

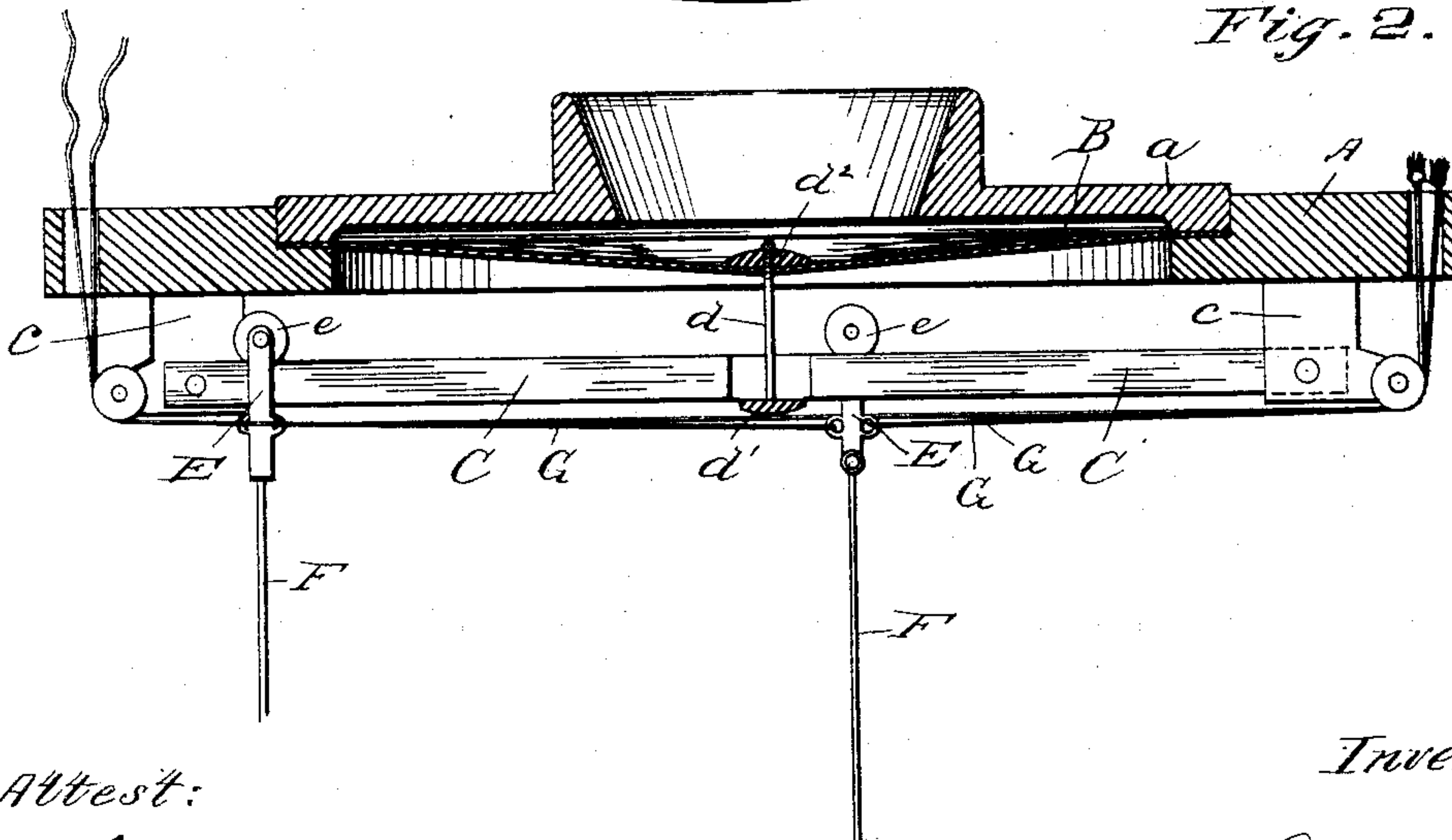
