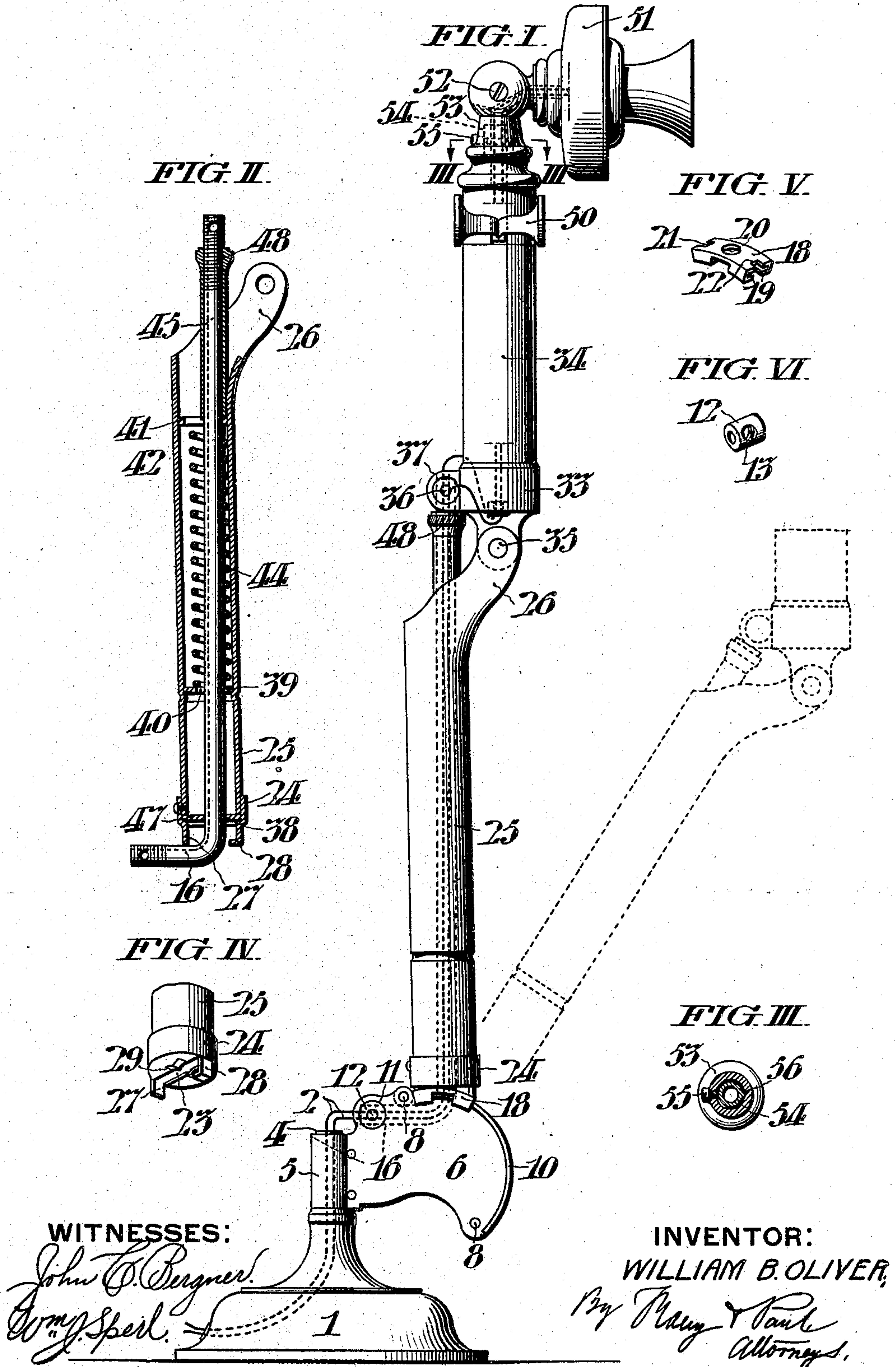


No. 885,859.

PATENTED APR. 28, 1908.

