

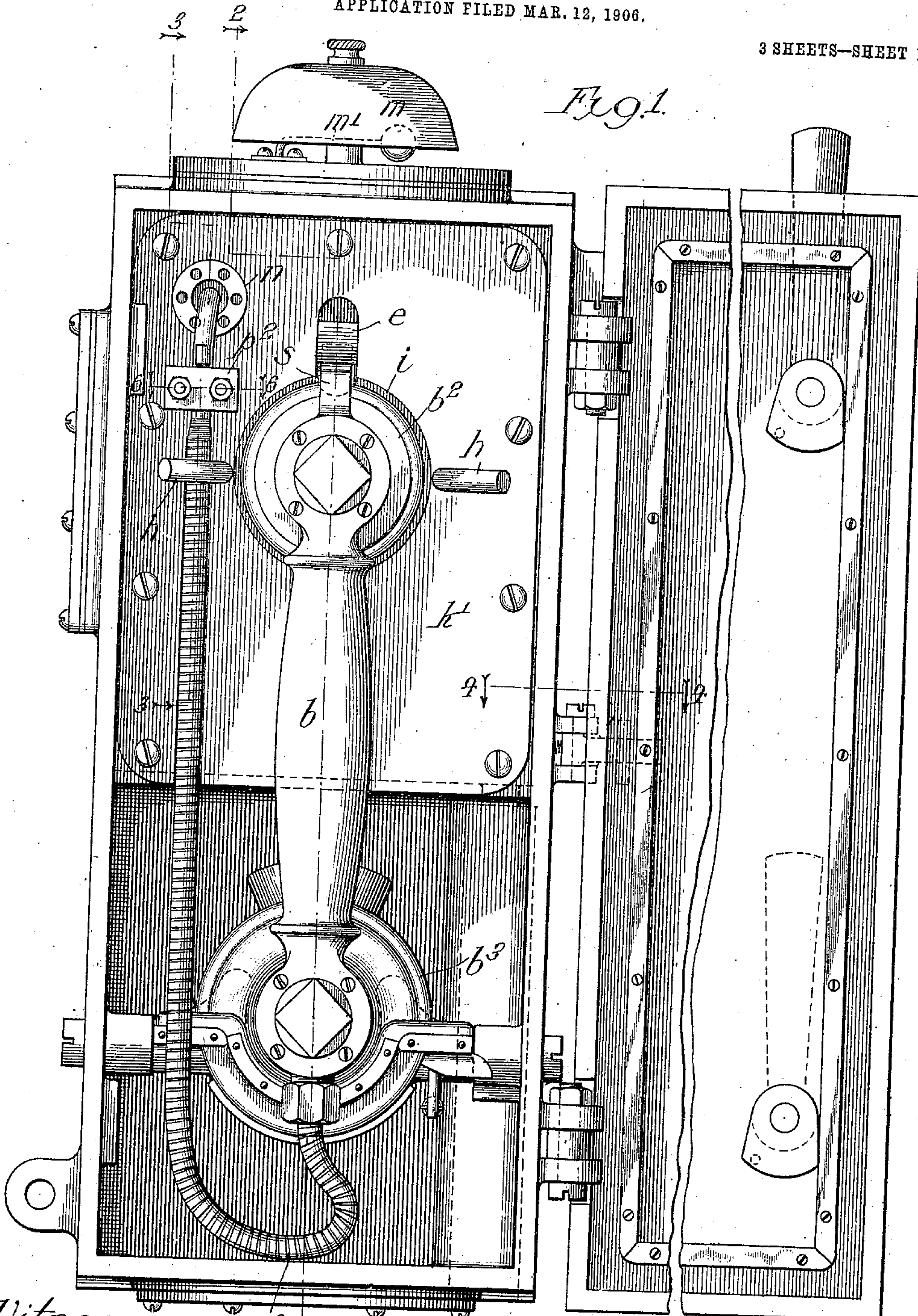
No. 847,305.

PATENTED MAR. 19, 1907.

G. F. ATWOOD.
TELEPHONE SET.

APPLICATION FILED MAR. 12, 1906.

