

(No Model.)

2 Sheets—Sheet 1.

G. W. LORD.

MECHANICAL TELEPHONE LINE.

No. 359,218.

Patented Mar. 8, 1887.

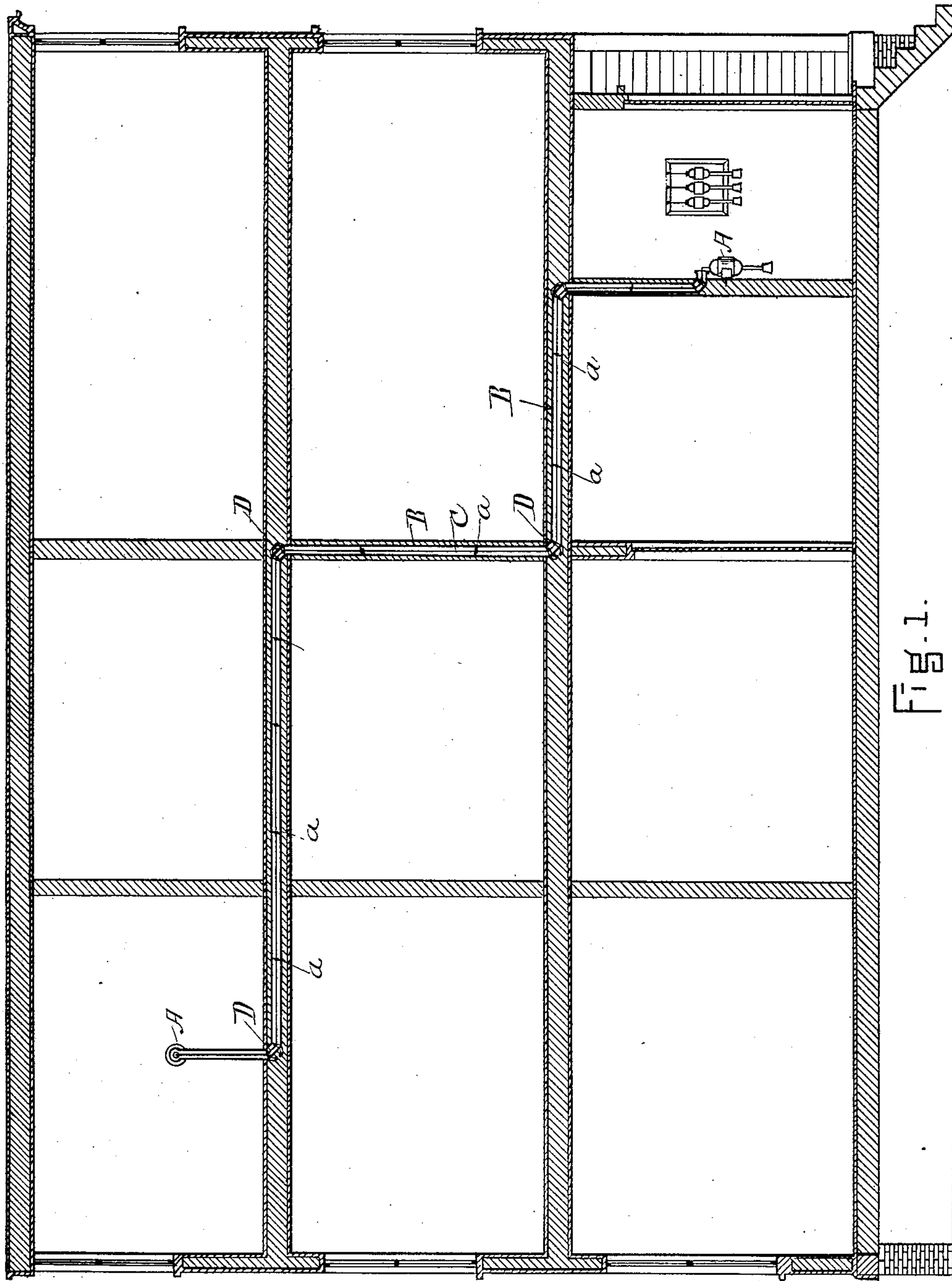


Fig. 1.

WITNESSES.

James W. Briggs
Thomas F. Skells

INVENTOR.

George W. Lord
by his attorney
Chas. L. Hayes.

