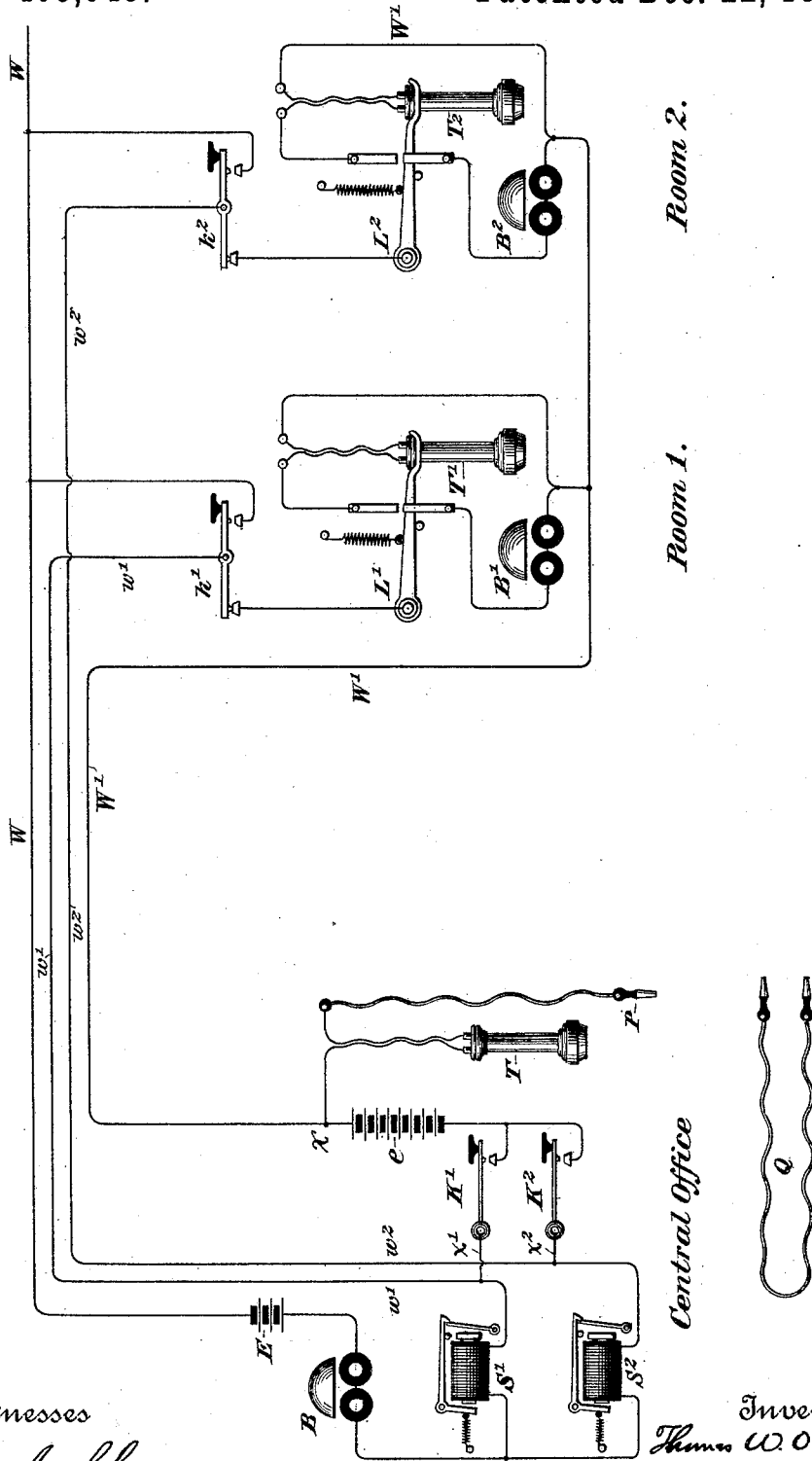


(No Model.)

T. W. O'BRIEN.
COMBINED SIGNAL AND TELEPHONE SYSTEM.

No. 465,648.

Patented Dec. 22, 1891.



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COMBINED SIGNAL AND TELEPHONE SYSTEM.

SPECIFICATION forming part of Letters Patent No. 465,648, dated December 22, 1891.

Application filed July 20, 1891. Serial No. 400,029. (No model.)

To all whom it may concern:

Be it known that I, THOMAS W. O'BRIEN, a citizen of the United States, residing in Wilkes-Barré, in the county of Luzerne and State of Pennsylvania, have invented a new and useful Combined Signal and Telephone System, of which the following is a specification.

The object of my invention is to furnish a convenient and effective system of instantaneous intercommunication, adapted to be used in hotels, apartment-houses, larger retail stores, and other like places, whereby any desired intelligence may be instantaneously exchanged between the central office or bureau of such an establishment and any required number of outlying rooms, departments, or other subsidiary points.

The invention comprises an organization of electric circuits and appliances, which enables a speaking-instrument, preferably a speaking-telephone, to be employed as a useful auxiliary to the ordinary system of arbitrary bell-signals.

