

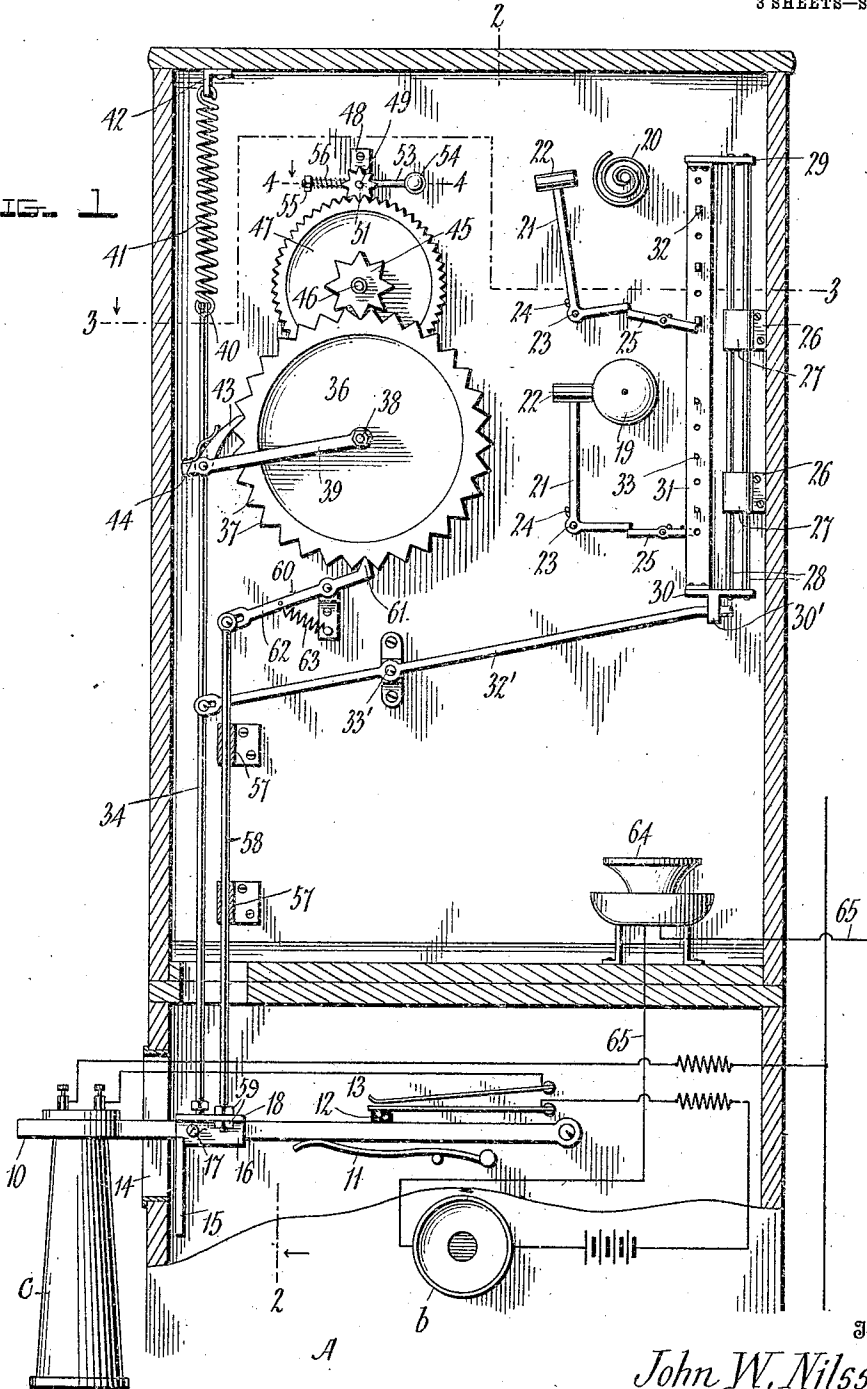
J. W. NILSSON.
ATTACHMENT FOR TELEPHONES.
APPLICATION FILED MAY 8, 1909.

