(No Model.) 2 Sheets—Sheet 1.

G. S. WILLIAMSON.

ELECTRICALLY CONTROLLED SPEAKING TUBE.

No. 540,529. Patented June 4, 1895.

Fig. 1.

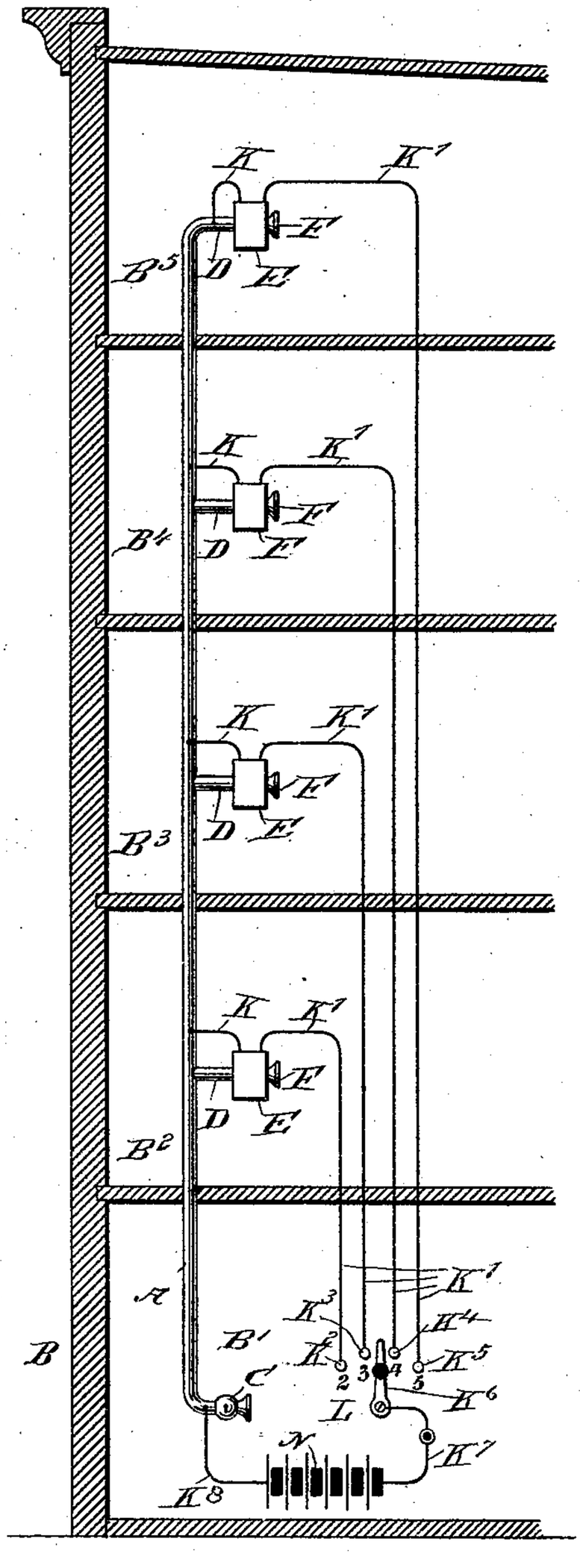
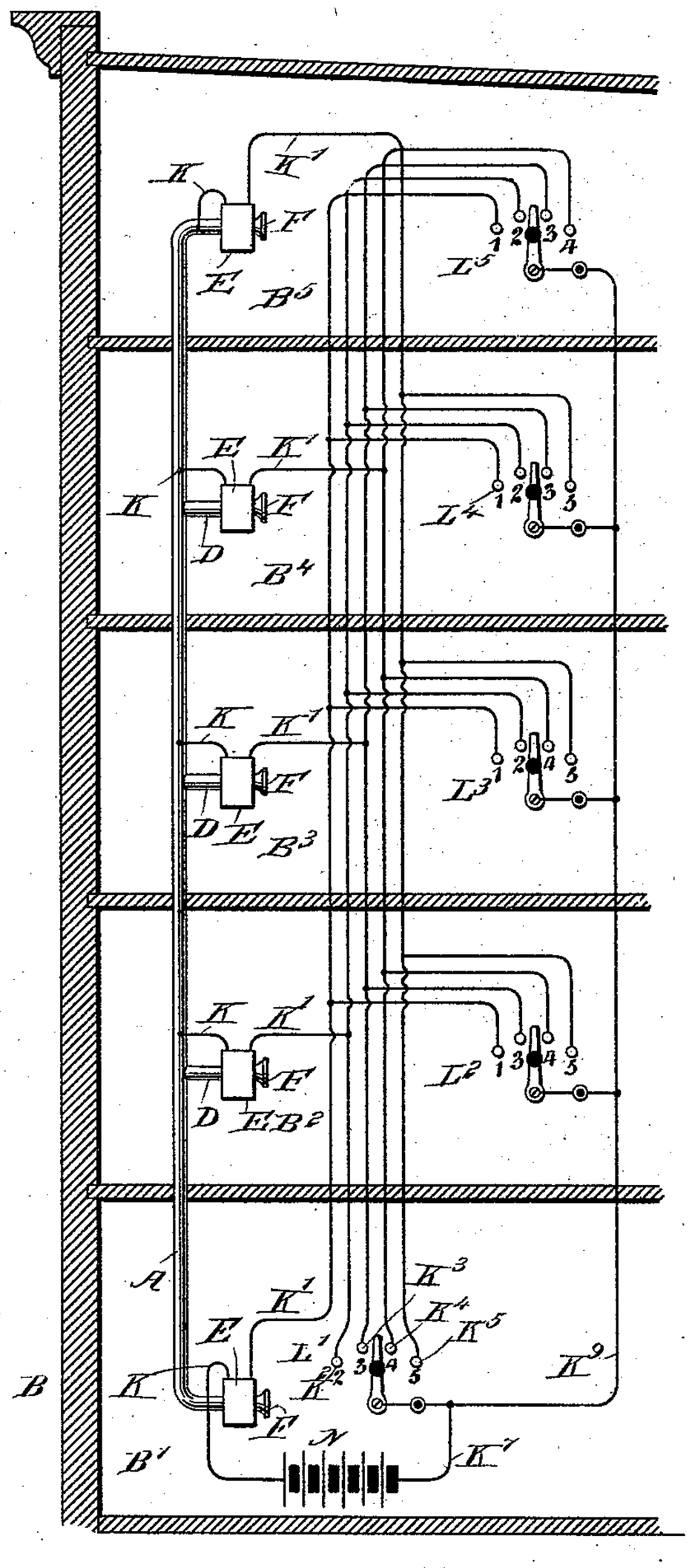


