

(No Model.)

W. BURNLEY.
TELEPHONE.

No. 436,334.

Patented Sept. 16, 1890.

Fig. 1.

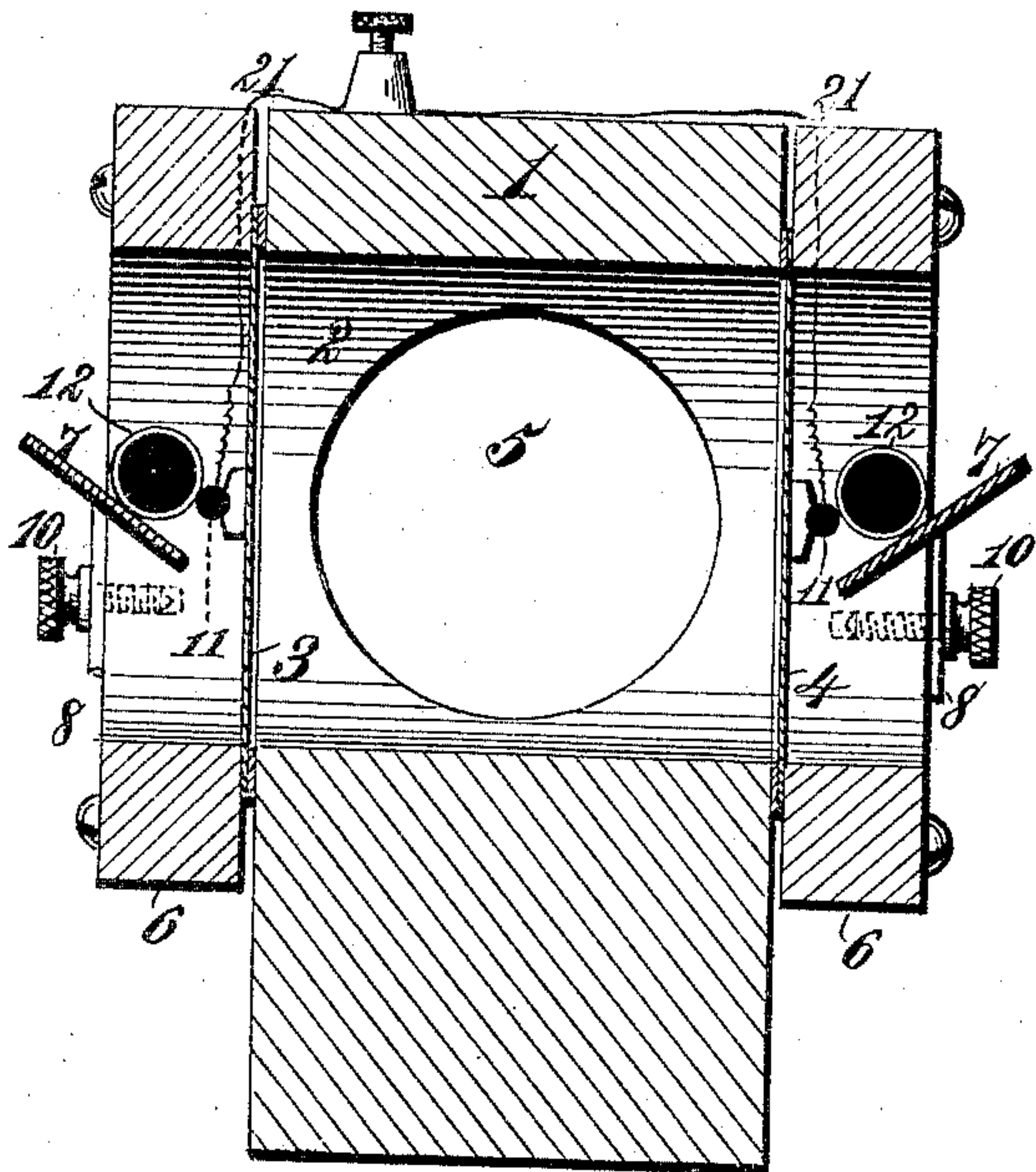


Fig. 2.

