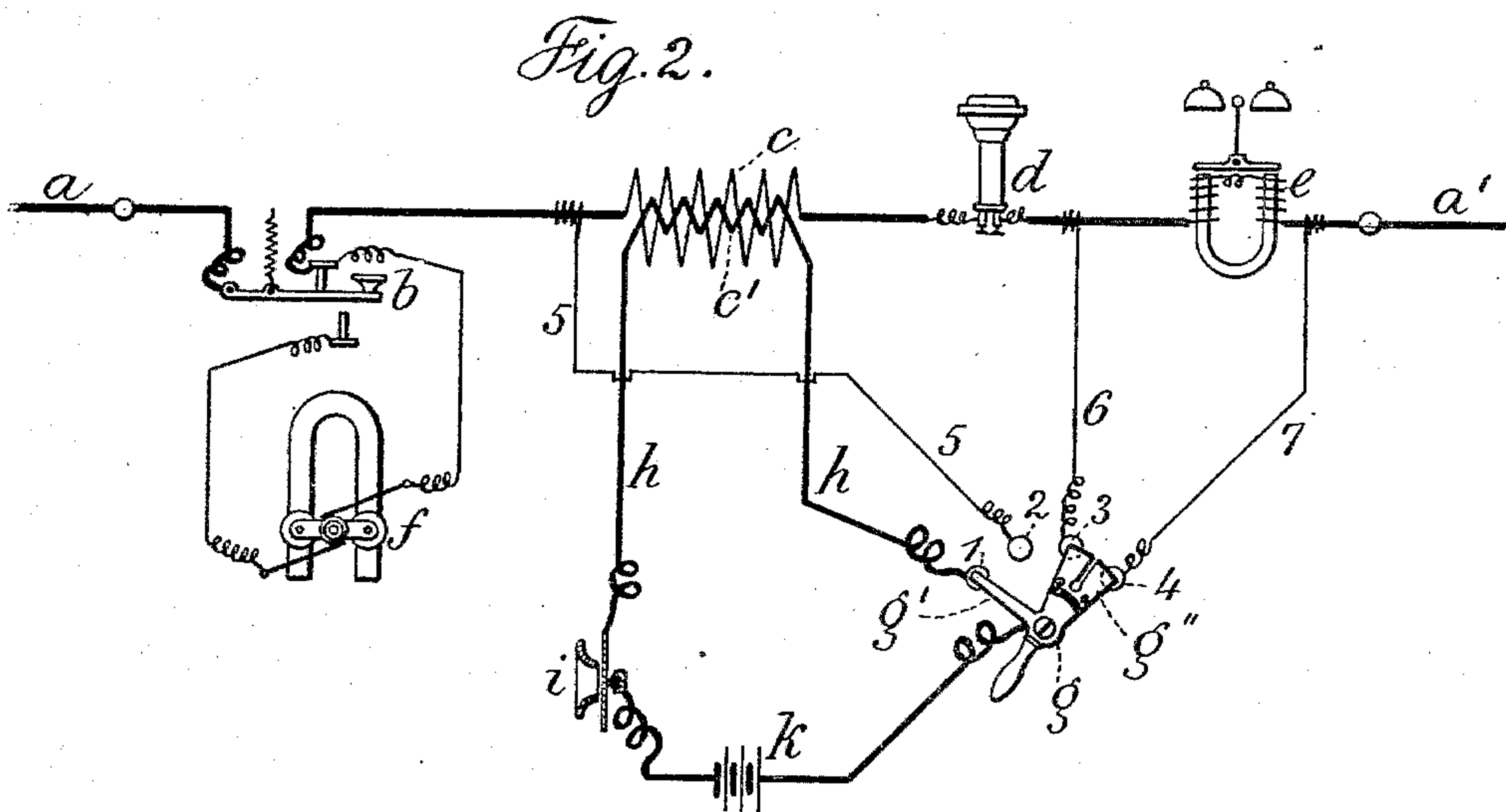
