(No Model.) 2 Sheets—Sheet 1.

J. TREGURTHA.

SUPPORT FOR TELEPHONES.

No. 289,179. Patented Nov. 27, 1883.

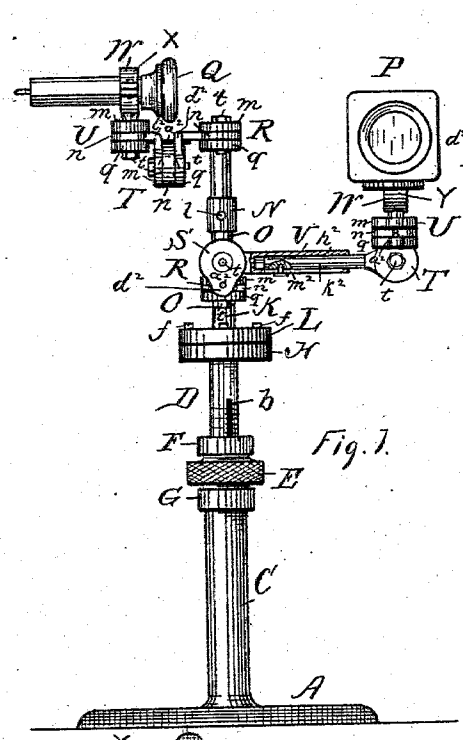


Fig. 1.

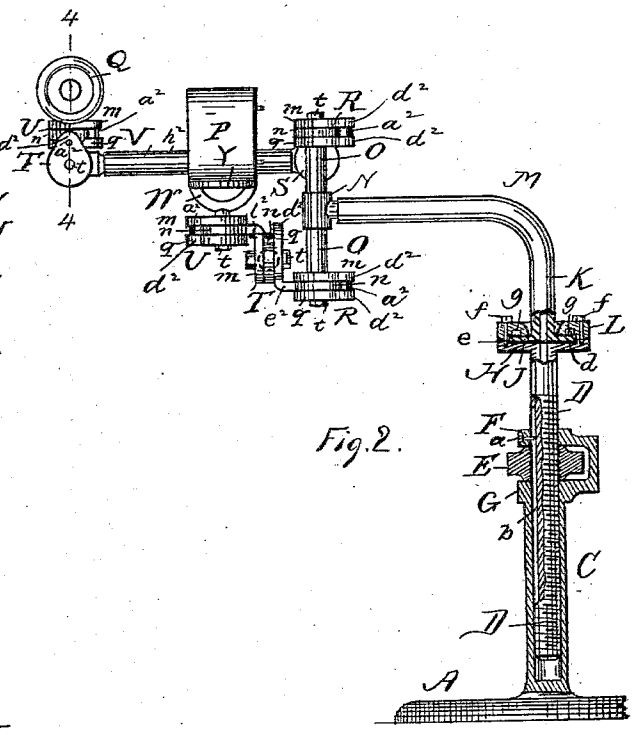


Fig. 2.

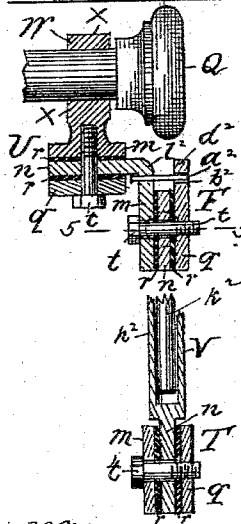


Fig. 4.

Fig. 5.

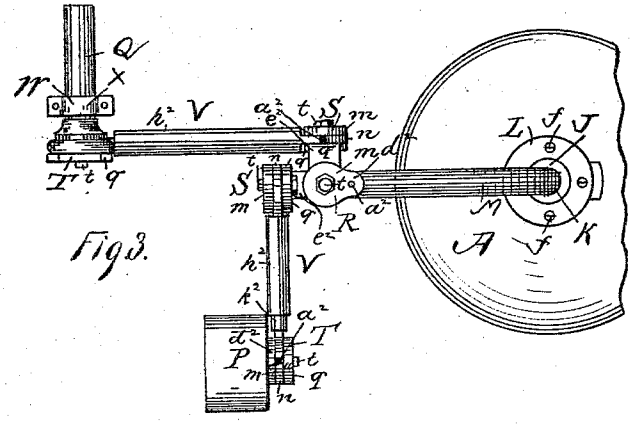


Fig. 3.

