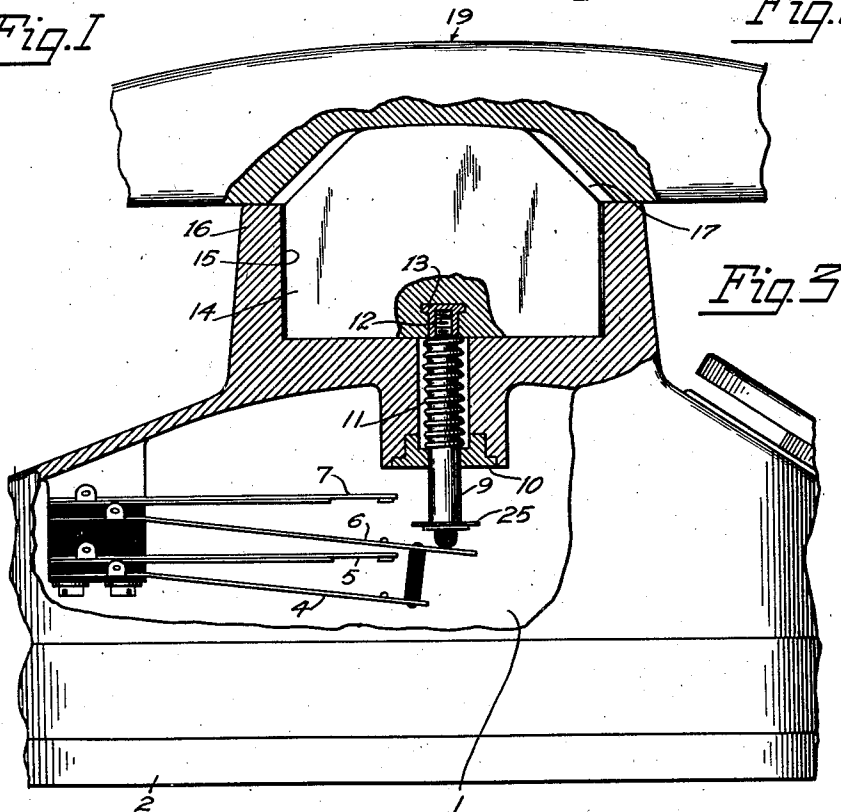
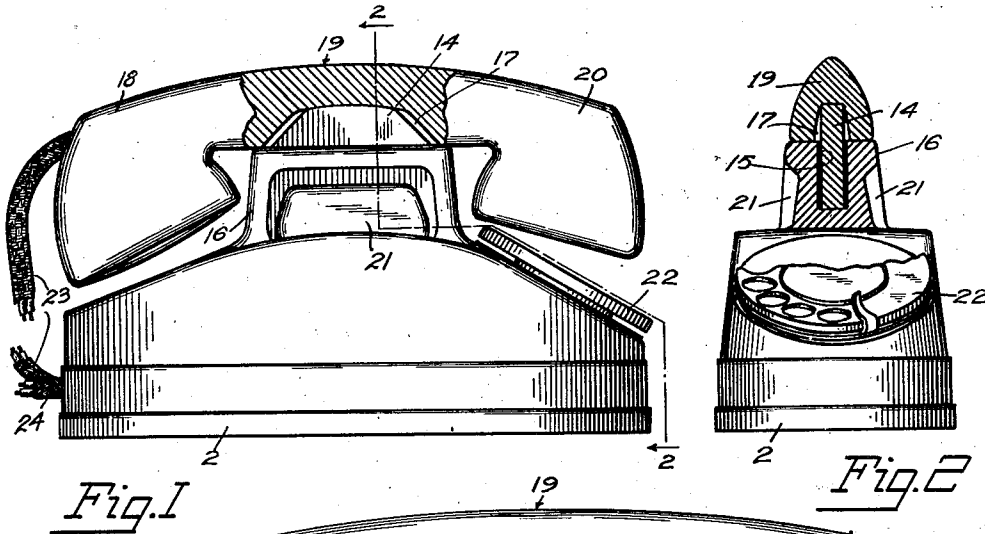


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TELEPHONE SUBSTATION SET

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TELEPHONE SUBSTATION SET

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6 Claims. (Cl. 179-146)

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This invention relates to telephone substation sets, being concerned more particularly with telephone substations employing hand telephones.

An object of the invention is to provide a substation telephone set incorporating a simple and efficient arrangement for actuating the switch of the instrument by the weight of the hand telephone and for retaining the hand telephone in position to maintain the switch actuated.

Another object of the invention is the provision of a desk-type of substation set employing a hand telephone and incorporating a simple and efficient construction which enables the user of the instrument to grasp both the stand and the hand set to facilitate lifting and moving the entire substation set.

A feature of the invention is that the switch-actuating plunger serves to hold the hand set in position against lateral displacement and also retains the hand set against horizontal rotation. For this purpose the plunger is conveniently made of oblong cross-section and is received within a longitudinal recess in the handle of the hand set.