955,190.

Patented Apr. 19, 1910.

3 SHEETS—SHEET 1.

FIG. 1



Inventor

John W. Nilsson

Witnesses

W. H. H. H.
W. H. H. H.

By

Charles H. H. H.
Charles H. H. H.

Attorneys

J. W. NILSSON.
ATTACHMENT FOR TELEPHONES.
APPLICATION FILED MAY 8, 1909.

955,190.

Patented Apr. 19, 1910.

3 SHEETS—SHEET 2.

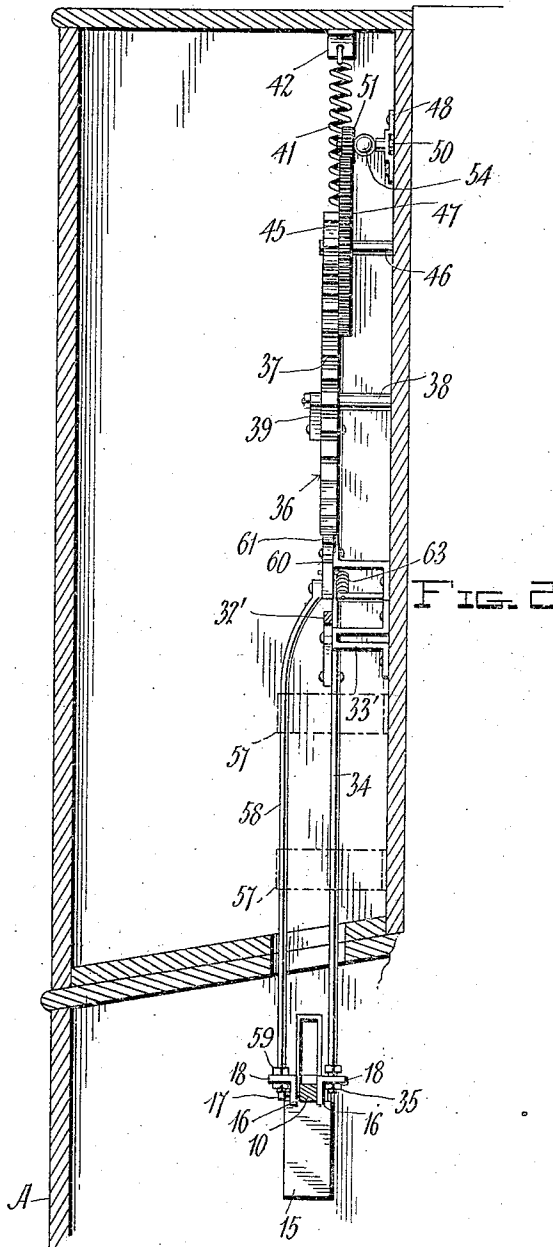
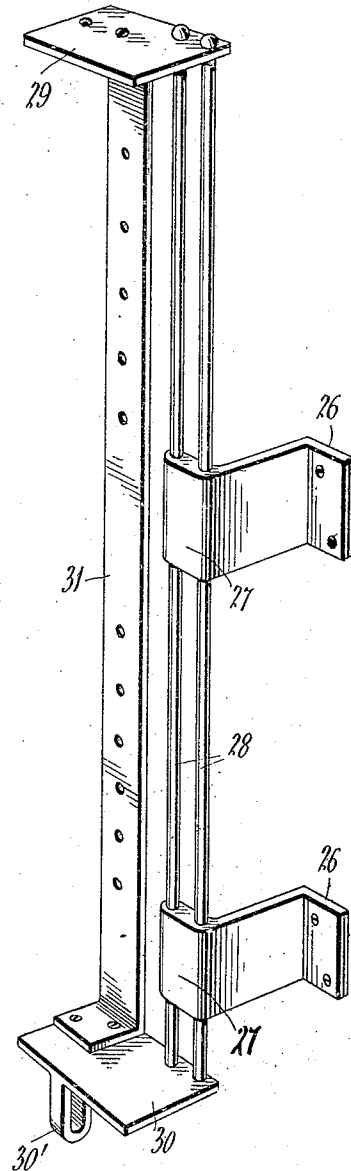


FIG. 6



Witnesses

J. J. Johnson
W. H. Miller

Inventor

John W. Nilsson

By

Charles Charles

Attorneys

J. W. NILSSON.
ATTACHMENT FOR TELEPHONES.
APPLICATION FILED MAY 8, 1909.

955,190.

