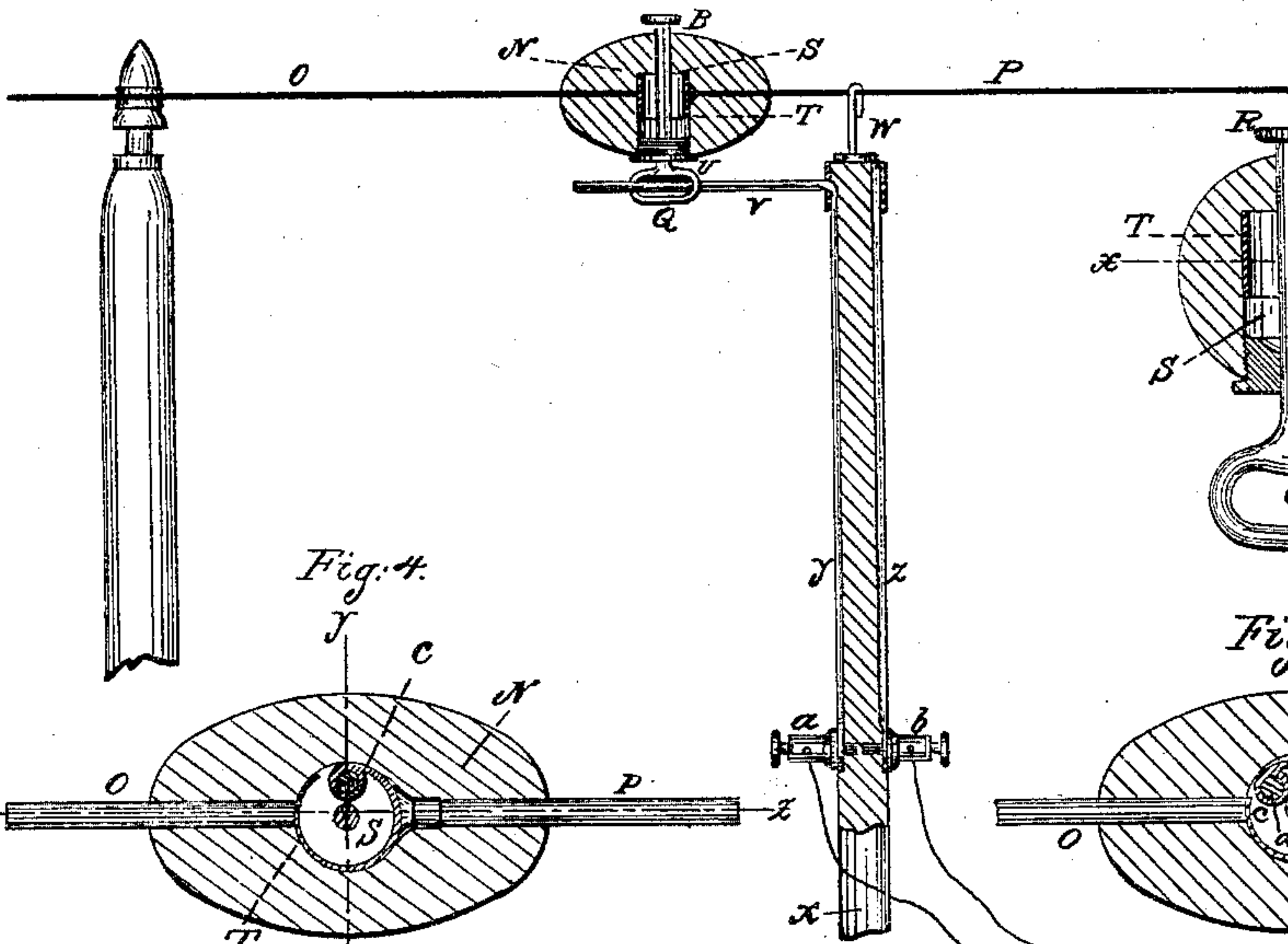


Fig. 3.

