Dec. 3, 1929. H. SEBELL 1,737,978

TELEPHONE CORD TAKE-UP

Filed Nov. 15, 1926

Fig. 1.

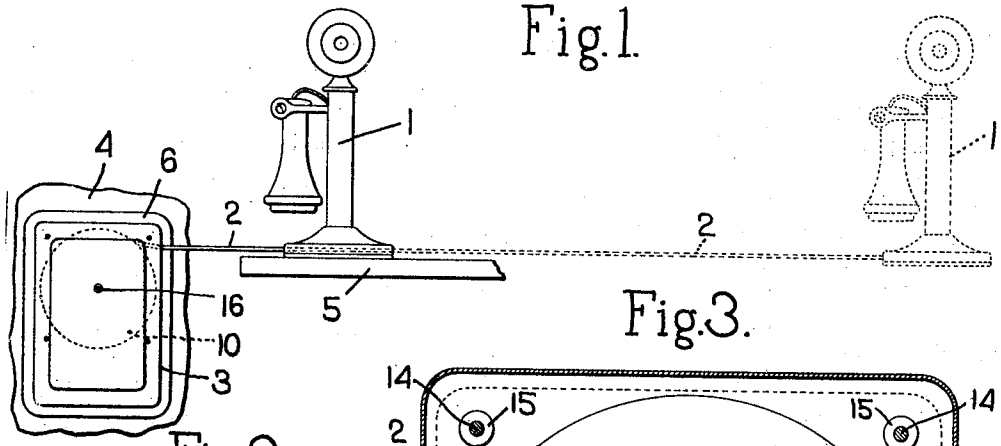


Fig. 2.

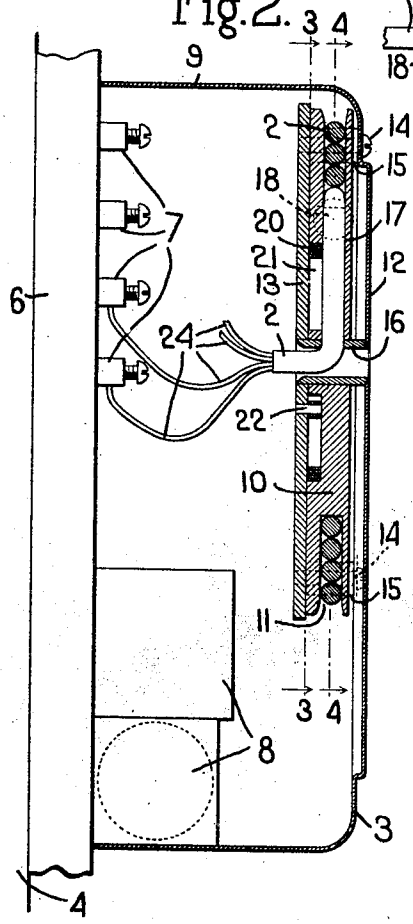


Fig. 3.

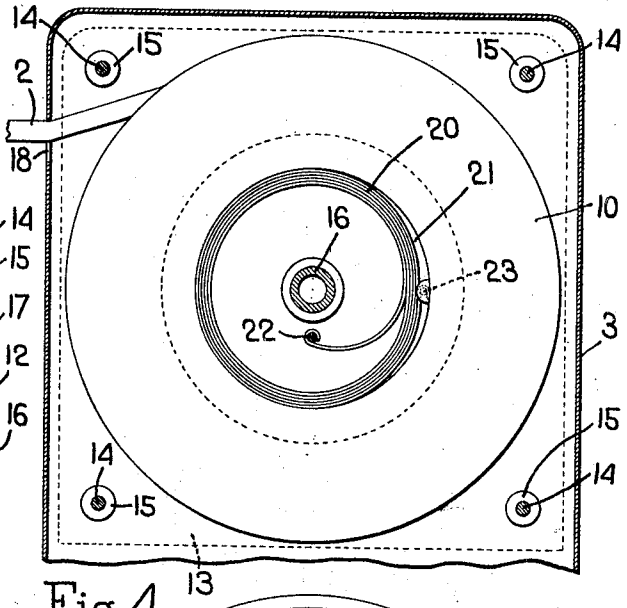
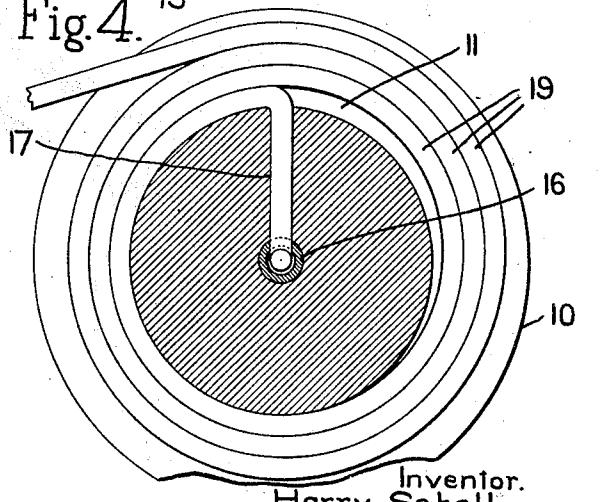


Fig. 4.



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UNITED STATES PATENT OFFICE

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TELEPHONE-CORD TAKE-UP

Application filed November 15, 1926. Serial No. 148,325.

This invention relates to a telephone cord take-up device for taking up the slack in the telephone cord and it has for its object to provide a novel device of this nature which is designed to be located within the signal box of the telephone.

In order to give an understanding of the invention I have illustrated in the drawings a selected embodiment thereof which will now be described after which the novel features will be pointed out in the appended claims.