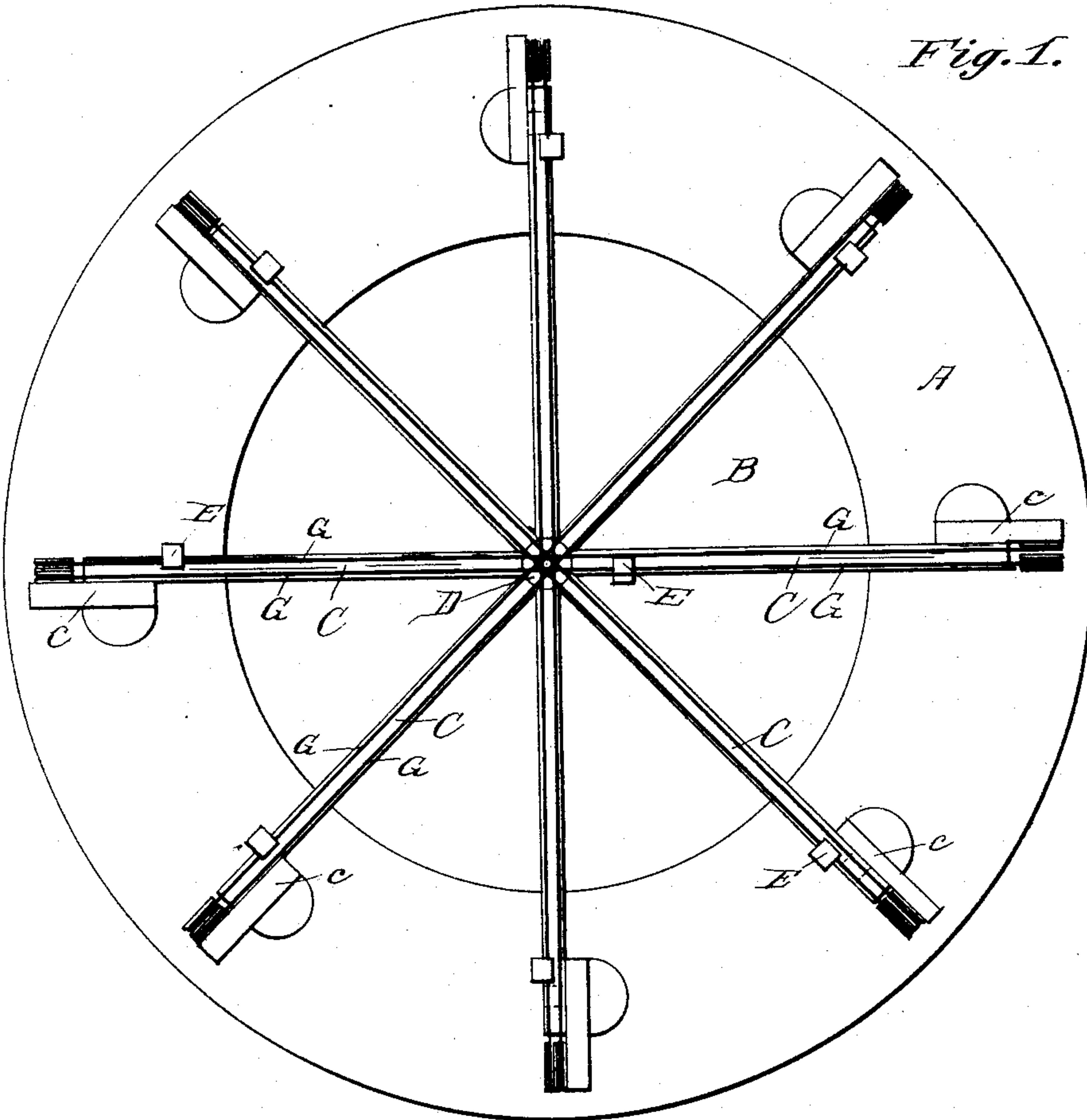
(No Model.)

