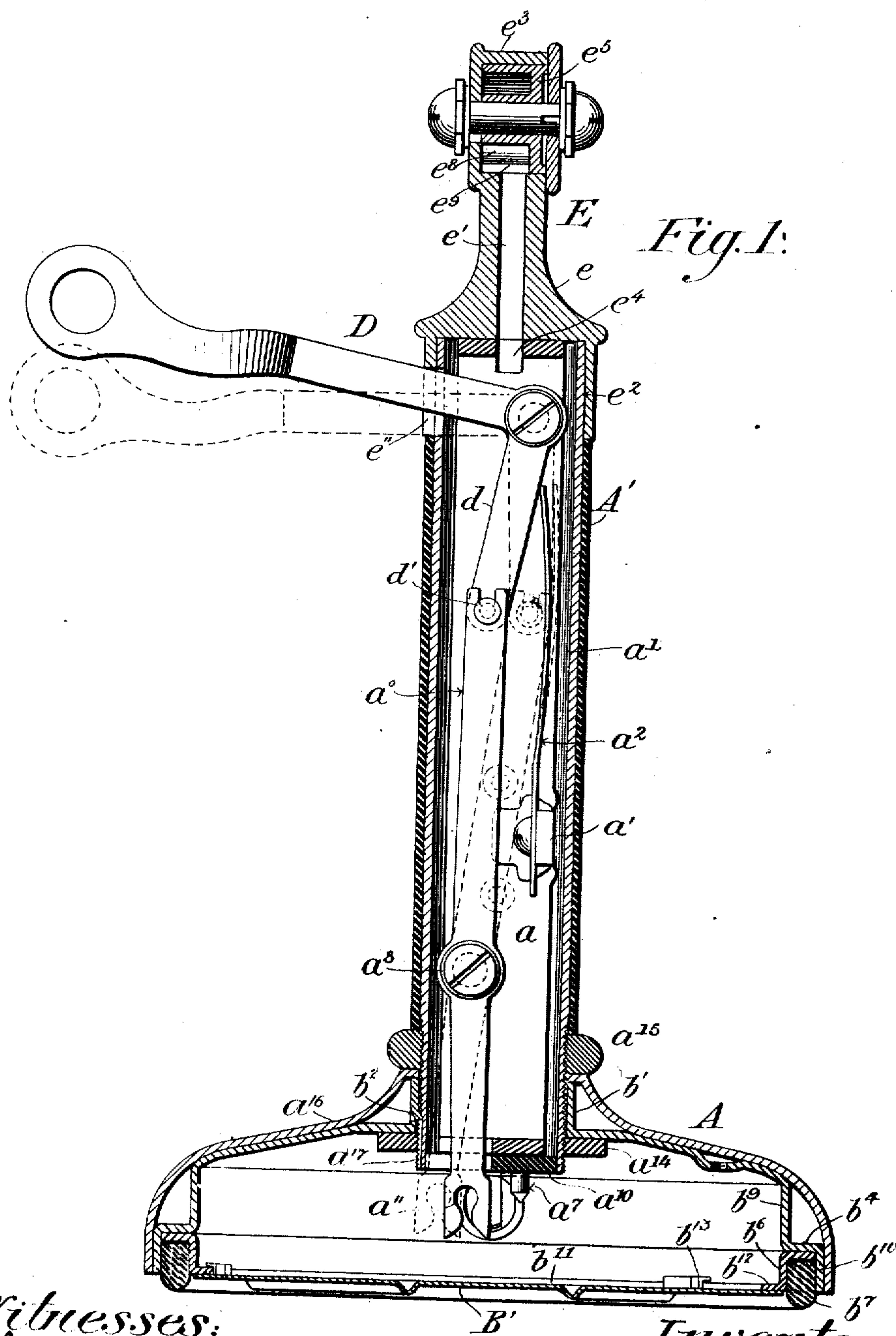


No. 829,410.

PATENTED AUG. 28, 1906.

