June 10, 1930. O. A. SHANN 1,762,746

SUBSTATION LOCKING APPARATUS

Filed Feb. 8, 1929

FIG. 1

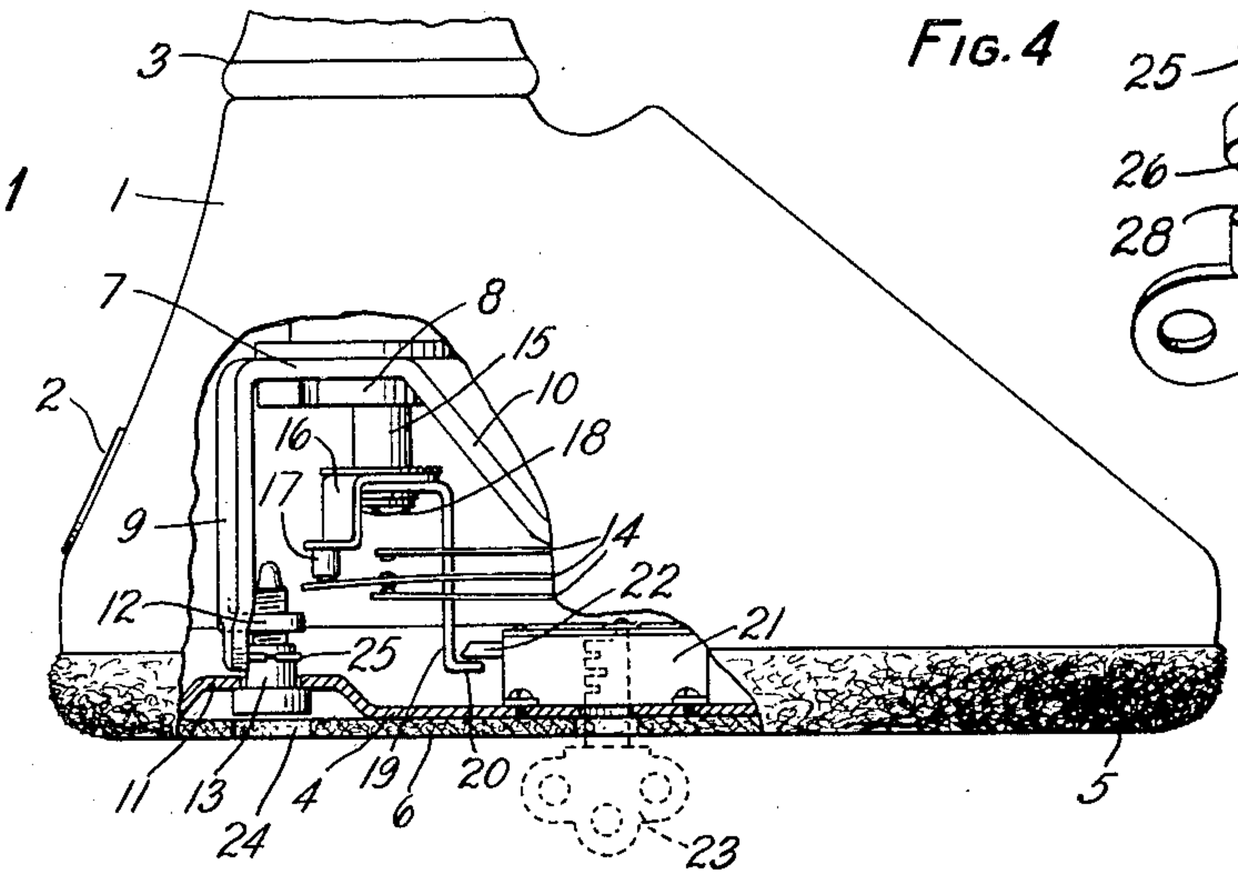


FIG. 4

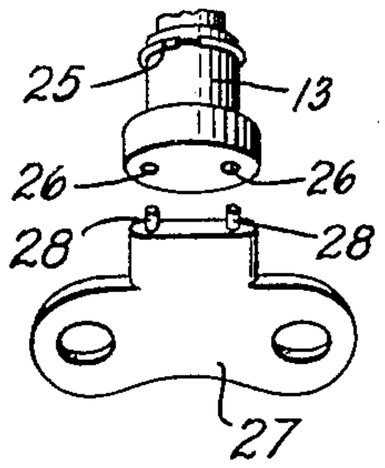


FIG. 2

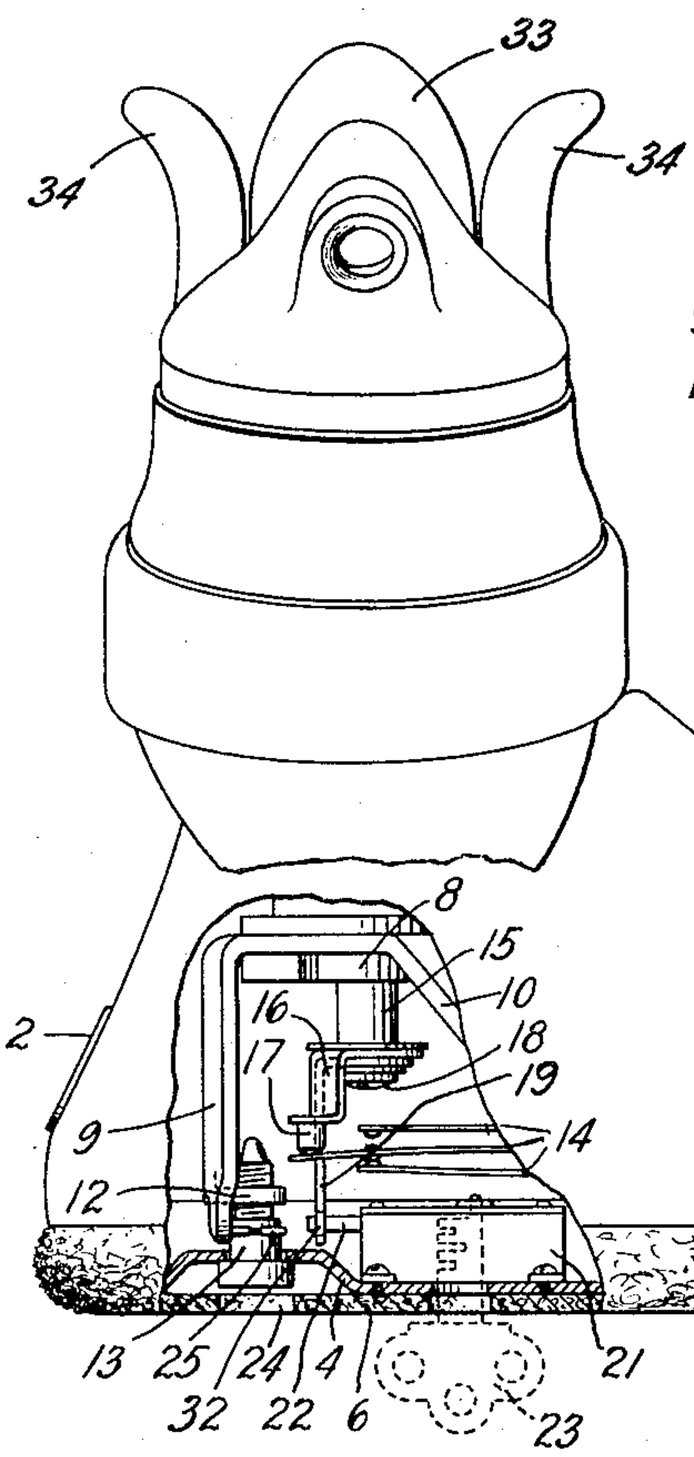