3 SHEETS—SHEET 1.



Witnesses:
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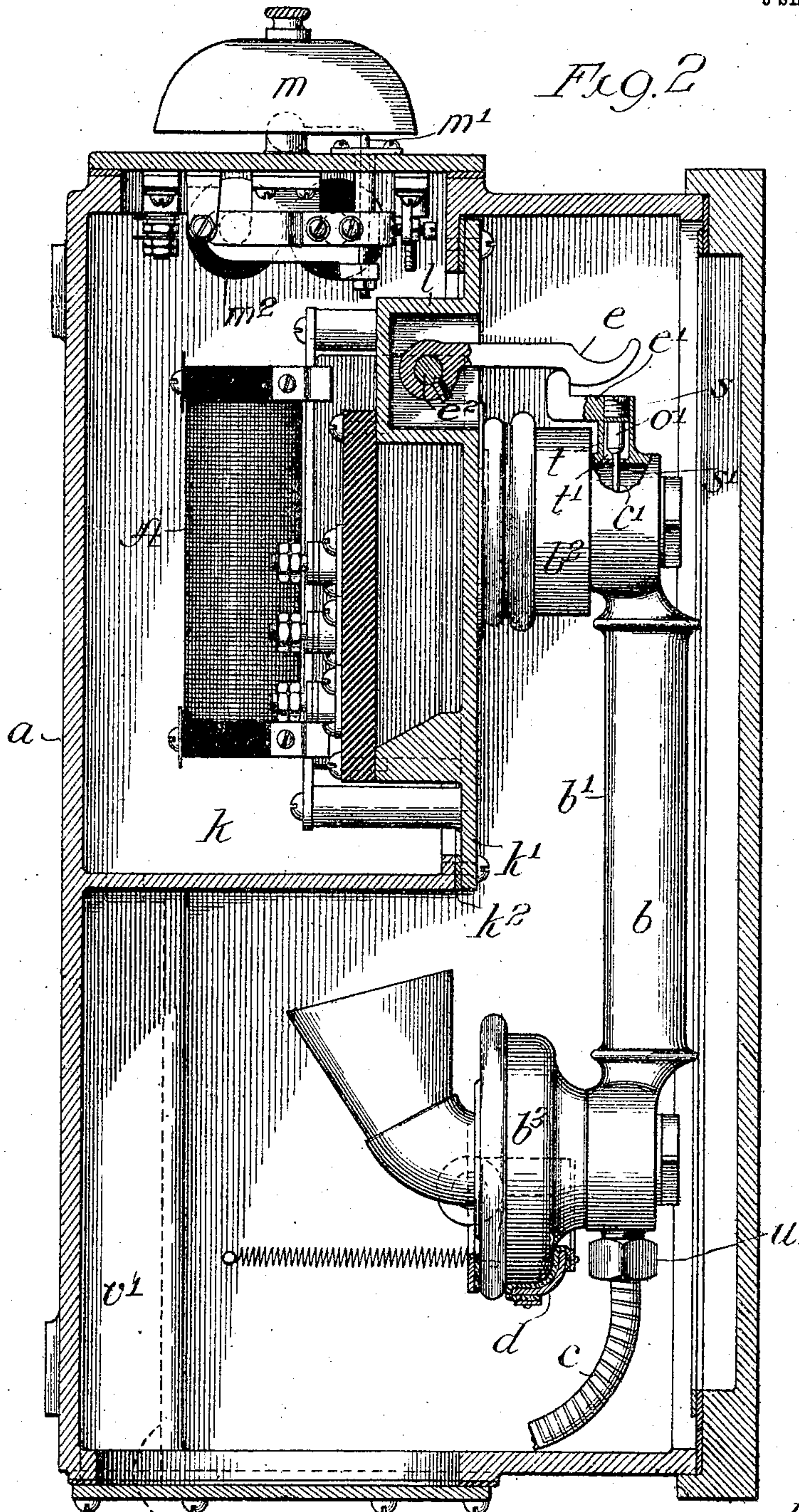
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