2 Sheets—Sheet 1.

A. W. STEIGER.
MECHANICAL TELEPHONE.

No. 338,620.

Patented Mar. 23, 1886.



Attest:

John A. Baber
Jacob Felbel.

Inventor:

Andrew W. Steiger.

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Fig. 3.

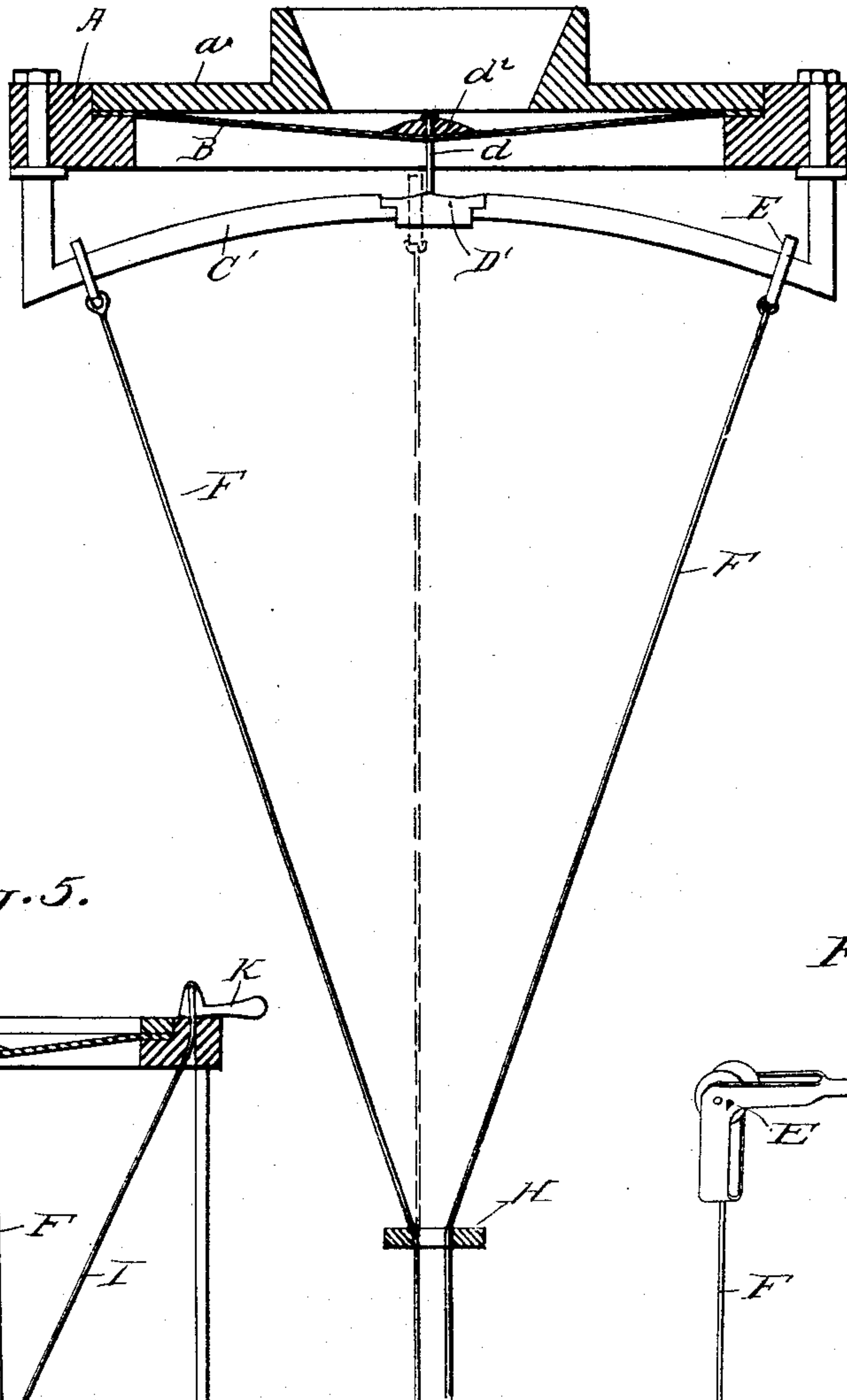


Fig. 5.