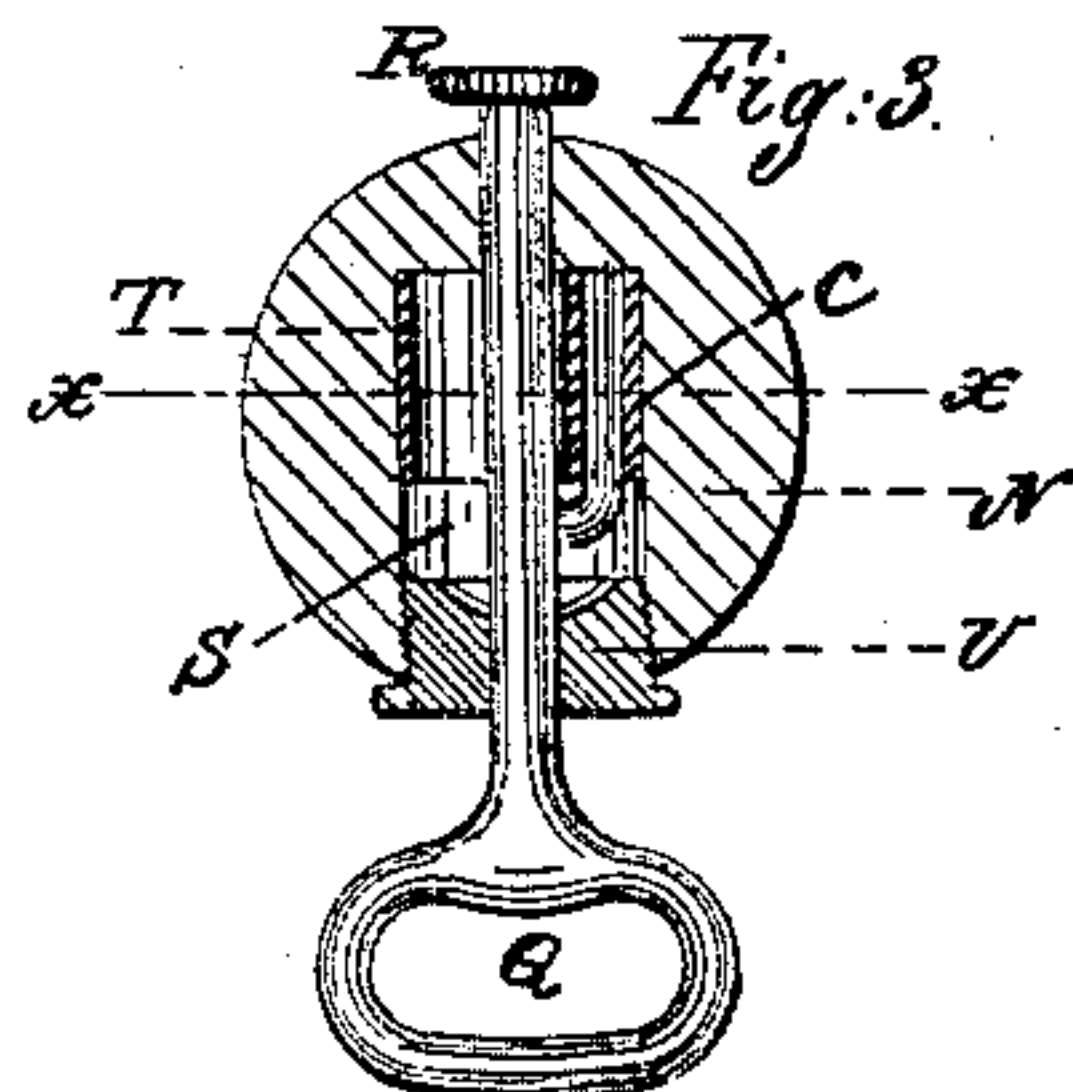


Fig. 4.