R. H. MANSON.
TELEPHONE DESK STAND.
APPLICATION FILED FEB. 28, 1905.

3 SHEETS—SHEET 1.



Witnesses:
D. W. Edlin.
James H. Marr

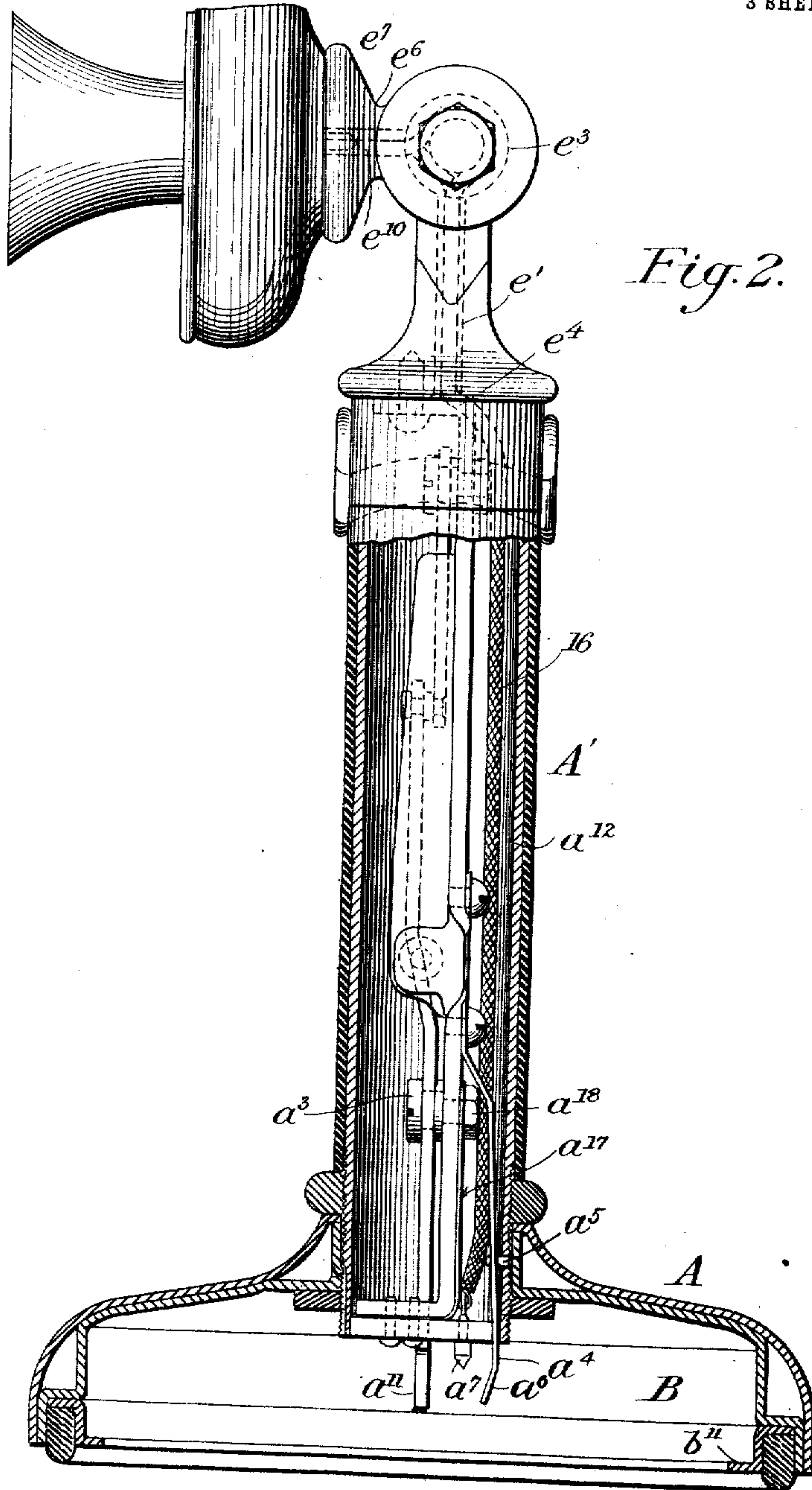
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No. 829,410.

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APPLICATION FILED FEB. 28, 1905.

3 SHEETS—SHEET 3.

Fig. 3.

