C. HEISLER.

Combined Speaking and Signaling Apparatus.

No. 209,760. Patented Nov. 12, 1878.

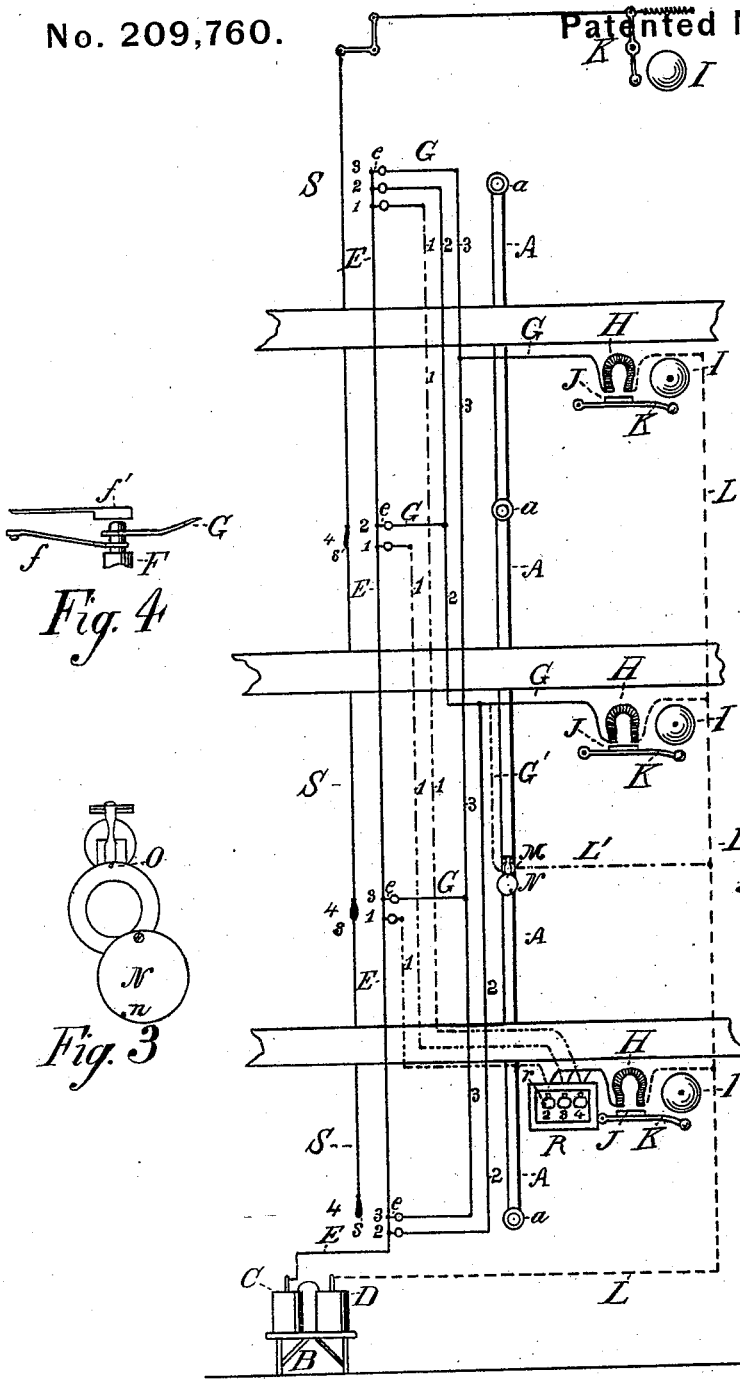

Fig. 1

Fig. 4

Fig. 3

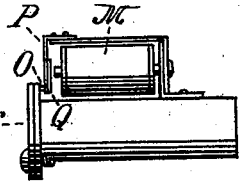

Fig. 2

Witnesses
Geo. H. Knight.
Walter Allen

Inventor
Charles Heisler
By Knight Bros.
Attys.

UNITED STATES PATENT OFFICE.

CHARLES HEISLER, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN COMBINED SPEAKING AND SIGNALING APPARATUS.

Specification forming part of Letters Patent No. **209,760**, dated November 12, 1878; application filed April 8, 1878.

To all whom it may concern:

Be it known that I, CHARLES HEISLER, of the city of St. Louis and State of Missouri, have invented a certain new and useful Improvement in Combined Speaking-Tube and Signaling Apparatus, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

The first part of my improvement consists in a single speaking-tube communicating with all the apartments or offices of a building or buildings, and combined with devices for signaling from any one room to either of the others, as fully set forth hereinafter.

Figure 1 in the drawings illustrates the application of my apparatus to a four-story building. Fig. 2 is a side view of a mouth-piece made to open by an electro-magnet operated by circuit-closers in other apartments, showing the mouth-piece cover closed. Fig. 3 is a front view of the above, showing the cover open. Fig. 4 shows the device for closing the circuits.

