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AUTOMATIC TELEPHONE INDICATOR

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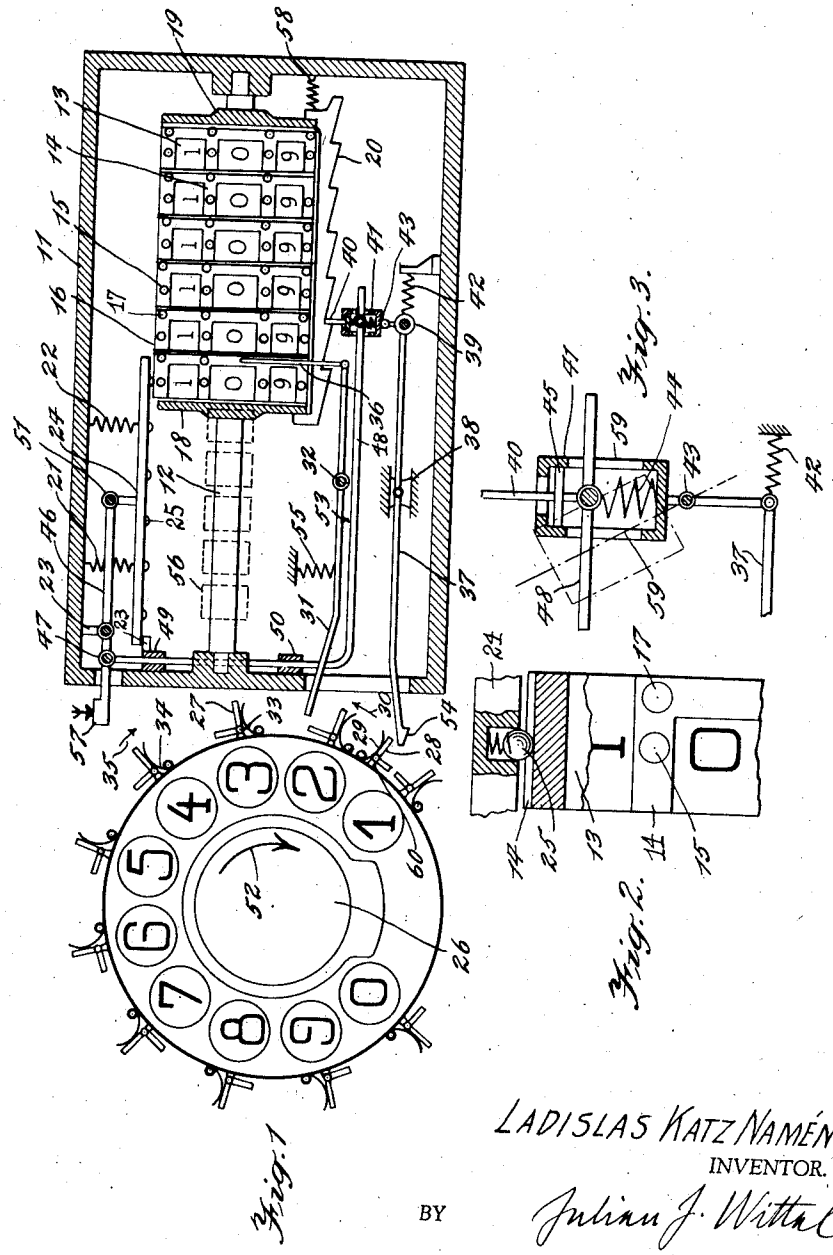

Fig. 1

Fig. 2.

Fig. 3.

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AUTOMATIC TELEPHONE INDICATOR

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1 Claim. (Cl. 179—90)

This invention relates to indicators for dial telephones and has for its main object to provide a device of this character which will show the number dialed during and after the dialing operation, at the telephone wherefrom the call originates, so that the caller may check whether the number dialed is the right one.

The invention mainly consists in character carrying disks, having characters conforming to those on the dialing disk and which may be operated and set independently from one another from the dialing disk by mechanical means or by electrical impulses.