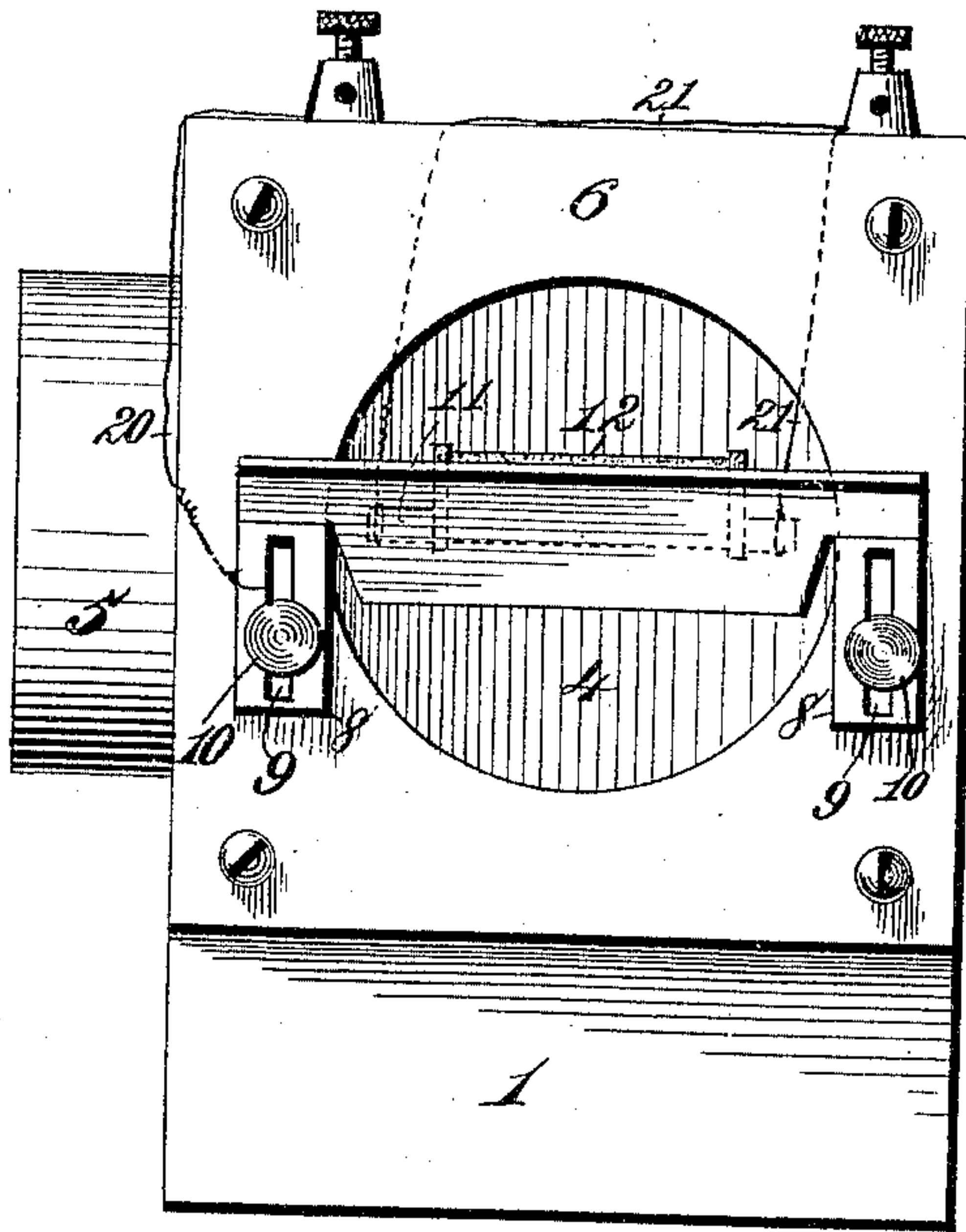


Fig. 3.