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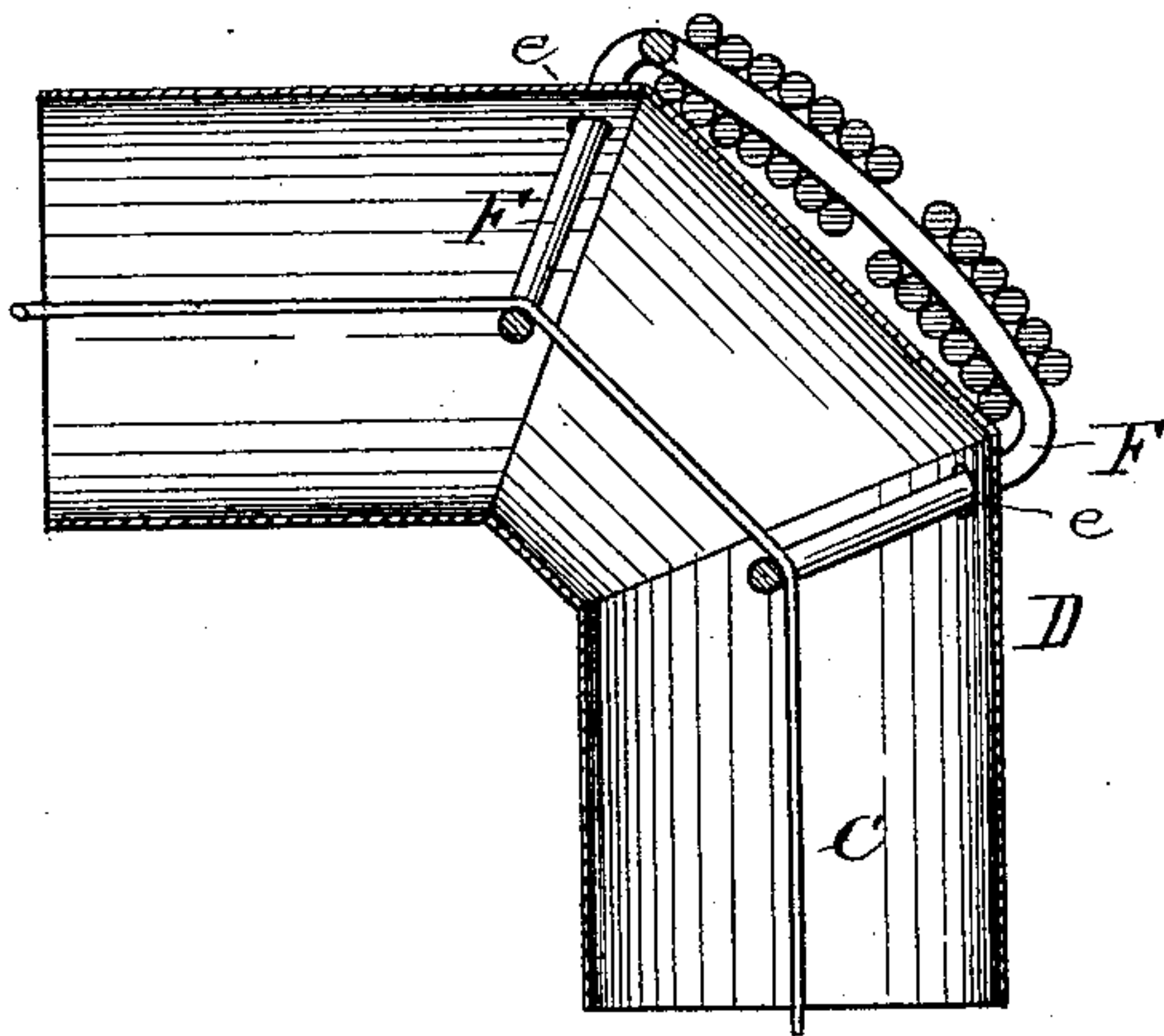


Fig. 2.

