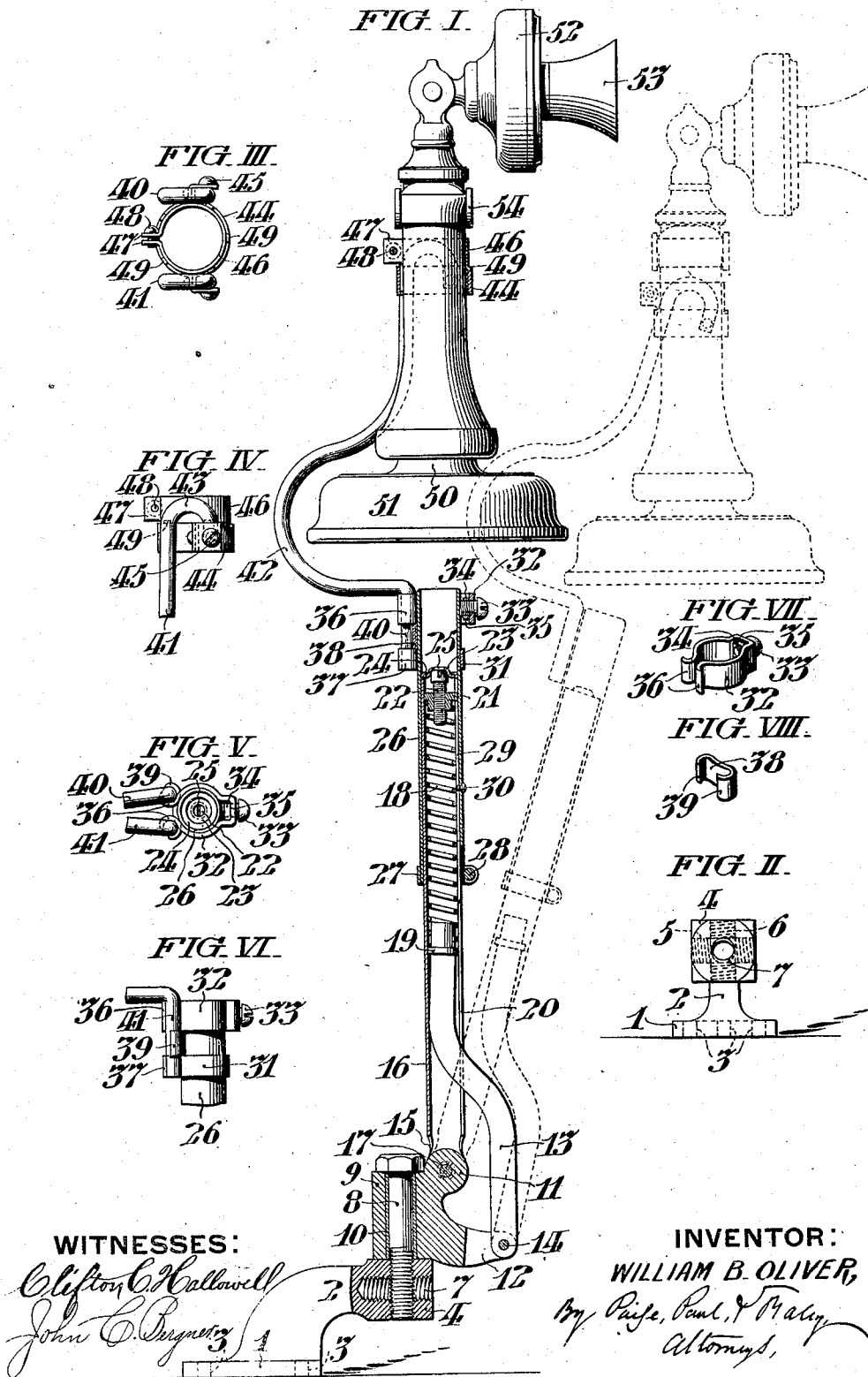


No. 858,819.

PATENTED JULY 2, 1907.

W. B. OLIVER.
SUPPORT.

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UNITED STATES PATENT OFFICE.

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SUPPORT.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM B. OLIVER, of Sharon Hill, in the county of Delaware and State of Pennsylvania, have invented certain new and useful Improvements in Supports, whereof the following is a specification, reference being had to the accompanying drawings.

My invention relates to that class of pivoted supports which are so balanced by means of self-contained spring devices as to be capable of remaining in a state of equilibrium when placed in any of the positions within the range of their pivotal attachment.

The most general use of these supports is in connection with telephonic instruments, and I shall therefore show and describe the device as organized for that purpose.