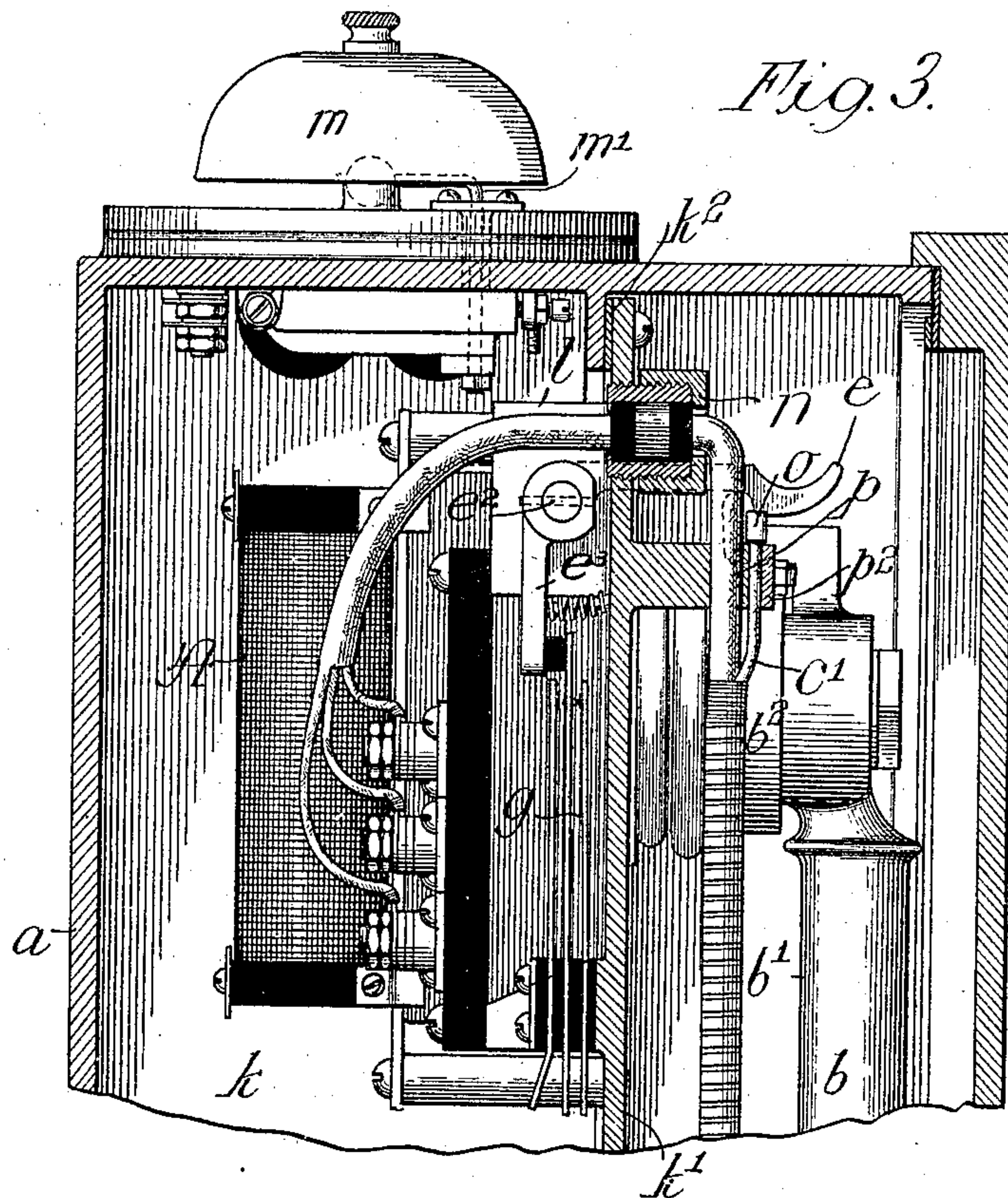


Fig. 3.

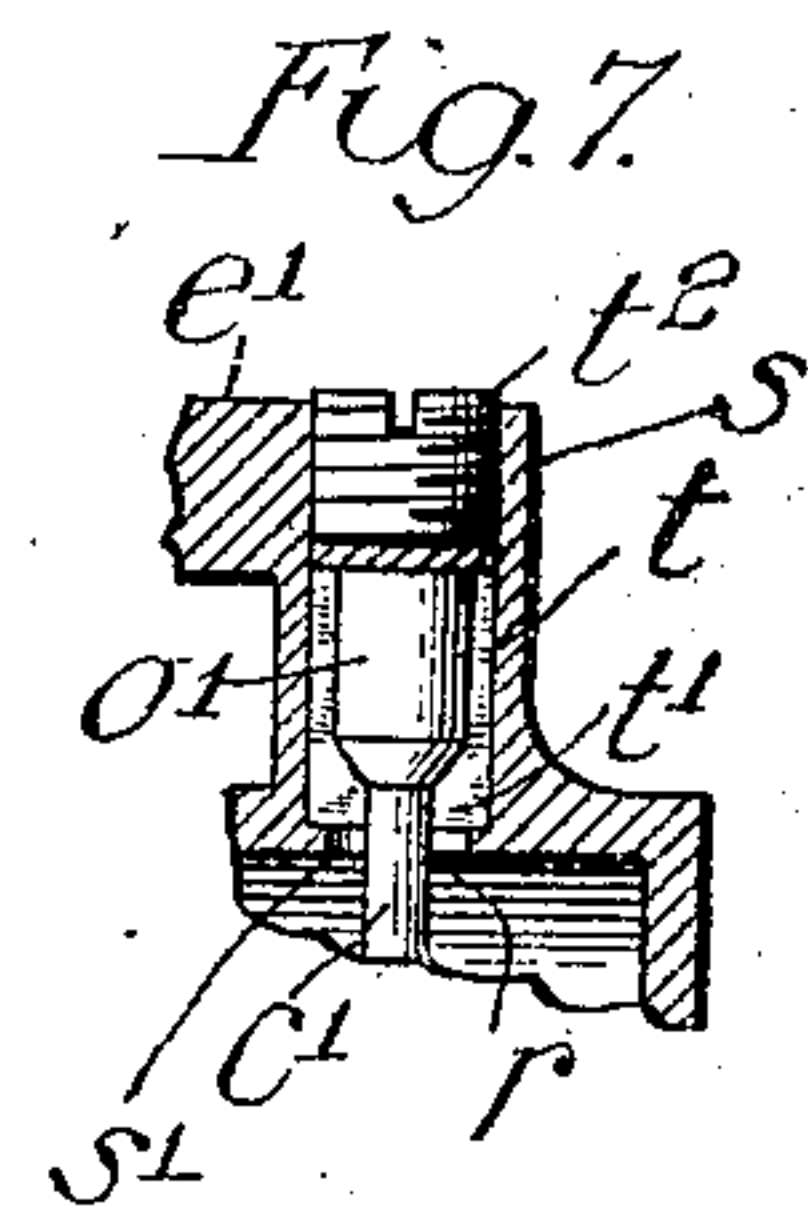


Fig. 7.