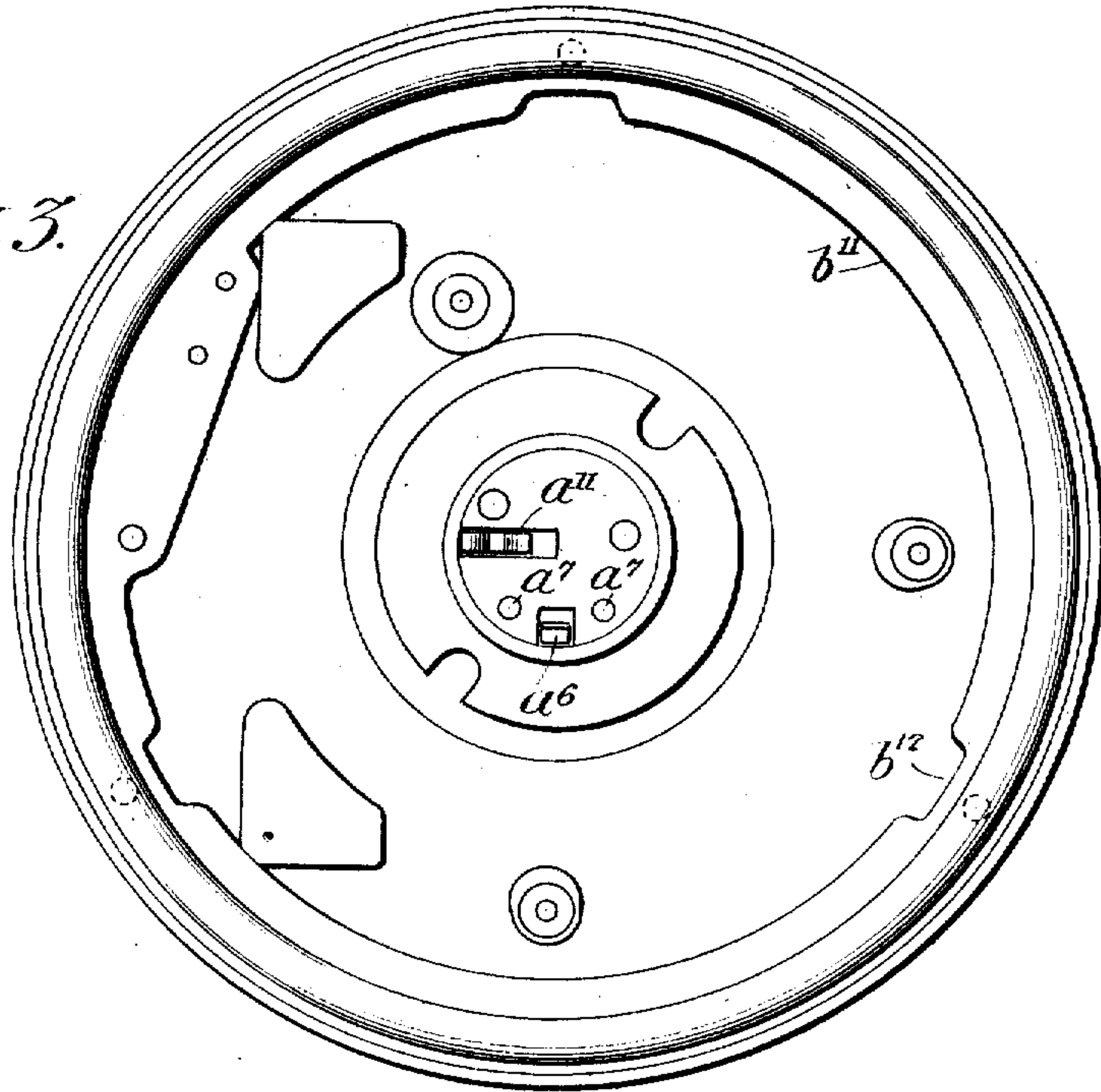