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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ELECTRICALLY CONTROLLED SPEAKING TUBE.

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Fig. 3.

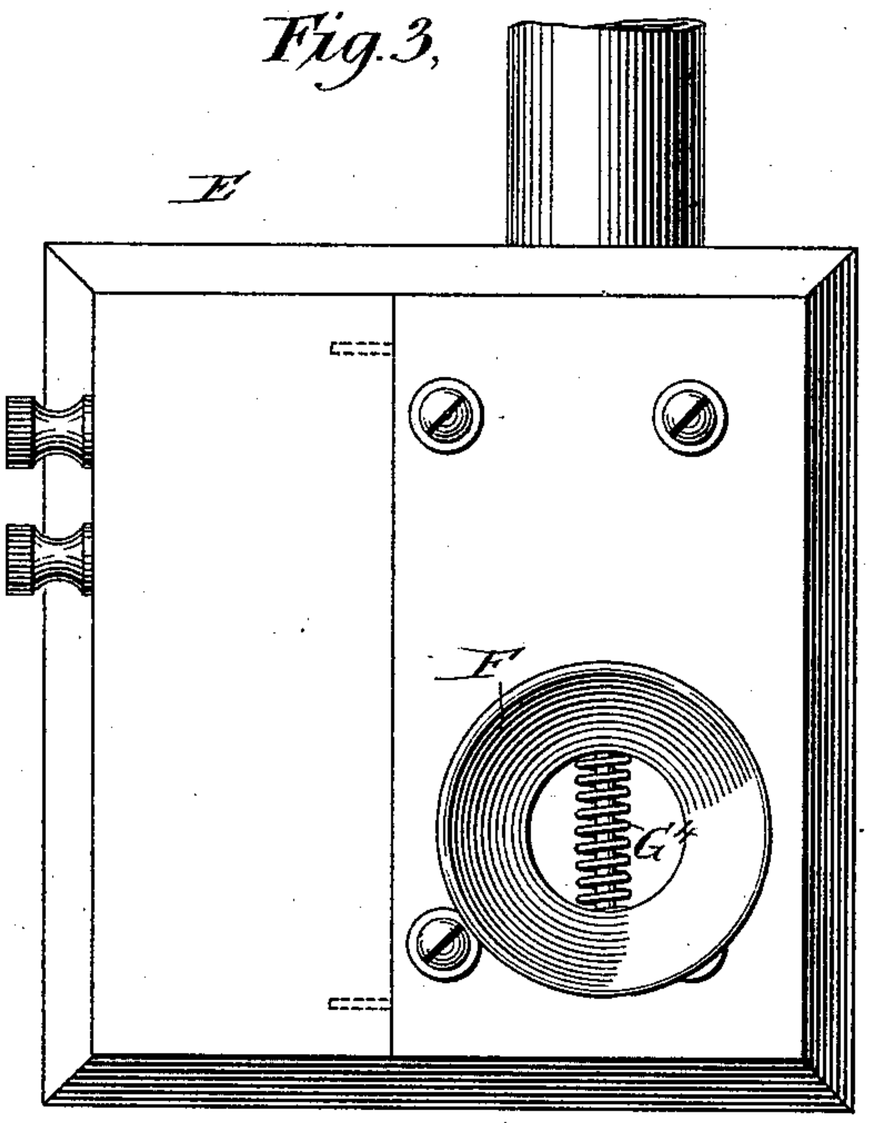


Fig. 4.