W. B. OLIVER.  
TELEPHONE STAND.

APPLICATION FILED MAR. 23, 1907.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## TELEPHONE-STAND.

No. 885,859.

Specification of Letters Patent.

Patented April 28, 1908.

Original application filed September 13, 1906, Serial No. 334,396. Divided and this application filed March 23, 1907. Serial No. 364,038.

*To all whom it may concern:*

Be it known that I, WILLIAM B. OLIVER, now of Collingswood, in the county of Camden and State of New Jersey, have invented certain new and useful Improvements in Telephone-Stands, whereof the following is a specification, reference being had to the accompanying drawings, this being a divisional case in relation to my application Serial No. 334,396, filed September 13th, 1906.

My invention relates to a telephone stand comprising an elongated standard pivotally mounted upon a base and having spring-actuated balancing mechanism, whereby the stand as a whole may be automatically retained at any inclination within the range of its pivotal movement; such stand having moreover, the capacity of maintaining the telephone support carried thereby, or attached thereto, in a predetermined relation to the vertical.

The object of the present invention is to simplify the structure by the elimination of certain relatively unimportant features found in existing structures of this general character, thus directly combining the transmitter casing and the receiver with the spring support, while at the same time permitting the use of the transmitter casing and receiver in the form commercially employed in desk telephone instruments.

Another object of my invention is to provide a support for the transmitter casing which allows the casing to be rotated in a horizontal plane throughout substantially an entire circle in addition to the pivot which allows movement of the casing in a vertical plane.

In the accompanying drawings, Figure I represents a side elevation of a stand comprising at its upper portion a telephone switch box, with receiver hook and transmitter. Fig. II is a partial vertical section through the standard showing certain details of the spring-actuated balancing elements. Fig. III is a transverse sectional view through the upper portion of the telephone instrument, on the line III, III, in Fig. I. Fig. IV is a view in perspective of the lower end of the standard. Fig. V is a view of the shoe which is interposed between the standard and the cam upon which the standard moves. Fig. VI is a detail view of one of the trunnion shaped nuts which consti-

tute the journals of the link comprised in the balancing mechanism.

The base 1, may be of any desired configuration, being preferably hollow to permit the passage of the telephone circuit wires 2, 2, and is shown, in this instance, as applied to a horizontal surface upon which it may be secured in any desired manner. The vertical post 4, rises centrally from the upper portion of the base and receives in pivotal relation the sleeve 5, to which a pair of cam pieces 6, are secured. Said cam pieces are spaced apart by suitable distance pieces and rigidly secured together by means of rivets or other fastenings 8. Laterally projecting flanges 10, are formed along the periphery of each of the engaging surfaces of the cam pieces 6. In the rear of the engaging surface and between it and the sleeve 5, circular openings 11, are formed in the cam pieces to afford bearings for a trunnion nut 12, or bracket, (see Fig. I), whose general construction is shown in Fig. VI. Said trunnion nut 12, is perforated centrally of its length in a direction perpendicular to its axis as shown at 13, and the opening is threaded so as to engage with the corresponding threaded lower end of the bent link 16, shown in Fig. II, and in dotted lines in Fig. I. The construction of said link and its relation to the other parts will be described later on.

Sliding freely upon the cam pieces 6, is a shoe 18, having downwardly depending and inwardly projecting flanges 19, on each side, adapted to engage beneath the flanges 10, upon the cam pieces. A central hole 20, is formed in the shoe, through which the link 16, above referred to, passes.