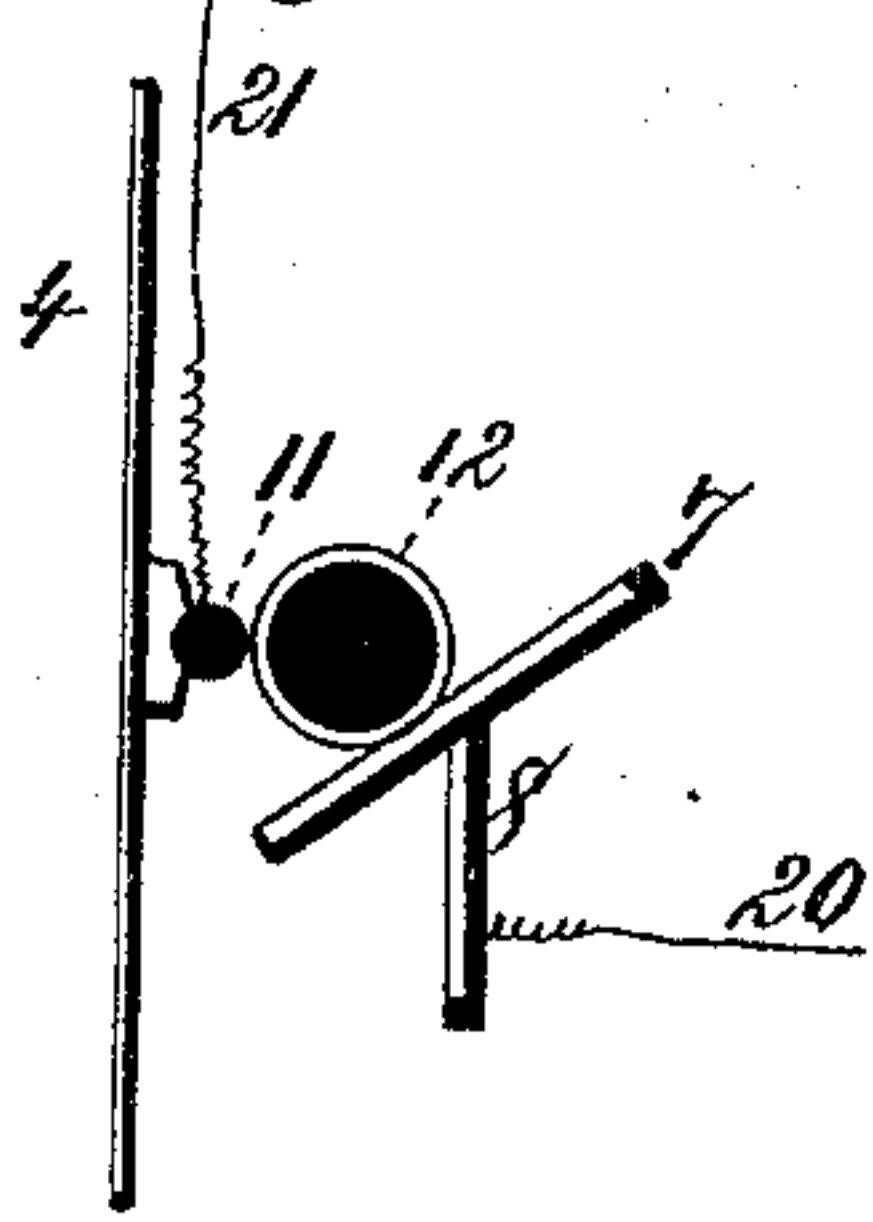


Fig. 4.

