

(No Model.)

J. O. STOCKWELL.

TELEPHONE SYSTEM.

No. 357,134.

Patented Feb. 1, 1887.

Fig. 1.

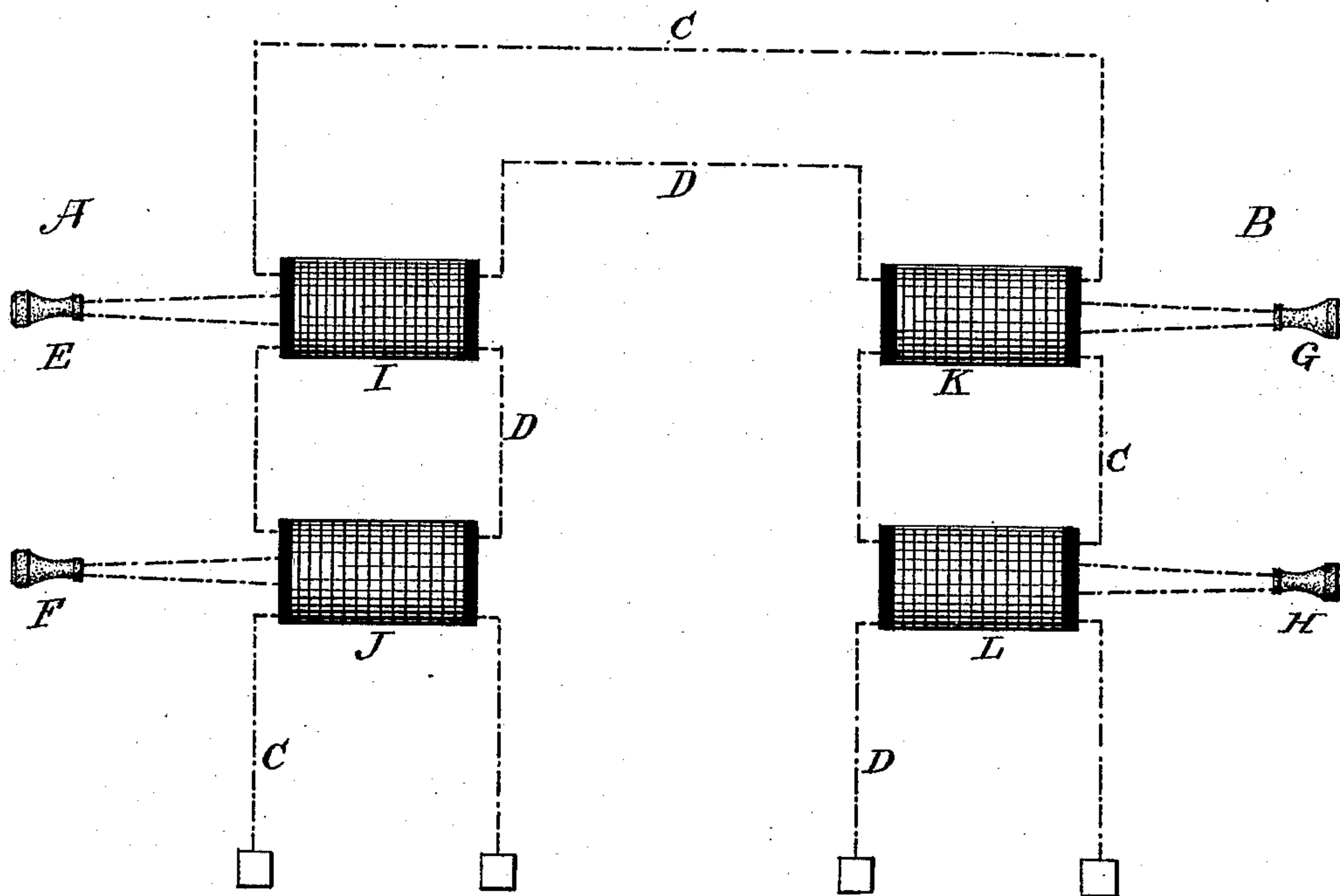
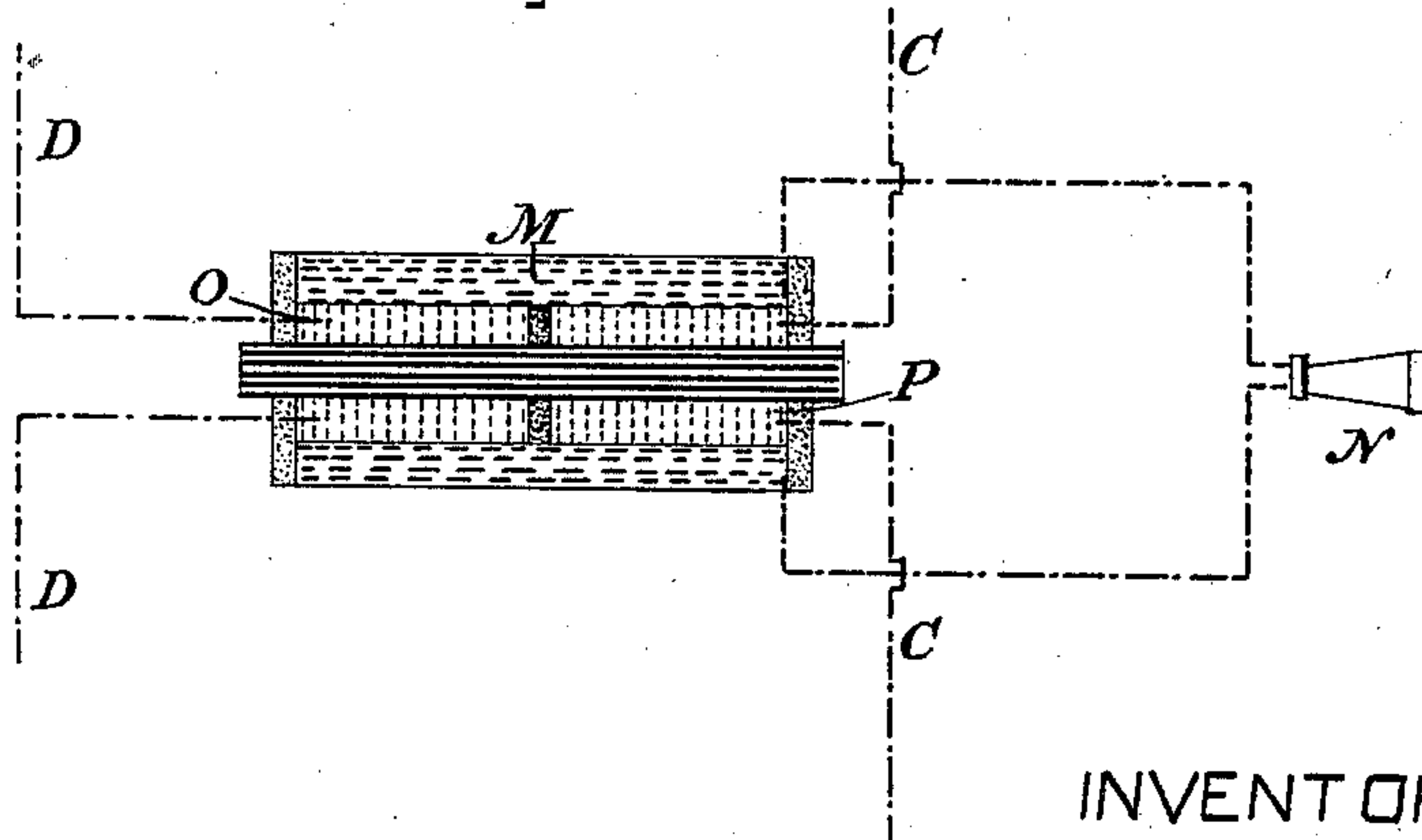


Fig. 2.