The accompanying drawing is a diagram showing an organization of electric circuits and apparatus embodying my invention. It shows a central station at the right and two subsidiary stations at the left; but it is to be understood that any required number of stations, even as many as several hundred, if necessary, might be arranged upon precisely the same plan without departing from the principle of the invention. In the drawing I have shown but two of these subsidiary stations or signaling-points, at each of which is provided a signaling-key k' k^2 , connected by individual insulated wires w' w^2 with visual signals or "drops" s' s^2 . Each of these keys, when depressed, establishes contact with its particular branch of a common return-wire W, included in which latter is a voltaic battery or other electrical generator E and an electro-magnetic bell or equivalent signaling-instrument B. This is thus far substantially the same as the ordinary hotel annunciator system.

In carrying out my invention I provide, in addition to the above, a resting contact for each room-key, as k' and k^2 , whereby each individual wire, as w' and w^2 , is normally maintained in connection with a corresponding branch of a common return-wire W'. This

extends back to the central station, where it divides at x into two normally-open branches, one of which contains a voltaic battery or other electrical generator e , and the other a telephone or other speaking-instrument T. The latter branch is attached to a peg P, which constitutes a movable or shifting terminal, as hereinafter explained. At the central station keys K' and K^2 (one for each individual wire, whatever their number) are provided, being connected thereto by branches x' and x^2 , as shown, and each of these keys, when depressed, makes contact with the common return-wire W', containing the battery E.

At each subsidiary station or signaling-point I provide a speaking-instrument, preferably a telephone, and it is preferable to employ an audible signal-instrument also, as indicated at B' and B², though in some cases the latter might be dispensed with without serious disadvantage. These instruments, either or both, are so placed that they may be included in the branch leading from the resting contact of the key to the common return-wire W'. It is preferred to effect this by means of the ordinary telephone-switch, as shown at L' and L², whereby the weight of the telephone itself (when not in use and hung on the hook of the switch) deflects the switch-lever, so as to cut the telephone out of circuit and establish an alternative circuit through the bell B' or B². This may, however, be done equally well by a hand-switch, or the bell-magnet, together with the telephone or other speaking-instrument, may be included in series in the branch, one after the other.

The operation is as follows: If a person wishes to communicate with the central office he depresses, for example, the key k' . This closes the circuit of battery E through wire w' , drop s' , bell B, and return-wire W, thus giving the attendant notice by the sounding of bell B and the falling of drop s' , and he responds by momentarily depressing his corresponding key K' , which closes the circuit of battery e through the same wire w' , and also through the resting contacts of key k' and switch L', bell B', and return-wire W'. Having thus secured the attention of the central office, the signalizer removes the telephone T' from its hook, (by which operation it is automatically placed in circuit and the

bell B' cut out under the arrangement represented in the drawing,) while at the same time the attendant at the central station by inserting the peg P in the appropriate socket in the wire x' places himself in direct communication with the telephone T' through his own telephone T. The conversation thus being carried on will not interfere with, neither will it be disturbed by, any signals which may be sent meantime from any other point in the system. By reversing the operation the central-office attendant may communicate with any of the subsidiary points in the system at a moment's notice.

By making use of a detached flexible conductor provided with a metallic peg at each end, as shown at Q in the drawing, the attendant at the central office may put any two of the subsidiary points in speaking communication with each other in the same manner as is done in a telephonic exchange. To effect this it is only necessary to insert its terminal pegs into the respective sockets of the individual wires, as x' x^2 , to be connected instead of using the peg P.

I claim as my invention—

1. The combination, with an annunciator system consisting of two or more signaling-instruments at a central station and two or more keys at different subsidiary points for transmitting signals through subsidiary conductors by closing the circuit of a common generator, of a key having a resting contact and a working contact for transmitting signals, and a switch whereby the resting contact of said key may be placed in connection at will with a branch including a signaling-instrument or with a branch including a speaking-instrument, substantially as set forth.

2. The combination, with an annunciator system consisting of two or more normally-open keys at a central station and two or more signaling-instruments at different subsidiary points, to which signals are transmitted by said keys through individual conductors normally open at said keys, of a speaking-instrument included in a common return-circuit and provided with means, substantially such as described, for establishing a connection at will with any one of said individual conductors, as set forth.

3. The combination, with an annunciator system consisting of two or more individual signaling-circuits extending from a central station to two or more subsidiary signaling-points, of a key at each signaling-point, which, when not employed in transmitting a signal, normally maintains contact with a branch of a normally-open return-circuit, a speaking-instrument capable of being placed in operative connection with each such branch, and a speaking-instrument in said return-circuit at the central station.

4. The combination, with an annunciator system consisting of two or more individual signaling-circuits extending from a central station to two or more subsidiary signaling-points, of a key at each such signaling-point, which, when not employed in transmitting a signal, normally maintains contact through a branch of a normally-open return-circuit, and a switch in said branch by which either a speaking or a signaling instrument is alternately brought into action, as set forth.

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Witnesses:

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