Referring to the drawings, Figure I, represents a vertical section through the axis of the standard which constitutes the main element of the support, showing in elevation one of the pair of supplemental rods which form prolongations of said standard, and showing an ordinary desk telephone as carried by the device. The dotted lines indicate the general position of the parts when turned slightly downwards from a vertical position. Fig. II, is a view in front elevation of the base of the support. Fig. III, is a plan view of the collar by means of which the telephone standard is suspended, showing the upper ends of the supplemental rods. Fig. IV, is a view in side elevation of the parts shown in Fig. III. Fig. V, is a plan view and, Fig. VI, is a view in side elevation of the upper end of the spring actuated standard which constitutes the main element of the support. Figs. VII, and VIII, are views in perspective of two of the bands by means of which the supplemental rods are attached to the standard.

Supports of this character are usually intended to be rigidly secured to a table, wall or other fixed surface, and it is of importance that the base of the support should be adaptable to horizontal as well as vertical attachment, and moreover, to permit of right and left applications. I prefer to construct the base as shown in Figs. I, and II, in the form of a flat plate 1, with a laterally projecting arm 2. The base may be attached to the supporting surfaces by means of screws through the holes 3, 3. The arm 2, terminates in a boss 4, which may be approximately cubical with chamfered corners, as there indicated, and which is symmetrically penetrated in the direction of its three dimensions by threaded cavities 5, 6, and 7, crossing one another at the center of figure. Said cavities are intended to seat and secure a threaded pin 8, which obviously may be inserted in any one of the five directions permitted by the three cavities. The foot 9, of

the support is rotatively mounted upon said pin 8, a bushing 10, being preferably interposed as shown. Said foot comprises two lugs 11, and 12, the latter of which is slotted to receive the lower end of a flat plunger 13, mounted on the pivot 14; the lug 11, is adapted to be embraced on its opposite faces by the bifurcated lower end 15, of the tubular standard 16, which is attached to the lug by a pivot 17. The standard 16, is tubular in form and contains a spiral spring 18, whose lower extremity abuts against a flanged plug 19, mounted on the upper end of the plunger 13. The plunger 13, is curved or bent laterally and extends into the interior of said tubular standard through a slot 20, which is of sufficient length to permit a considerable amount of relative motion of the parts. The upper end of said spring 18, abuts against the nut 21, carried by a screw 22, whose head is received within and abuts against a dome shaped cap 23, secured by means of a flange 24, at the upper extremity of the tubular standard 16; an opening 25, being made in the central portion of said cap to permit the access of a screw driver to the slot in the head of the screw 22. An extension-piece 26, also preferably tubular, fits snugly but slides upon the exterior of the standard 16, so as to afford a telescopic adjustment of the two parts, to elongate or shorten the standard. The lower end of said exterior tube 26, is split for a short distance and an open clamping ring 27, is secured adjacent to the split portion; said clamping ring being provided at its lateral projecting separated ends with a thumb screw 28, whereby the ends of the ring may be forced together so as to clamp the split end of the tube firmly against the external surface of the tube 16.

A vertical slot 29, is formed in the upper portion of the inner tube to receive the end of a screw pin 30, projecting inwards from the outer tube, which thus permits the telescopic movement of the two tubes in the direction of their axes but prevents rotative displacement of the one with relation to the other.

The upper extremity of the outer tube 26, is embraced by a pair of clamping bands, the lower one of which 31, may be simply sprung upon the tube, while the upper one 32, is provided with a set screw 33, and nut 34, the nut being retained against rotation within a recessed portion 35, of the band. Said band 32, embraces the greater portion of the periphery of the tube 26, its ends are bent outwardly as indicated at 36, in what may be termed hook shaped projections, (see Fig. VII). The band 31, is of similar construction, having the outwardly bent and hook-shaped projecting ends 37. Intermediate between the two bands is a saddle piece 38, (see Fig. VIII), whose two extremities 39, are bent in hook-shape, but in the opposite direction to the hooked projections 36, and 37, of the two

bands. When the three parts are placed in position, the alinement of the respective hook-shaped projecting ends is such as to form sockets to receive the lower ends of the supplemental rods 40, and 41, upon which the telephone is supported. When the set screw 33, is relaxed, the upper band 32, has sufficient play to permit the free withdrawal of the ends of the rods 40 and 41, but when the set screw 33, is tightened, the nut 34, engages with the inner face of the yoke 35, so that the band 32, is forced to the right in Fig. I, and thus is not only clamped fast to the tube 26, but clamps the ends of the rods 40 and 41, between the hook shaped projections 36, and 37, of the bands, and the oppositely facing projections 39, of the saddle piece, so as to hold the rods firmly in position.

