J. A. BIRSFIELD.

TELEPHONE DESK STAND.

APPLICATION FILED OCT. 24, 1906.

931,179.

Patented Aug. 17, 1909.

2 SHEETS—SHEET 1.

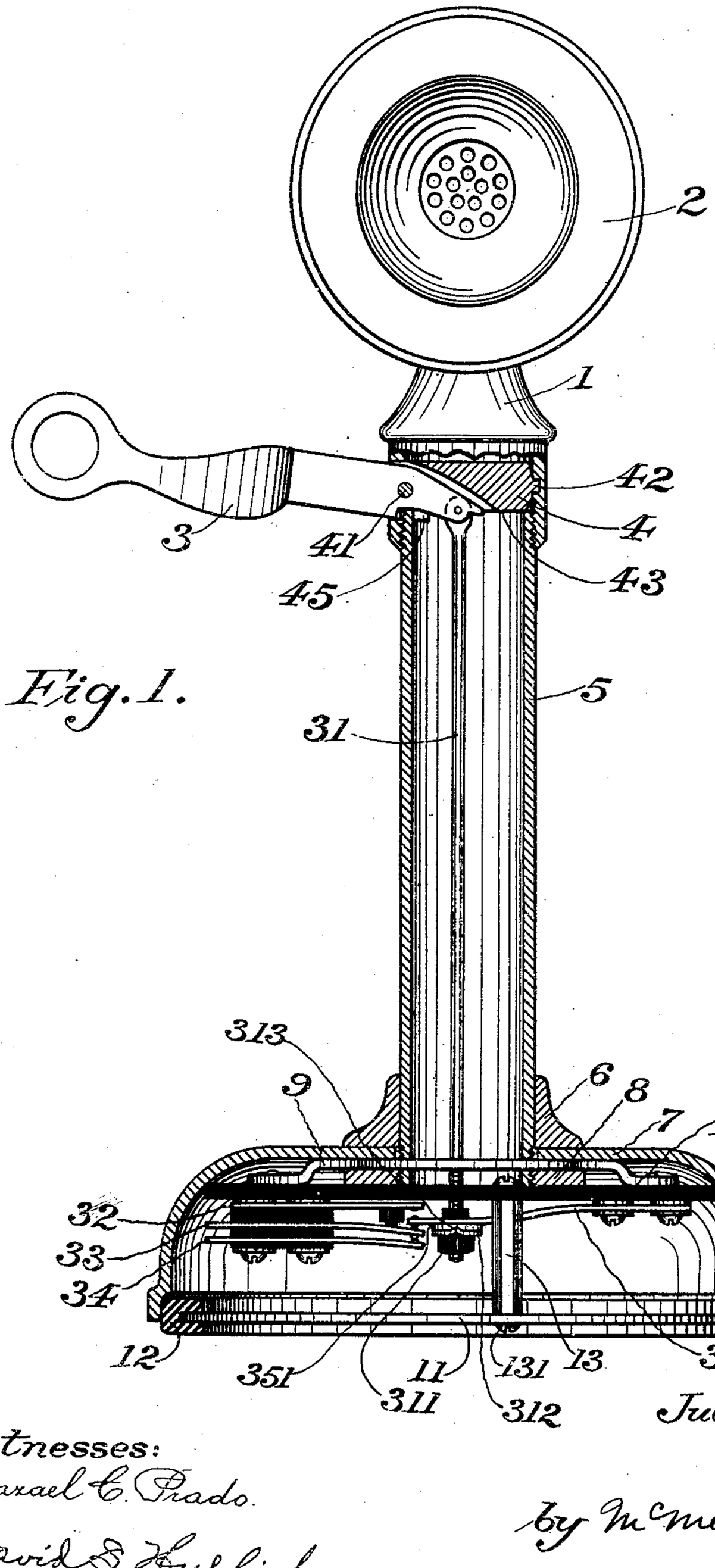

Fig. 1.