Witnesses;
William E. Sellers
Henry A. Clifford

Jas. Tregurtha
Inventor
per Brown Bros.
Attorneys.

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 2 Sheets—Sheet 2.

J. TREGURTHA.

SUPPORT FOR TELEPHONES.

No. 289,179. Patented Nov. 27, 1883.

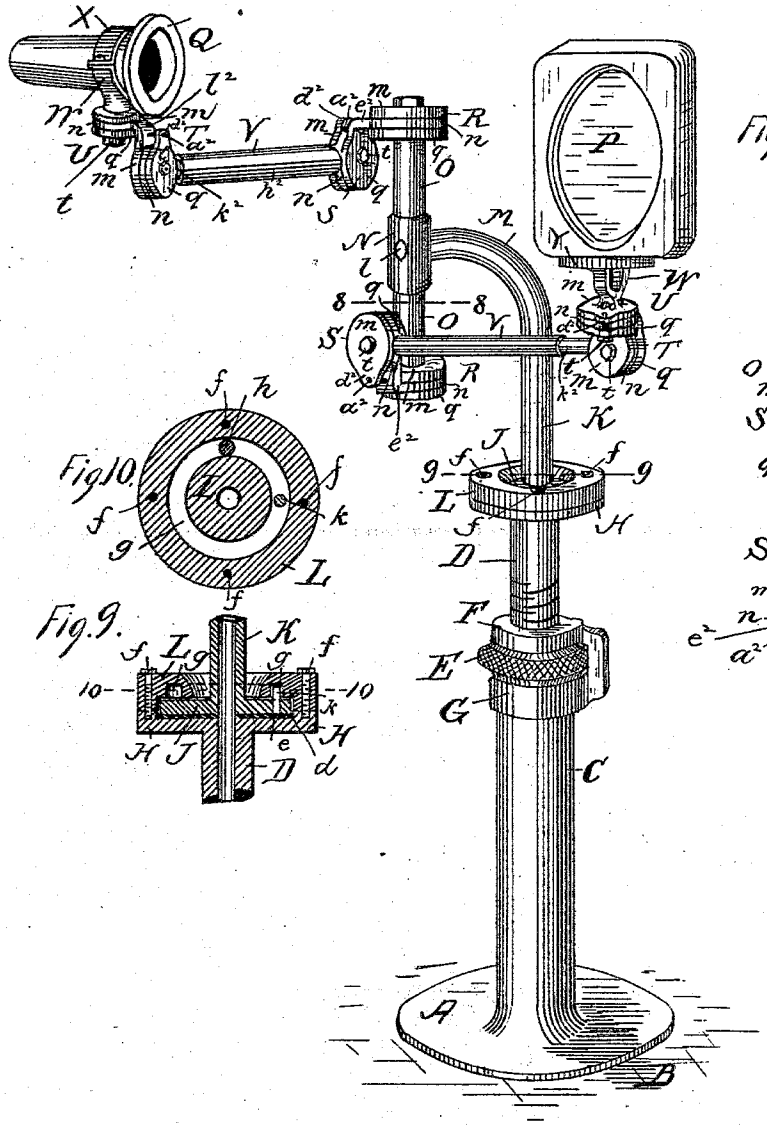


Fig. 6.

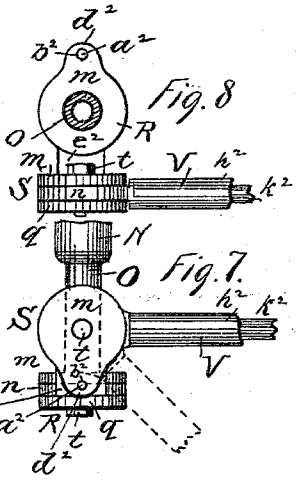


Fig. 8

Fig. 7.