At the respective ends of the shoe are square recesses 21, 22, adapted to receive and permit engagement with correlative parts on the lower end of the standard 25. This standard is an elongated tubular member having at its upper end a laterally projecting arm 26, and at its lower end the removable cap 24, upon the lower face of which is a downwardly projecting lug 27, and a second lug 28, the lower end of which is turned inwardly toward the center of the standard. Between these lugs is an elongated slot 23, and upon each side of said slot, a shallow wedge-shaped lug 29, is formed. The lug 27, extends down through the recess 21, in the rear end of the shoe, and the lug 28, engages,



by means of its inwardly projecting lower end, in the recess 22, at the other end of the shoe. The wedge-shaped lug 29, on the bottom of the standard, bears upon the upper surface of the shoe at or near its central portion, so as to permit a slight tilting or rocking of the standard as a whole, with relation to the shoe. The arm 26, at the upper end of the standard carries a socket 33, adapted to embrace the lower end of the switch box, or stem, 34, of a telephone instrument, the socket 33, being pivotally connected to the arm at 35. The socket has a second pivotal connection at the point 36, at which point the upper end of the link 16, is attached to a trunnion nut 37, similar to that shown in Fig. VI, and journaled in the rearwardly projecting portion of the socket. The link 16, is a rigid tube which extends down through the standard 25, and emerging at the bottom thereof through the slot 23, passes through the opening 20, in the shoe 18, to a point between the cam pieces 6, where it is bent at a right angle and terminates at the screw connection with the trunnion nut 12. The link is made tubular to permit the passage of the telephone wires 2, 2, as indicated. The link 16, constitutes a rigid connection between the pivotal point at 36, of the socket 33, and the pivotal point at 12, in the rear part of the cam pieces 6.

Immediately adjacent to the lower end of the standard 25, and within the cap 24, is a fixed washer or disk 47, having a central opening 38, which permits the free passage of the link at that region. At a point somewhat higher up in the standard, a second transverse washer 39, is rigidly secured across the tubular interior of the standard, said washer having an elongated central opening 40, which permits the passage of the link and affords a certain amount of play therefor, in a direction coincident with the balancing movement of the standard. Near the upper end of the standard a third washer 41, having a still more elongated opening 42, is freely mounted within the tubular interior so as to be capable of moving longitudinally with relation to the standard 25. A coiled spring 44, is mounted between and abuts against the washers 39, and 41, in such relation thereto as to be capable of compression or longitudinal movement of the washer 41, in a downward direction within the tube. The movement of the washer 41, is effected by means of an elongated sleeve 45, whose lower end bears upon said washer, said sleeve slides freely upon the upper portion of the link 16, and is longitudinally adjustable thereon by means of a thumb nut 48, which engages with the vertical upper extremity of the link 16. This longitudinal adjustment of the sleeve permits the proper tension to be exerted upon the spring, so as to compensate for the weight to be carried by the stand.

The telephone, which is here shown as mounted in the socket 33, comprises the switch box, or stem, 34, and the ordinary receiver hook 50, (the receiver itself not being shown), and also carries within the switch box 34, the usual switch devices common in telephone instruments which coöperate with the receiver hook 50. The transmitter casing 51, is pivoted upon a horizontal axis at 52, to a short vertical sleeve or head piece 53, which is rotatively supported upon the central hollow post 54, (see Fig. III), a screw stud 55, being provided to engage with a stop 56, on the exterior of the post 54, so as to prevent a complete rotation of the transmitter upon said post. The wires pass down, as indicated by the dotted lines, through said hollow post and the circuit is established through the instrument in the usual manner.

The operation of the device is as follows:— When the standard 25, is swung downwards from its normal vertical position, as indicated by the dotted lines, the shoe 18, slides upon the operative surface of the cam pieces 6, and by reason of the fixed relation between the pivotal points of the link 16, at 36, and 12, the standard 25, will be compelled to move longitudinally with relation to the link in accordance with the radial distance of the cam surface from the center of oscillation at the point 12. This relation will maintain the socket 33, in a constant relation to the vertical. At the same time the fixed washer at 39, and the movable washer 41, will cause compression of the spring 44, so as to afford a constantly increasing resistance to the tilting movement. By properly proportioning the spring its compression may be made to exactly compensate the gravitative effect due to the different positions of the support and telephone carried thereby. Hence the socket 33, and the stem mounted therein may be maintained in a predetermined relation to the vertical, and the standard as a whole will be retained against the action of gravity in any position within the range of its pivotal movement.

Having thus described the mechanical structure and operation of the parts, I will now point out certain advantageous features which in addition to more obvious ones are the notable results of the device.