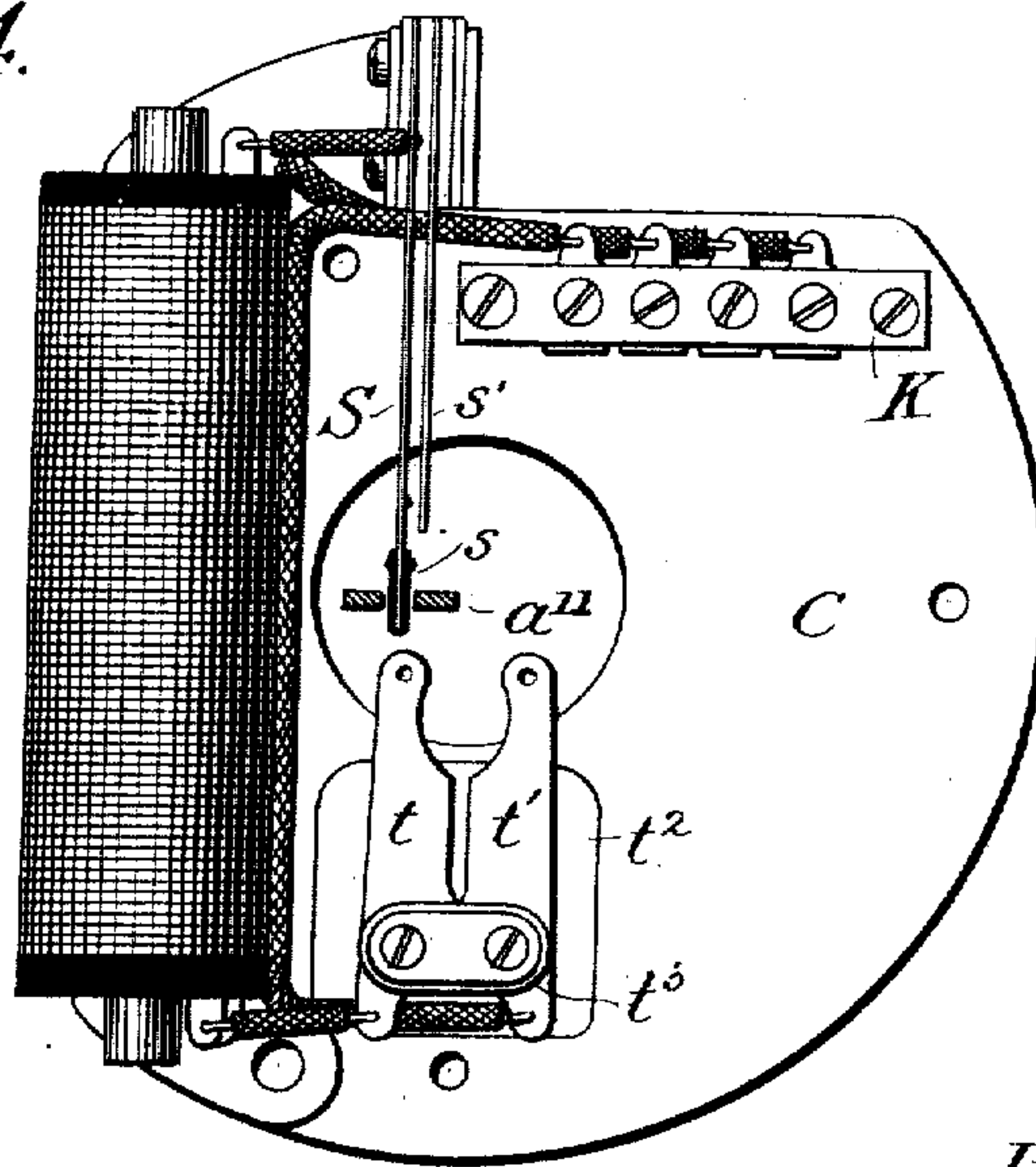