Fig. 10.

Fig. 9.

Witnesses;

Wm. S. Bellows.

Henry A. Clifford

Jas. Tregurtha
Inventor

per Brown Bros.

Attorneys.

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JAMES TREGURTHA, OF MALDEN, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE ADJUSTABLE TELEPHONE SUPPORT COMPANY, OF BOSTON, MASS.

SUPPORT FOR TELEPHONES.

SPECIFICATION forming part of Letters Patent No. 289,179, dated November 27, 1883.

Application filed March 26, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES TREGURTHA, of Malden, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Supports or Stands for Telephonic or other Instruments, of which the following is a full, clear, and exact description.

This invention relates to a stand or support, more particularly designed for telephonic instruments, transmitters, and receivers, either one or both, although it is also applicable to microscopic and other instruments.

The object of the invention is to provide a stand or support for such instruments, which shall be capable of ready and easy adjustment in position for the convenient use of either or both by operators. The present improved stand or support is composed in substance of clamps or other holders, one for the transmitter and one for the receiver, each doubly jointed for being swung on separate centers, in planes at an angle to each other, to one end of separate telescoping-arms, each of which arms at its other end is doubly jointed for being swung on separate centers, in planes at an angle to each other, to separate ends of a common standard or rod or to separate standards or rods arranged to be adjusted as to its or their distance from, and otherwise to be swung in relation to the location of the fixture to which this improved stand is attached for the use of the telephonic instruments carried by it, all substantially as hereinafter described.

In the accompanying plates of drawings is illustrated a support or stand of the present improved construction.

In Plate 1, Figure 1 is a front elevation, showing the improved stand or support as secured to a table or bench, and the transmitter at the right and the receiver at the left, in which position in use, with the mouth of the operator at the transmitter, the receiver would be at the left ear. Fig. 2 is an elevation at the right-hand side of the stand or support in the position of Fig. 1. Fig. 3 is a plan view of the stand or support in the position of Fig. 2. Fig. 4 is a detail sectional view, enlarged, on line 4 4, Fig. 2. Fig. 5 is a detail horizontal sectional view on line 5 5, Fig. 4. In Plate 2, Fig. 6 is a perspective view of the support in the position shown in Fig. 1. Fig. 7 is a face view. Fig. 8 is a horizontal section on line 8 8, Fig. 6. Fig. 9 is a vertical section on line 9 9, Fig. 6; and Fig. 10 is a horizontal section on line 10 10, Fig. 9, each and all in detail and enlarged.

In the drawings, A represents a base-plate, to be secured to a table or bench, B, or other suitable fixture with screws or other suitable fastening means.

C is a tubular standard rising from the base plate A, and containing a vertical screw-threaded tubular rod, D, having a screw-threaded nut, E, which, being turned upon the screw-rod D, either to the right or to the left, will cause said rod to move up or down, said nut being confined against vertical movement by and between the upper and lower bracket-arms, F G, of the standard C, and the rod D held against turning, while it is left free to so move up and down, as the case may be, by a spline-joint between it and the bracket-arm, said spline-joint consisting of the horizontal pin *a* on said arm and the vertical groove *b* in said screw-rod.