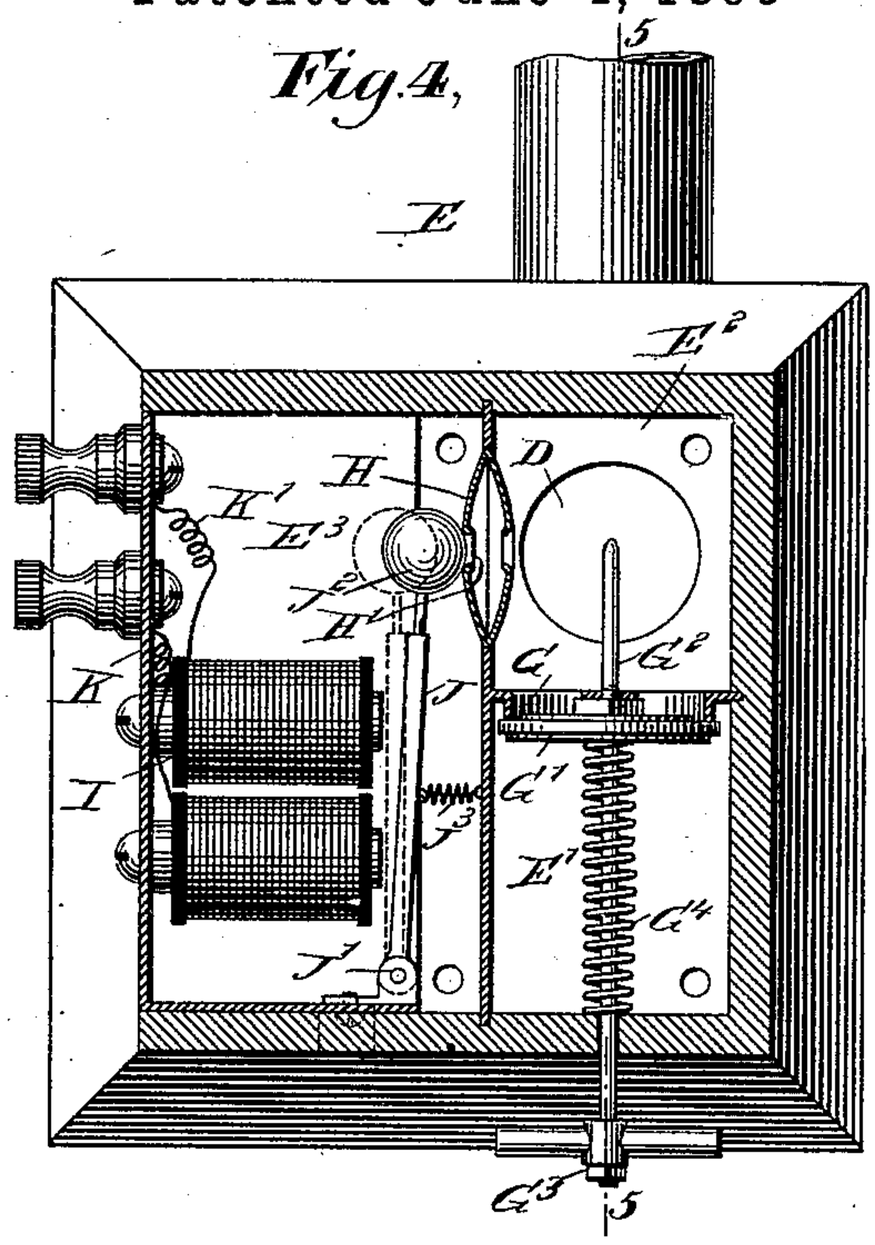
