

J. B. STEMM & G. E. SLADE.
TELEPHONE SYSTEM.
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995,924.

Patented June 20, 1911.

Fig. 1.

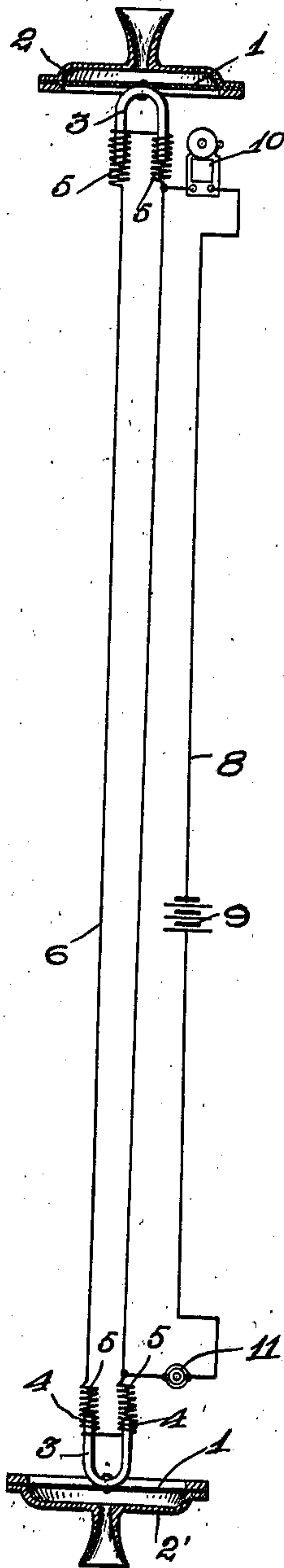
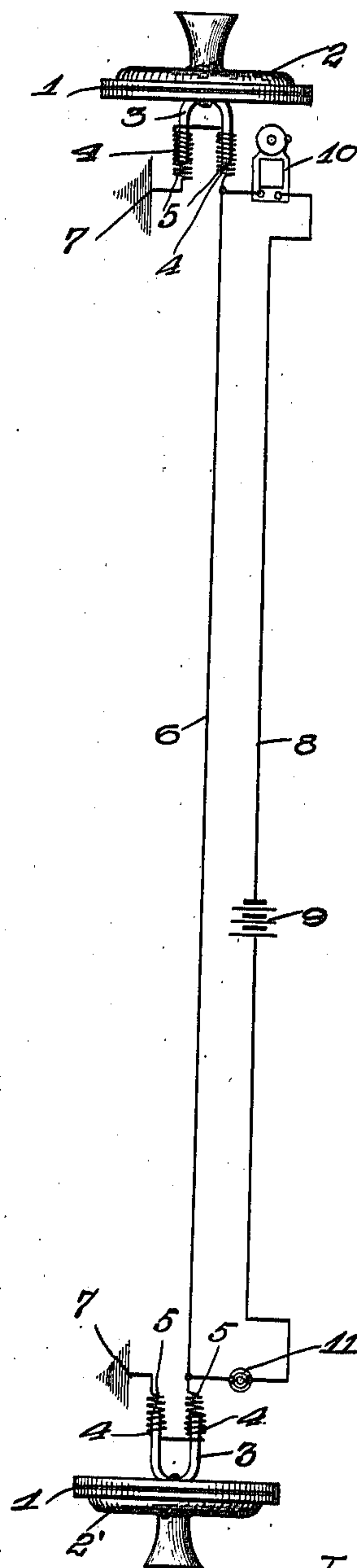


Fig. 2.



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UNITED STATES PATENT OFFICE.

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TELEPHONE SYSTEM.

995,924.

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To all whom it may concern:

Be it known that we, JACKSON B. STEMM and GEORGE E. SLADE, citizens of the United States, residing at Chicago, county of Cook, and State of Illinois, and Brookfield, county of Linn, and State of Missouri, respectively, have invented certain new and useful Improvements in Telephone Systems, of which the following is a specification.