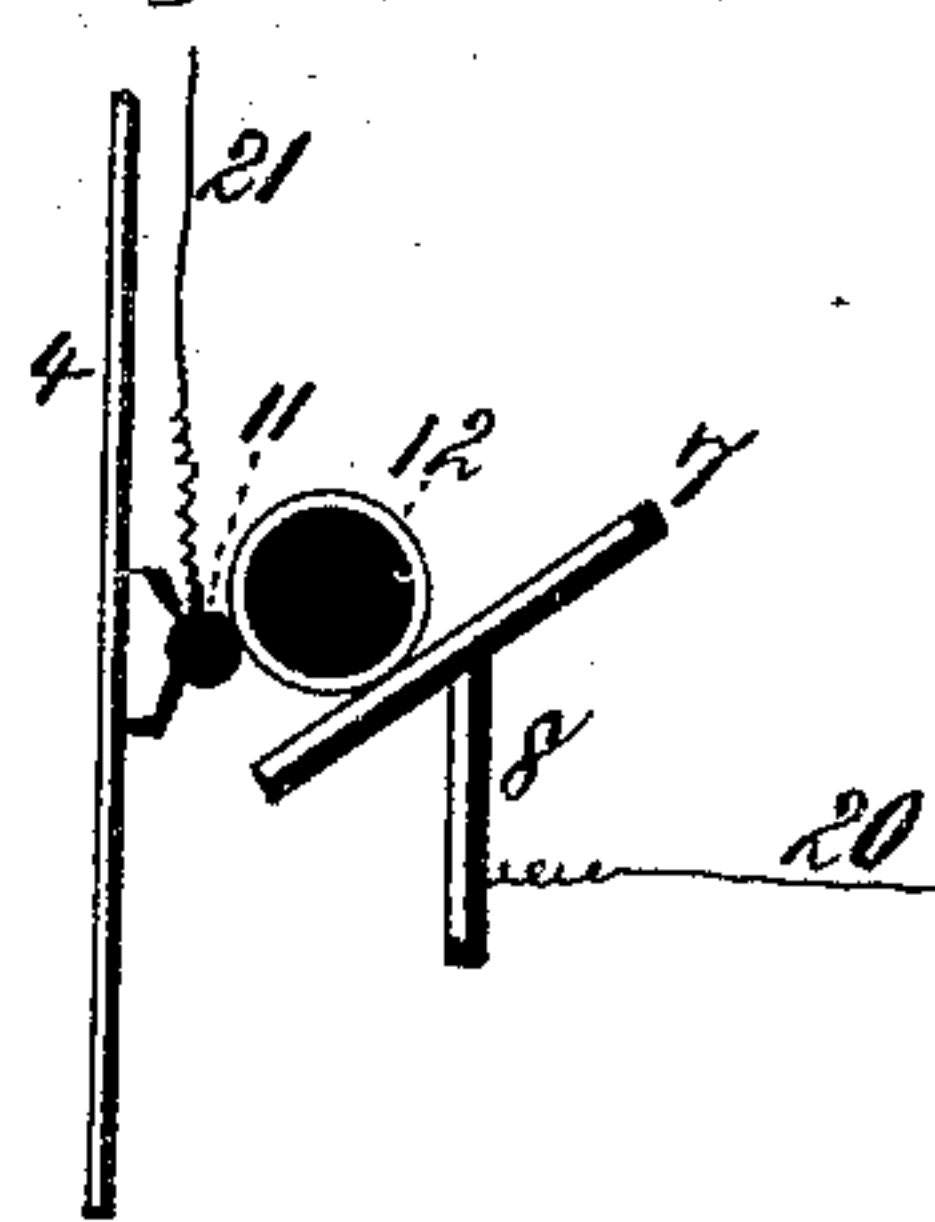
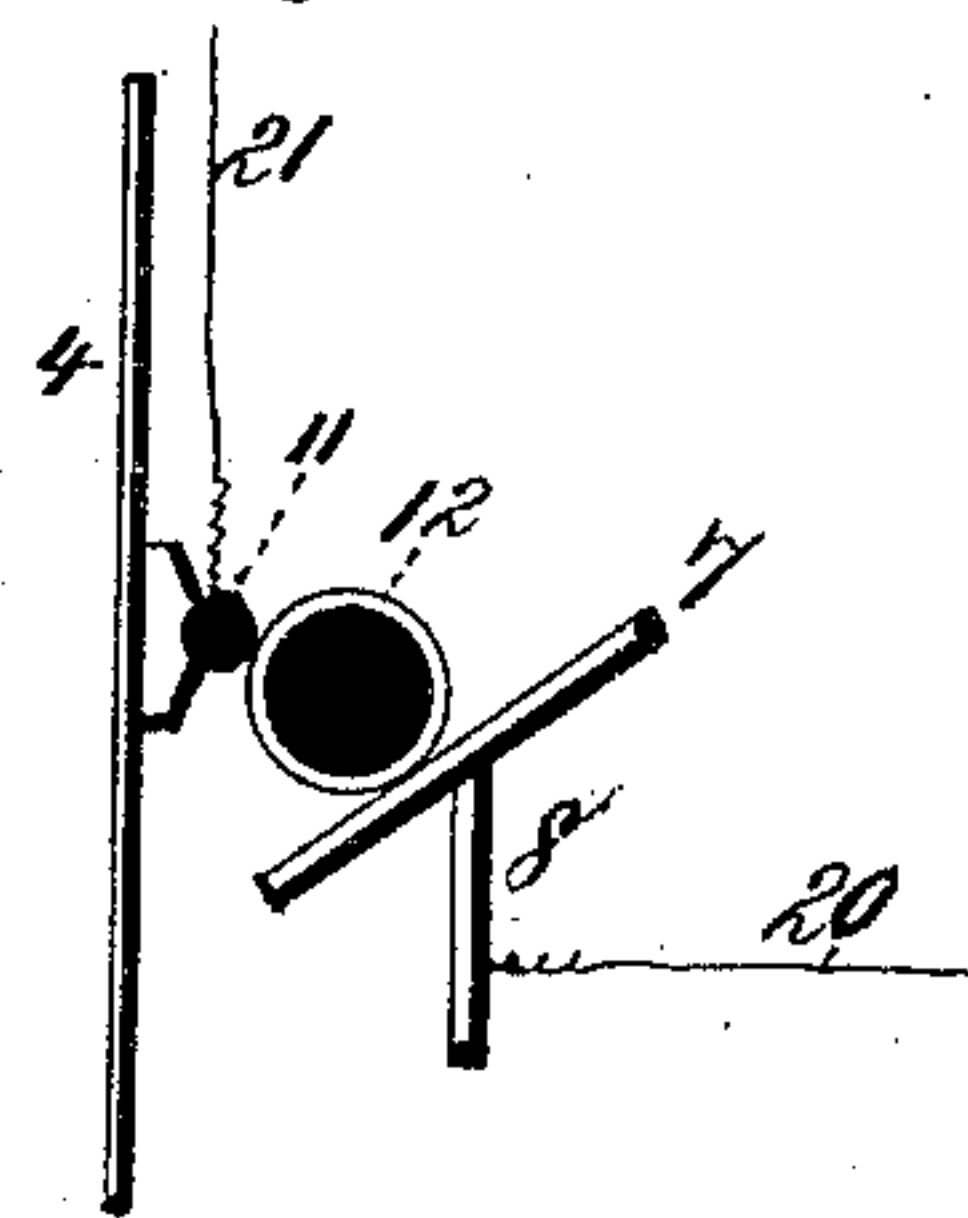