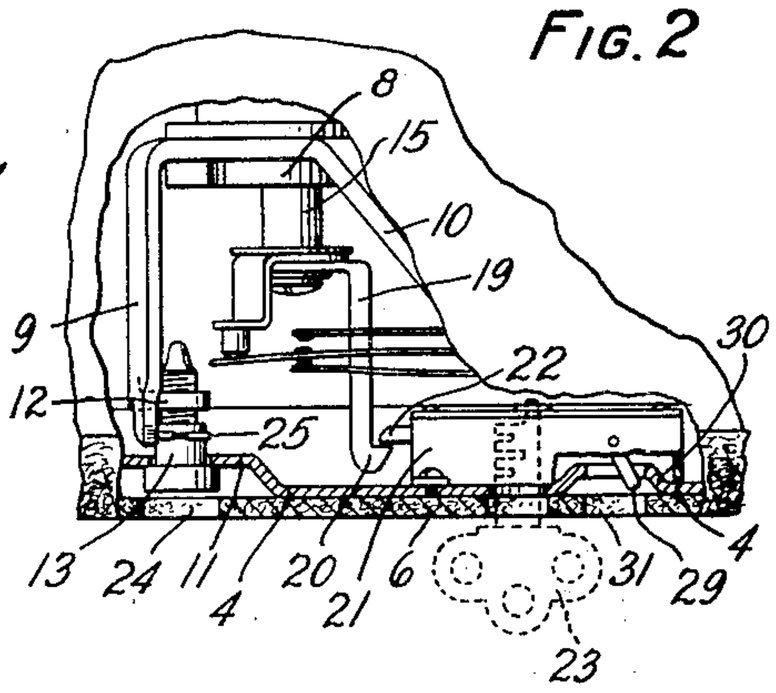


FIG. 3



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UNITED STATES PATENT OFFICE

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SUBSTATION LOCKING APPARATUS

Application filed February 8, 1929. Serial No. 338,406.