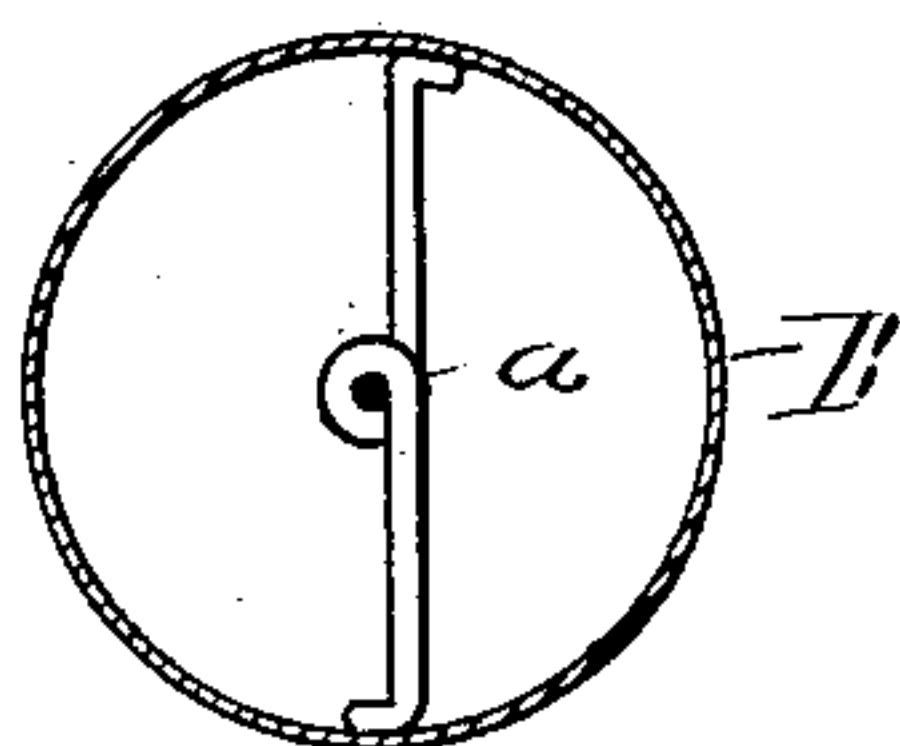


Fig. 3.

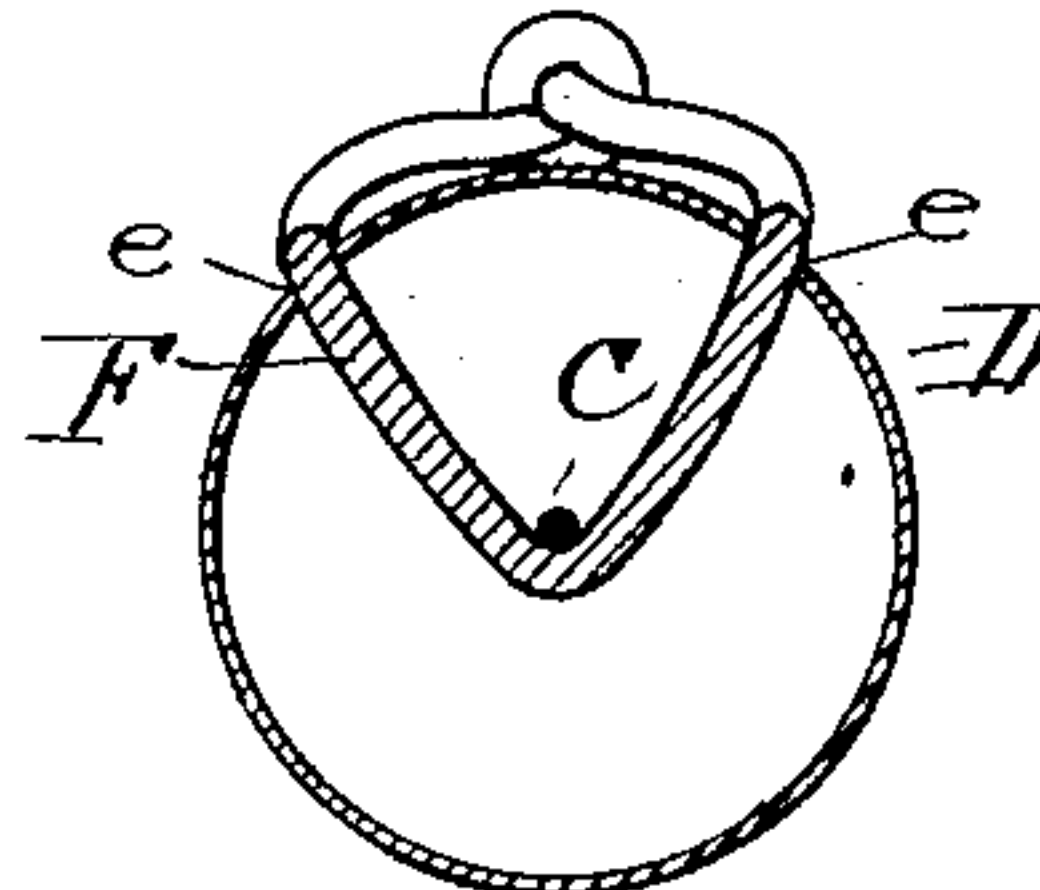


Fig. 4.