One embodiment of my invention is shown in the drawing accompanying this specification, in which embodiment the character carrying disks are operated by mechanically transmitted impulses originating in the motions of the dialing disk, said dial in this being shown as having six dialing characters.

In the drawing:

Fig. 1 is a diagrammatic assembly of my device with the dial disk operating the same, and

Figs. 2 and 3 are fragmentary details thereof.

Referring now to the drawing more in detail, by characters of reference, a housing or casing 11 is arranged on the telephone instrument in any suitable manner having a stationary shaft 12 therein.

Six identical rotatable and slidable character carrying disks 13 are arranged on the shaft 12 each being rockable independently of the other and having on and around its outer circumference the numbers 0 to 9. Between each two numbers in each carrier disk there is provided a slot 14 and a stop 15, in said slot. Each disk has also an integral cylindrical portion 16, having an outer circumference narrower than that of the disk in which circumference, are provided the recesses 17. The recesses 17, the stops 15 and the slots 14 are in axial alignment on the respective disks and cylinders.

Within each disk may be provided a spiral spring (not shown) which will have the tendency to keep the disks in their positions shown in Fig. 1 and respectively, to return them into such positions when they are rocked therefrom, unless they are locked against such return, as will be understood.

As the two ends of the group of carriers 13 two limit and support disks 18 and 19 are provided and connected to one another by the toothed bar 20.

Above the carrier disks is arranged within the housing 11 a bar or rod 24 which under the influence of the springs 21 and 22, and in the position shown in Fig. 1 will be pressed against the first carrier disk and against the rest 23 arranged on the front wall of said housing.

In the rod 24 are arranged spring pressed ball locking devices 25, the construction and operation of which is well known to those versed in this art, their distance from one another being identical with the distances between the rests 15 in carrier disks.

On the usual rotating dial disk 26 of the telephone instrument are arranged the impulse originators 27, each being adapted to rock around its pivot pin 33 against the action of the respective spring 34 in the direction of arrow 35.

Besides the originators 27, the circumference of dial 26 also is provided with a single originator 28 being in a different plane from that of the originators 27. Originator 28 may rock against its spring 29 on its pivot in the direction of arrow 30.

Originators 27 cooperate with the lever 31, arranged in housing 11, protruding therefrom and being rockable therein around the pivot 32.

The inner, right hand end of the lever 31 is pivotally connected with the arm 36 which carries at its free end a catch device (not shown) of any appropriate construction adapted to engage the recesses 17.

Similarly a lever 37 cooperates with the originator 28, said lever being axially slidable in the guide 38 against the spring 42 and being pivotally connected at its inner end 39 with a spring housing 41 rockable on pivot 43.

A spring 44 is arranged in the housing 41 pressing the arm or dog 40 which engages the teeth of the toothed bar 20. A bar 48 projects through the slot 59 in the spring housing 41 carrying the disk 45 of the arm or dog 40 and being pressed by the spring 44. The front part of the bar 48 is led upwardly in guides 49 and 50 and its upper end is pivotally connected to the rocking lever 46, as at 47, said lever operating the lock bar 24.

The use and operation of my device is as follows:

When calling a number, the dial disk 26 will be turned in the direction of the arrow 52, in the usual manner. During this turning the outer end of the lever 31 will receive, through the originators 27 and in the direction of arrow 52 as many impulses as correspond to the position of the first character in the number to be dialed.

While this is going on and the dial disk 26 is turned in the direction of arrow 52, originator 28 will ride over the end 54 of the lever 37 without

moving the same since its spring 29 will cause it to yield in this direction.

Each move of the lever 31 in the direction of arrow 53 will cause the catch device at the end of arm 36 to engage a recess 17 and when the lever 31 returns to its position in Fig. 1, under the influence of spring 55, it will turn the first carrier disk with one figure thereon in a direction so that the face thereof visible to an observer travels downwardly, thereby advancing the numeral indicated by one digit. The first carrier will, therefore, be turned with as many numerals as corresponds to the first character in the number dialed.