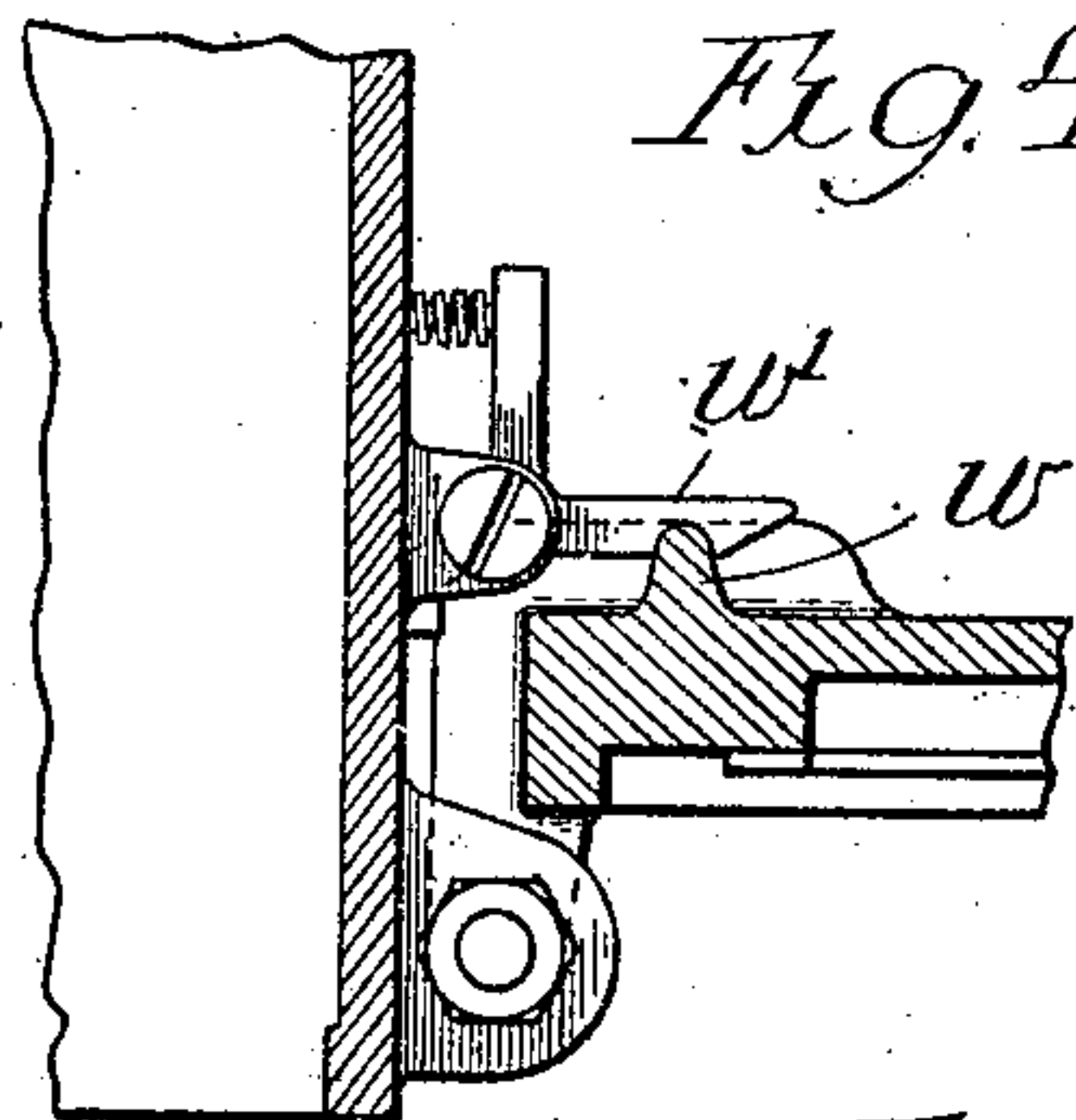


Fig. 4.