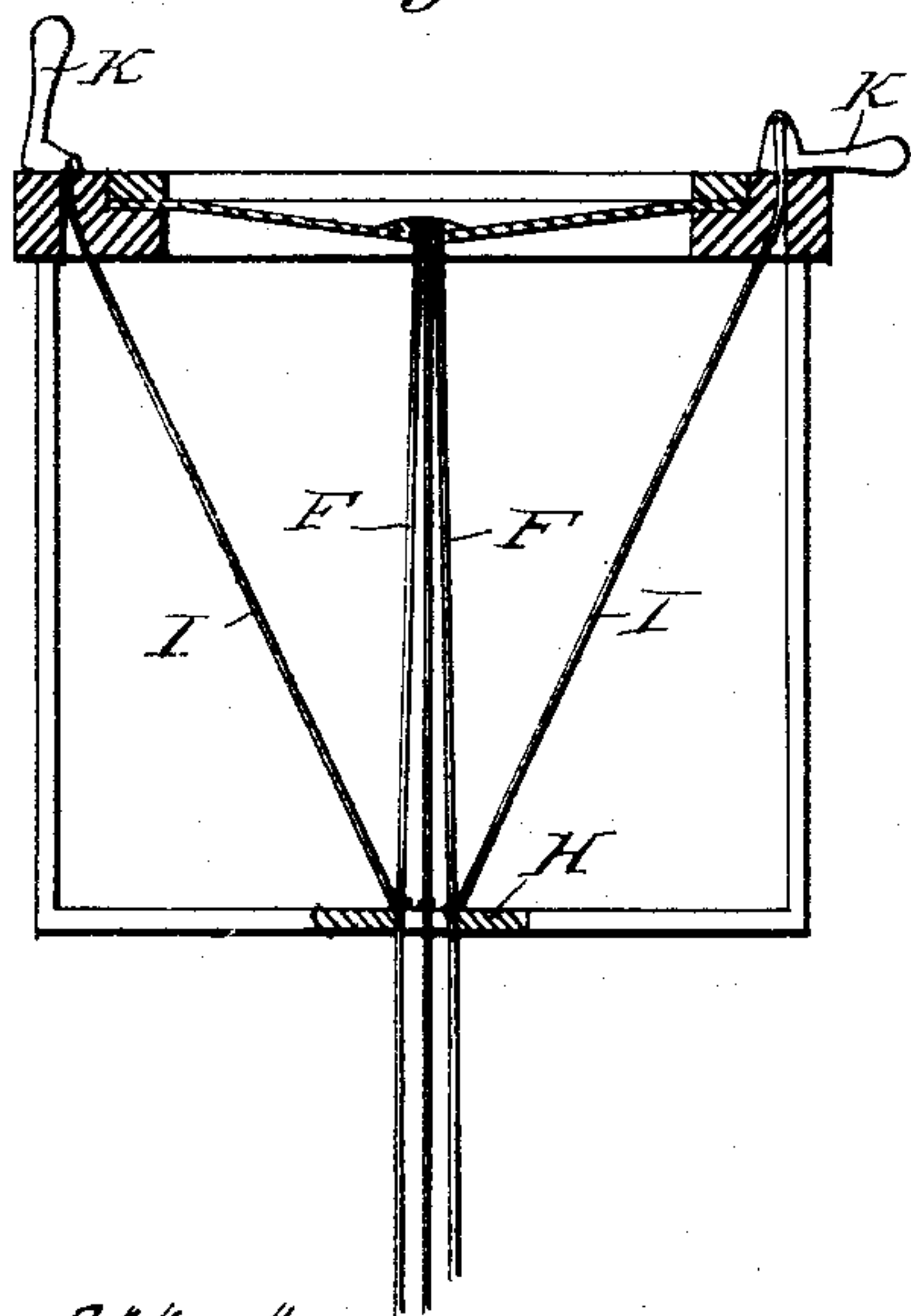