Patented Apr. 19, 1910.

3 SHEETS—SHEET 3.

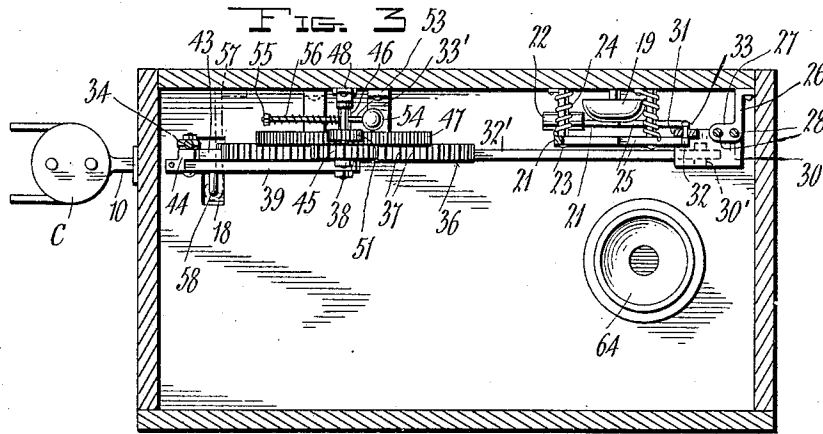


FIG. 4

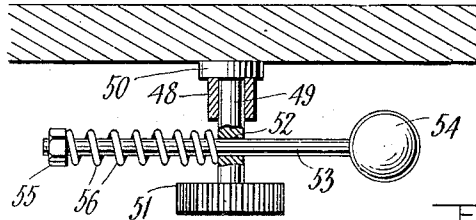


FIG. 5

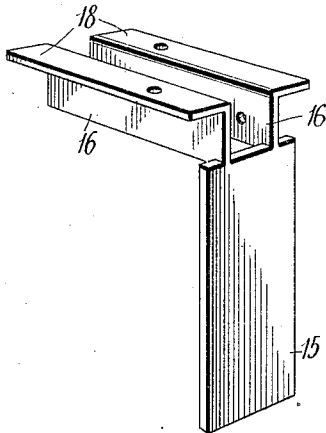
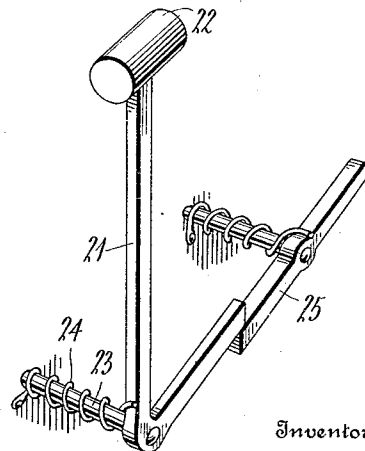


FIG. 7



Inventor

John W. Nilsson

Witnesses

J. L. Johnson
W. C. Ellis

By

Charles *Charles*

Attorneys

UNITED STATES PATENT OFFICE.

JOHN W. NILSSON, OF BALFOUR, NORTH DAKOTA.

ATTACHMENT FOR TELEPHONES.

955,190.

Specification of Letters Patent.

Patented Apr. 19, 1910.

Application filed May 8, 1909. Serial No. 494,730.

To all whom it may concern:

Be it known that I, JOHN W. NILSSON, a citizen of the United States, residing at Balfour, in the county of McHenry, State of North Dakota, have invented certain new and useful Improvements in Attachments for Telephones; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to telephone circuits and more especially to a device for detecting a third party on a telephone circuit.