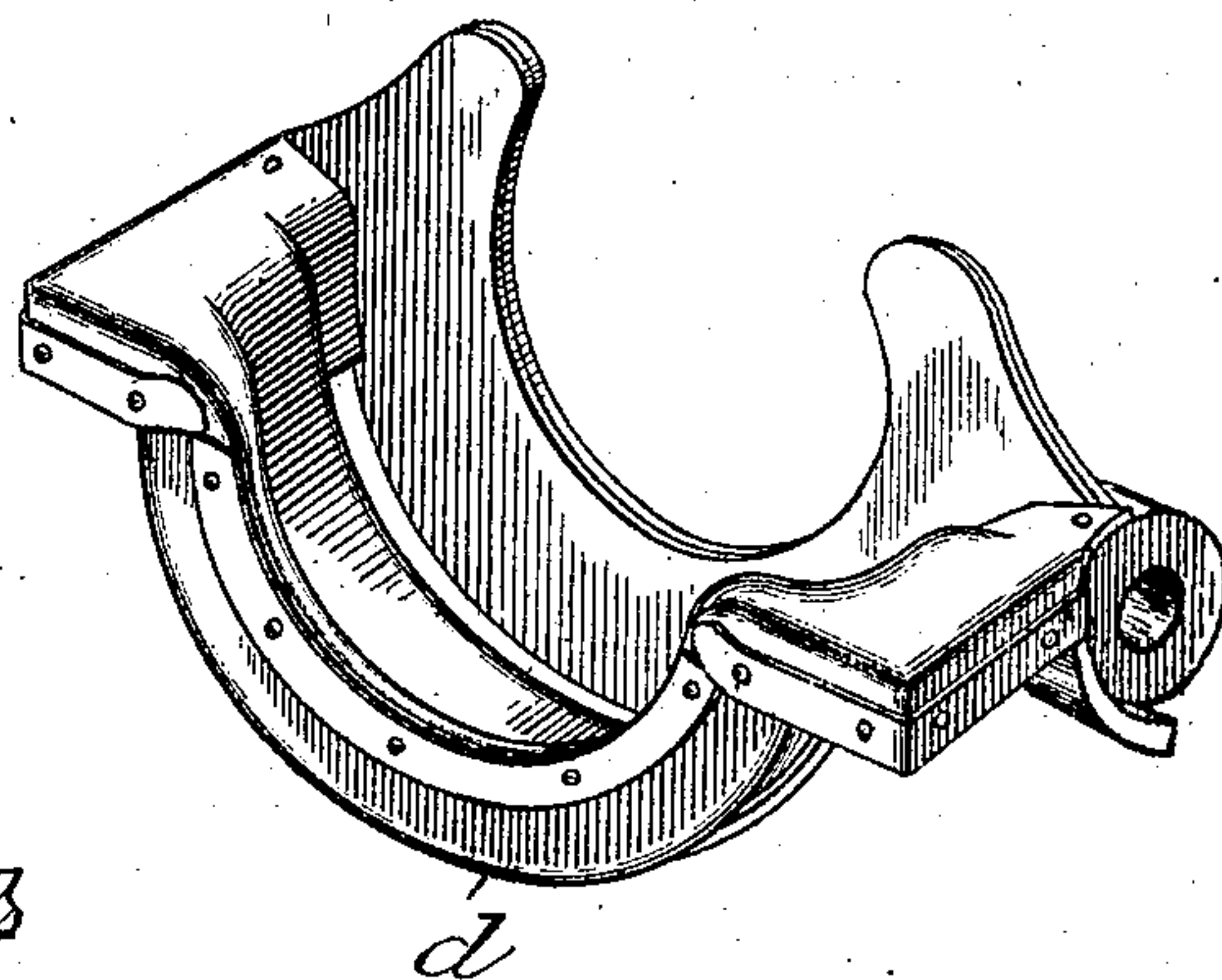
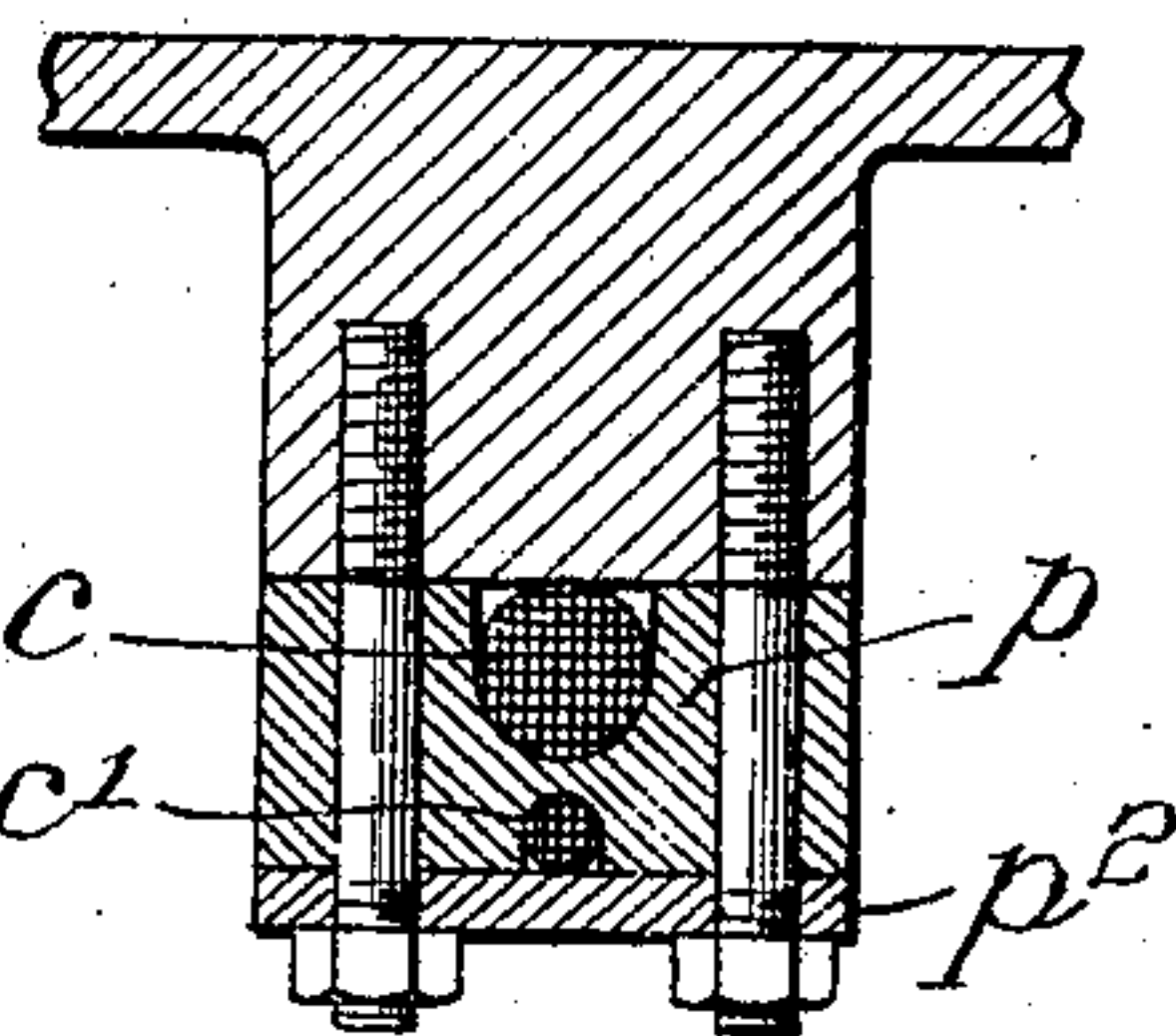