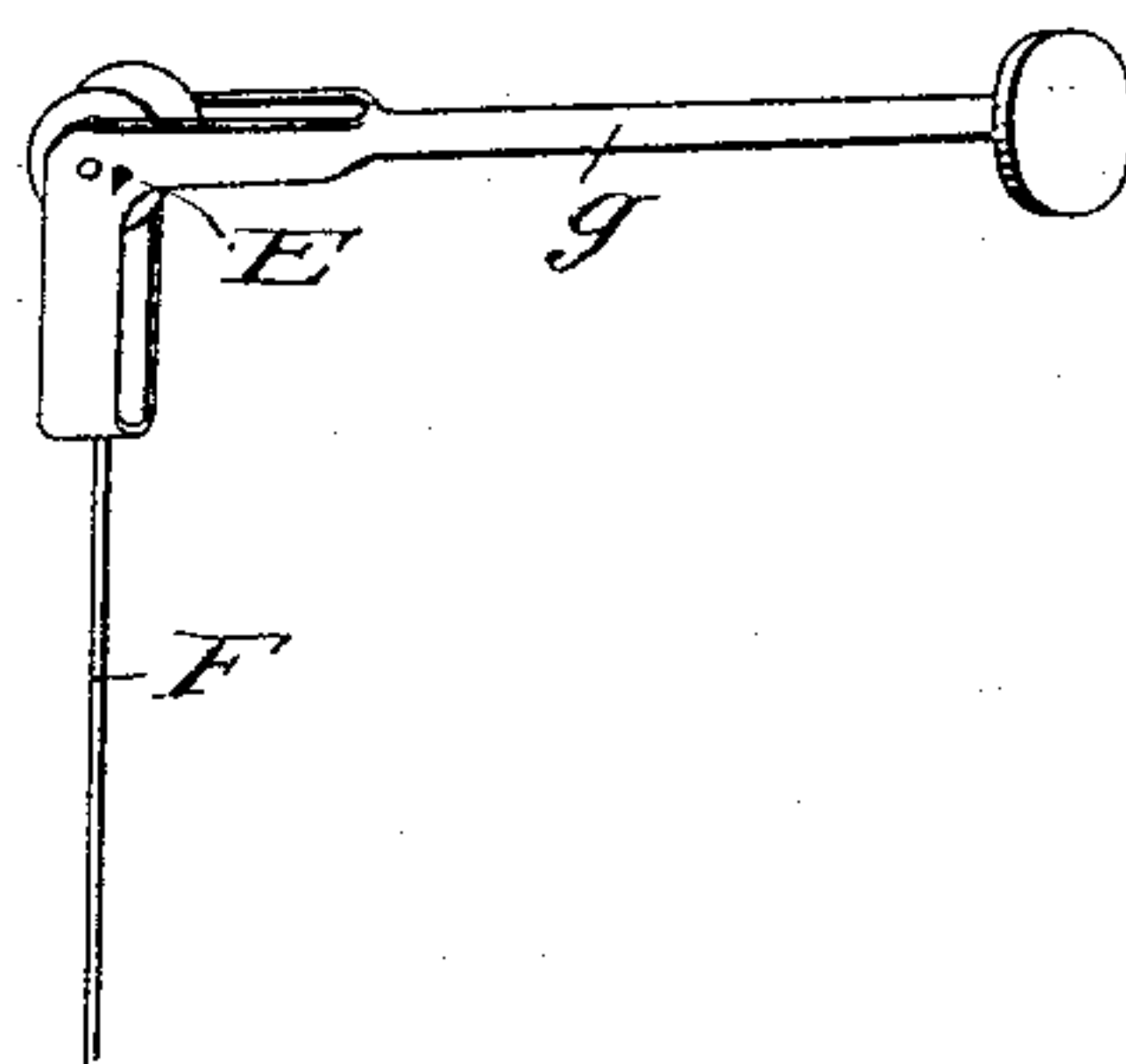