This invention relates to locks or latches for telephone instruments and particularly telephone instruments of the type commonly known as handsets in which the transmitter and receiver are attached by a suitable handle and a stand containing a line connecting switch is provided on which the handset is normally rested.

It is an object of this invention to prevent connection of a handset instrument with the line by an unauthorized person. A suitable lock therefor has been provided in the handset mounting which will prevent movement of the switch operating plunger when the handset is removed from the mounting.

One of the features of the invention is the locating of the lock within the base of the mounting where it is not only hidden from view but is rendered difficult of access.

Another feature is that the base plate of the mounting is secured to the upper portion by a specially designed screw which may be withdrawn only with a specially designed tool.

In Fig. 1, in the accompanying drawing a side view of the lower portion of a handset mounting has been shown and in Fig. 2 a side view of a fragmentary portion of the lower portion of a handset mounting. In each of these figures a portion has been broken away so that various parts of interest in connection with this invention may be seen. In Fig. 3 a side view of a handset mounting with a handset resting thereon is shown with certain portions broken away to disclose some of the parts and illustrate a modification of the construction shown in Fig. 1. In Fig. 4 is shown a fragmentary portion of one form of special screw which may be employed to secure the base plate to the mounting and a key for turning the screw. It may be desired in some instances to have an instrument which may be set in locked or unlocked condition for an indefinite time or it may be desired to have an instrument which may be unlocked for putting through a call but which will automatically be locked when the call has been completed.

Accordingly there is shown in Fig. 1 an arrangement by which a handset telephone instrument may be set in locked or unlocked condition for an indefinite time, and in Fig. 2 an arrangement by which a handset telephone instrument may be unlocked for the putting through of a call, but which upon completion of the call will be automatically restored to locked condition. Means are also shown in Fig. 2 whereby the lock may be set in unlocked condition for an indefinite time.

Referring now more specifically to the various parts shown in the drawing, 1 is the lower portion or casing of a handset mounting, 2 is an aperture in the casing for the accommodation of wires not shown but which are commonly lead into the casing, 3 is a fragment of the pillar portion and 4 is the base plate of the handset mounting. The base plate 4 is usually covered with felt or some textile material to prevent marring of a desk or table top when the handset is rested thereon or moved across it. This base plate covering is shown at 5 and in cross section at 6, and is held stretched over the base plate 4 by a split ring not shown but which is sprung within an upturned wall portion of the base plate 4.

Located within the casing 1 of the handset mounting, there is a bracket 7 which by a nut 8 is secured to a shank portion not shown but which extends downward within the casing 1 from the base of the pillar portion 3. Integral with the bracket 7 and extending downward are arms 9 and 10. Arm 9 extends downward into close proximity to an embossing 11 formed in the base plate 4.

An ear portion 12 of the arm 9 is drilled and threaded to receive a screw 13 which passes through an aperture in the embossing 11 and serves to secure the base plate 4 to the arm 9 and hold the base plate 4 up against the lower portion 1 of the casing of the handset mounting. Secured to the arm 10 are the spring contact members 14 which are common to handset mountings and through which signaling connection may be established between the handset instrument and the line.

Extending downward through the pillar 3 is a spring pressed plunger 15 and secured to this plunger 15 are arm members 16 only one of which is shown, on the free end of which is secured an insulating button 17 which when the plunger 15 is moved, serves to cause movement of the contacts 14 in a well known manner. Attached to the plunger 15 by a screw 18 is an arm 19 which terminates at its free end in a hook or offset portion 20.

Secured to the inner face of the base plate 4 is a lock 21 having a bolt 22 which when extended from the lock will engage the hook portion 20 of the arm 19 and prevent upward movement of the plunger 15 and the spring contacts 14. A key 23 which may be inserted in the lock 21 through suitable openings in the textile base covering 5 and the base plate 4 is provided for withdrawing the lock bolt 22 from engagement with the hook portion 20 of the arm 19 or extending the bolt 22 to lock the arm 19 and plunger 15 against upward movement according as desired.

As has been previously pointed out the base plate 4 is secured to the ear portion 12 of the arm 9 and held against the casing 1 by a screw 13 which passes through a suitable opening 24 in the textile base covering 5 and an opening in the embossing 11 and into the ear portion 12 of the arm 9. A ring 25 serves to prevent accidental dislodgment of the screw 13 from the base plate 4. To make the lock 21 which is secured on the inner face of the base plate 4 inaccessible to an unauthorized person, the screw 13 is provided with a head portion which is not adapted for operative engagement by a conventional type of tool such as an ordinary screw-driver. The head of screw 13 shown in Fig. 4 may be provided with indentations 26—26 so that it may be operatively engaged only by such for instance, as a key 27 provided with lugs or pins 28—28 spaced to the same spacing as the indentations 26—26 and which will fit therein.