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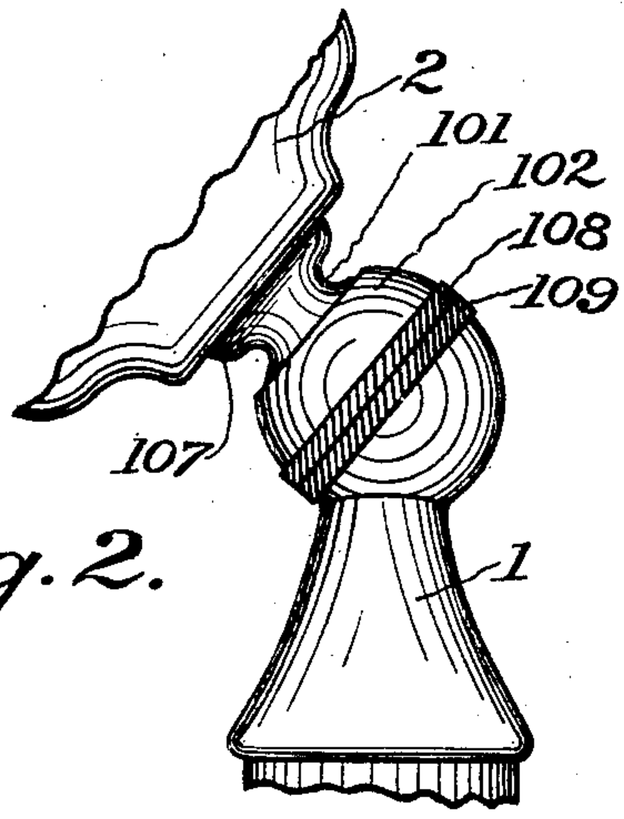

Fig. 2.

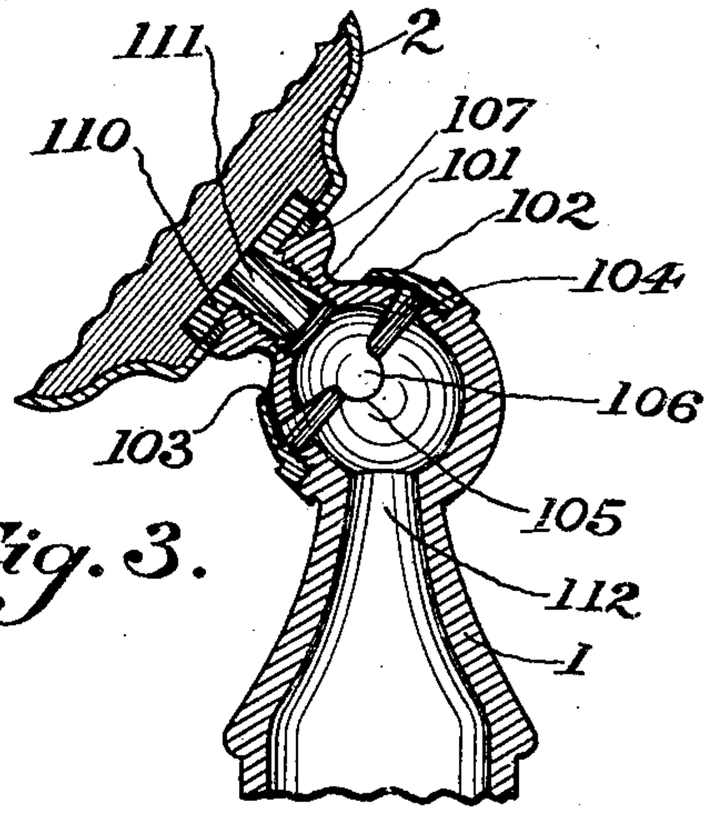

Fig. 3.