A is a single speaking-tube, having a mouth-piece, *a*, in each room. When there are a number of rooms upon the same story the mouth-pieces may be connected with the main tube A by branches without changing the principle of the apparatus, because all the tubes are connected together, and thus communication may be had from any one room to any other room. B is the galvanic battery. C may be the positive pole and D the negative pole of the battery. E is a conducting-wire extending to every room in which there is a mouth-piece of the speaking-tube, and the wire has a branch, *e*, connected to an insulated plate, *f'*, forming one member of the circuit-closer, whose other member consists of a spring, *f*, depressed by a thumb-knob, F. To the spring *f* is connected a conducting-wire, G, that extends to an electro-magnet, H, in one of the other rooms. Each of the rooms has a circuit-closer for each of the other rooms, and the thumb-knob is numbered accordingly, to indicate with which room it is in connection, to ring a bell or sound a gong, I, in the latter by means of an armature, J, and hammer K. L is the wire extending from the magnet H to the negative pole D of the battery. The arrangement is such that on the depression of the thumb-knob the bell in the room shown by the number of the knob will be rung, to call attention, and then a person in this room will open the mouth-piece there, and the message will be received. The circuit in such case would pass around the wires E *e* G L from the positive to the negative pole of the battery B.

The mouth-pieces in all the rooms containing electric wires may be automatically opened or closed by an electro-magnet. The arrangement for this purpose is shown in room 2, Fig. 1, and the mouth-piece in Figs. 2 and 3. In this a wire, G', leads from wire G to the magnet M, and a wire, L', leads from the magnet to the wire L. Thus when the circuit is closed by depression of the thumb-knob the mouth-piece is opened or closed in the proper room, and the bell sounded at the same time, where a bell is present. Any suitable device may be used to open the mouth-piece *a*.

The device I have shown and propose to use is constructed with a cover consisting of a flat piece of metal, N, turning on a pin passing through it near the lower edge, as shown, so that the weight of the plate N will cause it to fall open when relieved from a catch-pin, O. The catch-pin O is beveled at the end, so as to be pushed back as the mouth-plate N is turned up to close the mouth-piece. This pin O enters a hole or cavity, *n*, in the mouth plate or cover N, so as to hold it up. The pin is forced outward into engagement with the plate N by a spring, P, and is drawn back by the electro-magnet M, by means of an armature, Q, on the spring, to allow the cover to fall open.

One or more of the rooms may be supplied with an indicator, R, whose indicating-plates *r* are dropped or exposed to view in any manner by electro-magnets in the circuits of the wires operating or that may operate also the magnet by which the bell is rung.

Nothing new is claimed in the construction of the indicator *per se*, but only in combination with the speaking-tube connected with mouth-pieces in each room, and thus requiring some special device to show from which room the message comes.

The indicator is shown only in the lower story, the conducting-wires G leading directly from the other rooms to the various magnets of the indicator, and wires G' leading from each of said magnets to the magnet H of the

bell in that room. The wires leading from the thumb-knob of each room to the magnets of another room are marked with the number of the knob and room which the knob represents, in addition to the letter G, which is common to all of them.

S is a bell-wire, extending from all the other rooms to the hammer K of the bell or gong I in the fourth room. This wire has a pull-knob, *s*, in each of the other rooms, (1, 2, and 3,) and this bell, like the others, calls the attention of the occupant of the room to a coming message, so that he may open the cover N of the mouth-piece *a*.

I have shown and described three devices for signaling from one room to another when a message is about to be sent. I do not claim novelty in either device taken separately from the other parts of my improvement, but by the use of any one or more of them or by equivalent devices, I am able by a single speaking-tube, with or without the addition of branches leading from it, to communicate with any one or more of a number of rooms, and thereby save the putting in of a number of speaking-tubes leading from each of the rooms to each of the others.

This improvement has special value in the application of speaking-tubes to old buildings, because the insertion in the walls of such of a sufficient number of speaking-tubes to enable communication to be had from any one room to each of the others would oblige the cutting away of considerable portions of the walls, which would injure the building, besides being expensive. It is also found that the passing through the walls of a large number of tubes impairs the effect of the tubes.

This device does away with the necessity of making any signal through a tube, and also with the necessity of an annunciator or indicator where another of the signaling devices is used as a signal.

I claim herein as new and of my invention—

1. In a system for communication between several stations or apartments of a building, the combination of a central speaking-tube having all of the stations or apartments in its circuit together with a main electrical conductor from a galvanic battery, from which conductor in each station or apartment is taken a series of branch conductors, in number corresponding with the number of rooms or stations, each of the said branches having circuit devices capable of removing the mouth-piece of the speaking-tube at its respective destined stations, or for the purpose of sounding an alarm to indicate the coming of a message.

2. A tube having mouth-pieces in different apartments, said mouth-piece adapted to be opened or closed by an electrical current, which is operated from any of the apartments.

3. The combination speaking-tube and electric signal, said signal adapted to open or close the mouth-piece of said tube.

CHARLES HEISLER.

In presence of—

SAML. KNIGHT,

GEO. H. KNIGHT.