

(No Model.)

B. OEHMEN.

COMBINED TELEGRAPH KEY AND SOUNDER.

No. 377,862.

Patented Feb. 14, 1888.

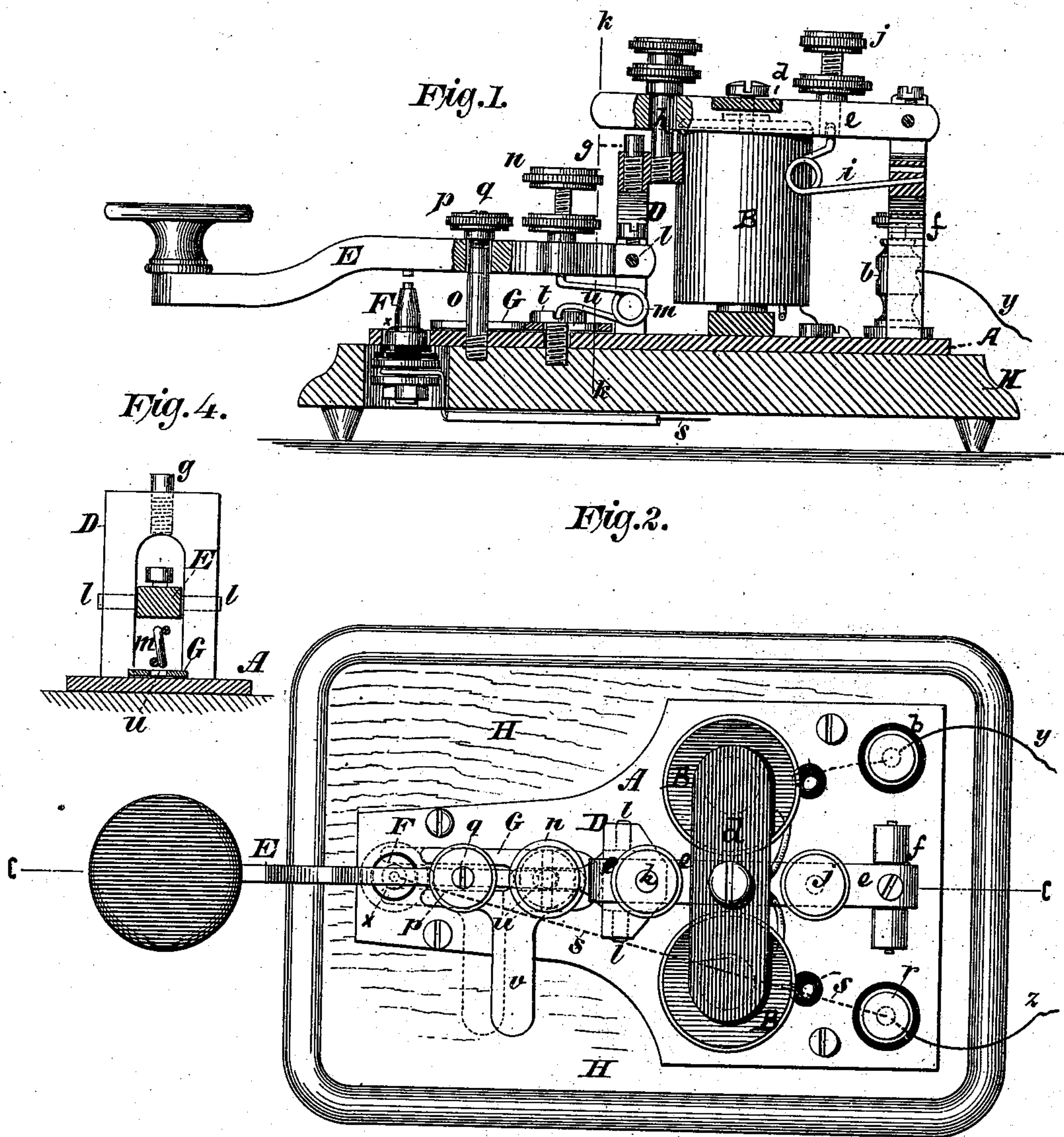


Fig. 3.

WITNESSES:

WITNESSES:
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COMBINED TELEGRAPH KEY AND SOUNDER.

SPECIFICATION forming part of Letters Patent No. 377,862, dated February 14, 1888.

Application filed October 13, 1887. Serial No. 252,206. (No model.)

To all whom it may concern:

Be it known that I, BARTHOLOMEW OEHMEN, of the city, county, and State of New York, have invented a new and Improved Combined
5 Telegraph Key and Sounder, of which the following is a specification.

The object of my invention is to combine in one instrument a telegraph key and sounder, which instrument shall be simple in construction, take up but little space, and be not liable to get out of order.

The invention consists in the combinations and details of construction, hereinafter more fully set forth.

15 Reference is to be had to the accompanying drawings, forming part of this specification, in which Figure 1 is a vertical longitudinal section on the line *c c*, Fig. 2, of a combined key and sounder constructed according to my invention. Fig. 2 is a plan view of the same. Fig. 3 is a vertical section through part of the key and its guide-post; and Fig. 4 is a vertical cross-section on the line *k k*, Fig. 1, showing the post in which the key-lever is pivoted.

25 A represents a plate of suitable conducting metal, which may be mounted upon a base, H, of wood or other non-conductor, in any suitable manner.

30 B B are electro-magnets secured to the plate A or base H. One of the poles of this electro-magnet is in electrical connection with said plate A, and the other pole with an insulated binding-post, *b*, of line-wire *y*.

