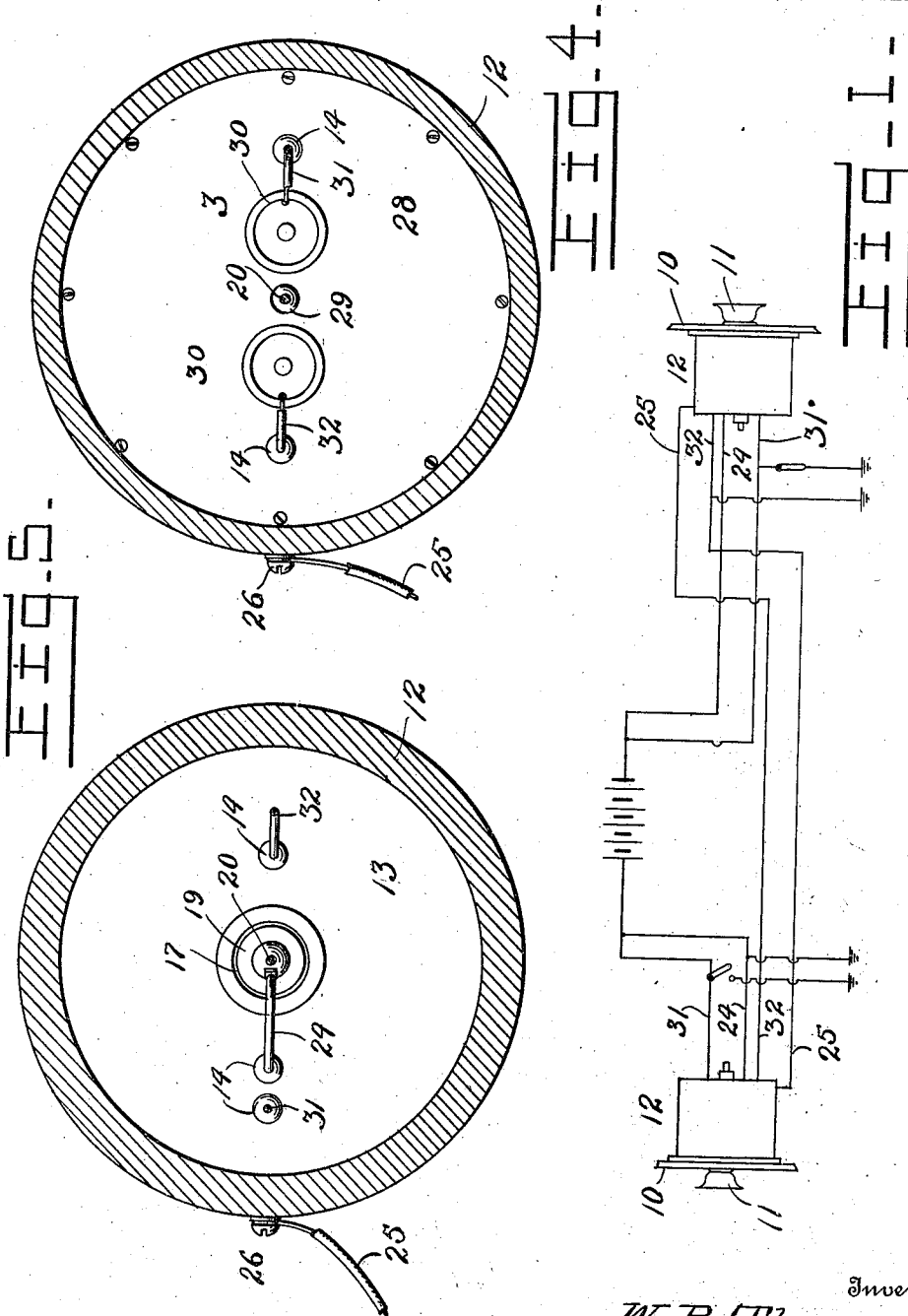


W. B. THOMPSON.
 COMBINED TRANSMITTER AND RECEIVER.
 APPLICATION FILED JUNE 20, 1911.

1,014,268.