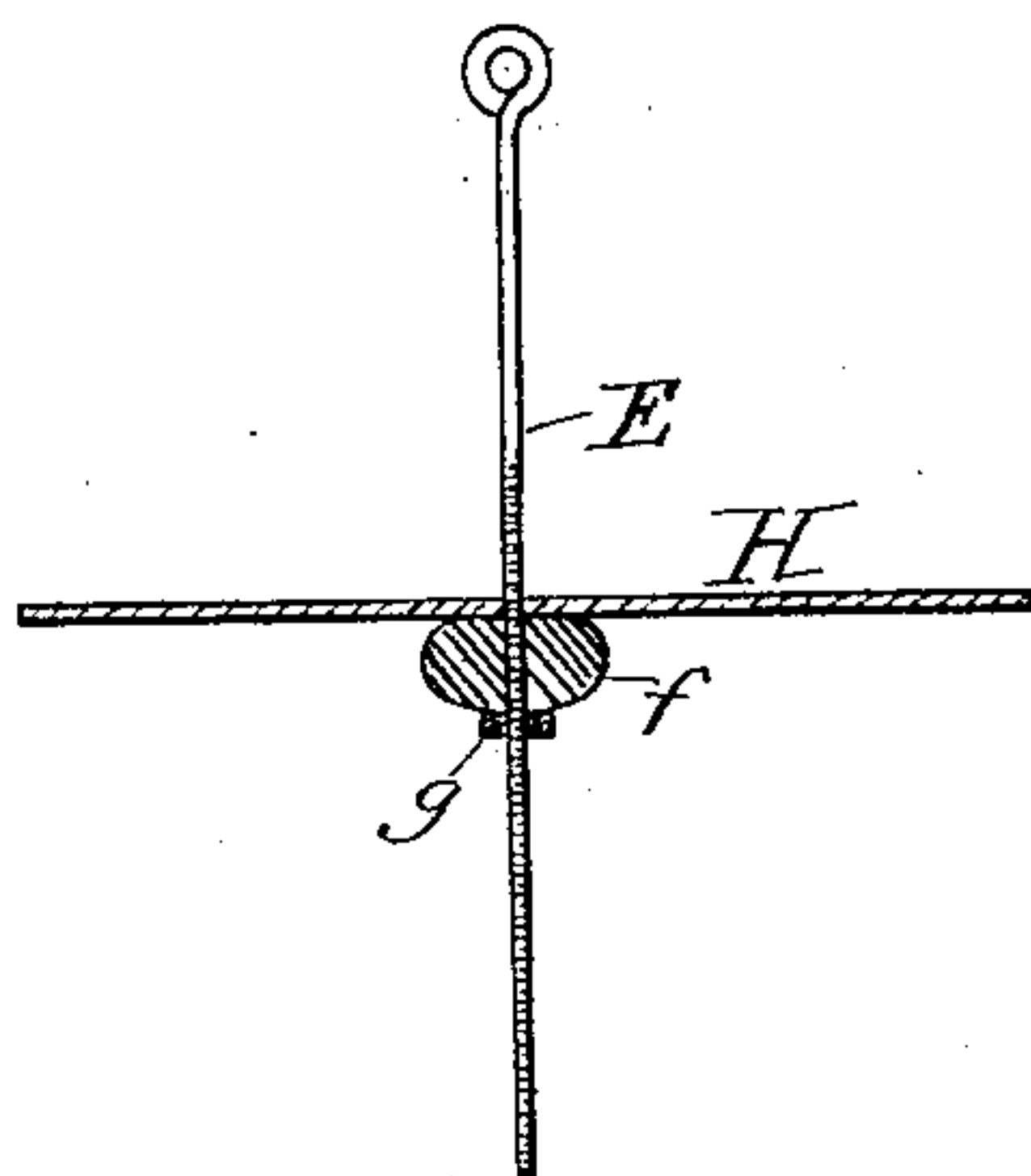


Fig. 5.

WITNESSES.

James W. Briggs
Thomas F. Kelly

INVENTOR,

George W. Lord
by his attorney
Chas. L. Hayes

UNITED STATES PATENT OFFICE.

GEORGE W. LORD, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE LORD ACOUSTIC TELEPHONE MANUFACTURING COMPANY, OF SAME PLACE.

MECHANICAL-TELEPHONE LINE.

SPECIFICATION forming part of Letters Patent No. 359,218, dated March 8, 1887

Application filed October 28, 1886. Serial No. 217,471. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. LORD, a citizen of the United States, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Mechanical-Telephone Lines for Buildings, of which the following is a specification.

This invention consists in the method of arranging a mechanical-telephoneline within the walls and floors of a building, as hereinafter more fully set forth, whereby the line is concealed and protected and its adaptability for the purpose of communication between the several rooms of a building increased.

It also consists in a device, as hereinafter more fully set forth, for giving the desired tension to the line.