Fig. 5.



Witnesses.

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UNITED STATES PATENT OFFICE.

WILLIAM BURNLEY, OF NORTH EAST, PENNSYLVANIA, ASSIGNOR OF TWO-THIRDS TO CHARLES A. HITCHCOCK, OF SAME PLACE, AND LEWIS F. WATSON, OF WARREN, PENNSYLVANIA.

TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 436,334, dated September 16, 1890.

Application filed August 11, 1887. Serial No. 246,721. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM BURNLEY, a citizen of the United States, residing at North East, in the county of Erie and State of Pennsylvania, have invented new and useful Improvements in Telephone-Transmitters, of which the following is a specification.

The present invention relates to that class of telephone-transmitters in which a loose rolling electrode is supported upon an inclined plane and co-operates with an electrode affixed to a diaphragm for producing changes or undulations in an electric circuit necessary to the reproduction of articulate speech.

The object of the invention is to provide means whereby the initial contact-pressure between the electrodes can be varied without altering or changing the inclination of the table or platform upon which the loose electrode is supported; and to such end the invention consists, essentially, in the combination of a vertically-sliding inclined platform or plate, with a loose rolling electrode resting on said plate in contact with the fixed electrode on the diaphragm, as will hereinafter be more fully described, and then set forth in the claims.

In the accompanying drawings, Figure 1 is a vertical longitudinal section of a telephone-transmitter embodying my improvements. Fig. 2 is a face view showing the means for effecting the vertical adjustment of the inclined plate. Figs. 3, 4, and 5 are diagram views showing different positions of the inclined plane to vary the contact-pressure between the rolling and diaphragm electrodes.

