Nov. 4, 1924. 1,513,768

W. H. STOWELL

TELEPHONE DISINFECTING DEVICE

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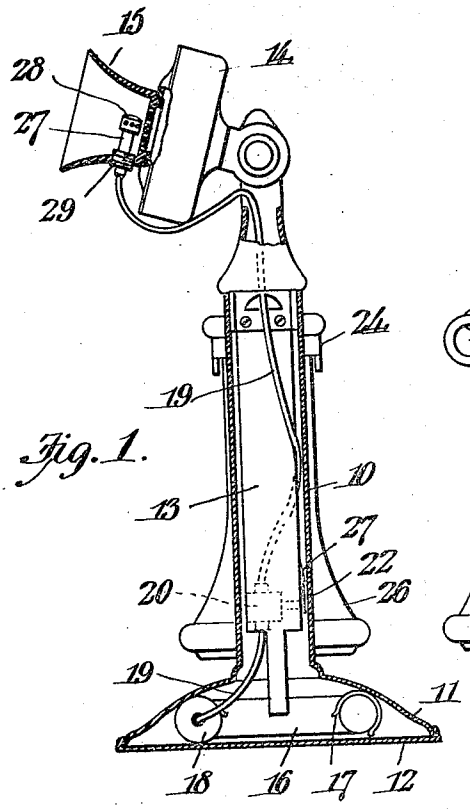


Fig. 1.

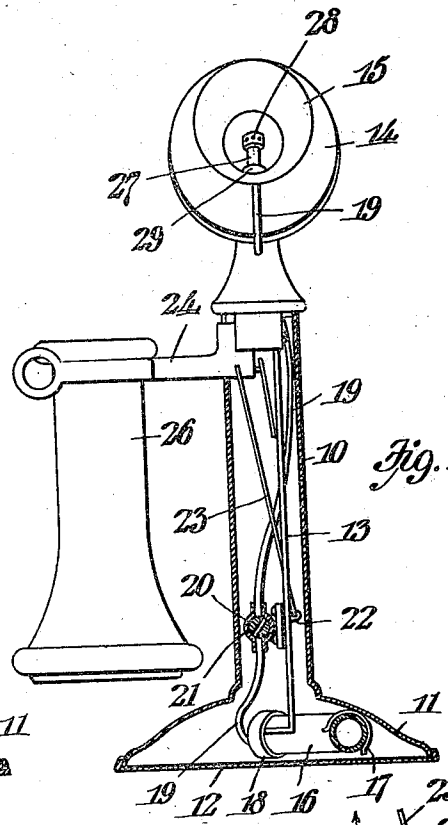


Fig. 2.

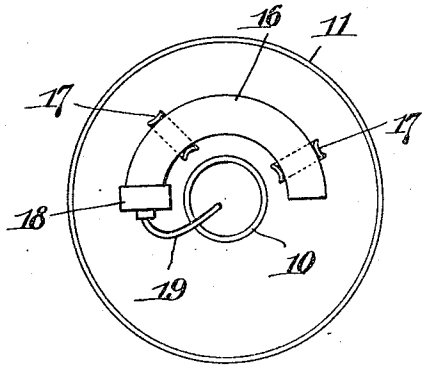


Fig. 3.

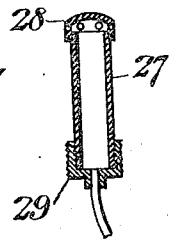


Fig. 4.

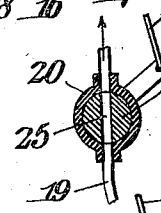


Fig. 5.

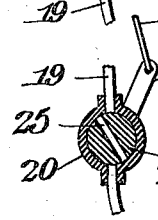


Fig. 6.