A feature especially applicable to desk-type sets is that the support portion for the handle of the hand telephone is undercut at the front and at the rear to enable the user to grasp both the stand and the hand telephone in one hand, which arrangement greatly facilitates lifting and moving the entire substation set without disturbing the relation between the stand and the hand telephone.

The foregoing and other objects and features of the invention will become more apparent as the description progresses.

Referring now to the accompanying drawings, it has been chosen to illustrate all of the features of the invention as applied to a desk type of substation set, although certain of the features are applicable to wall telephones, for example.

Fig. 1 is a side elevation of a desk set embodying the features of the invention;

Fig. 2 is a front view along the line 2-2 of Fig. 1; and

Fig. 3 is an enlarged view similar to Fig. 1, but with parts broken away to enable the switch and its actuating mechanism to be seen.

The stand portion of the illustrated desk set is shown at 2, with the integral pedestal portion 16 on which the handle 19 of the hand telephone normally rests. The portions 18 and 20 of the hand telephone contain the usual transmitter and receiver respectively. The hand telephone is electrically connected to the stand by the usual cord

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23, while the stand is connected to a telephone line through the cord 24.

The stand 2 has the hollow interior portion 1 for concealing the usual instrumentalities, such as condenser, ringer, and switch.

The pedestal portion 16 has a vertically disposed recess 15 therein of generally oblong cross-section for slidably receiving the plunger 14. The plunger 14 has the switch actuating stud 9 threadedly attached thereto as illustrated.

The stand, the hand telephone, and the plunger 14 may conveniently be molded of an insulating plastic material. The insert member 13 into which the upper end 12 of the stud 9 is threaded may be molded into the plunger 14.

The compression spring 11, surrounding the stud 9, is provided to assist in raising the plunger 14 to enable the switch to close its contacts when the hand telephone is removed from its illustrated normal position. The lower portion of spring 11 rests against the member 10, which may be threadedly or otherwise secured in place. A washer or head portion 25 on the lower end of the stud 9 limits the upward movement of the plunger assembly by contact with the lower face of the insert member 10 when the plunger assembly moves up.

Normally, the hand telephone is resting in the position illustrated, with the upper portion of plunger 14 received within the longitudinal recess 17 in the handle 19. The contact between the upper end of plunger 14 and the bottom or innermost portion of recess 17 holds the plunger 14 down in its illustrated position, and the lower end of stud 9 maintains the contact springs 4 and 6 of the switch out of engagement with the contact springs 5 and 7 respectively. Lateral movement of the hand telephone is prevented by contact between the side walls of plunger 14 and the wall portion defining the recess 17. At the same time, rotation of the hand set in a horizontal plane about the plunger 14 as a pivot is prevented because of the keying action between plunger 14 and the side walls of the recess 17.

One end wall of the stand 2 may be apertured to receive the usual calling device 22 when the substation set is connected with an automatic telephone line.

When it is desired to move the substation set bodily without removing the hand telephone (18, 19, 20) from its illustrated position on the stand, the user may grasp the handle 19 of the hand telephone and the support portion 16 of the stand for this purpose. The thumb may enter the recess 21 in the front of the support por-

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tion 16, while the fingers enter the recess 21 at the rear of the support portion. When the substation set is so grasped, it may be moved and turned in any position without permitting the hand telephone to move from its position with respect to the stand, for the palm of the hand then engages and holds the handle 19.

When a call is to be answered at or made from the illustrated substation, the user may grasp the handle 19 and lift the hand telephone for use. When this occurs, the removal of the weight of the hand telephone from the upper end of the plunger 14 permits the plunger to rise under the urge of the compression spring 11, as well as under the urge of the contact springs 4 and 7. The upward movement continues until the washer or head portion 25 of the stud 9 encounters the insert member 10. This occurs before the plunger 14 has been raised out of the recess 15. At this time, the illustrated contacts of springs 4 and 6 of the switch engage the illustrated contacts of the springs 5 and 7, respectively, placing the substation set in talking condition.

Upon completing the intended use of the substation set, the user is expected to replace the hand telephone on the stand, with the recess 17 encompassing the exposed end of the plunger 14, and aligned with the width of the plunger 14. When this occurs, the weight of the hand telephone depresses the plunger 14 to its illustrated normal position against the tension of springs 11, 4, and 6. The contact switch is thereby brought to its illustrated normal position.

It should be noted that the exposed end, or corner, portions of the plunger 14 are sloped, and that the longitudinal side walls of the recess 17 have an outward flare. These two provisions combine to enable the hand telephone to spiral downwardly through a considerable angle to the illustrated position of alignment when the hand telephone is being replaced. This makes it unnecessary for the user to align the handle of the hand telephone accurately with the plunger when replacing the hand telephone. Also, the end walls defining the ends of the recess 17 are sloped to correspond with the slope of the corner portions of the plunger 14, enabling the hand telephone to slide longitudinally into its illustrated position when released to one side or the other of the preferred position.