In the foregoing has been described an arrangement by which, when a handset is placed upon its mounting and the switch operating plunger 15 is depressed, the switch operating plunger may be locked against movement and the spring contacts 14 prevented from being moved to establish signaling connection between the handset and the line.

In Fig. 2 the bolt 22 of lock 21 is a spring pressed member and the arm 19 terminates at its free end in a round ended offset portion 20. By turning the key 23 the bolt 22 may be withdrawn from engagement with the arm 19 and the spring pressed plunger 15 allowed to rise when the handset instrument is lifted from the mounting. Upon release of the key 23 the bolt 22 will be pressed outward by its spring and will extend into the path of arm 19. When, however, the handset is placed upon the mounting and the plunger 15 depressed, the arm 19 will be moved downward and come into engagement with bolt 22 which will be forced out of the path of arm 19 until the rounded end portion 20 has passed the bolt 22. Bolt 22 will then be pressed outward by its spring and hold the arm 19 and plunger 15 against any upward movement. In this figure the lock 21 is also shown as being equipped with a catch, handle 29 of which protrudes through an aperture in an embossing 30 in the base plate 4 and in line with an aperture 31 in the textile base covering shown in cross section at 6. When the key 23 has been turned and the bolt 22 withdrawn from engagement with arm 19, the handle 29 of the catch may be moved so that the bolt 22 will be held withdrawn from engagement with arm 19. By this means the instrument may be kept in unlocked condition for an indefinite period.

In Fig. 3 which shows a handset 33 resting between the prongs 34—34 on a handset mounting the lock and the means for securing the base plate to the arm 9 and the casing 1 together with the switching arrangements are practically identical with those shown in Fig. 1 with the exception however, that the lock 21 has been placed more to the rear of the casing 1 and the arm 19 has been turned to be engaged by the lock in that position and the arm 19 instead of having an offset portion 20 at its free end, has an aperture 32 through which the lock bolt 22 is passed. With this arrangement, in addition to more space being allowed in the casing 1 for the accommodation of other apparatus such for instance as a calling dial, should the locking arrangement be used in an automatic substation instrument, the plunger 15 is more securely held against upward movement than in the construction shown in Fig. 1.

It will be apparent that various changes and modifications may be made in the structures disclosed and arrangement of the different parts without departing from the spirit of the invention defined in the following claims.

What is claimed is:

1. In a telephone instrument, in combination an attached transmitter and receiver, a mounting therefor having a switch by which telephonic connection may be had to a telephone line, an enlarged base portion in the mounting, and a lock contained within the enlarged base portion by which the switch may be locked against operation.

2. In a telephone instrument, in combination an attached transmitter and receiver, a supporting member therefor having an enlarged base portion containing a switch by which telephonic connection may be had to a telephone line, a lock contained within the enlarged base portion and an extension from the switch to be engaged by the lock.

3. In a telephone instrument, in combination an attached transmitter and receiver, a supporting member therefor, a base plate in the supporting member, a switch in the supporting member by which telephonic connection may be had to a telephone line, and a lock attached to the base plate of the supporting member for locking the switch against operation.

4. In a telephone instrument, in combination a transmitter-receiver, a supporting member therefor, a switch in the supporting member by which telephonic sonnection may be had to a telephone line, a plunger in the switch, an extension piece attached to the plunger and a lock within the supporting member to engage the extension piece on the plunger and lock the plunger against operation.

5. In a telephone instrument, in combination an attached transmitter and receiver, a supporting member therefor, a switch within the supporting member, a base plate attached to the supporting member, and a lock attached to the base plate and engaging the switch to prevent operation of the switch.

6. A telephone instrument comprising a transmitter and receiver, a supporting member therefor containing a switch by which telephonic connection may be had to a telephone line, a plunger in said switch, an extension arm on the plunger and a lock within the supporting member engaging the extension arm to prevent operation of the switch when the transmitter and receiver are removed from the supporting member.

7. In a telephone instrument, in combination an attached transmitter and receiver, a supporting member therefor containing a switch, a spring operated plunger in the switch normally depressed by the transmitter and receiver, an extension piece on the plunger, and a lock within the supporting member, the lock engaging the extension piece on the plunger to prevent operation of the switch when the transmitter and receiver are removed from the supporting member.

8. In a handset telephone instrument, in combination, a transmitter-receiver, a supporting member therefor, a switch within the supporting member, a plunger within the switch to operate the switch contacts, an extension arm on the plunger, and a lock within the supporting member to prevent movement of the plunger when the transmitter-receiver is removed from the supporting member.

In witness whereof, I hereunto subscribe my name this 2nd day of February, 1929.

OSCAR A. SHANN.