Fig. 4.



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UNITED STATES PATENT OFFICE.

RAY H. MANSON, OF ELYRIA, OHIO, ASSIGNOR TO THE DEAN ELECTRIC COMPANY, OF ELYRIA, OHIO, A CORPORATION OF OHIO.

TELEPHONE DESK-STAND.

No. 829,410.

Specification of Letters Patent.

Patented Aug. 28, 1906.

Application filed February 28, 1905. Serial No. 247,713.

To all whom it may concern:

Be it known that I, RAY H. MANSON a citizen of the United States, residing at Elyria, in the county of Lorain and State of Ohio, have invented certain new and useful Improvements in Telephone Desk-Stands, of which the following is a specification, reference being had therein to the accompanying drawings.

10 My invention relates to telephone sets, and particularly to what are known as "desk sets."

It has for its object the production of such an instrument which shall be of high efficiency, simple and economical to manufacture, and not likely to get out of order, or if it does which shall be easy to repair. In order to attain my object, I make my complete desk outfit in three parts—viz., the receiver, connected to the stand through the usual cord, (and not illustrated because it forms no part of the present invention,) the desk-stand proper, and the transmitter-support, which slides into the stand and carries the switch-hook parts except the springs. I mount the coil, switch-springs, and terminal rack in the base of the stand, preferably on a removable plate; but this manner of mounting specifically forms no part of the present invention, as such mounting may be either interchangeable or permanent without altering my invention.

My invention is illustrated in the accompanying drawings, in which—
35 Figure 1 is a vertical sectional view of the desk stand and base with the transmitter and receiver removed. Fig. 2 is a similar view at right angles to Fig. 1. Fig. 3 is a bottom view of the base with the cover-plate and mounting-plate removed. Fig. 4 is a plan view from beneath the mounting-plate in the base.

In the drawings, A is the base, and A' the standard, of a desk set. The switch mechanism of this set is partly contained in the base and partly in the standard. Mechanical portions are all mounted in or on the standard, connected to and controlled by the receiver hook-lever D. The electrical contact-springs, however, are arranged in the base, preferably on a separable base-plate.

In the standard A', which is preferably sheathed with hard rubber or similar mate-

rial, I house a vertical support or mounting-strip *a*, secured at its upper end in any suitable manner, as by screws or rivets, to the cast head E. This head comprises a body portion *e*, having a central passage-way *e'* for the passage of the transmitter-wires, a cap-flange *e²* fitting the upper end of the tube *a¹²*, and a laterally-bored cylindrical socket-piece *e³* for the knuckle-joint of the transmitter. The cylindrical chamber formed in this socket-piece (or bearing-head) communicates with the passage *e'*, and the latter registers with an opening *e⁴* in the upper end of the vertical support *a*, so that an uninterrupted channel for the wires is formed from the aforesaid chamber to the interior of the vertical standard. Into this chamber is fitted the hub *e⁵*, which has an annular channel *e⁸* extending into it from one side, its lower wall being cut away at *e⁹* to pass the transmitter-wires and sufficiently to allow play of the hub in its journal without compressing the wires or cutting the insulation. On this hub is mounted the stub plate or block *e⁷* by means of a neck *e⁶*, passing through an opening cut in the upper part of the flange of the socket-piece *e³*, the extent of this opening determining the angular motion of the transmitter. The stub-plate *e⁷* is bored out to form a central channel *e¹⁰*, opening directly into the annular chamber *e⁸*. The transmitter-wires 16 and 17 are led through this channel into the chamber *e⁸*, then wrapped in reverse directions around the central spindle, then carried down through the channel *e'* and the opening *e⁴* into the hollow standard A'.

Upon the vertical support *a* is pivoted at *a³*, by means of a shoulder-screw or other wise, the vertical oscillating lever *a¹⁰*, which at its upper end is forked to take over a pin *d'* on the lower arm *d* of the bell-crank hook-lever D, and at its lower end is forked, as shown at *a¹¹*, to take over and operate the circuit-changing springs, to which I will refer farther on. The support *a* is provided with an upstanding lug, upon which is mounted a strong leaf-spring *a²*, whose upper or free end bears upon the arm *d* of the hook-lever. In order to give play to the latter, a slot *e¹¹* is cut in the flange *e²* of the cap E, and a similar registering slot cut in the upper end of the tube *a¹²*.

At its lower end the support *a* is over-

turned and has secured to it by screws or rivets a button or disk a^{10} of insulating material, cut away at one side to permit the passage of the forked end a^{11} of the lever a . Set in this disk are two contact-studs a^7 , which project through on the upper side of the disk behind the support a , as shown in Fig. 2, where they are connected, respectively, to the two transmitter-wires 16 17. The disk a^{10} may be of metal and the studs a^7 may be bushed therein with insulating material, and I also preferably provide a piece of sheet fiber or similar insulating material a^{17} , secured at its upper end under the nut a^{18} of the pivot-screw a^3 , and its lower end turned under the end of the support a . This insulates the parts and prevents any accidental grounding or crossing of the wires on the support.