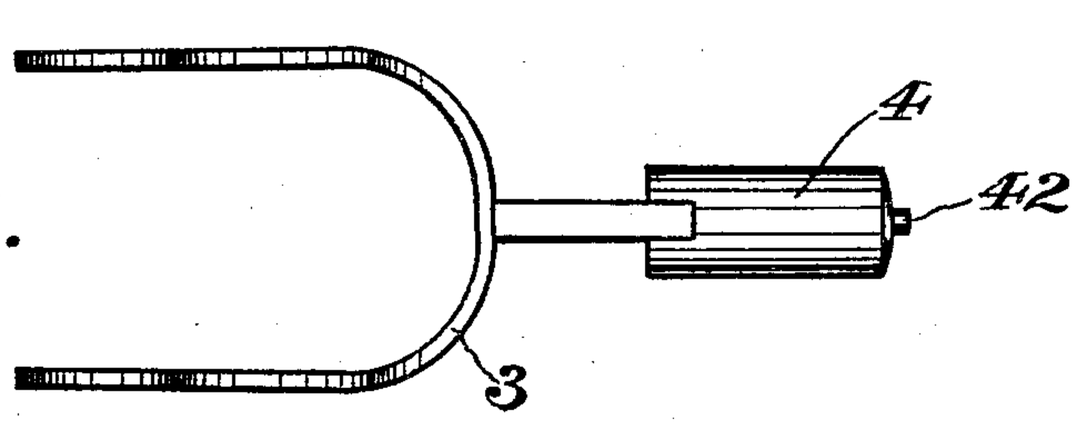

Fig. 4.

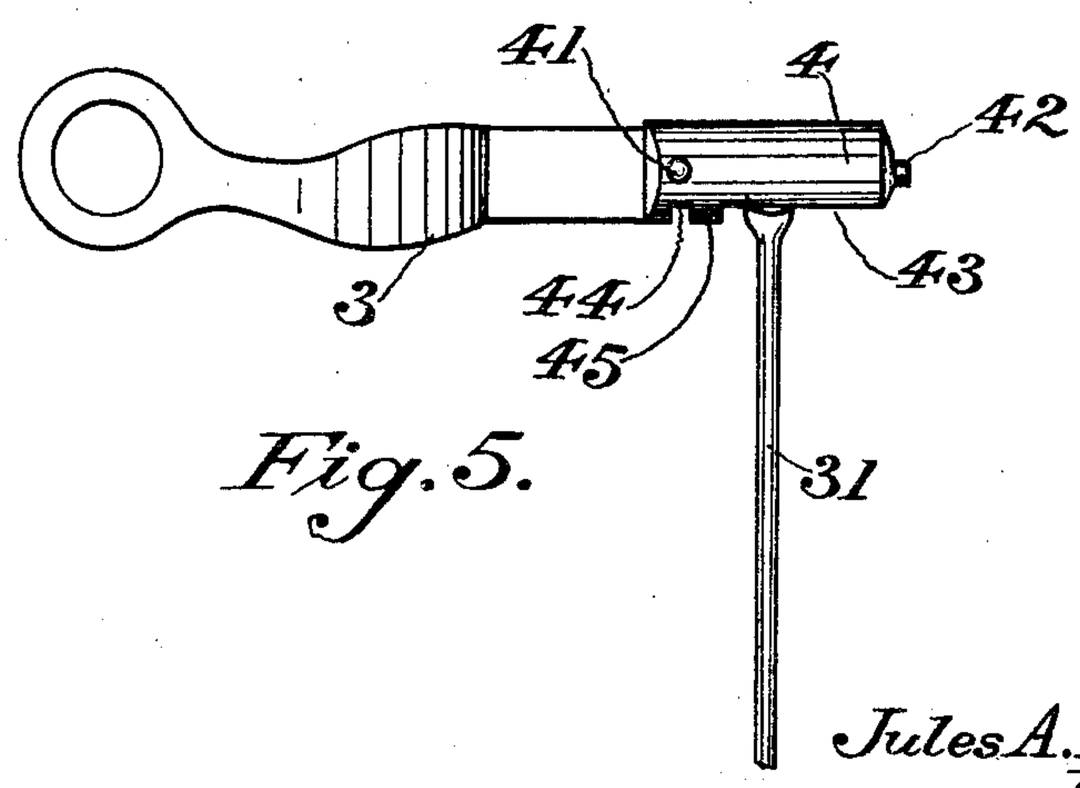

Fig. 5.