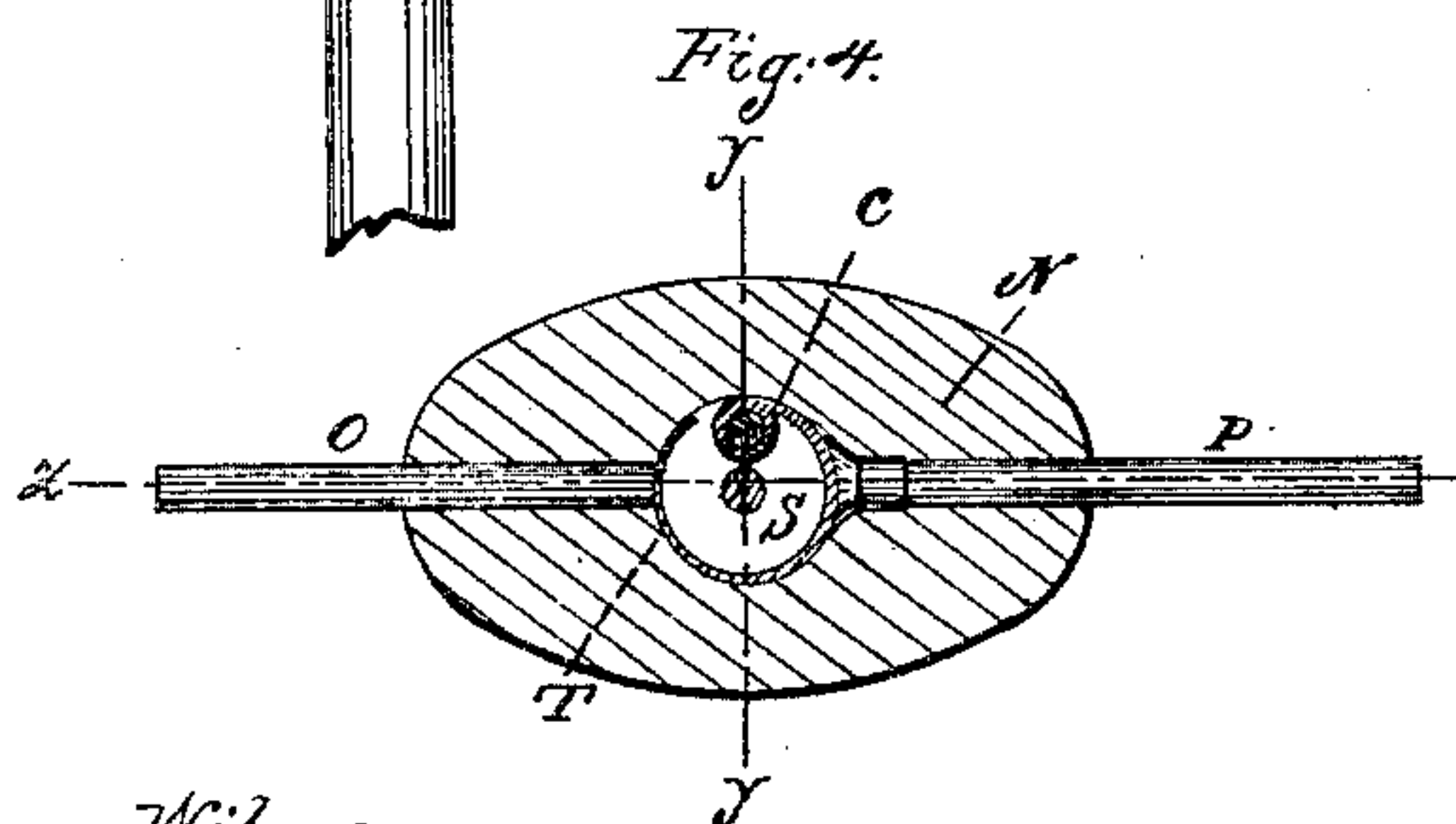