Patented Jan. 9, 1912.

2 SHEETS-SHEET 1.



Witnesses
 Charles J. MacLartie
 Harry M. Test

Inventor
 W. B. Thompson.
 By Harry Ellis Chandler

Attorney

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Fig. 2 -

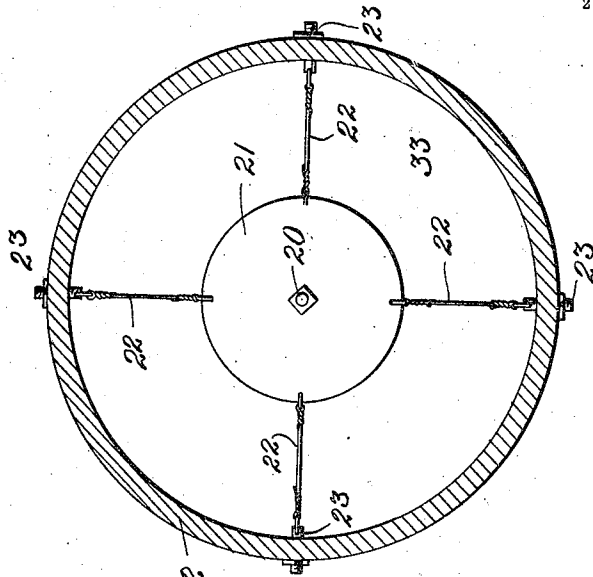
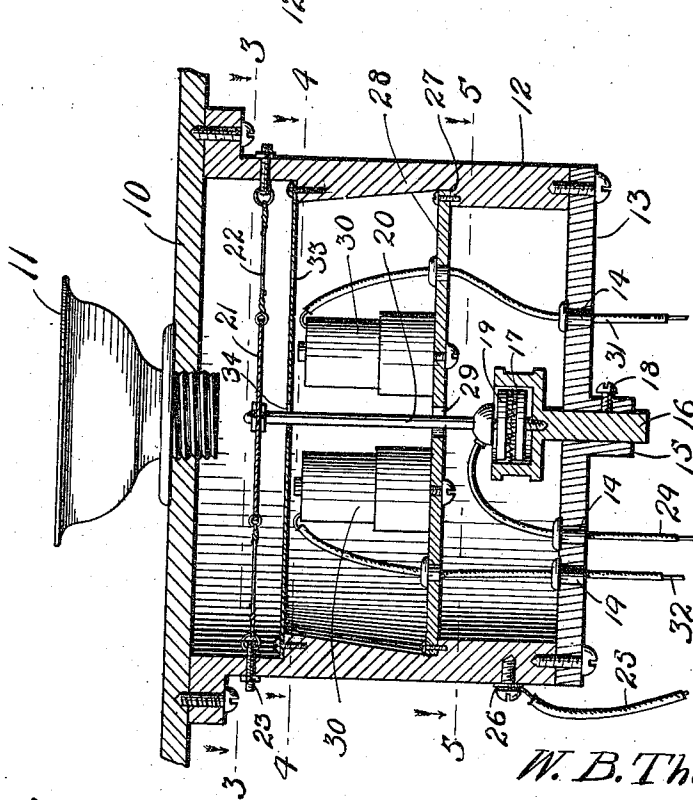


Fig. 1 -



Witnesses

Charles J. MacCarter

Harry M. Test

Inventor

W. B. Thompson.

By Harry E. Chandler

Attorney

UNITED STATES PATENT OFFICE.

WILLIAM BARBER THOMPSON, OF NORTH CONWAY, NEW HAMPSHIRE, ASSIGNOR OF
ONE-HALF TO ARTHUR E. KENISON, OF NORTH CONWAY, NEW HAMPSHIRE.

COMBINED TRANSMITTER AND RECEIVER.

1,014,268.

Specification of Letters Patent.

Patented Jan. 9, 1912.

Application filed June 20, 1911. Serial No. 634,361.