The switch box, or stem, 34, is of sufficient length to act as a guard for the receiver when the latter is hung upon its hook 50, and since this stem 34, is always maintained in a vertical position the lower end of the receiver will in any position of the support be protected from coming in contact with the desk or other adjacent object, even if the arm 25, is swung into a horizontal position. The stem 34, and subjacent parts act as a substantially complete shield for the receiver when in position upon the hook. It will also be seen that the mouth piece of the trans-



mitter is accessible throughout a range of horizontal rotative adjustment corresponding in extent to substantially an entire circle, and at the same time it will, in such rotation, clear the adjacent parts and avoid disturbance of the receiver. This arrangement is greatly superior to one in which the entire stem, including the receiver and its hook, are rotatively mounted, since there is always danger of injury to or displacement of the receiver in such case.

I use the term "base" as comprehending not merely the specific form indicated at 1, in the drawings, but any means of mounting a standard as a whole, either by attachment to a fixed surface or otherwise. The terms "standard" and "link" are employed to conveniently designate the two parts whose relative longitudinal motion contributes both to the self-balancing action and to the maintenance of the telephone support in definite relation to the vertical. It is obvious, however, that such designation is merely descriptive since the parts which I have termed the "link" might with equal propriety be considered as the standard.

Having thus described my invention, I claim:—

1. A telephone support, including in combination an adjustable counter-balancing supporting means, a stem comprising a switch box carried by said supporting means, and held from horizontal rotation thereon, a switch hook mounted upon said stem and a transmitter carried by said stem and mounted to rotate with relation thereto in a substantially horizontal plane.

2. A telephone support, including in combination, a pivoted counter-balancing supporting means, a stem comprising a switch box carried by said supporting means, and held from horizontal rotation thereon, a switch hook mounted upon said stem and a transmitter carried by said stem and mounted to rotate with relation thereto in a substantially horizontal plane.

3. A telephone support, including in combination a pivoted counter-balancing supporting means, a stem comprising a switch box carried by said supporting means, and held from horizontal rotation thereon, a switch hook mounted upon said stem and a transmitter carried by said stem and mounted to rotate with relation thereto in a substantially horizontal plane, and means whereby said transmitter may be swung in a vertical plane.

4. A telephone support including in com-

bination a pivoted counter-balancing supporting means, a stem comprising a switch box carried by said supporting means and held from horizontal rotation thereon, a switch hook mounted upon said stem, a movable head piece mounted upon said stem, for rotative movement with relation thereto, and a transmitter directly mounted on said head piece, to rotate therewith in a substantially horizontal plane.

5. A telephone support, including in combination a pivoted counter-balancing supporting means, a stem comprising a switch box carried by said supporting means, and held from horizontal rotation thereon, a switch hook mounted upon said stem, a transmitter carried by said stem and mounted to rotate with relation thereto in a substantially horizontal plane, and cooperative stops for limiting the extent of rotation of said transmitter.

6. In a telephone support, the combination with a base, of an adjustable standard pivoted to said base, a switch box attached to the outer end of said standard, a switch hook carried thereby, and a transmitter mounted on said switch box for rotative movement with relation to the switch box and switch hook in an approximately horizontal plane.

7. In a telephone support, the combination with a base, of an adjustable standard pivoted to said base, a switch box pivoted to the outer end of the said standard, a switch hook mounted upon said switch box, means for maintaining said switch box in a predetermined position during the movement of said standard, and a transmitter mounted on said switch box for rotative movement with relation thereto in an approximately horizontal plane.

8. In a telephone support, the combination with a base, of a counter-balancing adjustable standard pivoted to said base, a switch box attached to the outer end of said counter-balancing standard, a switch hook mounted upon said switch box, and a transmitter mounted on said switch box for rotative movement with relation thereto in an approximately horizontal plane.

In testimony whereof, I have hereunto signed my name, at Philadelphia, Pennsylvania, this 22nd day of March, 1907.

WILLIAM B. OLIVER.

Witnesses:

JAMES H. BELL,  
E. L. FULLERTON.