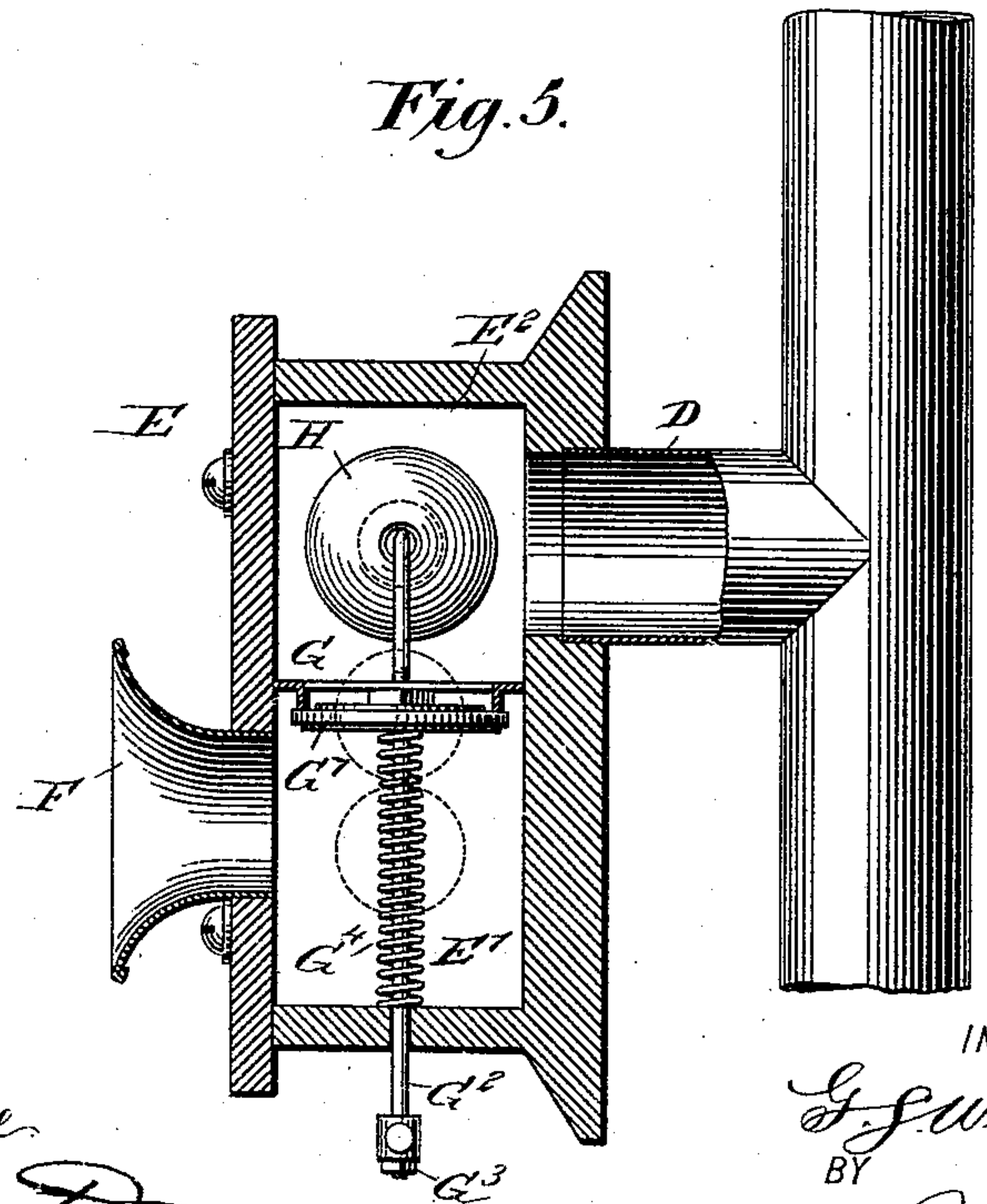