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TELEPHONE DISINFECTING DEVICE

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Fig. 7

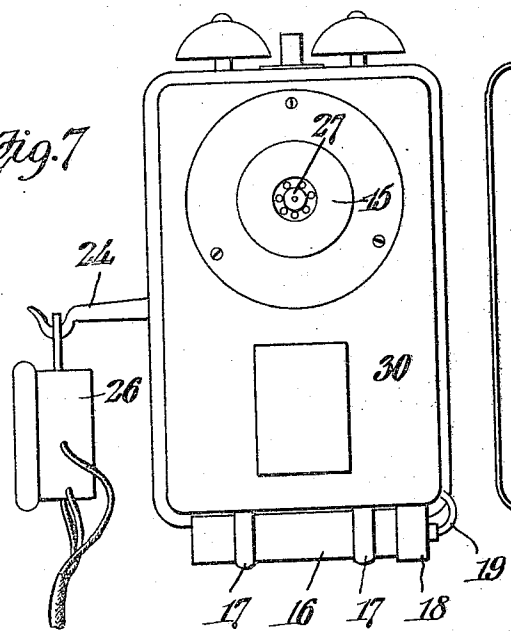


Fig. 8.

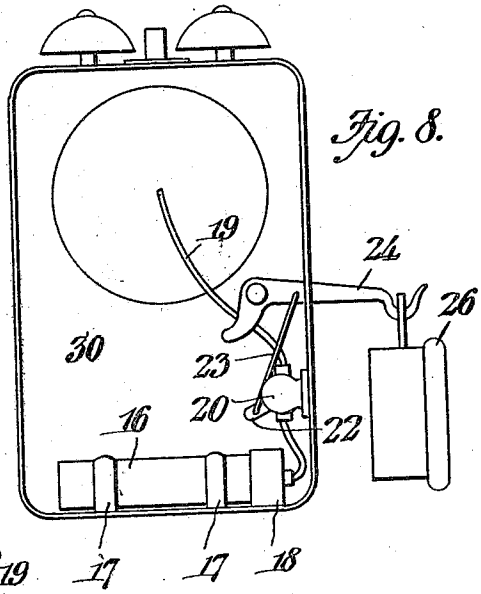
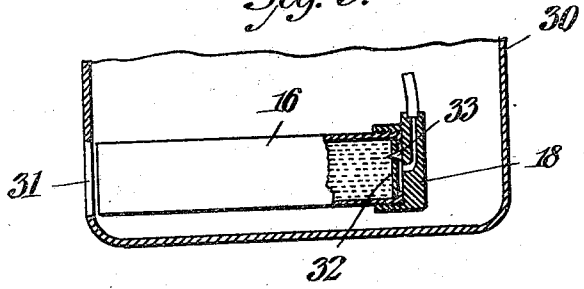


Fig. 9.



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UNITED STATES PATENT OFFICE.

WESTON H. STOWELL, OF MAMARONECK, NEW YORK, ASSIGNOR TO NATHAN STRAUSS, OF MAMARONECK, NEW YORK.

TELEPHONE-DISINFECTING DEVICE.

Application filed November 1, 1923. Serial No. 672,138.

To all whom it may concern:

Be it known that I, WESTON H. STOWELL, a citizen of the United States, residing at Mamaroneck, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Telephone-Disinfecting Devices, of which the following is a specification.

This invention relates to attachments for telephones, the primary object of which is to provide a device by means of which certain parts of the telephone are constantly maintained in sanitary condition.

A further object of the invention is to provide means of a simple character and operating automatically at certain periods to inject a charge of disinfecting fluid into the transmitter of a telephone.

A further object is to provide a disinfecting means for the mouthpiece or transmitter of a telephone instrument which enters into operation at each use of the telephone for thoroughly cleansing, sterilizing and deodorizing these parts.

Other objects consist in providing a sterilizing and disinfecting apparatus of such character and construction as to be easily applied to telephones now in use, without change or alteration in the latter, which is adaptable to telephones or telephone equipment of different constructions and applications; which is wholly automatic in operation; which requires no attention after installation; which in no way affects the operation of the telephone instrument; and which may be applied to the instrument so as to be substantially unobservable.

With these objects in view, together with others which will appear hereinafter, the invention consists in the novel construction, combination and arrangement of parts, all as described in detail hereinafter and set forth in the claim, with reference to the accompanying drawings.