Fig. 5.

Fig. 6.



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UNITED STATES PATENT OFFICE.

GEORGE F. ATWOOD, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO WESTERN ELECTRIC COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

TELEPHONE SET.

No. 847,305.

Specification of Letters Patent.

Patented March 19, 1907.

Application filed March 12, 1906. Serial No. 305,551.

To all whom it may concern:

Be it known that I, GEORGE F. ATWOOD, a citizen of the United States, residing at East Orange, in the county of Essex and State of New Jersey, have invented a certain new and useful Improvement in Telephone Sets, of which the following is a full, clear, concise, and exact description.

My invention relates to a telephone set, and has for its object to provide a substantial and water-tight structure capable of withstanding severe usage.

The subscriber's telephone set of my invention was designed especially for use on ships and in the navy, where it will be subjected to inclement weather and rough usage. It is desirable in such a set to allow the user considerable freedom of movement and permit of observation. It is therefore desirable to use a hand telephone set connected by a flexible conductor-carrying cord with the mechanism of the set. Another advantage in the use of the hand set is that the transmitter thereof is cushioned by the hand of the user against the noise and shocks prevalent.

A feature of my invention consists in the manner of supporting the hand set within the case of the telephone set while not in use. I provide a working member adapted to receive one end of the hand set and a latch adapted to engage the other end thereof to hold the hand set securely and protect the same from shocks.

Another feature of my invention consists in the means which I employ for protecting the mechanism within the case from exposure to moisture—as, for example, when the door of the case is opened and the set in use. The electrical mechanism of the set is inclosed in a water-tight chamber within the case, and the point of entry to the chamber of the cord leading from the hand set to the mechanism within the chamber is sealed by a suitable stuffing-box. The latch above referred to, which engages one end of the hand set, projects through an opening in said chamber and controls switching mechanism within the chamber for the hand set, said opening being sealed against moisture. The signal-bell is provided for the set, having a gong on the outside of the case and a magnet for operating a tapper-arm for the gong located within said chamber, said arm passing

through an opening in the wall of said chamber and case, which is sealed against moisture.

The user of a telephone set upon a ship is liable to be thrown from his feet by the pitching of the ship while retaining his grasp upon the hand set, thereby pulling the cord from the containing-case or breaking its connection with the hand set.

A further feature of my invention consists in the provision of improved means for clamping the cord to the case and hand set, respectively, so that the cord will support the weight of the user if thrown from his feet without destroying the connections of the cord with either the case or hand set.

I will describe my invention by reference to the accompanying drawings, which illustrate the preferred form thereof, reserving for the appended claims a statement of the parts, improvements, and combinations which I consider novel with me.