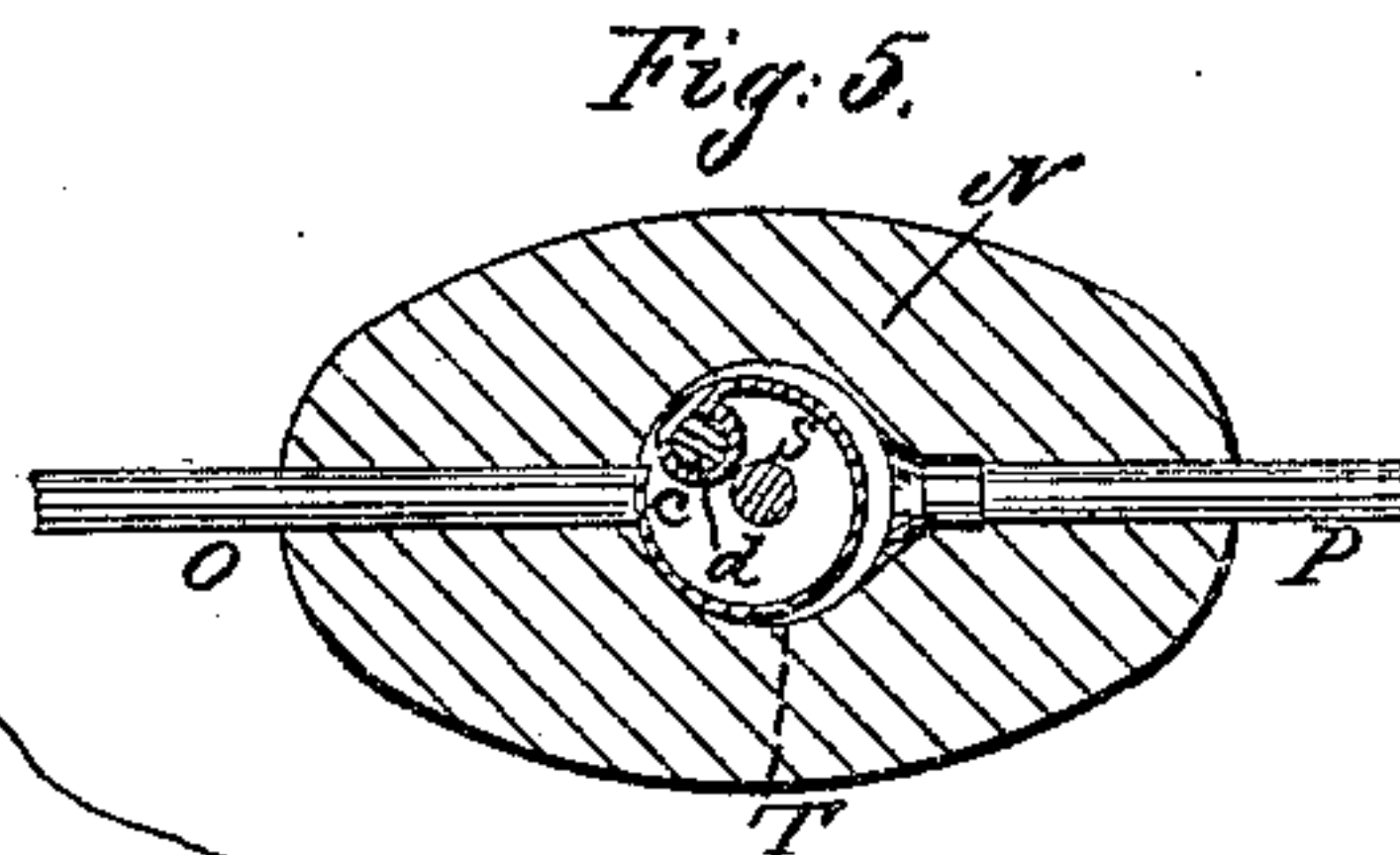