The rods 40, and 41, are formed with deep lateral bends as indicated at 42, so as to afford room for the base of an ordinary telephone stand, when suspended between them. The upper portions of the rods return to an upright position and terminate in overhanging portions 43, (see Fig. IV) the extreme ends being approximately in a vertical line with the axis of the tubular standard 16. A collar 44, preferably circular in outline, is attached to the downwardly depending ends 43, of the rods, by means of the screw pivots 45, which engage the sides of the collar at points beyond the center of its figure, so that the axis of pivotal support is in an eccentric chord of the circle. An open clamping band 46, whose projecting ends 47, are provided with a set screw 48, is freely mounted within the collar 44, and is provided with a series of projecting lugs 49, which rest upon the upper surface of the collar, so as to permit a rotative adjustment of the clamping band 46, with relation to the collar 44, but prevent it from slipping downwards. This band 46, is adapted in this instance, to embrace and hold the post 50, of an ordinary desk telephone, whose base is represented at 51, and whose transmitter casing 52, is provided with the ordinary mouth piece 53. Said standard has the usual receiver hook 54, and may be of any well known construction; one of the objects of the present support being to permit its use in connection with practically any or all of the well known types of desk telephone stands. The retaining device (comprising in the instance shown, the collar 44, and clamping band 46), permits the telephone instrument to swing freely in a vertical plane, and also to be rotated on the axis of the post, and the eccentric pivoting of the collar compensates for the unequal distribution of the weight due to the projection of the transmitter.

Equilibrium of the support and the object carried thereby in any position with reference to the perpendicular is attained by the differential rotative movement of the plunger 13, and tubular standard 16, and the consequent action upon the spring 18, but as this general system is not new in the present application, and as its action is well understood, no detailed description thereof is deemed necessary.

The mode of operation of the structural features which constitute the subject of the present improvements, has

been incidentally set forth in describing them, and I deem it only necessary to point out that their use is not necessarily restricted to the particular type or organization of the balancing spring and its coacting elements, shown herein. Hence I desire to claim the features of improvement broadly, and without reference to the details of the self balancing mechanism, and to that end I desire to comprehend any available forms of such mechanism under the general term employed in my claims:

1. In a support comprising a standard, a self-contained spring and differential actuating mechanism for said spring, the combination of a base provided with a projecting boss having a plurality of seating cavities extending in intersecting planes; a foot; and a pin adapted to be secured in any of said cavities and rotatively supporting said foot, substantially as set forth.

2. The combination, with a foot, a standard pivoted thereon, and a self-contained balancing spring; of a movable abutment supported in the standard and engaging one end of said spring; a plunger terminating at the other end of said spring and engaging therewith, said plunger being pivoted at its other extremity to said foot; and adjusting mechanism for said movable abutment, whereby the tension of said spring may be varied.

3. The combination with the standard and its self-contained balancing spring; of differential actuating mechanism for said spring, engaging one end thereof; a nut engaging the other end of said spring; a set screw engaging said nut; and a cap constituting an abutment for the head of said set screw, said cap being provided with an opening to permit access to the screw head.

4. The combination, with the standard and its self-contained spring balancing mechanism; of a swinging retaining device freely suspended from said standard; and pivotal connections between said retaining device and said standard, the axis of said pivotal connections being out of line with the center of figure of the retaining device, whereby unequal distribution of the weight of a suspended article may be compensated; substantially as set forth.

5. The combination with the standard comprising self-contained spring balancing mechanism; of a pair of supplemental rods mounted on said standard; and a retaining device carried at the upper extremities of said rods.

6. The combination with a standard; of a pair of clamping bands having hook-shaped ends; an intermediate saddle piece having oppositely curved hook-shaped ends; means for securing one of said bands to the standard and for retracting its hook-shaped ends with relation to the ends of the other band and of the saddle piece; and a pair of rods adapted to fit within said hook shaped ends, said rods being provided at their other extremities with a retaining device.

7. The combination with the standard and the supplemental rods supported thereby; of a collar pivotally supported at the ends of said rods; a clamping band rotatably seated in said collar; and means for clamping said band about an object to be supported.

8. The combination of a base; a self-balancing support, pivoted to said base; said support having a deep lateral return bend and having its upper end approximately in a vertical line with the main axis of the support; and retaining devices pivotally attached to the upper extremity of the support.

In testimony whereof, I have hereunto signed my name, at Philadelphia, in the State of Pennsylvania, this eleventh day of June, 1906.

WILLIAM B. OLIVER.

Witnesses:

JAMES H. BELL,

E. L. FULLERTON.