H is a horizontal plate or disk fixed to the upper end of the tubular screw-rod D. This fixed plate H on its upper face has a circular recess or depression, *d*, receiving a circular washer, *e*, of leather or other suitable packing material, and above this washer is a horizontal circular and rotating disk, J, which is concentric with screw-rod D, and is concentrically attached to the lower end of a vertical tubular rod, K, and is confined against said washer *e* and said fixed plate H by a ring, L, secured by means of screws *f*, or otherwise, to the plate H outside of the washer. This ring L is of a shape to overlap the upper face of the moving disk J at and around its outer edge, and it has a circular concentric groove, *g*, in its face, in contact with said rotating disk J. This groove *g* has a fixed pin or abutment, *h*, and it also receives a pin or abutment, *k*, of the rotating disk J, all so that said disk J is free to be turned or rotated in either direction upon the stationary plate H of the standard C, but not in either direction for a complete turn

or rotation, because of the necessary abutment of the pin *k* of the disk J against the pin *h* of the ring L, that is attached, as described, to the plate H, carried by the adjustable screw-rod D of the standard C. The fixed plate H, rotating disk J, and washer *e* all are open at their center, corresponding to the opening of the tubular screw-rod D and the upward-extending rod K, from the rotating disk J, and by tightening or loosening the contact of the rotating disk against said washer and fixed plate, it is plain the ease with which the rotating disk may be turned or rotated, can be regulated at pleasure, and as a consequence, while the same may be made to be freely adjustable, yet it can be made secure against accidental displacement. The upward-extending tubular rod K, attached to and traveling around with the rotating disk J, is at a short distance above said disk bent and brought into a horizontal position, as shown at M, and this horizontal part or extension terminates at the outer end in a vertical collar, N, in which is fixed a vertical rod or standard, O, extending equally above and below said horizontal extension. The tubular rod K is also tubular in its horizontal extension M, and, in fact, for its whole length, opening at *l* to the outside of the vertical collar N, in which the vertical standard-rod O is fixed, as above described. This rod-standard O supports both a telephonic transmitter, P, and a telephonic receiver, Q, either of any of the usual or suitable constructions. This support of the transmitter and receiver is in each case through similar mechanism, and such being the case, a description of the mechanism of one obviously is sufficient if the proper letters be applied to the corresponding parts of the other.

The transmitter P is connected to and supported from the lower end, and the receiver Q is connected to and supported from the upper end, of the rod-standard O, and the connecting and supporting mechanism of each is as follows: Four joints, R, S, T, and U, all of similar construction, a telescoping rod, V, and a clamp or holder, W, each of which parts is duplicated for each telephonic instrument, transmitter P, and receiver Q. Each joint R, S, T, and U is in three separate lifts or leaves, *m n q*, of a circular disk shape, and severally placed by their flat surfaces upon each other with a washer, *r*, (see Figs. 4 and 5 more particularly,) of leather or other suitable packing material, between them, and all secured together by a headed screw-bolt, *t*, passing concentrically through their several thicknesses and screwing into either one or both of the outer lifts or disks, *m q*, but loosely through the middle lift or disk, *n*, which is thus made capable, if not bound to the disks at each side thereof by sufficiently screwing up the axial screw-bolt, of being turned or rotated upon said axial bolt. The outside disks, *m* and *q*, of each of said joints are locked together by a pin, a^2, fastened to one and entering loosely into a socket, b^2, of the other, and located in a lug, d^2, of each disk, which lugs project from the edge and one side of the disks, and, as a consequence, with either of said outside disks fastened or held against turning in any manner, the other one thereof will be correspondingly held against movement; but if neither thereof is so fastened and otherwise they are free to be turned—that is, if not bound against the sides of the middle disk, *n*, by means of the center or axial bolt, *t*, or either of them held in any other way—then they, with said axial bolt, can be rotated, turning by said bolt within the center opening and by the inner face of each outside disk against the opposite faces of the middle disk. The duplicate joints R are secured one to the upper end and the other to the lower end of the rod-standard O, and in each case the several disks making each joint are horizontal and fastened to or against the ends of said standard by entering and securing the axial bolt *t* of each into the same, and, in fact, preferably the outside disk of each joint against the ends of said standard is rigidly and independently attached thereto. The middle disk of the upper joint has an angular and radial arm, e^2, connecting it to an outer disk, *q*, of the duplicate joints S, next in order of arrangement from the rod-standard O, the middle disk, *n*, of each of which joints is carried by one of the separate and duplicate telescopic rods V. Both telescopic rods V project radially from the axis of rotation of their respective joints, and each is composed of an outer tubular rod, h^2, having within it another rod, k^2, both of which make the telescoping-rod—that is, a rod capable of being lengthened and shortened—either by drawing the inner one, k^2, out of and forcing it into the outer one, h^2, or by drawing the outer one, h^2, off and forcing it over the inner one, k^2. Each joint R rotates in a horizontal plane, and each joint S in a vertical plane, and said planes of rotation are at right angles.