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UNITED STATES PATENT OFFICE.

JULES A. BIRSFIELD, OF CHICAGO, ILLINOIS, ASSIGNOR TO ALFRED STROMBERG, OF CHICAGO, ILLINOIS.

TELEPHONE DESK-STAND.

No. 931,179. Specification of Letters Patent. Patented Aug. 17, 1909.

Application filed October 24, 1906. Serial No. 340,254.

To all whom it may concern:

Be it known that I, JULES A. BIRSFIELD, a citizen of the United States of America, and a resident of Chicago, county of Cook, and State of Illinois, have invented a new and useful Improvement in Telephone Desk-Stands, of which the following is a specification.

My invention pertains to telephone desk stands of the portable type, and has as its object the production of a neat, strong and simple device for the purpose described.

The points of novelty in the desk stand of my invention are a transmitter hinge joint of sightly construction and providing at the same time a positive hinge and an ample clearance for flexible conductors passing through the hinge from the transmitter to the terminals of the desk stand; a switch hook mechanism of strong and simple construction and locked in position in a novel and reliable manner; a hook switch of simple and durable design; an adjustment between the switch hook and the hook switch of reliable design and comprising as a part thereof automatic locking means whereby an adjustment is automatically retained; and an improved method of applying to the bottom of the desk stand a cushion for protecting the furniture upon which the desk stand may be placed in service.

This specification is accompanied by five figures in which—

Figure 1 shows the assembly of the complete desk stand in sectional view; Fig. 2 shows elevation of the transmitter hinge joint; Fig. 3 shows sectional view of the transmitter hinge joint; Fig. 4 shows plan of the switch hook and mounting; Fig. 5 shows elevation of the switch hook and mounting.

The assembly of the desk stand as a whole consists of the cap casting 1 bearing the transmitter 2 and the switch hook 3 with its mounting block 4; into the cap piece 1 is screwed the tubular shaft 5, to the lower end of which is brazed the shoulder 6. The sheet metal base dome 7 surrounds the tube 5 and is locked in place by the lock nut 8 which also clamps in place a spider 9 surrounding tube 5. The purpose of the spider 9 is to provide mounting support for the insulating table 10 bearing the hook switch and cord terminals of the desk stand; the assembly is completed by placing the bottom plate 11 and its cushion rim 12, the bottom plate 11 being held in position by the strut 13, between the bottom plate 11 and the table 10.

The transmitter 2 is held upon the cap piece 1 by the improved hinge joint of construction which will be understood from Figs. 2 and 3. The hinge joint consists of three parts:—first, a fixed or base part, being in this instance the cap piece 1; second, a movable part 101; and third, a clamping member, 102; a friction washer 103 also forms an essential feature of the complete hinge. The casting 1, which is the base casting of the hinge joint, terminates in an annular lip 104 screw threaded externally. At two points in this annular lip and diametrically opposite each other are semicircular notches 105. The second member of the hinge 101 is spherical in that portion of its external surface which is assembled adjacent to the part 1; the two projecting lugs 106 are adapted to engage the notches 105 of the part 1, and are cylindrical in their engaging surfaces, with radius approximately that of the notches 105 so that a smoothly working hinge is obtained. The spherical surface of the part 101 is concentric with the center of the cylinder of the lugs 106 and therefore is revolved upon its center when the part 101 is revolved upon the axis of the lugs 106. The clamping ring 102 is spherical in that portion of its interior surface which engages the part 101, and it is further provided with internal screw threads to coöperate with the screw threads of the lip 104. The outer extension 107 of the part 101 is sufficiently small to pass through the clamping member 102 and assembly thus is made by placing the part 101 in position upon the part 1 with lugs 106 in notches 105, and then passing the clamping ring 102 over the extension 107 and screwing it in place upon the lip 104 to clamp parts 1 and 101 together. Part 102 is knurled at 108 to facilitate the assembly, and part 1 is knurled at 109 to improve the appearance of the finished detail. To secure a smooth hinge movement with uniform friction throughout its range, the leather washer 103 is placed within the clamping part 102 before that clamping part is assembled in position.