10 Our invention relates to telephonic apparatus and has for its object the provision of a telephone system particularly applicable for employment in telephoning between two comparatively proximate points, the system
15 being especially designed for use in substitution or replacement of the ordinary speaking tubes which are generally used as a medium of communication between points not far removed.

20 A further object is the provision of a telephone system which will be of extremely simple and inexpensive construction, in fact, a system which may be manufactured and installed at a cost considerably less than the
25 cost of construction and installation of the ordinary speaking tube system; a further object being to provide a telephone system which will be of great efficiency in operation.

30 Other objects will appear hereinafter.

With these objects in view our invention consists in a telephone system characterized as above mentioned and in certain details of construction and arrangement of parts
35 all as will be hereinafter fully described and more particularly pointed out in the appended claim.

Our invention will be more readily understood by reference to the accompanying
40 drawings forming a part of this specification, and in which,

Figure 1 represents the preferred organization of our improved system, and Fig. 2, a slightly modified form thereof.

45 In carrying out our invention we employ two similar diaphragms 1 which are suitably mounted in holders 2—2', the latter being designed each for service both as an ear piece and a mouth piece, in other words, as
50 a receiver and a transmitter. Carried upon the outer side of each of the diaphragms 1 is a permanent magnet 3, preferably of the horse-shoe type, the arms or poles 4 thereof being extended perpendicularly outwardly.

55 5 indicate induction coils which are con-

nected in series in a circuit 6. The arrangement is such that the magnets 3 will induce a current into the coils 5, the intensity or strength of such coils being governed by the position or proximity of the magnets relative to said coils. Hence the current induced
60 will be varied by the movement of the magnets toward or from said coils, the current being stronger as the magnets approach said coils, the same diminishing in strength as
65 said magnets recede therefrom. Said magnets being fixed to the diaphragm 1, movement or vibration of the latter, as caused by the impingement of sound waves thereon, will be communicated directly to said mag-
70 nets, hence the intensity of the induced current will be governed directly by the vibrations of said diaphragms. Thus sounds produced at one of the diaphragms will cause vibration of the latter; this vibration,
75 through the magnet carried thereby, producing an undulatory current or series of electric impulses in the circuit. This undulatory current will affect the other magnet to cause a corresponding vibration of the
80 diaphragm connected thereto. Hence the sounds produced at one diaphragm will be reproduced at the other.

In Fig. 1 a metallic or wire conductor is employed in the circuit. However, with a
85 view of conducing to economy of construction, one leg of the metallic conductor may be dispensed with, if desired, as shown in Fig. 2, and the resilient terminals 7 mounted. A call bell system as is usual is also em-
90 ployed in conjunction with the telephone system. In this system are included the circuit 8 in which are connected in series the battery 9, bell 10, and push button or other suitable switch 11. The circuit 8, as illus-
95 trated, is so arranged that a leg of the metallic conductor of circuit 6 is utilized therein, the same serving as one of the legs of the former circuit. This arrangement is adopted only with the end in view of pro-
100 ducing a cheap construction.

While we have shown what we deem to be the preferable form of our system we do not wish to be limited thereto as there might be various changes made in the details of
105 construction and arrangement of parts described without departing from the spirit of the invention comprehended within the scope of the appended claim.

Having described our invention what we

claim as new and desire to secure by Letters Patent is:

In a telephone system, the combination of two diaphragms; a permanent horse-shoe magnet having its bend secured centrally to each of said diaphragms with its limbs projecting perpendicularly therefrom; stationary induction coils loosely encompassing the limbs of said magnets; and an electric circuit connecting said coils, substantially as described.

In testimony whereof we have signed our

names to this specification in the presence of subscribing witnesses.

JACKSON B. STEMM.
GEORGE E. SLADE.

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