One and the outer end of the inner rod, k^2, of each telescoping rod V carries a middle disk, *n*, radially attached, of one of the duplicate joints T, next in order of arrangement from the standard-rod O, and one of the outside disks, *m*, of each of said joints has a right-angular and radial arm, l^2, connecting it to the middle disk, *n*, of one of the duplicate joints U, and the next and last in the order of arrangement from the standard-rod O. To the outside disk, *m*, of each of said joints U, the farther removed from the axis of rotation of the joints T, is secured one of the duplicate clamps or holders W. These clamps are each of any suitable construction—for instance, the one, a ring, X, divided into two halves, secured together about the body of the receiver Q, and the other a bracket, Y, attached by screws to the under side of the transmitter P. Each joint T and each joint U rotates in a plane at right angles to the other, and the rotation of the former is in a plane coincident with the longitudinal axis of the telescopic rod V, to which it is connected.

The pin a^2, locking together the two outside disks of each of the joints R S T U, as herein described, prevents, by the abutment against it on either side of a part—to wit, the angular arm-extensions e^2 f^2, or the telescopic rods V, attached to or forming a part of and moving with the middle disk of such joint—or by its abutment against said part of the middle disk, any of said joints from having or making a complete turn or rotation in either direction about or upon their respective axial bolts or pintles *t*.

The freedom with which each of the several joints R S T U may work or be worked, it is obvious, can be regulated by tightening up or loosening its axial bolt *t*, or, in other words, by tightening or loosening the several disks of each joint in their bearing against each other, and plainly any of the joints may be made rigid or fast at pleasure by simply screwing up its axial bolt *t* sufficiently therefor.

Electric wire connections are made with each of the telephonic instruments, transmitter P, and receiver Q, as usual, and in making these connections the several wires pass from the instruments to and through the open end *l* of the horizontal tubular rod M, and thence through said rod, the rotating disk J carrying it, standard C, hollow screw-rod D, and base-plate A to the other necessary parts to be connected.

In the improved stand or support for telephonic instruments, and attached to a table or bench, B, as herein described, it is plain that each of the instruments is capable of being adjusted in height or distance from the table—first, by raising or lowering the vertical screw-rod D in the standard C from the turning of the screw-nut E; second, by swinging its telescopic rod V in a vertical direction through the joint S of said rod V, which is connected with the middle disk, *n*, of the joint R upon the rod-standard O; third, by swinging its clamp W in a vertical direction or plane through the joint U of said clamp, which is connected with one of the outside disks, *m*, of the joint T at the outer end of its telescopic rod V; and, fourth, by either lengthening or shortening its telescoping arm or rod V; and, again, each of the instruments is capable of being adjusted in its distance from a given vertical plane passing from the front to the rear, or passing across and between the front and the rear of the support herein described, as it is attached to the table or bench B—first, by rotating the disk J upon its support of the base-plate standard C; second, by swinging its telescoping arm or rod V in a vertical plane or direction through the joint S of said rod, connecting it with the middle disk of the joint R upon the rod-standard O; third, by swinging its telescoping arm or rod V in a horizontal direction or plane through its joint R, connecting it with the rod-standard O; fourth, by swinging its clamp or holder W in a vertical direction or plane through the joint T upon the outer end of its telescoping rod V; fifth, by swinging its clamp or holder W around upon its joint U, which joint is connected to the joint T, connected to the outer end of the telescoping arm V; sixth, by either lengthening or shortening its telescoping arm or rod V.