Fig. 5.



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UNITED STATES PATENT OFFICE.

GEORGE S. WILLIAMSON, OF McKEESPORT, PENNSYLVANIA.

ELECTRICALLY-CONTROLLED SPEAKING-TUBE.

SPECIFICATION forming part of Letters Patent No. 540,529, dated June 4, 1895.

Application filed February 18, 1895. Serial No. 538,747. (No model.)

To all whom it may concern:

Be it known that I, GEORGE S. WILLIAMSON, of McKeesport, in the county of Allegheny and State of Pennsylvania, have invented a new and Improved Electrically-Controlled Speaking-Tube, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved electrically controlled speaking tube, designed for use in dwellings, stores, hotels, &c., and arranged to permit of conveniently connecting any two rooms with each other, either with or without the intervention of a central office; also permitting the central office when called to quickly sound an alarm in each room in case of danger of fire or other causes.

The invention consists of a whistle inclosed in a casing having a speaking tube inlet and a mouth piece, a valve for controlling the connection between the mouth piece and whistle, and an electric circuit provided with electromagnets and having an armature lever controlled from the whistle.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement arranged with a central office, the building being in section. Fig. 2 is a like view of the improvement arranged without a central office. Fig. 3 is a face view of the signal-box. Fig. 4 is a sectional front view of the same, and Fig. 5 is a cross-section of the same on the line 5 5 of Fig. 4.

As illustrated in Fig. 1, a main speaking tube A extends through the several floors B′, B^2, B^3, B^4, B^5 of a building B, and on the lower end of the said main speaking tube A, is arranged a whistle and mouth-piece C of any approved construction. From each of the floors B^2, B^3, B^4, B^5, leads a branch tube D, connecting with a signal box E provided on its face with a mouth-piece F opening into a chamber E′ formed in the box, as is plainly illustrated in Figs. 4 and 5. In this chamber E′ is arranged a valve seat G, normally closed by a valve G′, to disconnect the chamber E′ from the chamber E^2, into which opens the branch tube D. The valve stem G^2 of the valve G′, extends through the base of the box E, and is provided at its outer end with a suitable handle G^3 adapted to be taken hold of by the operator. A spring G^4, coiled on the valve stem G^2, rests with one end against the inside of the box E, and with its other end against the valve G′ so as to hold the latter normally on its seat.