More particularly the invention is an attachment for telephones.

The principal object of the invention is to provide an audible signal which will indicate to a person using any one of the telephones in a telephone system the presence of an auditor at another telephone of that system.

Another object of the invention is to indicate to a person using any one of the telephones of a telephone system, the number of the telephone answering his call, thereby detecting whether or not the right telephone has responded.

With the above and other objects in view, the invention consists, in general, of an attachment for telephones so arranged as to render audible any attempt to listen through any one of said telephones to such other person as may be in conversation and at the same time to indicate what telephone is being used to intercept the conversation.

The invention further consists in certain novel details of construction and combinations of parts, hereinafter fully described, illustrated in the accompanying drawings, and specifically set forth in the claims.

In the accompanying drawings, like characters of reference indicate like parts in the several views, and:—Figure 1 is a front elevation of an attachment for telephones constructed in accordance with this invention, the front of the casing of the device being removed to show the interior. Fig. 2 is a section on the line 2—2 of Fig. 1. Fig. 3 is a section on the line 3—3 of Fig. 1. Fig. 4 is a detail section on the line 4—4 of Fig. 1. Fig. 5 is an enlarged detail view of the guard plate. Fig. 6 is an enlarged detail perspective of the bell actuating frame. Fig. 7 is an enlarged detail showing the arrangement of one of the hammers.

The device has here been shown as applied to an ordinary telephone of the wall or box type such as indicated by the letter A. This telephone is equipped with the usual transmitter *b* and receiver *c*, all of these parts being of the ordinary and well known form.

The numeral 10 indicates the usual telephone receiver fork which is adapted to be raised by a spring 11 when the receiver is removed from the fork. This telephone receiver fork is provided with a contact closing block 12 arranged to close the usual line contact 13. Upon the receiver fork 10 and opposite the slot 14 through which the fork moves there is provided a guard plate 15 provided on its upper edge with a pair of spaced upstanding members 16 adapted to lie on either side of the receiver fork. One of these members is provided with a set screw 17 in order to clamp the receiver fork firmly and prevent accidental detachment of the plate. Each of the members 16 is provided with an outwardly extending perforated ear 18 for purposes hereinafter to be described.

The signaling mechanism proper comprises a pair of bells 19 and 20, preferably of different tone and whereof 19 is here shown as a plain round bell while 20 is a coil of tempered steel wire such as is commonly found in the cathedral gongs of clocks. In order to ring these bells there is provided a pair of bell crank levers 21, one of these levers being adjacent each of the bells and each of the levers being provided with a hammer head 22. These levers are pivoted on pivot posts 23 secured in the back of the casing and each of these pivot posts is surrounded by a spiral spring 24 one end whereof is fixed to the post and the other end whereof operates to throw the hammer head 22 against the respective bells when moved away therefrom by the mechanism now to be described.

At 25 are arranged levers pivoted intermediate their ends each having one end contacting loosely with the end of the bell crank lever 21 so that by moving the contacting end of the lever 25 upward the bell crank lever has the hammer pushed away from the gong until it is disengaged from the end of the lever 25 when the spring 24 forces it quickly backward and strikes the gong.

At 26 is shown a pair of brackets each of which is provided with guide ears 27 through which pass rods 28 connected at