The adjustments of either telephonic instrument as hereinabove described, except as to those made by the operation of the screw-nut E and the rotating disk J, are independent of and separate and distinct from each other, and from the variety of the same, as appears from the recital thereof herein given, together with the adjustment secured from the operation of said screw-nut E and said rotating disk, it is obvious that either instrument is capable of being placed in almost any conceivable position, (of course within given limits,) either as to any given vertical or horizontal plane, or as to the other or companion instrument upon the same stand or support, and therefore, as a consequence, either and both instruments can be located for most convenient, easy, and ready use, and to suit the position and condition of any operator or operators, and with the utmost ease, facility, and quickness, the advantages of all of which are obvious. Limiting the rotations of the disk J and of the separate joints R S T U, substantially as described, constituting, with other parts, the stand or support of this invention, prevents all possibility of twisting or winding of the electric wires leading to and from the instruments upon any part or parts of the stand or support to an extent to injure or damage the same, or to interfere with their proper operation at all times.

A screw-nut, E, for adjusting the screw-rod D, and operating thereon as described, together with a telephonic instrument or instruments connected to said rod, is important, in that it not only by a turning of the screw-nut in the proper direction secures the lifting and lowering of the instruments through its operation upon said screw-rod, but it also holds said instruments in their so adjusted position without further operation of any mechanism or use of any other fastening device or devices.

The horizontal extension M and the vertical rod K, to which it forms such extension, and also both the upper and lower parts of the rod-standard O, may each and all, or such of them as desired, be made telescoping the same as described for the telescoping rods V, and each arm or rod or part so telescoped may be allowed to turn freely upon the other, or be constructed with a spline-joint, as at m^2, Fig. 1, to prevent them from so turning.

It is obvious, first, that the stand or support herein described, as to either instrument, is complete of itself, and works the same in every respect; second, that while either instrument can be placed at a greater or less distance or height from the table or other support to which the telephonic stand is secured, and also can be swung about the usual line of the movement or adjustment just above stated—that is, the vertical axis of the standard B—either instrument is also capable of being

swung around two other axes (the axes of the joints R U) at a distance from each other, both of which axes are parallel to each other, and also to but not coincident with the axial swing and adjustment of the instrument first above stated, and, in addition thereto, either instrument is also capable of being swung around two other axes (the axes of the joints S T) at a distance from and parallel to each other, and at right angles to each and all the other axes above referred to.

Among special advantages of the telephone stand or support of this invention, in addition to its general and other capabilities before recited, it may be well to mention, first, that the telephonic instruments and their connections, when not in use, can be swung to the rear or either side of the standard B, and thus placed out of the way; second, that the double joints of the telescoping rods at each end, as described, are in the nature of universal joints, and as a consequence in whatever positions the instruments may be placed by swinging them upon said joints and otherwise adjusting them, a then slight movement of the joints enables the instruments to be placed squarely to the mouth or ear, as the case may be, and without necessarily changing the height or distance of the whole apparatus for its point of fixture to the table, wall, &c.; third, as the instruments are at the outer ends of their respective carrying-arms and jointed thereto, as described, when placed in position for use there are no obstructing arms in the way of the operator, and, again, the instruments can be swung and placed under the carrying-arms, so as to leave a clear space below; fourth, by a simple movement of the parts carrying the instruments the position of the instruments can be readily changed for the receiver to be used at either the right or left ear of the operator, and for the transmitter to be placed in suitable relative position.

The washers for the working-joints, herein described, may be dispensed with; but they are desirable, as they enable sufficient friction to be given to the working-faces of the joints to hold the joints against accidental working and without tightening the parts together to an extent to prevent their being easily worked.