In the wall of the chamber E^2 is arranged a whistle H of usual construction, leading into a chamber E^3 likewise formed in the box E alongside the chambers E′ and E^2, as plainly indicated in Fig. 4. In this chamber E^3 are arranged a pair of magnets I, and an armature lever J, fulcrumed at J′ within the box E, and carrying at its free end a ball J^2 normally closing the inner aperture H′ of the whistle H. A spring J^3 serves to hold the lever J normally out of contact with the magnets I.

Now it will be seen that when a blast of air passes into the chamber E^2 either from the tube D or from the mouth-piece F at the time the valve G′ is open, then the air will pass into the whistle H and sound the same provided the armature lever was previously attracted by its magnets I.

The magnets I are connected with wires K and K′, of which the wire K is connected with the main tube A, while the wire K′ leads to a switch board L, preferably arranged in the lower floor B′ at the central office. The several wires K′, from the several floors B′ to B^5, terminate at the switch board L in contact points K^2, K^3, K^4, K^5 respectively. A switch lever K^6 is adapted to connect with any of the contact points K^2, K^3, K^4, K^5, and the said lever is connected by a push button and wire K^7 with one pole of a battery N, connected at its other pole by a wire K^8 with the main tube A, so that the latter serves as a conductor for the several wires K′. Now, when a party, say on the fourth floor B^4, of a building, desires to call a party on the second floor B^2, then he first pulls the lever G^3 at his signal box E and blows into the mouth-piece F, so that the whistle C is sounded in the central office on the first floor. The attendant of the central office is then informed that this party desires to con-

nect with the second floor, and consequently the attendant moves the switch lever K^6 to the contact point K^2. As soon as the switch lever K^6 is moved onto the contact point K^2, then the electro-magnets I on the second floor attract their lever J so that the whistle H in the first signal box E is free, and consequently the party on the fourth floor, on blowing into the mouth-piece F, sounds the whistle H in the signal box of the second floor B^2. The two parties, the one on the fourth floor and the one on the second floor, are in communication with each other through the main tube A and the branch tubes D leading from their signal boxes.

As illustrated in Fig. 2, the central office is dispensed with, and on each floor B′, B^2, B^3, B^4, B^5 are arranged switches L′, L^2, L^3, L^4, L^5 respectively, all alike in construction and similar to the switch L previously described. A wire K^9 connects the several switch levers with each other and with the wire K^7 leading to the battery N, so that a party on any of the floors, by moving the switch lever to the desired contact point of another floor, can call up the party thereon, so as to establish communication between the two floors. In this instance the wire K^8 is dispensed with, and wire K leads from the lower signal box E to the battery N. It is understood that this calling up of one party by another, is similar to the one described above in reference to a party on one of the floors calling up the central office.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A speaking tube, comprising a whistle inclosed in a casing and adapted to be sounded from a mouth-piece and a main speaking tube, a valve for controlling the connection between the mouth-piece and whistle, and an electric circuit provided with electro-magnets and having an armature lever for normally closing the said whistle, substantially as shown and described.

2. A speaking tube provided with a signal box having a connection with a main tube and a mouth piece, a whistle arranged in the said box, a spring pressed valve for controlling the connection between the mouth piece and whistle, and a lever normally engaging the whistle and closing the same, substantially as shown and described.

3. A speaking tube, provided with a signal box comprising a casing divided into chambers, of which one is connected with the main speaking tube, and the second is provided with a mouth-piece, a valve for controlling the connection between the said first and second chambers, a whistle arranged between the first and third chambers, and a lever arranged in the third chamber for normally closing the said whistle, substantially as shown and described.

4. A speaking tube, provided with a signal box comprising a casing divided into chambers, of which one is connected with the main speaking tube, and the second is provided with a mouth-piece, a valve for controlling the connection between the said first and second chambers, a whistle arranged between the first and third chambers, a lever arranged in the third chamber for normally closing the said whistle, and an electric circuit provided with electro-magnets in the third chamber, and adapted to attract the said lever, substantially as shown and described.

GEORGE S. WILLIAMSON.

Witnesses:
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C. S. LOWER.