To mount the transmitter 2 upon the extension 107, the extension is drilled and tapped and a screw 110 having a broad flat

head is passed through a perforation in the case of the transmitter 2 and screwed into the extension 107 clamping the transmitter 2 firmly in position. To give the transmitter a greater rigidity than would be secured by mere screw pressure, lugs upon the face of the extension 107 engage corresponding depressions or perforations in the case of transmitter 2, thus providing an increased resistance to prevent the turning of the transmitter 2 upon the extension 107. To provide for passing insulated electrical conductors to the working electrical portions of the transmitter 2, the screw 110 is bored at 111. The part 1 is cast hollow at 112. Passage for conductors thus is provided through the channel 111 and the channel 112, the opening through the hinge joint at 105 and 106 being of ample dimension to prevent crowding or twisting or unduly short bends in the insulated conductors either in the process of passing them into position or by reason of the operation of the hinge in service.

The hook 3 is pivoted in the cylindrical block 4 by the pivot 41. The cap piece 1 is drilled on the side adjacent to the hook of proper diameter to receive the cylindrical block 4, and on the side remote from the hook is recessed of proper diameter to receive the projection 42 of the block 4, thus determining the axis upon which the block 4 shall be maintained. The block 4 at the point 43 is cut with a flat surface and at the point 44 is cut with a notch having a flat bottom corresponding with the surface 43. When assembled by placing it in the cap piece 1, the notch 44 registers with the upper end of the tube 5 as does also the flat face 43, and when the tube 5 is screwed home it clamps the block 4 firmly in the notch 44 and upon the face 43, holding it rigidly and preventing rotation upon its axis. The lug 45 left by the notch 44 is further precaution against the withdrawal of the block 4 in case of slight accidental loosening of the tubular shaft 5. The link 31 extends from the hook 3 downward to transmit the motion of the hook to the hook switch. The hook switch consists of four electrical contact parts, 32, 33, 34 and 35, of which the part 35 is a spring of sufficient strength to overcome the parts 33 and 34 and to raise the hook 3 when the telephone receiver is not hung upon the hook. When the telephone receiver is hung upon the hook 3, the hook is depressed, the link 31 is elevated lifting the switch part 35, releasing the switch parts 33 and 34, breaking contact of 33 with 34 and of 35 with 33 and making contact of 35 with 32. The adjustment of the switch is provided by a nut 311 upon the lower threaded end of the link 31. The nut 311 is of insulating material to prevent electrical contact of the switch part 35 with the rod 31, and thus with the frame of the desk stand. The nut 311 carries the washer 312, giving metallic bearing service upon the switch part 35. The switch part 35 is formed up at 351 giving an annular surface upon which the washer 312 bears. The washer 312 is mechanically rigid with the nut 311; and has a rib formed in it at 313, the annular surface 351 of the part 35 having a corresponding notch. The adjustment of the switch with reference to the hook 3 is obtained by turning nut 311 upon its screw threads until it is approximately in the proper position upon the link 31; in this position the spring switch part 35 presses upon the washer 312 and the rib 313, engaging the notch of the bearing surface 351 will prevent any unscrewing motion of the nut 311 upon the link 31, thus maintaining permanently the switch adjustment given it. The switch parts are mounted upon the insulating table 10 which table is designed to hold also terminals for the receiver cord, for the transmitter conductors and for the flexible conductors connecting the stand to the telephone line, these terminals, forming no novel part of my invention, being omitted to avoid confusion of detail in the drawing.