their top by a plate 29 and at the bottom by a plate 30. Each of these plates extend outward from the rod and on their outer ends support a ringing bar 31 provided with a series of projecting pins 32 on the upper end of the bar and a second series of projecting pins 33 on the lower end of the bar. These pins are arranged to contact alternately with the upper lever 25 and the lower lever 25 so that these levers are alternately actuated. Furthermore, these pins are varied in number and positioned so that the bells may each be struck a desired number of times as the frame including the bars and pins is moved through the ears 27. In order to operate this frame the plate 30 is provided with an eye 30' wherethrough extends the end of a lever 32' pivotally mounted on a pivot post 33'. The opposite end of this lever 32' is pivotally connected to a bar 34. This bar 34 extends downward through a suitable opening in the casing and telephone box and passes through one of the ears 18 being slidable therein. In order to limit the sliding motion the bar 34 is provided with a head 35 which is adapted to contact with the under side of its ear 18 to limit the upward motion of said bar through the ear and to contact with the upper side of the fork to limit the downward motion of the bar through the ear. The amount of this movement is so arranged that prior to the movement of the bar 34 the contacts 13 are closed by the action of the closing block 12. It will be thus seen that before the ringing apparatus is actuated the contact will be closed and the telephone thrown into circuit. In order that this movement may not take place in a too rapid manner there is provided a gear 36 having V-shaped teeth 37. This gear is pivoted on a post 38 and is freely movable thereon. An arm 39 is also pivoted on the post 38 being likewise freely movable thereon. The free end of the arm 39 is pivotally attached to the rod 34 which extends upward above the point of its attachment to the lever 32' for this purpose. The rod 34 extends still farther upward and is provided at its upper end with an eye 40 to receive the lower end of a coil spring 41 which is attached at its upper end to a clip 42 mounted on the top of the casing. On the arm 39 is pivotally mounted a pawl 43 which is normally pressed in the direction of the gear 36 by means of a spring 44. This gear 36 meshes with a gear 45 and the gear 36 is a large gear while the gear 45 is preferably a pinion. The gear 45 is freely rotatable around a stub axle or post 46 and has attached thereto a large gear 47.

At 48 is indicated a bracket supporting a freely rotatable shaft 49 which is held in the bracket by means of a collar 50 and this shaft has fixed on its outer end a gear 51 which meshes with the gear 47. This shaft

49 is provided with a transverse opening 52 wherein is slidably mounted an arm 53 carrying on one end a weight 54 and having at the other end a collar 55. Between the collar 55 and the shaft 49 is mounted a compression spring 56. By reason of this construction as the pawl 44 engages with the teeth 37 the wheel 36 will be rotated whenever the receiver is removed from the receiver fork and the latter moves upward, this effect taking place as soon as the bar 34 begins to move. As this gear rotates it will in turn rotate the gear 45 which carries with it the gear 47 and rotates the gear 51. If this rotation is more rapid than desired the weight 54 will draw the bar 53 through the opening 52 and thus act as a governor by describing a circle of greater radius as the wheel 51 turns. It is obvious to accomplish this purpose that the wheel 51 must have a high speed of rotation relative to the wheel 36 and to this end the wheels 36 and 47 are provided with a large number of teeth while the wheels 45 and 51 are provided with a small number of teeth.

In order to hold the wheel 36 locked from movement until the removal of the receiver from the fork there is provided a pair of guides 57 wherethrough extends a rod 58. This rod 58 passes through the remaining ear 18 and is held rigidly therein by means of upper and lower nuts 59. At 60 is a lever provided with a hook end 61 arranged to engage the teeth 37 of the gear 36. This lever is also provided with an end 62 arranged to lie normally in the path of the bar 58. By this arrangement the hook 61 normally engages with the teeth 37, a spring 63 being provided for the purpose of holding the hook in such contact. When however, the receiver is removed from the fork the fork rises and carries with it the bar 58 which strikes the free end 62 of the lever and disengages the hook 61 from the teeth 37. This permits the action of the pawl 44 on these teeth with the result before described.

In order to render the ringing of the bells 19 and 20 audible on the talking circuit within the casing is provided a receiver 64 of any desired form which is connected with the circuit of the telephone by means of a wire 65.

It will now be observed that as soon as the receiver fork is permitted to rise by the removal of the receiver the first action that takes place will be the release of the hook 61 from the teeth 37 and the simultaneous closing of the circuit. When this has been accomplished the bar 34 will be raised and draw the frame which actuates the lever 25 downward thus ringing the bells. This action is dampened however by the governor ball 54 so that it takes place slowly and the bells are rung distinctly thus preventing confusion in the signals.

