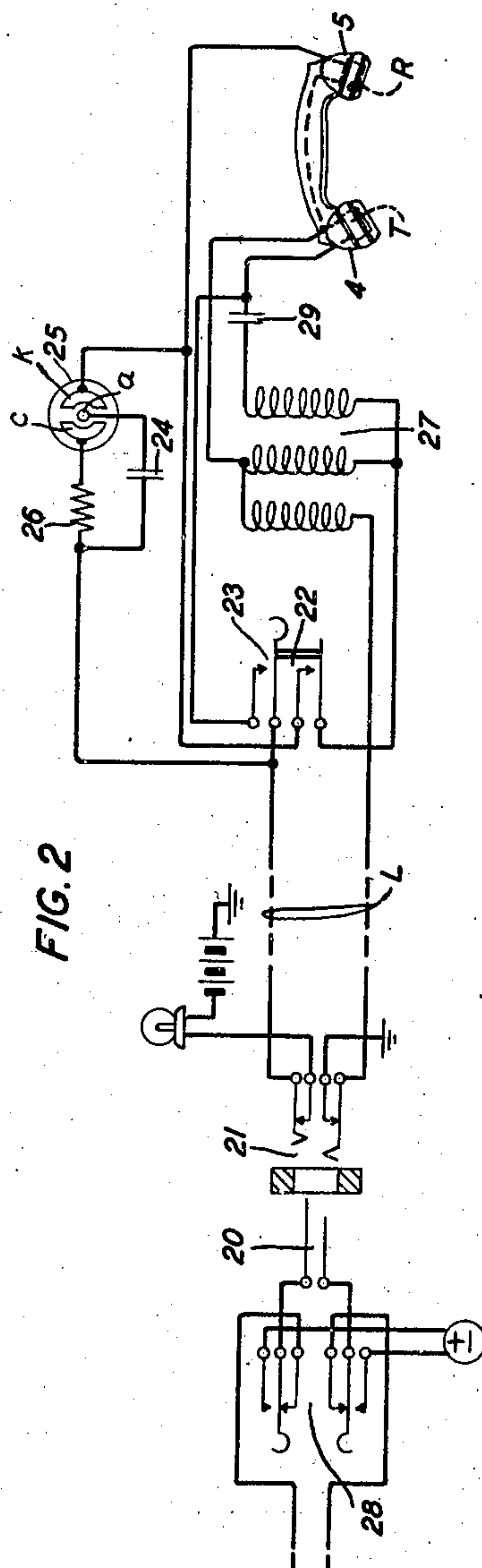
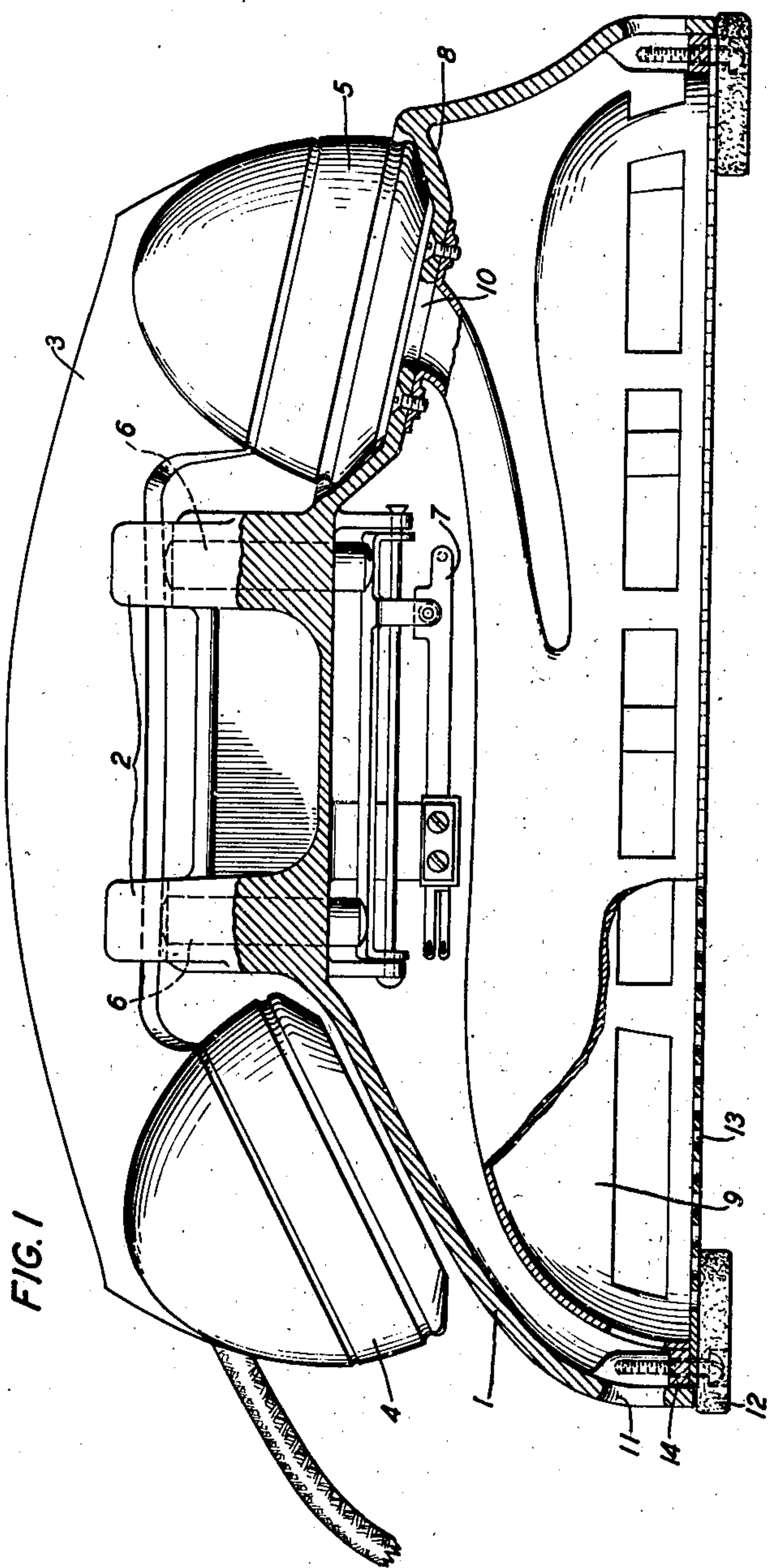