The metal tube a^{12} which forms my hollow standard is permanently secured at its lower end to the base A by means of the threaded ring a^{15} and the nut a^{14} . The base of the stand is shown herein of pressed metal; but I may also make it a casting, preferably cast-iron, and when so made the nut a^{14} may be dispensed with, the base itself being threaded and screwing on the tube against the ring a^{15} . Assuming such a base to be employed, I mount therein to one side of the center, a terminal rack or strip carrying insulated terminals for the receiver, induction-coil, and switch-springs. The switch-springs are also mounted to one side, as shown in Fig. 4, wherein the terminal-rack is lettered K and the springs S and s' . The end of the spring S is covered with insulation, preferably by having a short strip of hard fiber turned about it and riveted fast, this insulated end lying in the fork a^{11} , as shown, when the parts are assembled. Mounted upon an insulating-bed t^2 and secured at one end only at t^3 , is a pair of terminal-springs t t' , wired to the coil and terminal-rack, and adapted, when the instrument is assembled, to be pressed down by the studs a^7 , thereby connecting the latter and the transmitter-wires into circuit with the coil and terminal-rack.

The parts shown in Fig. 4 may be attached permanently to the inside of the base, or their mounting may be on a separable plate C secured within the base, the latter being shown in Fig. 3 exposed by the removal of all the parts. The idea of a separable mounting, however, I do not claim specifically as my invention nor any of the details thereof which I have shown, any suitable form of mounting falling within the scope and purview of my invention.

The support a , with the transmitter and the hook-lever parts upon it, slides bodily in and out of the tube a^{12} in the standard. In order to hold it in place when inserted and yet render it easily removable, I have pro-

vided the spring-latch a^4 , secured at its upper end to the support a and having its lower end a^6 bent over, as shown. This latch-spring is punctured to receive the pin a^5 , and when it is desired to remove the vertical support and its parts from the standards A' all that is necessary is to remove the cover-plate in the base, which will shortly be described, and press back the spring a^4 , whose end a^6 will then be exposed. On replacing the vertical parts in the tube the spring-latch will of itself reengage the pin a^5 , locking the parts in position. The base of this instrument may be formed as follows: A press-metal shell a^{16} is shouldered around a central opening to fit upon the tube a^{12} and lie against the screw-ring a^{15} , which is threaded thereon. Inside the shell a^{16} is fitted a press-metal liner B, having a peculiar configuration, for purposes which I will now point out. The liner has its upper part shaped in at b' to form a tubular neck fitting snugly around the tube a^{12} , and with the upper end of its flange or tube pressing against the inside edge of the shoulder or shell a^{16} . It is necessary for certain reasons that the liner B should not turn upon the tube. To secure this, a projection b^2 is punched in from one side of the neck b' , and in one side of the tube a^{12} a slot or keyway is formed, as shown at a^{17} , in which the projection b^2 may lie when the liner is slipped on a tube. The liner is held in place by means of a threaded nut a^{14} , which is set up against it on the tube.

At the lower and outer edges of its bell the liner B has a horizontal flange and two vertical flanges, (lettered b^9 , b^4 , and b^{10} , respectively.) The horizontal flange b^9 stiffens the whole base perfectly. The vertical flange B incidentally stiffens the top of the base all around, and the flange b^{10} forms one side of a channel to receive the rubber or leather ring b^7 , which serves to form a soft pad or deadener for the base of the set. The inner side of this ring-channel is formed by the flange-ring b^6 , whose horizontal flange b^{11} is notched at b^{12} at intervals. Against the lower face of this ring rests the cover-plate B', provided with locking-teeth or radial projections b^{13} to register with and take into the notches b^{12} , so that by inserting the same and then slightly turning the cover-plate the projections b^{13} will pass under the flange b^{11} and lock the plate in position.

My invention set forth herein does not relate to any of the parts in the base of the desk set as such, nor does it depend upon any special arrangement of those parts. It has to do particularly with the parts in the standard, and while I have described and illustrated herein a convenient type of base and fittings therefor I do not by any means wish to limit myself thereto, nor, conversely, do I claim the same as my invention.