We claim:

1. In a telephone substation set, a hand telephone comprising two instrument portions interconnected by a handle, a pedestal extending upwardly between the instrument portions and having an upper supporting surface engaging the underside of the handle when the hand telephone is in normal position, said surface then supporting such hand telephone in stable equilibrium in a generally horizontal position, a switch, and a plunger operatively associated with said switch and extending up through said pedestal and supporting surface to be actuated by the weight of the hand telephone, the underside of said handle having a recess receiving said plunger when the hand telephone is in its said normal position, said plunger cooperating with the side walls defining said recess to prevent lateral displacement of said hand telephone from its normal rest condition of stable equilibrium on said supporting surface, said plunger being of non-circular cross-section, and said recess being of a cross-section and size conforming sufficiently to the cross-section and size of said plunger that rotation of the hand set about the plunger as an axis is prevented.

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2. In a telephone substation set, a hand telephone comprising two instrument portions interconnected by a handle, a pedestal extending upwardly between the instrument portions and having an upper supporting surface engaging the underside of the handle when the hand telephone is in normal position, said surface then supporting such hand telephone in stable equilibrium in a generally horizontal position, a switch, and a plunger operatively associated with said switch and extending up through said pedestal and supporting surface to be actuated by the weight of the hand telephone, the underside of said handle having a recess receiving said plunger when the hand telephone is in its said normal position, said plunger cooperating with the side walls defining said recess to prevent lateral displacement of said hand telephone from its normal rest condition of stable equilibrium on said supporting surface, said plunger being of generally oblong cross-section, said recess extending longitudinally of the handle and conforming sufficiently in shape and size to the shape and size of the plunger that rotation of the hand set about the plunger as an axis is prevented.

3. In a telephone substation set, a hand telephone comprising two instrument portions interconnected by a handle, a pedestal extending upwardly between the instrument portions and having an upper supporting surface engaging the underside of the handle when the hand telephone is in normal position, said surface then supporting such hand telephone in stable equilibrium in a generally horizontal position, a switch, and a plunger operatively associated with said switch and extending up through said pedestal and supporting surface to be actuated by the weight of the hand telephone, the underside of said handle having a recess receiving said plunger when the hand telephone is in its said normal position, said plunger cooperating with the side walls defining said recess to prevent lateral displacement of said hand telephone from its normal rest condition of stable equilibrium on said supporting surface, said plunger being of generally oblong cross-section, said recess extending longitudinally of the handle and conforming sufficiently in shape and size to the shape and size of the plunger that rotation of the hand set about the plunger as an axis is prevented, said plunger having sloping end walls near the top cooperating with the walls defining said recess to bring the hand set horizontally and spirally into position as it descends with respect to said plunger.

4. In a desk-type telephone substation set, a hand telephone comprising two instrument portions interconnected by a handle, and a stand having a pedestal thereon for normally supporting the said handle in a generally horizontal position and in a generally fixed angular position in a horizontal plane, opposite side walls of said pedestal being undercut at points intersected by a vertical plane at right angles to said handle in its normal position to facilitate grasping the hand telephone and the pedestal in one hand when the entire substation set is to be lifted and moved.

5. In a desk-type telephone substation set, a hand telephone comprising two instrument portions interconnected by a handle, and a stand having a pedestal thereon for normally supporting the said handle in a generally horizontal position, said pedestal having a generally oblong cross-section in a horizontal plane, means inter-acting between said pedestal and said handle for

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normally maintaining said handle in a generally fixed angular position in a horizontal plane, the side walls of said pedestal aligned with the side walls of said handle in normal position being undercut to provide a generally T-shaped cross-section in a vertical plane, said undercut configuration facilitating grasping the hand telephone and the pedestal in one hand when the entire substation set is to be lifted and moved.

6. In a telephone substation set, a hand telephone comprising a receiver portion and a transmitter portion interconnected by a handle, a switch, an upwardly extending plunger operatively associated with said switch and adapted to be actuated by the weight of the hand telephone when the handle is placed on the upper end of said plunger, the underside of said handle having a recess for receiving said plunger, said plunger cooperating with the side walls defining said recess to limit lateral displacement of the hand set from its position of rest on the plunger, said plunger having a generally oblong configuration in a horizontal plane, and a support for the hand telephone surrounding said plunger, said support having a generally oblong configuration in a horizontal plane and having a vertically disposed

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opening therethrough for guiding said plunger, the top surface of said support acting to support said hand telephone and to maintain it in stable equilibrium thereon in a generally horizontal position, each of the longer side walls of said support being undercut opposite the plunger to facilitate grasping the hand telephone and the support in one hand when the entire substation set is to be lifted and moved.

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