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DESK TELEPHONE SET
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DESK TELEPHONE SET

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2 Claims. (Cl. 179—100)

This invention relates to telephone sets adapted for use at stations where the usual ringer is eliminated and signaling is effected by causing alternating current, transmitted over the line, to cause the station receiver to produce an audible signal. An arrangement of this general character is described in Patent 2,048,908 to A. E. Woodruff, issued July 28, 1936.

More particularly, the invention relates to desk telephones of the handset type in which the handset, when not in use, rests in a so-called cradle on the base of the set and a feature of the invention resides in a base for such desk sets having a sound transmitting horn formed therein with its large or expanded end discharging through openings in the bottom of the base and with its small or constricted end terminating in an opening in a depression in the casing of the base so located as to receive the earpiece of the handset receiver when the handset is in the cradle whereby audible signals produced by the receiver are transmitted by the horn and discharged through openings in the bottom of the base into the surrounding air, thus producing louder signals than would be otherwise heard.

The invention will be understood from the following description when read with reference to the accompanying drawing, Fig. 1 of which shows a telephone desk set illustrating one embodiment of the present invention, and Fig. 2 schematically shows means at the central office for applying signal current to the line and one arrangement of a station circuit for applying the received signals to the receiver while the handset is in its resting position in the cradle.

Referring to the drawing (Fig. 1) a cradle type desk stand is shown having a base member or casing portion 1 and a cradle 2 supporting a handset 3 which handset has a transmitter 4 and receiver 5. When the handset is in position in its cradle it rests on plungers 6 for controlling the usual switchhook springs 7.