Fig. 5.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN ELECTRIC TELEGRAPHS.

Specification forming part of Letters Patent No. 57,673, dated September 4, 1866.

*To all whom it may concern:*

Be it known that I, ALONZO CHACE, of Syracuse, in the county of Onondaga and State of New York, have invented a new and useful Improvement in Telegraph-Instruments; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a lettered board, which illustrates one feature of my invention. Fig. 2 represents a device for breaking the circuit of a line of telegraph-wires, and introducing into such line the device shown in Fig. 1, or an ordinary telegraph-instrument. Figs. 3, 4, and 5 are detailed views of the device by which the circuit of the line can be broken at pleasure.

The object of this invention is to enable persons who are not skilled in or acquainted with the system of telegraphing to signal any message over the wires of a line of telegraph. The invention can also be used by experts, who will be enabled by means of it to transmit messages more rapidly than by the ordinary key.

The invention will be especially useful for railroad-conductors when, in situations of emergency, they desire to signal the condition of their trains or of a railroad-track over the wires, or to call for assistance.

It consists in means for breaking a telegraph-circuit out upon the line at pleasure, as will be hereinafter more fully shown.

In Fig. 1, F and G designate wires of a telegraph-line leading in opposite directions, whose ends are connected with a lettered board, E, which has four groups of platinum plates, *e*, representing, by their relative sizes and positions, the letters A B C D according to the Morse system. I have shown only four characters or letters in this example of my invention, since they are enough for the purpose of illustration, it being understood that the board E, or whatever other surface or device is substituted for it, is in practice to contain the whole series of characters or letters of the Morse or other system whose symbols are employed in using my invention. The wire F, which enters the thumb-screw H at

one end of the plate, has a metallic connection with each group of platinum plates *e*. The other line-wire, G, enters the thumb-screw I, and has a metallic connection, thence through the flexible wire J, with the thumb-screw K upon the head of the pencil L. The said thumb-screw K has a metallic connection with the metallic point M through the body of the pencil, which is made of a non-conducting material for protection against shocks in handling. By steadily drawing the point M of the pencil, under the conditions above stated, across the first group of platinum plates *e* the circuit is broken and closed in such a manner as to signal the Morse character A upon the line. In like manner the other letters, B C D, may be written, and the sound or mark produced in the receiving-instrument will be the Morse symbols for those letters. The board E or equivalent device for containing metallic symbols is to be of sufficient capacity to contain all the characters of the Morse or other alphabet.

Fig. 2 shows a device designed to facilitate the breaking of a telegraph-circuit out upon the line, and the introduction therein of the letter-board E or its equivalent, or of any ordinary telegraph-instrument. The letter N designates an oval block, into whose opposite ends are inserted the line-wires O P, which enter and pass through the same to the sides of a chamber, S, formed in the center of said block, where they terminate. This chamber opens on the lower side of the block. Connected with the end of line-wire O is a metallic spring or spring-plate, T, which fits within said chamber S, but is not long enough to have its ends meet each other when in its normal position. Its free end has a socket, *c*, formed thereon, as seen in Figs. 3, 4, and 5. In its normal state or position this spring presses firmly against the end or head of the other line-wire, P, thereby insuring electric connection from one wire to the other. Q is a key, whose stem passes up through the oval block through the center of chamber S, and is attached to the block by means of a nut, R, which screws onto the end of the stem, which protrudes above the block, and the stem of the key is held centrally in the said chamber by means of a screw-cap, U, through whose center it passes, and which cap is screwed into



the open ends of the chamber. From one side of the stem of the key Q extends an arm, *d*, which enters the socket *c* of the spring, so that if one turns the key in such a way as to bring the arm *d* toward the left the spring T will be drawn away out of contact with the end or head of the line-wire P, and the electric connection of the wires O P is thereby interrupted. X is a portion of a connecting-pole, the metal arm V of which, passing through the ring of the key Q, furnishes a lever, by means of which the key can be turned and the electric connection broken in the said chamber S. The connecting-pole is designed to be used from the ground, and is provided with a metallic hook, W, which, when hooked over the line-wire P, keeps the pole in place. Upon the lower end of said pole are thumb-screws *a b*, the first of which has a metallic connection with the arm V of the pole by means of a wire, *y*, and the latter with the hook W by means of the wire *z*, the arm V and hook W being insulated from each other. It will be observed that when thus placed the thumb-screw *a* is in electric communication with the line-wire O through wire *y*, arm V, key Q, and spring T, and that the thumb-screw *b* is in electric connection with the line-wire P through the hook W and the wire *z* or other conductor leading to itself. If, under these conditions, the wires of an ordinary Morse key and relay-instru-

ment are inserted in the said thumb-screws *a b*, as indicated in red outline in Fig. 2, messages may be sent and received through the same in the usual way.

The breaking device herein illustrated may be inserted along the line at frequent intervals, ready for any emergency which may demand its use, and a railroad-conductor or any other person, if supplied with a letter-board like that here shown, or an equivalent device, and with a connecting-pole, as described, will be thereby enabled to send messages along the line of wire, although entirely unskilled in the system of telegraphing by the use of instruments and symbols.

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

1. In combination, the devices above shown for breaking the electric connection upon a telegraph-line—that is to say, the block N and its appurtenances and the connecting-pole X and its appurtenances, made and applied substantially as above set forth.

2. The block N and its spring T, in combination with the wires that compose a line of telegraph, substantially as above set forth.

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