35 *d* is the armature of the electro-magnets, carried by a lever, *e*, which lever is pivoted in a post or upright, *f*, that projects from the plate A.

40 D is the sounding-post carried by the plate A. It preferably carries a stud or anvil, *g*, upon its upper end, which the lever *e* is to strike to produce a clicking sound. The post D also carries, or may carry, on a projection thereon, an upwardly-projecting guide-pin, *h*, which passes through a slot of the lever *e*. The
45 pin *h* carries above the lever *e* nuts to limit and regulate the upward movement of said lever.

50 The armature-lever *e* is kept in the raised position by means of a wire spring, *i*, one arm of which is inserted in one of a series of holes in the post *f*, its other arm connecting with a

screw, *j*, which is carried by the lever *e*, as shown. By this screw the tension of the spring *i* is regulated to a subordinate extent, while it is regulated to a greater extent by inserting
55 the end of the spring in a different hole of the post *f*. I prefer that one end of the spring *i* project into a depression in the end of the screw *j*, to insure that the spring will remain in its proper position against the screw. This
60 is shown in Fig. 1.

I have described my preferred form of mechanism for a sounder; but any other construction of sounder mechanism may be used, if desired. I have also shown two coils of elec-
65 tro-magnet B; but one or more may be used, as may best suit convenience.

I will now proceed to show how the key is combined with the sounder.

70 E is a key-lever of suitable construction pivoted in the post D by means of a pin or other pivot, *l*. The post D is shown in Fig. 4 to be arched, and the end of the lever E passes into said arch, where it is pivoted; but the lever E may be supported in any other form
75 of post D. The lever E is held in its proper normal position by means of a spring, *m*, bearing at one end against the lever or against a set-screw, *n*, carried by said lever, and at its other end against the plate A or a projection
80 therefrom, or against any other suitable support. This spring *m* could, if desired, be adjusted in a manner similar to the spring *i*—that is, have one of its ends supported by the
85 post D.

85 *o* is an upwardly-projecting guide-pin carried by the plate A and passing through a hole in the lever E, as shown. The guide-pin *o* carries a nut, *p*, at its upper end, which may be adjusted to limit and regulate the up-
90 ward movement of the lever E. The upper part of the guide-pin *o* is split vertically, as at *q*, to produce an outward spring tendency, which serves to lock the nut *p* in position, thus doing away with a lock-nut; but this
95 nut *p* may be otherwise locked, if desired. It will be seen that the post D serves the double purpose of post for the sounder-lever and supporting-post for the lever E. It is evident that the lever E could be pivoted in the post
100 *f* to substantially the same advantage. The plate A serves, also, as the main support for

sounder and key, and, as I will now show, as single conductor for both these instruments.

F is an anvil or contact-post carried by the base H out of metallic contact with the plate A. In the drawings it is shown projecting through the plate A and insulated therefrom. The anvil F is in electrical connection with an insulated binding-post, *r*, and conductor *z* by means of a wire, *s*; but, if desired, the anvil may be connected directly to the line-wire. The anvil F is carried beneath the lever E, and it is adapted to be struck by the lever E to close the circuit by the key. The anvil F is brought into electrical connection with the plate A by means of a sliding twitch, G, carried by and in contact with said plate. The switch G is preferably held in position on the plate A by means of a screw, *t*, passing through a slot, *u*, in the switch, and thence into the plate A. By means of this slot the switch is permitted longitudinal movement. The opposite or free end of the switch is forked, as seen in Fig. 2, and when moved forward it is adapted to straddle the anvil F and come in contact with the shoulder *x* thereof, as shown in dotted lines, Fig. 2. The pin *o* may also project through the fork of the switch to help guide said switch on the plate A. The switch is provided with a finger-piece, *v*, for convenience in operating. To close the circuit for the sounder, the switch is moved forward to contact the anvil F, as shown in dotted lines, Fig. 2. The switch G could be made to contact any other insulated binding-post instead of the anvil, and thereby to bring the sounder into circuit; but the construction shown I prefer as simplifying the arrangement. In operating the key the switch G will first be moved out of contact with the anvil.

An instrument constructed as above described will take up but little room, and will not be liable to get out of order, as it is made with comparatively few parts. It will be seen that the same conductors are capable of use with the key as with the sounder. The key, when depressed, connects the anvil metalli- cally with the plate A, wire of coil B, post *b*, and conductor *y*, the anvil uniting with conductor *z*. The sounder, when the switch is closed, also uses the conductors *y* and *z*.

Having now described my invention, what I claim is—

1. The combination of the plate A, post *f*, having series of holes, pivoted lever *e*, and spring *i*, inserted at one end in one of the perforations of said post *f* and bearing at its other end upon the lever *e*, whereby the tension of said spring is regulated, substantially as described.
2. The combination of the plate A with the anvil F, for connection with a line-wire, said anvil having a shoulder, *x*, above the plate A, and with the slotted and forked longitudinally-sliding switch G and guide-posts *t* and *o*, entering said slots and fork, respectively, substantially as described.
3. The combination of the metal plate A, electro-magnet B, one pole being electrically connected with the plate A, sounder-lever *e*, and sounder-posts *f* and D with the key-lever E, pivoted in the sounder-post, longitudinally-sliding switch G, insulated anvil F, conductors *s r z* and *b y*, all arranged so that both said conductors are used by the key and by the sounder, as specified.

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Witnesses:

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