The casing 1 has formed therein a depression 8 positioned so that it forms a cup for receiving the ear cap of the receiver 5 when the handset is in its resting position. Formed in the casing 1 is a sound transmitting chamber 9 in the form of a horn having its small or constricted end terminating in a small opening 10 in the depressed portion 8 which opening registers with the usual openings in the receiver cap. The horn 9 expands rapidly from its small end until its lower end has a large diameter opening at the bottom of the casing 1 where a plurality of sound openings 11 are provided in the periphery of the casing. Louvres

may be provided in these openings. Supporting pads 12 may also be provided to raise the casing above the level of the desk or other supporting surface and openings or perforations 13 may be provided in the bottom plate.

From the foregoing it will be understood that audible sounds produced by the receiver diaphragm will be transmitted to the horn 9 and depending on the shape and design of the horn chamber, will be heard with sufficient loudness to attract the attention of persons at some distance from the telephone.

Referring now to Fig. 2, a typical cord circuit 20 is shown adapted to be connected to the jack 21 of a subscriber's line L which line terminates at a station arranged in such a manner that when the handset is not in use and resting in its cradle, as shown in Fig. 1, the application of ringing current to the line will cause the receiver 5 to produce an audible tone as a calling signal.

At the subscriber's station a switchhook 22 is shown which, in its "on-hook" position, disconnects the line, at its contacts 23, from the transmitter 4. A three-element gas-filled discharge tube 25 is shown having a control electrode c connected through a high resistance 26 to the upper or tip conductor of the line L, having its cathode k connected to one terminal of the receiver 5, and its anode a connected to the tip of the line in series with a condenser 24. The other receiver conductor is shown connected to the lower or ring conductor of the line in series with the left-hand winding of the usual substation induction coil 27.

When ringing current is applied to the line by the operation of cord circuit ringing key 28 the control gap tube 25 breaks down in a well-known manner and ionization occurs whereupon the main gap, i. e., from the anode a to the cathode k, conducts ringing current in a circuit from the tip of the line, condenser 24, anode cathode gap, winding of receiver 5 and middle winding of induction coil 27 to the other side of the line. Condenser 24 is alternately charged and discharged in this circuit, over a range between the applied peak voltage of the ringing current and the voltage at which the main discharge gap is extinguished, thereby producing an audible signal in the receiver.

The gas-filled tube 25 may also act as an auxiliary visual signal by mounting it in some convenient location as, for example, in the base of the desk set where it can be readily observed.

When the subscriber, in answering a call, re-

moves the handset from the cradle, voice current paths are closed over contacts of the switchhook to permit conversation in the usual manner.

Induction coil 27, condensers 24 and 29 and resistance 26 may also be mounted in the base of the desk stand or in any other suitable location.

It will also be understood that other arrangements and means for causing the receiver to produce an audible signal may be employed as, for example, a source of complex voice frequency simulating the sound frequency of a telephone bell and substituted for the usual source of ringing current at the exchange which, when reproduced by the station receiver, produces a bell-like sound which with the aid of the horn in the base of the desk stand, can be heard by the subscriber. In this case the station circuit can be simplified to some extent as the gas-filled tube may not be necessary.

What is claimed is:

1. In combination, a telephone communication handset, including a reproducer of voice frequency currents, a horn having a small end shaped to acoustically cooperate with said reproducer, and a base member comprising a cradle

for holding said handset when not in use, said horn being formed within the base member and in such a position that the small end is in cooperative relation with said reproducer when the handset is held by said cradle.

2. In a telephone set, a casing forming a base member, a handset including a receiver unit, said receiver having an ear cap provided with openings therein for permitting passage of sound waves produced by said receiver, cradle means on said base member for holding said handset when not in use, a depression in said casing conforming with the contour of the receiver ear cap and adapted to receive it when the handset is placed in the cradle, an opening in the bottom of said casing depression in substantial alignment with the openings in said ear cap and a sound conducting horn within said base member having its restricted end terminating in the opening in said depression, a plurality of openings in the bottom of said base member casing and the expanded end of said horn discharging into the outer air through said openings in the bottom of the base.

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