In the drawings, Figure 1 is a front elevation of a telephone set embodying my invention with the door open. Fig. 2 is a vertical sectional view on line 2 2 of Fig. 1 with the door closed. Fig. 3 is a vertical sectional view on line 3 3 of Fig. 1. Fig. 4 is a detail view of the means which I may employ to hold the door in its open position against accidental closure, and Fig. 5 is a detail view of the rocking member supporting the transmitter end of the hand set. Fig. 6 is a detail sectional view on line 6 6 of Fig. 1. Fig. 7 is an enlarged detail view showing the manner of clamping the anchoring-strand within the hand set.

The same letters of reference designate the same parts wherever shown.

The containing-case *a* of the telephone set, which is preferably of metal and of substantial form, contains the mechanism of the set, as well as the hand set *b* when the same is not in use. The hand set preferably comprises a hollow handle *b'*, carrying at one end a receiver *b²* and at the other end a transmitter *b³*, a conductor-carrying cord *c* connecting said hand set with the mechanism *A* within the case. A rocking member *d* is secured within the case adapted to receive the transmitter end of the hand set, the other end or receiver end being engaged by a latch *e*, secured within the case. The receiver end preferably carries a lug *e'*, adapted to engage

the spring-actuated latch-finger *e*, said finger controlling switching mechanism *g* for the hand set. The rocking member is preferably lined with leather as a protection to the transmitter. Guide-rods *h h* serve to direct the receiver end into engagement with its latch and a rubber mat *i* is provided to protect the earpiece of the receiver in case the hand set should be violently thrown into place within the case.

A water-tight chamber *k* is formed in the upper portion of the case *a* to receive the electrical mechanism *A* of the telephone set, said chamber having a cover *k'*, mounted upon the upper edge of a partition of the box, and an outwardly-projecting flange upon the walls of the case. The cover supports the latch-finger *e*, guide-rods *h h*, and mat *i*, the rocking member *d* being secured in the lower part of the case. A rubber cushion or washer *k²* is interposed between the cover and edge of the chamber to render the same water-tight. The switching mechanism *g* is placed within the chamber in position to be operated through the agency of the latch-finger *e*. The latch-finger is preferably mounted upon a shaft *e²*, projecting through a hole in the countersunk portion *l* of the cover, said hole being rendered water-tight in any suitable manner. The shaft *e²* extends within the chamber and carries a lug *e³*, adapted to engage the switching mechanism *g*, said latch-finger, shaft, and lug forming a rocking lever adapted to communicate the motion of said latch-finger to said switching mechanism.

A signal-bell is provided for the telephone set comprising a gong *m*, mounted upon the top of the containing-case and provided with a rocking tapper-arm *m'*, passing through a hole in the top wall of the case and chamber (the top wall of the case also constituting the top wall of the chamber) and being connected with the armature of a magnet *m²* within the chamber, said opening being arranged to form a water-tight bearing for the tapper-arm.

A conductor-carrying cord *c* passes into the chamber *k* to the mechanism therein through a hole preferably in the cover *k'*, said hole being sealed against moisture by a stuffing-box *n*. An anchoring-strand *c'* of the cord carries at one end a button *o*, said strand at such end lying in a groove in a block *p*, secured to the cover *k'* of the chamber *k*, (see Fig. 6,) and a clamping-plate *p²* is secured to said block over said anchoring-strand *c'*, whereby said member is firmly clamped between said parts *p p²* with the button in engagement with the edges thereof, as shown in Fig. 1. The other end of the anchoring-strand *c'* carries a button *o'*, adapted to be anchored within the hand set *b* to the frame thereof, preferably at the upper end, the cord passing through the hollow han-

dle. An opening *r* is provided in the upper end of the frame of the set connecting with the lower opening of a hollow lug *s*, which is preferably the vertical portion of the latch-lug *e'*. A split bushing *t* surrounds the button *o'*, the lower opening in said bushing being contracted to form flanges *t' t'*, which serve as a seat for the button, said flanges abutting against an intumed annular flange *s'* within the lug *s* or at the lower opening thereof. A plug *t²* is preferably screwed into the lug *s* over the button *o'* and bushing *t* to prevent the same from backing out of the lug. With this arrangement the ends of the cord *c* are securely anchored within the hand set and containing-case, and the cord may bear a very heavy weight without becoming disengaged from the hand set and containing-case and disturbing its connections. A stuffing-box *u* is provided for the opening in the lower end of the hand set through which the cord enters the set, said stuffing-box sealing said opening against moisture.

The line-wires of the telephone set preferably enter the case through an opening *v* in the case thereof, said opening being connected by a covered passage *v'*, with an opening in a wall of the chamber *k*, the line-wires passing through said passage *v'*. The wall of the case is preferably cored, as shown. The wires would preferably be brought into the passage *v'* through a conduit threaded into the opening *v*, thus permitting the line-wires to be led from the set without exposing either the chamber *k* or the interior of the case to moisture. The door of the case may carry a lug *w*, adapted when the door is open to engage a spring-actuated latch-finger *w'*, carried by a side wall of the case to prevent the door from being accidentally shut.