On these drawings:

Fig. 1 is a vertical sectional view through a telephone of the portable type and of familiar construction, and illustrating the same as equipped with disinfecting means in accordance with the invention.

Fig. 2 is a similar view taken at right angles to the plane of the section of Fig. 1.

Fig. 3 is a bottom plan view of the telephone stand shown in the preceding views.

Fig. 4 is an enlarged sectional view taken through one form of the disinfectant discharge nozzle.

Figs. 5 and 6 are enlarged sectional views through one form of control valve for the disinfectant; the views showing the valve plugs in changed positions.

Fig. 7 is a front view in elevation of a familiar type of wall telephone and showing the same equipped with disinfecting means in accordance with the invention.

Fig. 8 is a rear view of the same type of telephone and showing a slightly modified form of the invention.

Fig. 9 is a sectional view through the lower part of the telephone casing and showing a further modification of the disinfecting means.

Referring to the drawings, and particularly to Figs. 1 to 6 inclusive, 10 represents the post or standard of a familiar type of portable or desk telephone, 11 representing the base thereof. The base and post are both hollow, the lower side of the base being closed by the removable bottom 12, the post containing the bar 13 provided with the operating equipment present in such instruments.

For the purpose of clearly illustrating the present invention and to prevent confusion in the drawings, most of this usual equipment is omitted, but the disinfecting apparatus is of such construction that it may be applied to the bar 13 without interfering with any of the usual equipment. The upper end of the post supports the transmitter housing 14, to which is attached the usual mouthpiece 15.

The disinfecting apparatus in this form of the invention consists of a tube or container of disinfecting fluid or solution arranged in the base of the telephone, and from which leads a conductor for the disinfectant, said conductor carrying the disinfecting fluid in small but sufficient quantity to the mouthpiece and there discharging it in atomized or finely subdivided condition, a charge of said disinfecting solution being discharged into the mouthpiece at each operation of the telephone.

In accomplishing this purpose the base has arranged therein a tube, tank or cartridge 16 containing the proper disinfecting fluid, solution or the like, under pressure, and retained in position within the hollow base of the telephone by the spring clips 17,

the use of which enables the container to be easily and rapidly applied to or removed from the base, as required. One end of this container is provided with a cap 18, to which one end of a tube, pipe or conductor 19 is secured, the said conductor passing up through the standard 10, as shown. The bar 13 has attached thereto a valve 20 which is arranged in the line of the conductor and through which all the fluid from the container 16 passes. This valve, in the present instance, is provided with a rotatable plug 21 to control the passage of the fluid through the conductor, the movements of said plug 21 being governed by the arm 22 secured to one end of the plug. Attached to said arm 22 is one end of a link 23, the other end of which is connected to the movable hook or fork 24 of the telephone equipment in such manner that the movement of the latter causes the partial rotation of the valve plug. The port 25 in the plug is so arranged that when the receiver 26 is in position on the hook 24, the port 25 does not register with the conductor ends, and during its travel, either upwardly or downwardly, the plug in its downward movement causes the port 25 to move into and then out of registration with the conductor ends. When the hook is inoperative communication between the disinfectant supply and the upper part of the conductor is interrupted; but in the upward movement of the hook the port 25 is brought momentarily into registration with the conductor ends, whereupon a charge of the disinfectant fluid or solution is permitted to pass through the valve and into the upper part of the tube. Further upward movement of the hook causes the plug to again interrupt the supply, so that when the hook is at rest in either its uppermost or lowermost positions no fluid may pass through the tube. It is apparent therefore that there can be no waste of the disinfecting fluid, yet at each operation of the telephone there is permitted to pass through the tube a quantity of disinfecting fluid sufficient to thoroughly sterilize the mouthpiece of the instrument.