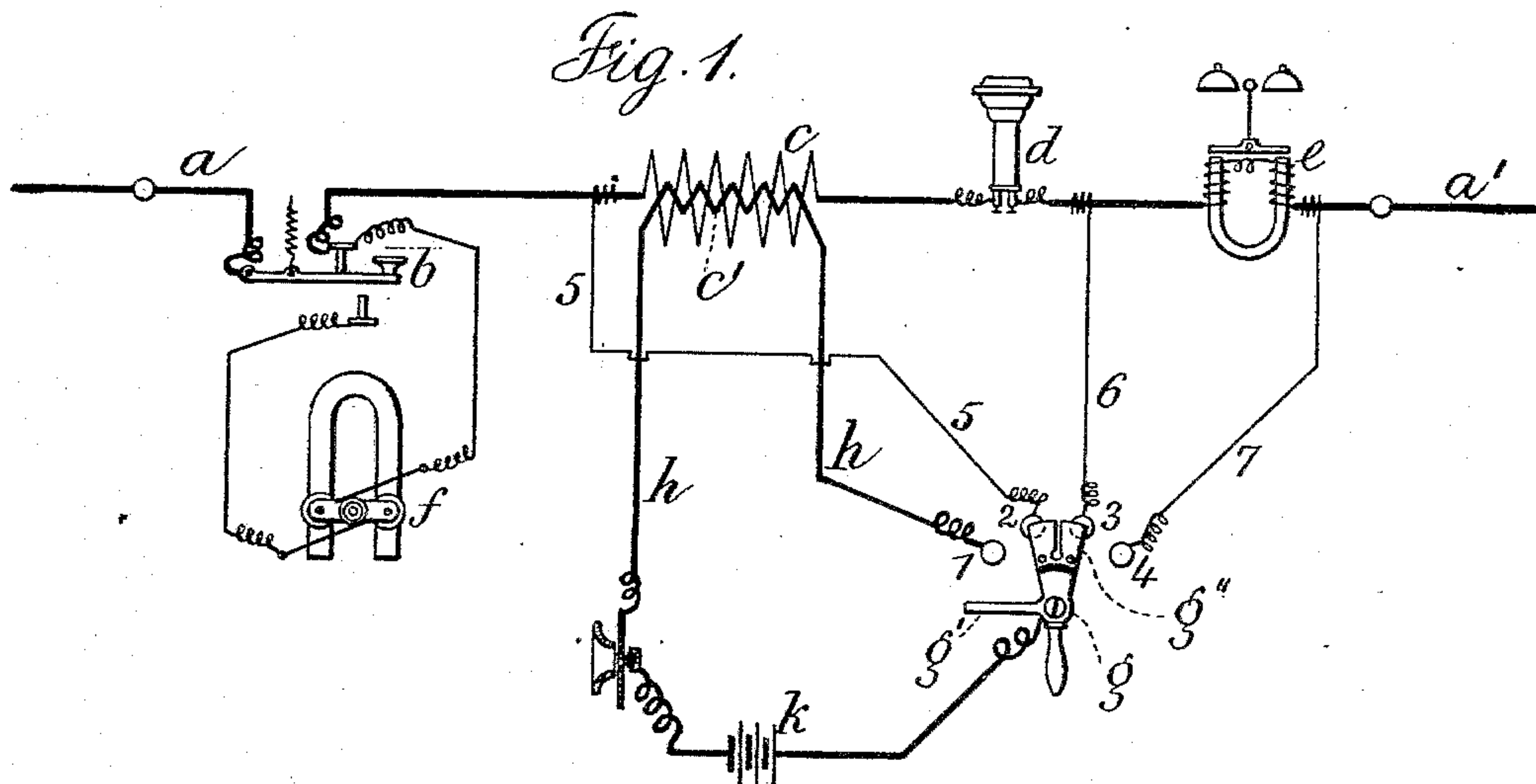