Having thus described my invention, I claim—

1. The combination with a telephone set, of a containing-case therefor, a telephone within the case, a rocking member adapted to receive one end of said telephone, and a latch for the other end thereof.

2. The combination with a telephone set, of a containing-case therefor, a hand telephone set within the case, a rocking member adapted to receive one end of said hand set, and a spring-actuated latch for the other end of said hand set.

3. In a subscriber's set, the combination with a containing-case, of a hand telephone set therein carrying a receiver and transmitter at the ends thereof, mechanism within said case, a conductor-carrying cord connecting said hand telephone set therewith, a rocking member adapted to receive the transmitter end of said hand set, and a latch adapted to engage the receiver end.

4. In a subscriber's set, the combination with a containing-case for the mechanism of

the set, of a telephone therein, a rocking member adapted to receive one end of said telephone, a latch for the other end of said telephone, and switching mechanism for the telephone controlled by said latch.

5. In a subscriber's telephone set, the combination with a containing-case for the mechanism of the set, of a hand telephone set therein, a rocking member adapted to receive one end of said hand set, a lug upon the other end of said hand set, a spring-actuated latch-finger within the case adapted to be engaged by said lug to hold said other end of the hand set, and switching mechanism for the hand set controlled by said latch-finger.

6. In a subscriber's telephone set, the combination with a containing-case, of a telephone therein, a rocking member adapted to receive one end of said telephone, a latch for the other end of said telephone, and guides adapted to direct the telephone into engagement with said latch.

7. In a subscriber's telephone set, the combination with a containing-case, of a chamber within the case adapted to receive the mechanism thereof, a cover for said chamber, a hand telephone set, a conductor-carrying cord connecting said hand set with the mechanism within the chamber, a rocking member adapted to receive one end of said hand set, a lug upon the other end of said hand set, a spring-actuated latch-finger projecting through an opening in said cover adapted to be engaged by said lug to hold said other end of the hand set, and switching mechanism for said hand set within said chamber, controlled by said latch-finger.

8. In a subscriber's telephone set, the combination with a containing-case, of a chamber within the case adapted to receive the mechanism thereof, a cover for said chamber, a telephone within the case, a conductor-carrying cord extending from said telephone to the mechanism within said chamber, a stuffing-box adapted to seal the point of entry of said cord into the chamber, a rocking member adapted to receive one end of said telephone, and a latch for the other end thereof.

9. In a subscriber's telephone set, the combination with a containing-case, of a chamber within the case adapted to receive the mechanism thereof, a cover for said chamber, a hand telephone set within the case carrying a receiver and transmitter at its ends, a conductor-carrying cord connecting said hand set with the mechanism within the chamber, a rocking member adapted to receive the transmitter end of said hand set, a lug upon the receiver end of the hand set, a latch-finger carried by said cover adapted to be engaged by said lug to hold said end, guide-rods carried by the cover adapted to direct

said receiver end into position to cause said lug and latch-finger to engage, and an elastic mat for the receiver carried by said cover.

10. In a subscriber's set, the combination with a containing-case, of a hand telephone set therein, a water-tight chamber within said case containing the mechanism of the subscriber's set, a conductor-carrying cord leading from the hand set to the mechanism within said chamber, means for rendering water-tight the point of entry of said cord into the chamber, a rocking member within the case adapted to receive one end of the hand set, and a spring-actuated latch-finger having a water-tight bearing in one wall of said chamber and adapted to engage the other end of the hand set.

11. In a subscriber's set, the combination with a containing-case, of a hand telephone set therein, a water-tight chamber within said case containing the electrical mechanism of the subscriber's set, a conductor-carrying cord leading from the hand set to the mechanism within the chamber, a stuffing-box for rendering water-tight the point of entry of said cord into the chamber, a rocking member within the case adapted to receive one end of the hand set, a spring-actuated lever projecting through a hole in one wall of the chamber adapted to engage the other end of said hand set, means for sealing said hole against moisture, switching mechanism within the chamber for said set controlled by said lever, a gong on the outside of the containing-case, an electromagnet within said chamber, an armature therefor, and a rocking tapper-arm connected with said armature and passing through an opening in the wall of said chamber and case to operate said gong, said opening forming a water-tight bearing for said arm.

12. In a subscriber's telephone set, the combination with a containing-case, of a water-tight chamber therein containing the electrical mechanism of the set, a telephone in said case, a conductor-carrying cord leading from said telephone to the mechanism within said chamber, means for rendering water-tight the point of entry of said cord to the chamber, and line-wires for the case, a wall of said case being cored to form a covered passage leading from an opening in the base of the box to said chamber, through which said line-wires pass to the mechanism within the chamber.

In witness whereof I hereunto subscribe my name this 3d day of March, A. D. 1906.

GEORGE F. ATWOOD.

Witnesses:

WM. B. TOM,

R. EDWARDS, Jr.