I have in the present instance shown my improvements applied to a multiple transmitter in which a plurality of diaphragms, each controlling an independent set of electrodes, are actuated by the same sound vibrations, and, as is the case with the transmitter forming the subject-matter of a patent granted to me on the 5th day of February, 1886, No. 335,502, each set of electrodes has its own circuit and battery connections, which may be the primary circuits of independent induction-coils, whose secondary circuits are connected either in series or in multiple circuits to a

main line, or all the sets of electrodes may control local-circuit connections to a single primary coil of an induction-coil whose secondary circuit is connected to line. I may premise, however, that since my invention concerns exclusively the means employed for varying the initial contact-pressure between the current-regulating electrodes, I may embody or apply the invention to any and all forms of transmitters having one or more diaphragms.

The reference-numeral 1 designates a block or shell, which is hollowed out to form a sound-chamber 2, the sides of which are closed by the diaphragms 3 and 4. In the front of the block or shell 1 is formed an opening for the voice, which is surrounded by a mouth-piece or rim 5. The diaphragms are secured in position by means of blocks 6, which are clamped to the shell 1 by screws or other fastening devices. The blocks 6 are each provided with a circular opening, in which is arranged an inclined metal plane or platform 7, having means for raising and lowering the same without changing its inclination. To attain said adjustment, the plate or platform 7 is cut or shaped so as to clear the sides of the opening in the block 6, and it projects outside of said opening and has downwardly-projecting flanges or legs 8. These flanges have vertical slots 9, through which pass set-screws 10, which enter the block 6 and serve to hold the inclined plane in position. The slots are of such length that the inclined plane can be moved up and down within the opening in the block 6, for the purpose hereinafter stated. To the side of the diaphragm facing the apertured block 6 is applied a carbon electrode 11, which may be in the form of a round pencil extending across the diaphragm and cemented or otherwise secured thereto. Upon the inclined plane is supported a loose rolling electrode 12, which may be a solid carbon cylinder or a sphere. This loose electrode when made of a cylindrical or stick form is generally provided with circular end rims, which alone come in contact with the electrode on the diaphragm. As shown in Fig. 3, the set-screws are located at the middle por-

tions of the slots in the flanges of the inclined plane, and the loose rolling electrode then makes contact with the diaphragm-electrode in such manner that its mass or weight will
5 be distributed uniformly above and below the axial line of the diaphragm-electrode. When a greater contact-pressure is desired, the set-screws are loosened and the inclined plane is elevated and clamped in its position. By
10 raising the plate, as is seen in Fig. 4, more of the mass or weight of the loose electrode is placed above the axial line of the diaphragm-electrode. When the least or a minimum pressure is required, the inclined plane is lowered, as
15 is shown in Fig. 5, and consequently the mass or weight of the rolling electrode is placed below the axial line of the diaphragm-electrode.

It is obvious that the diaphragm-electrode and the metallic inclined plane must be in-
20 cluded in the circuit of a local battery in order to regulate or change the electric impulses going to line. In the present instance circuit-wires 20 run through apertures and are in metallic contact with the slotted flanges of
25 the inclined plate or platform, and other wires 21 are connected with the diaphragm-electrode.

Having thus described my invention, what I claim is—

1. In a telephone-transmitter, the combina- 30
tion of a diaphragm, an electrode affixed there-
to, an inclined plane, a loose electrode resting
on said plane and in contact with the dia-
phragm-electrode, and means for elevating
and lowering the electrode-supporting plane 35
without altering its inclination, substantially
as described.

2. In a telephone-transmitter, the combina-
tion of a diaphragm having a fixed electrode,
a vertically-sliding inclined plane, and a loose 40
electrode resting on said plane in contact with
the fixed electrode, substantially as described.

3. In a telephone-transmitter, the combina-
tion, with the diaphragm having a fixed elec-
trode and the casing or box, of the vertically- 45
sliding inclined plane having slotted flanges
and set-screws securing said inclined plane to
the transmitter-box and moving it up and
down, and the loose electrode resting on said
inclined plane in contact with the diaphragm- 50
electrode, substantially as described.

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

WILLIAM BURNLEY.

Witnesses:

J. M. DEWITT,
DYER LOOMIS.