The bottom of the desk stand is finished by closing it with the bottom plate 11, carrying the cushion ring 12. The cushion ring 12 consists of a strip of resilient material such as a piece of round leather belting, a saw cut being made into one side of the belting to a predetermined distance from the opposite surface. The resilient strip then is cut to proper length, wrapped around the bottom plate 11 with the saw cut embracing the edge of the plate, and the ends of the strip are glued together holding it firmly upon the plate. The outside dimension of the bottom plate 11 thus equipped with its resilient edge, is of proper size to fit snugly the opening of the dome 7 of the desk stand, and when this is placed in position it is held by the screw 131 passing through it into the strut 13 attached to the table 10. The bottom plate 11 with its edge 12 is similar on both sides, and it is immaterial which side is placed within and which without. By this method of installing the resilient washer 12, it is securely held.

Having thus described my invention, what I claim as new and desire to protect by United States Letters Patent is:

1. In a telephone desk stand, a tubular shaft, a cap piece threaded upon said shaft, a hook-supporting cross member in said cap and locked by the engagement therewith of the end of said shaft, substantially as described.

2. In a telephone desk stand, a tubular shaft, a cap piece threaded upon said shaft, a hook supporting cylindrical member crossing said cap piece and having flattened faces, and locked by the engagement of the end of

said tubular shaft with said flattened faces, substantially as described.

3. In a telephone desk stand, a pivoted hook lever and reciprocating link connected therewith; an electrical switching spring having a perforation near its movable end, said link passing through said perforation; a projecting edge upon said spring at said perforation, said projection having notches cut therein and a nut threaded upon said link and engaging said projecting edge, the tension of said spring being such as to press said edge against said nut, and said nut having projections engaging the notches of said projecting edge, substantially as described.

4. In a telephone desk stand, a pivoted hook lever and reciprocating link connected therewith; an electrical switching spring having a perforation near its movable end and said link passing through said perforation; a nut threaded upon said link and lying partly within said perforation and connecting said link and said switching spring, said switching spring having a tension pressing against said nut and said nut and spring having corresponding projections and recesses which, by mutual engagement, tend to prevent rotation of said nut upon said link, substantially as described.

5. In a telephone desk stand, a pivoted hook lever and reciprocating link connected therewith; an electrical switching spring having a perforation near its movable end and said link passing through said perforation; a nut threaded upon said link and lying partly within said perforation and connecting said link and said switching spring, said switching spring having a tension pressing against said nut and said nut and spring having interlocking faces preventing rotation of said nut, substantially as described.

6. In a telephone desk stand, a pivoted hook lever and reciprocating link connected therewith; and an electrical switch comprising a set of springs, one of which is longer than the remaining spring, said longer spring being perforated in its extending portion and said link passing through said perforation; a shouldered nut threaded upon said link and lying partly within the perforation of said spring, said spring having a tension to press the engaging faces together; and interlocking projections on the faces thus engaged to prevent rotation of said nut upon said link, substantially as described.

7. In a telephone desk stand, a base dome; a bottom plate; an annular cushion member slotted in its inner periphery, the periphery of said bottom plate resting in the slot and said cushion member projecting below the bottom plane of said base dome, substantially as described.

8. In a telephone desk stand, a base dome; a disk bottom plate; a grooved resilient cushion member engaging with its groove the edge of said bottom plate and resting partially within said base dome, substantially as described.

Signed by me at Chicago, county of Cook and State of Illinois, in the presence of two witnesses.

JULES A. BIRSFIELD.

Witnesses:
DAVID S. HULFISH,
HARRIET L. SMITH.