To all whom it may concern:

Be it known that I, WILLIAM B. THOMPSON, a citizen of the United States, residing at North Conway, in Conway, in the county of Carroll and State of New Hampshire, have invented certain new and useful Improvements in Combined Transmitters and Receivers, of which the following is a specification.

10 This invention relates to improvements in telephones and has particular reference to combined transmitters and receivers.

The principal object of the invention is to improve and simplify the construction of
15 devices of this character.

Other objects will develop as the following description proceeds.

In the drawings: Figure 1 is a diagrammatic view of a system in which my device
20 is used, Fig. 2 is a vertical section through my device, Fig. 3 is a transverse section on the line 3—3 of Fig. 2, looking in the direction of the arrows, Fig. 4 is a transverse section on the line 4—4 of Fig. 2,
25 looking in the direction of the arrows, Fig. 5 is a transverse section on the line 5—5 of Fig. 2, looking in the direction of the arrows.

Referring to the drawings, 10 designates a base plate in which is secured the mouth
30 piece 11. To the opposite side of the plate 10 is secured a box 12 having a removable cover plate 13 in the opposite end thereof, said plate 13 being provided with the insulated bushings 14 for the passage of the
35 wires. A boss 15 is formed centrally in the plate 13 and receives therein the stem 16 of a granular microphone 17, and is adjustable therein by means of the set screw 18. The upper plate 19 of the granular microphone has secured thereto a vertically extending rod or stem 20, the upper end of which is secured to the center of the transmitting diaphragm 21. This diaphragm is
40 located centrally within the box 12 and close to the inner end of the mouth piece 11 and is suspended by means of the wires 22 secured at one end to the diaphragm, and at the other end to the box by means of the screws 23. The diaphragm 21, the wires 22
45 and the screws 23 are all metal, and form an electrical connection with the box 12, which is also of metal. Connected to the
50 lower end of the stem 20 and extending

through one of the bushings 14 is a wire
24 leading to the source of electrical supply. 55
Connected to a screw 26, which is secured in the side of the box 12, is a wire 25.

On a ledge 27 is mounted a shelf 28, which has a central opening 29, for the reception of the stem 20. Mounted on this shelf are
60 the electromagnets 30, the ends 31 and 32 of the windings of which extend through the bushings 14. Directly above the electromagnets is a receiving diaphragm 33, having a central opening 34 for the stem 20. 65

The wires 24 and 25 of one telephone device are connected to the wires 31 and 32 of the other device, so that the movements of the diaphragm 21 of one device will impart a corresponding movement to the dia-
70 phragm 33 of the other device.

If desired, I may provide each of the telephone devices with a controlling switch to cut out the magnets from one telephone, when that telephone is being used to trans-
75 mit. Thus the voice will cause the movement of the diaphragm 21, and transmit its movements to the diaphragm 33 of the other telephone, and prevent movement of the diaphragm 33 of the first telephone when talk-
80 ing. When using the device as a transmitter, the sound waves might cause the movement of the diaphragm 33, and produce sounds which would render the sounds from the other diaphragm indistinct or blurred. 85
Thus when one telephone is talking, the other one is listening, and when the other telephone desires to talk, the receiving magnets are thrown out.

The device is particularly useful in apart-
90 ment houses, hotels, factories, or on board ships, to displace the ordinary speaking tube, and provides a much more sensitive, and consequently reliable device than the speaking tube. 95

What is claimed is:

A combined telephone transmitter and receiver comprising a metallic box, a removable plate on the box, a granular microphone secured to said plate within the box, a shelf
100 above the granular microphone, electromagnets on the shelf, a diaphragm arranged above said magnets, said shelf and said diaphragm having central openings, a diaphragm above the first mentioned dia-
105 phragm, wires secured to the diaphragm

and the box to form electrical connection therebetween, a vertical stem extending from the granular microphone, through the openings of the said shelf and diaphragm, a
5 mouth-piece arranged on the box, and means for vertically adjusting the granular microphone.

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

WILLIAM BARBER THOMSON.

Witnesses:

MARTHA LEWIS,
VESTA E. TIBBETTS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."