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

1. In a telephone desk set the combination of the following instrumentalities: a hollow standard, a hollow base, a detachable support mounted within the standard, a transmitter carried by said support, switch-springs mounted in the base and connected in the circuit of the instrument, a switch-hook mounted on the support, and mechanical means connected to the switch-hook and pivotally mounted on the support and when the latter is in position extending into the base to operatively connect the switch-hook and the switch-springs, substantially as described.

2. In a telephone desk set the combination of the following instrumentalities: a hollow standard, a detachable supporting-strip sliding within said standard, a transmitter mounted upon the end of said strip, a receiver hook-lever pivoted on said support, a switch-operating lever extending along and also pivoted to the support with its upper end engaging the hook-lever and its lower end projecting below the end of the support, a hollow base secured to the standard, circuit-changing springs mounted within said base, and means for operatively engaging the projecting end of the pivoted lever with said springs when the support is in position, substantially as described.

3. In a telephone desk set, a hollow tubular standard, a mounting strip or support adapted to fit therein, a switch hook-lever and cooperating parts mounted on said support, circuit-changing springs operated thereby, and a spring-catch automatically actuated by the insertion of the support within the standard to secure the same against displacement, substantially as described.

4. In a telephone desk set, a hollow tubular standard, a mounting strip or support adapted to fit therein, a switch hook-lever and cooperating parts mounted on said support, circuit-changing springs operated thereby, and means actuated automatically upon the insertion of the support to retain the same, but requiring to be manually actuated to release the same from the standard, substantially as described.

5. In a telephone set, a pivotal transmitter-support comprising a body with a longitudinal channel therein, a cylindrical bearing-head thereon open at one side, a hollow turning plug fitted into said bearing-head, with an opening in one side of the plug uncovering and registering with the channel in the body, a cover plate or disk extending across the edges of the bearing-head to close the opening and cover the turning plug, a through-bolt extending from one side to the other of the bearing-head in the axis of the plug and holding the parts together, an elongated bearing on the turning plug for said

bolt and a channeled stub or neck extending from the turning plug through an opening in the wall of the bearing-head and adapted to receive and support the transmitter, substantially as described.

6. In a telephone desk set, a tubular vertical standard, a removable mounting therein comprising a metal strip attached at its upper end to a closure means for the tube, upon which the transmitter is mounted, and at its lower end provided with insulated terminal-contacts extending into the hollow base, said base attached to and underlying the standard, a bell-crank hook-lever pivoted at the upper end of the strip and extending out through a slot in the standard as to one arm, and down the strip as to the other, a secondary lever pivoted on the strip engaging the latter arm at one end, and having its other end projecting below the standard into the hollow base, a retractile spring for the hook-lever mounted on the strip, terminal-contacts in the base cooperating with the terminal-contacts of the strip, and switch-changing springs also mounted in the base and adapted to be engaged by the lower end of the secondary lever to be positively moved in both directions as the hook-lever moves up or down, substantially as described.

7. In a telephone desk set, the combination of a vertical tubular standard and hollow base, with a movable mounting-strip in the standard, a hook-lever pivoted on the mounting-strip and having a mechanical extension into the base, a set of switch-springs mounted in the base, connections from said springs to the talking and signaling parts of the instrument, and means whereby the hook extension may removably engage and positively operate the said springs in either direction, substantially as described.

8. In a telephone desk set, a tubular standard and hollow base, switch-contacts mounted in the base, and mechanical operating means therefor carried on a removable mounting-strip in the standard and removably engaging the springs to positively operate them in either direction, substantially as described.

9. In a telephone desk set the combination with a tubular standard and a hollow base, and a set of switch-springs mounted in the base, a hook-lever and an extension-lever having a bifurcated end adapted to removably engage the long spring of the set, whereby the extension-lever when operated by the hook-lever will positively operate the switch-springs in either direction and is rendered removable therefrom without tools.

In testimony whereof I affix my signature in presence of two witnesses.

RAY H. MANSON.

Witnesses:

S. A. BEYLAND,
A. D. T. LIBBY.