There has thus been provided a simple and efficient device of the character described and for the purpose specified.

It is obvious that many minor changes may be made in the form and construction of this invention without departing from the material principles thereof. It is not therefore desired to confine the invention to the exact form herein shown and described, but it is wished to include all such as properly come within the scope of the appended claims.

Having thus described the invention, what is claimed as new, is:—

1. In a telephone attachment, an audible signaling mechanism, actuating means for said signaling mechanism attachable to a telephone fork, and a governor mechanism for regulating the speed of said signal simultaneously operable with said signaling mechanism by said actuating means.

2. In a telephone attachment, an audible signaling mechanism, actuating means for said signaling mechanism attachable to a telephone fork, and a governor mechanism for regulating the speed of said signal simultaneously operable with said signaling mechanism by the actuating means, said governor mechanism embracing a train of gears operable by said actuating mechanism, and an inertia governor connected to and rotating with the last gear of said train.

3. In a telephone attachment, an audible signaling mechanism, actuating means for said signaling mechanism attachable to a telephone fork, and a governor mechanism for regulating the speed of said signal simultaneously operable with said signaling mechanism by the actuating means, said governor mechanism embracing a train of gears, a ratchet carried by said actuating mechanism and arranged to rotate the first gear of said train, and an inertia governor connected to and rotating with the last gear of said train.

4. In a telephone attachment, an audible signaling mechanism, actuating means for said signaling mechanism attachable to a telephone fork, a governor mechanism embracing a train of gears, a ratchet carried by said actuating means and arranged to rotate the first gear of said train, a shaft revoluble with the last gear of said train and provided with a transversely disposed aperture, a bar projecting through said aperture, a weight carried on one end of the bar, and a spring on the other end of the bar normally forcing said weight toward the shaft.

5. In a telephone attachment, an audible signaling mechanism, actuating means for said signaling mechanism attachable to a telephone fork and operated by the lifting of said fork, a governor mechanism for regulating the speed of said signal simultaneously operable with said signaling mechanism and a locking element normally holding the governor mechanism from movement and operable to release the bar to the actuation of said governor mechanism.

6. In a telephone attachment, an audible signaling mechanism, actuating means for said signaling mechanism attachable to a telephone fork and operated by the raising of said fork, a governor mechanism for regulating the speed of said signal simultaneously operable with said signaling mechanism by the actuating means, said governor mechanism embracing a train of gears operable by said actuating mechanism, an inertia governor connected to and rotating with the last gear of said train, and a locking element for said train operable in advance of the movement of the signaling mechanism to release the train from movement of the governor.

7. In a telephone attachment, an audible signaling mechanism, actuating means for said signaling mechanism attachable to a telephone fork and operated by the raising of said fork, a governor mechanism for regulating the speed of said signal simultaneously operable with said signaling mechanism by the actuating means, said governor mechanism embracing a train of gears, a ratchet carried by said actuating mechanism and arranged to rotate the first gear of said train, an inertia governor connected to and rotating with the last gear of said train, and a locking element normally holding said train of gears from movement and operable by the raising of the telephone forks to release the gears prior to their actuation by the ratchet.

8. In a telephone attachment, an audible signaling mechanism, actuating means for said signaling mechanism attachable to a telephone fork and operable by the raising of said fork, a governor mechanism embracing a train of gears, a ratchet carried by said actuating means and arranged to rotate the first gear of said train, a shaft revoluble with last gear of said train and provided with a transversely disposed aperture, a bar projecting through said aperture, a weight carried on one end of the bar, a spring on the other end of the bar normally forcing said weight toward the shaft, and a locking element normally holding said train of gears from movement and operable by the raising of said fork, said locking element being arranged to release the gears prior to their actuation by said ratchet.

In testimony whereof, I affix my signature, in presence of two witnesses.

JOHN W. NILSSON.

Witnesses:

S. L. KEEN,
E. J. WICK.