The upper part of the conductor 19 passes up through the post and into the mouthpiece 15 of the telephone instrument, and said mouthpiece is preferably equipped with a discharge nozzle shown at 27. This nozzle is cylindrical in form and has its outer end disposed so that fluid therein may pass to the central part of the mouthpiece and be diffused therein. Said upper part of the nozzle is equipped with a cap 28, provided with a series of radial openings as shown, to allow the fluid to pass out from the nozzle in all directions and to gain access to all parts of the interior of the mouthpiece. The nozzle may be secured in the mouthpiece in any preferred or desired manner. In the present case the lower part of the cylinder is provided with a closure cap 29, having external threads, as shown, to engage threads formed in the wall of an opening in the mouthpiece, so that the nozzle may be screwed in position. Any other means, however, may be utilized for attaching the nozzle to the mouthpiece. The conductor 13 may be of flexible tubing to permit of the mouthpiece being moved without breaking or interfering with the tubing.

Fig. 7 of the accompanying drawing illustrates a slightly modified form of the invention, wherein the latter is adapted to a form of wall telephone instrument. In this case the container for the disinfectant is secured beneath the box or housing for the telephone apparatus 30, by means of clips 17, as in the former case. The conductor 19 passes through the valve (not shown in this modification) and to the nozzle 27 which projects from the rear of the mouthpiece.

In Fig. 8 the mechanism is the same as in Fig. 7, with the exception that the container for the disinfecting fluid or solution is housed by the telephone casing or housing, and in replenishing the supply of said disinfectant it is necessary to remove and replace said casing. In Fig. 7, however, the container for the fluid may be recharged and replaced when its supply becomes exhausted, by simply removing the container from its supports and detaching the tube therefrom.

Fig. 9 shows a disinfectant container arranged within the housing for the telephone mechanism, but which is accessible from the exterior without removing the housing. In this case the head 18 for the container is secured to the interior of the housing in alignment with the opening 31 in one wall thereof, and the externally threaded end of the container 16 may be screwed into the said head by simply rotating the container from its rear end. A container such as this used in this form of the invention may be provided with a seal, frangible end, which is adapted to be perforated or broken when the container is screwed in position. The end of the container may, for example, be closed off by the comparatively thin wafer or cap 32, and the inner wall of the head 18 provided with a forwardly extending or projecting pin or prong 33 to engage and penetrate the seal 32 when the latter is reaching the limit of its movement inwardly of the head. Once the cap is pierced the fluid under pressure in the container will flow into the lower part of the tube and be ready for passage into the telephone mouthpiece when the receiver thereof is raised from the hook. In this form of invention, when the supply of fluid in the container becomes exhausted, it is necessary only to unscrew the empty container and remove the same, and then apply a fresh con-

tainer. The fluid or solution may therefore be prepared in cartridge and so placed on the market, it being obvious that the application and removal of the cartridges or like receptacle is an operation requiring no skill or the use of any tools or instruments.

From the foregoing it is apparent that I have provided means of extremely simple character for causing the mouthpiece of a telephone to be thoroughly disinfected at each operation of the telephone hook, thus maintaining the instrument constantly in a sanitary state. The parts of the mechanism used in carrying out the invention are of such construction and assemblage that danger of the same becoming out of order, broken or inoperative is exceedingly remote. It is also apparent that use may be made of disinfecting solutions or fluids of any known and obtainable character, either in the form of a liquid, vapor or gas, preferably but not necessarily combined with a deodorizing agent, under pressure in the container.

The present illustrations and descriptions disclose the invention in the forms appearing to be the simplest and most practical, but it will be understood that changes in form, construction and assemblage of the parts herein shown may be made without departing from the scope of the invention as defined by the claim.

Having thus described my invention, what I claim is:

In a desk telephone a hollow base, a hollow standard, and a movable receiver supporting hook; a container for disinfectant fluid under pressure; means including spring clips in said base for receiving said container; a tube leading from said container, interiorly of said standard and terminating in a nozzle located in the mouthpiece thereof, the said tube being provided, intermediate its length, with an enlarged casing; a circular ported plug adapted for oscillation in said casing; an arm connected to said plug and extending exteriorly of said casing; a link connecting said arm with the movable hook of said telephone whereby when said hook is moved, the port in said plug is adapted to register momentarily with the bore of said tube to permit of the flow of disinfectant from the container to the outlet nozzle.

In testimony whereof I affix my signature.

WESTON H. STOWELL.