Fig. 1 is a view illustrating a telephone equipped with my improved cord take-up;

Fig. 2 is a vertical section through the signal box showing the take-up device installed therein;

Fig. 3 is a section on the line 3—3, Fig. 2;

Fig. 4 is a section through the take-up pulley on the line 4—4, Fig. 2.

Referring first to Fig. 1, 1 indicates a telephone instrument to which is secured the usual telephone cord 2 that leads to the telephone or signal box 3, the latter being usually secured to a wall or other support 4.

My invention provides a take-up device for the telephone cord 2 which is located within the box 3 so that any slack in the telephone cord 2 will be taken up within the box 3. My improved take-up device will operate to let out slack in the cord 2 as the telephone is moved away from the signal box 1, as indicated by dotted lines Fig. 1, and will take up the slack as the telephone instrument is moved toward the signal box, the cord being always held under a slight tension sufficient to hold the cord taut in all positions of the telephone. These telephone or signal boxes 3 are frequently made with a back or base plate 6 which carries the various terminals 7 to which the telephone wires are secured and which also carries the bell, coils and other electrical apparatus of a telephone installation indicated generally at 8, and with a cover portion 9 that encloses the apparatus and connections that are supported by the back plate 6 and which cover is formed with an opening through which the cord 2 extends.

In accordance with my present invention I secure to the inside of the cover 9 a take-up device arranged to take up the slack in the telephone cord 2 and to keep the said cord taut. Said take-up device is specially designed so that it will occupy a minimum amount of room and will not interfere in any way with the connections and other electrical devices within the signal box, and can be readily installed in any signal box of the type shown herein.

The take-up device illustrated is in the form of a narrow pulley 10 which has a deep narrow groove 11 therein that is of a width approximately equal to the diameter of the telephone cord but is of a depth to receive several turns of said cord laid one on the other in the same plane. This pulley is supported partly by the outer wall 12 of the telephone box and partly by a plate 13 which is secured in the box. The plate 13 is fastened to the wall 12 by means of supporting screws 14 and each screw will preferably have a spacing sleeve 15 thereon to keep the plate 13 properly spaced from the wall 12. The screws 14 enter the wall 12 from the outside and screw into the supporting plate 13.

The take-up pulley 10 is provided with a central hollow hub 16, one end of which is journalled in the wall 12, and the other end of which is journalled in the plate 13. The pulley is also provided with a radial passage 17 leading from the bottom of the groove 11 to the interior of the hub 16. The telephone cord 2 enters the inner open end of the hub 16, then passes out through the radial passage 17 to the groove 11 and is then wound in said groove in a plurality of spiral turns 19 as shown in Fig. 4, the cord then passing out through an opening 18 in the signal box and extending to the telephone instrument 1.

The pulley 10 is acted upon by a spring which tends normally to turn the pulley in a direction to wind up the cord thereon. This spring is a spiral spring similar to a clock spring and is indicated at 20. It is located in a recess 21 formed in the inner side face of the pulley 10. The inner end of the spring is shown as attached to a pin or projection 22 that is anchored in the supporting plate 13 and the outer end of the spring is connected to a pin or projection 23 that is carried by the pulley.

As stated above the spring is constructed so that it tends normally to wind up the cord on the pulley, thus keeping the cord taut. This spring, however, offers only a slight resistance to the movement of the telephone away from the signal box, as shown in dotted lines Fig. 1, and when the instrument is thus moved away the tension on the cord will rotate the pulley anti-clockwise, Fig. 4, or in a direction to give up slack in the cord and during such rotation the spring 20 will be wound up. On the other hand, when the telephone instrument is moved toward the signal box the tension on the spring 20 is sufficient to wind up the cord on the pulley and thus take up the slack therein.

In practice the various wires which are included in the telephone cord 2 are separated at the end of the cord within the signal box and the separated wires are attached to the appropriate terminals 7. In the operation of this device when the pulley 10 is rotated in one direction to pay out an extra length of cord 2, as will be the case when the telephone is moved from the full to the dotted line position Fig. 1, the separated wires 24 which lead to the terminals will be twisted together in one direction and when the pulley 10 is rotated in the opposite direction to wind up cord thereon, as would be the case when the telephone instrument is moved from the dotted to the full line position Fig. 1, said wires 24 will be untwisted. Inasmuch, however, as there is considerable slack in these wires between the point where the cord merges from the bushing 16 and the terminals to which the wires are attached the slight twisting and untwisting of the wires will have no detrimental effect.

By employing the specially formed pulley with the narrow groove shown so that the telephone cord is wound up in a spiral coil and by supporting said pulley partly in the end face 12 of the box and partly in the plate 13, the take-up device occupies a minimum amount of room and is of such dimensions that it can be readily placed in the ordinary signal box of a telephone installation without interfering in any way with the other apparatus that is contained therein. This is an important feature because it provides a device which can be installed in a signal box which is already in use without making any changes therein and without requiring a cover portion 9 of special dimensions.

I claim:

In a telephone cord take-up, the combination with a telephone instrument, a telephone cord and the usual signal box having within it terminals to which the wires of the telephone are secured, of a supporting plate within the box adjacent the front wall thereof, a take-up pulley located between said plate and said wall of the box, and adapted to wind thereon or let-off therefrom a portion of the telephone cord between the telephone instrument and the terminals of the signal box, said pulley having a hub, one end of which is journalled in said plate and the other end of which is journalled in the wall of the box, the side of the pulley adjacent the plate being recessed, and a coil spring located in said recess and confined between the wall thereof and said plate, one end of said spring being secured to said plate and the other to said pulley.

In testimony whereof, I have signed my name to this specification.

HARRY SEBELL.