In the accompanying drawings, Figure 1 is a vertical sectional plan of a building, showing the several walls and a telephone-line placed within them. Fig. 2 is a sectional view of the device used for supporting the conducting-wire at angles. Fig. 3 is a view of the device for supporting the wire within the tube. Fig. 4 is a transverse sectional view of the device for supporting the conducting-wire at angles, and Fig. 5 is a view of a device for giving tension to the line.

In these several figures the same letters refer to the same parts.

Mechanical telephones have been used in buildings for communicating between the several rooms; but owing to the fact that angles in the conducting-wire have heretofore impeded the transmission of sound-waves, and the devices with which it has been attempted to overcome this obstacle to the successful transmission of sound-waves mechanically by a conducting-wire have been of such form as not to be capable of being placed within the floors and walls of a building, the use of mechanical telephones in buildings has necessarily been limited.

By the devices which I have invented for supporting the conducting-wires of a mechanical telephone at angles, and which are described in Letters Patent No. 346,594, dated August 3, 1886, and in application No. 181,908, I am enabled to transmit articulated speech over

a wire containing right angles almost as perfectly as upon a straight wire, and, moreover, to place the wire within the walls and floors of a building, either inclosed or uninclosed, thus largely extending the application of mechanical-telephone systems for the purposes of communication between the several rooms of a building.

Referring to the drawings, A A are the telephones—one in the vestibule and the other in one of the rooms of a building—and C is the wire connecting the same.

The telephones may be of any form; but I prefer to use that described by me in another application for a patent, inasmuch as, independently of the superior acoustic properties of this telephone, it admits of the wire being maintained at a suitable tension by the weight of the telephone, as described in my application No. 216,381. This wire is placed within the walls and floors of the building, and is preferably supported within a tube, B, by means of suitable supports—as, for example, the supports of wire shown at *a a* in Figs. 1 and 3, which are made of wire covered with cotton and coated with paraffine, or covered with any other sound-insulating material.

D are the devices for supporting the wire at angles. These may be the device patented by me August 3, 1886, as before stated, or that described in my application No. 181,908. One form of that device is represented in Fig. 2. It consists of a bent tube, of tin or other suitable metal, formed of two sections at right angles to one another, connected by a shorter section. In the walls of each of these longer sections, near the shorter section, are made two perforations, *e e*, at a distance from each other equal to about one-third of the circumference of the same, and through these perforations is inserted a wire, F, preferably covered with cotton coated with paraffine, though any other non-conducting covering can be used. This wire is inserted in such a manner that two loops are formed at an angle to each other, and the ends of the loops are then twisted together on the outside of the tube, and to this twisted wire the cord or wire is attached by which the tube is kept in position. These loops have a curved form and resist any tendency of the

conducting-wire by its tension to draw them into a V-shaped form. The conducting-wire rests in the apex of the loop, and does not touch the sides of the same. Consequently there is a minimum of contact with the loop and but little conduction of sound-waves through the same.

Fig. 5 represents a device for giving the desired tension to the wire. It consists of a wire, E, to which the conducting-wire is attached, and which passes through the diaphragm, and a button, *f*, on the same. Upon this wire E is cut a screw-thread, and a nut, *g*, is provided on the same, by means of which the wire can be screwed up to give any desired tension to the conducting-wire.

In my application No. 181,908 I have claimed, broadly, a supporting and protecting tube for the conducting-wires of telephones, in combination with supporting-loops for said wires extending within said tube. I therefore do not claim, broadly, this construction in the present application.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination of the bent tube D, the open loops F, contained within the same and arranged at an angle to each other, the wire supported by said loops, supports for the straight part of said wire, the tube E, inclosing the latter at all points, all the foregoing de-

vices being arranged within the walls and floors of a building, the screw-threaded rod E, the diaphragm of a telephone through which said rod passes, and the adjusting-nut on said rod, whereby the tension of the wire is regulated, substantially as set forth.

2. The combination, substantially as and for the purpose set forth, with the conducting-wire of a mechanical-telephone line, of the tube D, made in two sections at an angle to one another and connected by a shorter section, perforations *e e* in each of the longer sections arranged, as described, near the short section, a wire, F, covered with an insulating and sound-deadening material, as described, passing through these perforations and having its ends connected, as described, on the outside of the tube, and curved loops formed by the wire F for supporting the conducting-wire within the tube.

3. The combination, substantially as and for the purpose set forth, of the wire E, having a screw-thread on the same, the diaphragm H, nut *g*, and button *f*.

In witness whereof I have hereunto signed my name in the presence of the two subscribing witnesses.

GEORGE W. LORD.

Witnesses:

JAMES W. BRIGGS,
THOMAS F. WELLS.