When dial disk 26 returns, after the dialing of the first character, originator 23 will hit the end 38 of lever 37 and will rock the same and the spring housing 41 connected therewith into the position shown by the dotted lines in Fig. 3. This motion will move the toothed bar 20, and the whole group of six carrier disks therewith, towards the left to distance equivalent with the width of one carrier. The arm 36 now is facing the recesses 17 in the second carrier disk.

When the carrier disk group is moving towards the left, the spring lock 25 fixing the first carrier is lifted from the 15 rest in the slot 14 and after the group has moved with one disk, it will engage the upper rest 15 in the second disk, while the second lock from the right in the bar 24 will engage and fix the first carrier disk.

The operations hereinbefore described will be repeated while dialing the second character of the number to be called and after the dialing of all the six characters of the device here shown as an example, the carrier group is entirely moved in a left handed direction and the characters of the number called will appear in the windows 56 of the housing 11 shown by dotted lines and in imaginary manner in Fig. 1; as will be understood.

It will be seen that the caller has means to control and check whether the number dialed is the right one or not.

After the telephone conversation is finished, the receiver will be replaced on its hook, as usual, which hook may be connected with the member 57 acting on the lever 46 as indicated by the arrow in Fig. 1 so that the outer end of the lever 46 will be pressed downwardly, whereupon the rod 24 will be raised and every carrier disk 13 will be freed from its lock 25.

A spring 53 may be arranged between the further end wall of the housing 11 and the toothed rod 20 under the influence of which said rod and the whole group of carrier disks will now be returned to their original positions, as shown in Fig. 1, and the sequence may again begin.

When the member 57 presses the arm 46 in a downward direction, rod 48 also will be moved downwardly carrying with it the disk 45 and the dog 49 therewith, so that the toothed bar 20 will be freed therefrom.

In the embodiment here shown and described the operation of the carrier disks is executed by mechanical means. It will be obvious, however, that electrical impulses may be utilized for the same purpose, said impulses being created by the rotations of the dial disk in a manner to correspond to the call impulses, as will be understood by those versed in this art. Said impulses may operate relay devices or magnets, rocking and advancing the carrier disks.

What I claim as new, is:

A device adapted to be attached to the dial of an automatic telephone, including a plurality of discrete radially extending impulse originating members, one for each character on said dial, said members being each provided with means whereby each member in turn will virtually shorten its effective length when tangential pressure in one direction is exerted thereupon, at least one additional radially extending impulse originating member, said last mentioned member being provided with means whereby it will virtually shorten its effective length when tangential pressure is applied thereto in a direction opposite to that direction which serves to virtually shorten said first mentioned members, a discrete registration box containing indicating numeral displaying indicia and adapted to be placed in close spatial relationship with said dial and coacting therewith solely by virtue of said radially extending impulse originating members associated with said dial, said registration box including extending laterally therefrom, a plurality of levers adapted to be actuated by said impulse originating members, one such lever being actuated by said plurality of first mentioned impulse originating members, each acting thereupon in turn when moving thereby in one tangential direction and each being virtually shortened when moving thereby in the opposite tangential direction, so as to fail to act thereupon when moving in said last mentioned direction, another such lever being actuated by said second mentioned single radially extending impulse originating member when said member is moving thereby in one tangential direction, said last mentioned impulse originating member being virtually shortened when moving thereby in the opposite tangential direction, said first mentioned lever serving to sequentially advance at any one time only a single digit wheel of said indicia, and said second mentioned lever serving to selectively and consecutively establish connection between said first mentioned lever and each digit wheel in turn, whereby successive partial rotations of said dial will register consecutively upon discrete digit wheels of said indicia, and a third lever adapted to be actuated by the hook switch of the telephone so as to restore all said digit wheels to their original null positions when the receiver of the telephone is placed upon said hook switch.

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