ATTEST:

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JOHN OSCAR STOCKWELL, OF BURLINGTON, KANSAS.

TELEPHONE SYSTEM.

SPECIFICATION forming part of Letters Patent No. 357,134, dated February 1, 1887.

Application filed March 18, 1886. Serial No. 195,646. (No model.)

To all whom it may concern:

Be it known that I, JOHN OSCAR STOCKWELL, a citizen of the United States, and a resident of Burlington, in the county of Coffey and State of Kansas, have invented certain new and useful Improvements in Telephone Systems, of which the following is an exact description.

My invention relates to telephony; and the object of the same is to provide means whereby two persons at one station may hold conversation with two other persons at another station.

The invention consists, in brief, of induction-coils, line-circuits, and telephonic apparatus, electrically connected in such a manner that one set of acoustic vibrations does not interfere with the other set.

In order to illustrate the practical manner of carrying out the invention, drawings are hereunto annexed and described.

A general outside view of an installation of my system is shown in Figure 1, while Fig. 2 shows a detail view of the relative dispositions of the primary and secondary coils.

A represents one station, and B another station, the stations being connected by two main lines, C and D, and being provided with two telephones, E and F, in the one station, and G and H in the other station. Two induction-coils or inductoria, I and J, are located at station A, and two other inductoria, K and L, are located at station B.

Although not shown in detail in Fig. 1, each inductorium consists, as shown in Fig. 2, of a primary or local coil, M, in circuit with any single telephone N—i. e., each of the telephones E, F, G, and H is connected up with the outside coil M in the inductorium, although this would not necessarily be interpreted from Fig. 1. Two inner secondary coils, O P, are provided, each being so located and of such a mass as to receive approximately equal currents from said primary coil. The main line C passes through the coil P, while the main line D passes through the coil O. The only difference between the two inductoria I and J or K and L is that those inner coils similarly located are wound in opposite directions. In any inductorium the two coils O and P are wound in opposite directions. The directions of these windings are not shown, as they are merely of a relative nature. The primary coils are all wound in the same direction. Further, J and L are wound alike, and so are I and K.

The *modus operandi* of the system is as follows: Upon speaking, for instance, through the telephone E, the current therefrom is divided into two currents, one of which passes through the main line C in one direction and the other through the main line D in the opposite direction. If at the same time another person speaks through the telephone F, he will be heard at H, so that the parties at telephones E and G can hold conversation at the same time that the parties at the telephones F and H are speaking to each other.

I am at a loss to overcome all theoretical objections in reference to the operation of my invention. I and others have tried it, and we have found it to be practically successful. Further investigation may show that interference really does occur, but that the sounds received in H from F are louder than those received from E, and that those received in G from E are louder than those received from F. The louder sounds would be heard to the exclusion of the sounds of less loudness.

The principles of construction and operation involved in the above are evidently attained in many variations in the specific character of the devices employed without departing from the spirit of the invention.

Having now stated the title, object, and relation of the said invention, what I claim is—

1. In a system of telephony, two stations, two main lines, two local circuits, two inductoria, and two telephones at each station, and in circuit with said inductoria and with said main lines, substantially as illustrated.

2. In a system of telephony, the combination of two stations, two main lines, two inductoria at each station, having three coils each, one of said coils being in circuit with a telephone and wound in each inductorium, and the other two coils in each inductorium being the one in the main line and the other in the other main line, and being wound in opposite directions in any one inductorium, and both secondary coils at the same station and in the same main line being wound in opposite directions, substantially as described.

In testimony whereof I hereunto sign my name, in the presence of two subscribing witnesses, this 30th day of January, 1886.

JOHN OSCAR STOCKWELL.

Witnesses:

GEO. D. CARPENTER.

HARRY E. KELLEY.