The telescoping of the rods may be dispensed with; but it is best to so make them. The carrying-arm for either instrument may be doubly jointed, as described, only at one and either end, instead of at both ends. The double jointing of the carrying-arm for either instrument may be used in connection with means for elevating and lowering their carrying-arm other than the screw-rod D and screw-nut E. The means for elevating and lowering the stand or support—to wit, the screw-rod D and screw-nut E—may be used with other means of connection of the instruments therewith. The standard C may be secured to the wall of a room, &c., in lieu of a table, and such standard may be of other forms—as, for instance, if it is to be attached to a wall in the form of a bracket, arranged to swing upon the wall—and other obvious changes and combinations of the several parts which have been herein described so fully may be made, and yet secure more or less of the results aimed at by the present invention. However, a telephone stand or support having all the parts and operations and movements specified is most desirable, for manifest reasons.

In conclusion, it will be observed that although the present improved stand or holder has been herein particularly described in connection with telephonic instruments, and in the claims also particularly so stated, such description and claims are meant to and do include any and all other instruments for which said stand or support may be found available—as, for instance, microscopic instruments, &c.—and so, therefore, it is not intended that this invention, either in its description or in the recital of the claims shall be limited to telephonic instruments only.

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

1. The combination, in a stand or support for telephonic instruments, &c., having a clamp or holder, W, for an instrument and a standard, C, of a screw-rod, D, carrying said clamp, and a screw-nut, E, arranged to operate said rod, substantially as described, for the purpose specified.

2. In a stand or support for telephonic instruments, &c., an arm or support carrying an instrument and attached to a screw-rod, D, to be swung thereon, in combination with a standard, C, and screw-nut E, for raising and lowering said screw-rod, substantially as and for the purposes described.

3. In a stand or support for telephonic instruments, &c., a clamp or holder, W, for an instrument jointed to an arm to be swung thereon in intersecting or crossing planes, in combination with a standard, C, carrying screw-nut E and screw-rod D, connected to said arm, substantially as and for the purpose described.

4. In a stand or support for telephonic instruments, &c., a clamp or holder, W, for an instrument jointed to an arm to be swung thereon in intersecting or crossing planes, in combination with a standard, C, fixed to a suitable support and provided with a screw-nut, E, and screw-rod D, connecting said arm to said support and constructed and arranged for said arm to be adjusted and also to be swung upon said screw-rod D, substantially as and for the purpose described.

5. In a stand or support for telephonic instruments, &c., a clamp or holder, W, for an instrument jointed to an arm, V, to be swung thereon in intersecting or crossing planes, and which arm is jointed to an arm, M, to be swung thereon in intersecting or crossing planes, in combination with a standard, C, fixed to a suitable support, and to which standard said arm M is connected for adjustment relative

thereto and to said support, substantially as and for the purpose described.

6. In a stand or support for telephonic instruments, &c., a clamp or holder, W, for an instrument, an arm, V, jointed to said holder for said holder to be swung thereon in intersecting or crossing planes, and also similarly jointed to an arm, M, in combination with a standard, C, fixed to a suitable support and provided with a screw-nut, E, and a screw-rod, D, connecting said arm to said support, and constructed and arranged for said arm to be adjusted and also to be swung about the axis of said screw nut and rod, substantially as and for the purpose described.

7. In a stand or support for telephonic instruments, &c., a clamp or holder, W, for an instrument jointed to an arm, V, to be swung thereon in intersecting or crossing planes, and which arm is constructed to be lengthened and shortened, in combination with a standard, C, fixed to a suitable support, and to which standard said arm V is connected for a movement thereon, substantially as and for the purpose described.

8. In a stand or support for telephonic instruments, &c., a clamp or holder, W, for an instrument and a standard, in combination with an arm, V, which is arranged between them and connects them, and jointed with angular joints R S T U, composed of lifts *m n q*, and an axial pintle, *t*, and connecting-arm M, substantially as described, for the purpose specified.

9. A stand or support for telephonic instruments, &c., composed of a clamp or holder, W, joints U and T, rod V, joints S and R, arm M, swinging upon standard C, screw-rod D, and screw-nut E, constructed, arranged, and combined together, substantially as described, for the purpose specified.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JAMES TREGURTHA.

Witnesses:
EDWIN W. BROWN,
WILLIAM S. BELLOWS.