(No Model.)

J. PIEL.  
TELEPHONE SYSTEM.

No. 563,614.

Patented July 7, 1896.



Witnesses:  
J. Staib  
Chas. H. Smith

Inventor:  
by Jean Piel  
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attys



# UNITED STATES PATENT OFFICE.

JEAN PIEL, OF NEW YORK, N. Y., ASSIGNOR TO FREDERICK PEARCE, OF  
SAME PLACE.

## TELEPHONE SYSTEM.

SPECIFICATION forming part of Letters Patent No. 563,614, dated July 7, 1896.

Application filed April 13, 1896. Serial No. 587,244. (No model.)

*To all whom it may concern:*

Be it known that I, JEAN PIEL, a subject of the Emperor of Germany, residing at New York, in the county and State of New York, have invented a new and useful Improvement in Telephone Systems, of which the following is a specification.

This invention consists in introducing into the main line the secondary of an induction-coil, the telephone-receiver and the call-bell in series and in combination therewith, a switch and wires therefrom to the main line for shunting either the secondary of the induction-coil and the telephone-receiver when the switch is in the position of rest, the line being thus prepared for call, or the call-bell when the switch is moved to the other position, thus preparing the line for talking service.

In the drawings, Figure 1 is a diagram of the parts in my improved system in the position preparatory to sending a call by sounding the bell or by operating another signaling device, and Fig. 2 is a similar diagram with the parts in the position for speaking over the line.

The main line is represented at *a* and *a'*, the key of ordinary or usual construction at *b*, and *c* represents the secondary and *c'* the primary of an induction-coil. The telephone-receiver is represented at *d*, and the call-bell at *e*. These parts are also of usual and well-known construction. The key *b*, the secondary *c* of the induction-coil, the telephone-receiver *d*, and the call-bell *e* are all in the main line.

*f* represents a current-generator, which may either be a magneto-generator or a battery. The switch is provided with adjacent contacts 1 2 3 4.

*g''* represents an insulated metallic piece upon the switch *g g'* to engage the adjacent contacts 2 and 3 or 3 and 4, and wires 5 6 7 extend from these contacts to the main line in the manner shown.

*h* represents a circuit which includes the primary *c'* of the induction-coil, the telephone-transmitter *i*, and the battery *k*, and one end

of the circuit *h* connects with the contact 1 and the other with the switch *g g'*.

Referring now to Fig. 1, a call comes over the main line from a distant instrument and passes chiefly along the path of least resistance from the main wire *a* by the wire 5 to the contact 2, by the metallic piece *g''* to the contact 3, by wire 6 through the call-bell to the main wire *a'*. The call is sent in at the distant station in the well-known manner by pressing the key *b* and thus bringing the generator *f* into the line. After the call has been given, and to bring the parts into the proper relation for speaking, the switch *g g'* is moved from the position shown in Fig. 1 to the position shown in Fig. 2, and the shunt 5 2 3 6, around the secondary of the induction-coil and the telephone-receiver, is taken off and the shunt 6 3 4 7 is put on around the call-bell, so that an electric current coming over the main line *a* from a distant station passes through the secondary *c* of the induction-coil, through the telephone-receiver *d*, and chiefly by the wire 6, contact 3, piece *g''*, contact 4, and wire 7 to the main wire *a'*. In this position of the parts the telephone-receiver *d* will reproduce the message from the distant station, and the closing of the primary *c'* of the induction-coil through *h, i, k, h, g, g'*, and contact 1 will allow of sending a message to the distant station. The parts are brought to their normal position by moving the switch back into the position shown in Fig. 1.

I claim as my invention—

In a telephone system, the combination with the secondary of an induction-coil, the receiver and the call-bell or other signaling instrument in the main line, of a switch and wires therefrom to the main line for shunting either the secondary of the induction-coil and the receiver or the call-bell or other signaling instrument, according to the position of the switch, substantially as set forth.

Signed by me this 9th day of April, 1896.  
JEAN PIEL.

Witnesses:

GEO. T. PINCKNEY,  
S. T. HAVILAND.