Fig. 4.



Attest:
John A. Baber
Jacob Felbel.

Inventor:
Andrew W. Steiger

UNITED STATES PATENT OFFICE.

ANDREW W. STEIGER, OF NEW YORK, N. Y., ASSIGNOR TO JOHN A. CABOT
AND WILLIAM L. McCREARY, BOTH OF SAME PLACE.

MECHANICAL TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 338,620, dated March 23, 1886.

Application filed October 16, 1885. Serial No. 180,060. (No model.)

To all whom it may concern:

Be it known that I, ANDREW W. STEIGER, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Mechanical Telephones, of which the following is a specification.

My invention relates to a switching device for use with acoustic or mechanical telephones, the object being to permit the use of one diaphragm in connection with two or more separate and distinct line-wires.

It consists, as hereinafter set forth, in so connecting the line-wires with the diaphragm as that the direct pull of any or all the wires may be made to draw either directly upon the diaphragm or upon its supporting-frame, each line being operative or not, according as it is made to draw upon the diaphragm.

In the accompanying drawings, Figure 1 is the rear view of a telephone-diaphragm fitted with my switching device made to accommodate eight line-wires. Fig. 2 is a transverse section through the same. Fig. 3 shows a sectional view through a modification adapted for two line-wires. Fig. 4 shows a shifting-rod and friction-roller, and Fig. 5 shows a modification wherein the guide or traveler bar is dispensed with.

A is the telephone frame or box, and B is the flexible diaphragm, the latter shown as held in place by a face-plate, *a*, provided with a conical-shaped mouth-piece. Immediately behind the diaphragm are two or more pivoted levers, C, pivoted at one end to the lugs *c*, secured to the frame A, and projecting inward to the central point of the diaphragm, where they are connected with or made to rest upon a stirrup, D, connected directly with the diaphragm. I preferably make this stirrup as shown in Fig. 2, wherein *d* is a light metallic rod provided with a disk, *d'*, to form a rest upon which the levers C may bear. The rod *d* is made to pass through the diaphragm, and is threaded at its outer end, and has thereon a threaded nut, *d''*. Upon each of the several levers C is mounted a sliding yoke, E, preferably provided with a friction-roller, *e*.

The line-wires F F are attached each to one of the yokes E. As will be readily seen, the pull upon the line-wire will draw either upon the diaphragm B or upon the frame A as it is moved from end to end of the guide-lever C. In Figs. 1 and 2 I have shown this movement of the yokes and their wires as being accomplished by flexible cords G, attached at one end to the yoke, and passing around pulleys pivoted to the frame, and out through the frame A. In lieu of these cords G, I may substitute a rigid bar, *g*, as shown in Fig. 4, made in one with or attached to the yoke.

Instead of the pivoted guide-lever C, and where it is desired to have only two wires connected with the diaphragm, I may make use of a rigid guide-bar, C', attached securely to the frame, the stirrup D', attached to the diaphragm, being made to fit into a recess cut into the guide C', so that the sliding yoke E may be forced along the guide and upon the yoke.

In Figs. 1 and 2 I have shown the pivoted levers as being made straight; but in certain cases, especially when the lines are made to form an angle near the instrument, it is necessary, to prevent there being a slackening of the wire, to make the surface of the lever curved, the center of the curve being the nearest fixed point of the line. To render this curve uniform, I preferably lead the several line-wires through a guide-ring, H, (see Figs. 3 and 5,) which may be set in the rear wall of the box-case of the telephone.

As I wish to claim, broadly, the use of two or more line-wires connected with one diaphragm, I have shown in Fig. 5 a means of making the connections wherein the levers C and the sliding yoke are dispensed with. In this form the line-wires F F are connected directly with the diaphragm, and branch wires I I are connected with the line-wires at or near where they pass through the guide-ring H, are led through the frame A of the telephone, and connected with cam-levers K K. The levers K are preferably made in the form of an L, as shown, and the wires I I are connected with the ends of one of the straight portions, as shown, so that by throwing the other end of the lever

back and forth the pull of the line-wires F F may be transferred at will from the diaphragm to the frame A.

Having described my invention, what I claim is—

1. In an acoustic or mechanical telephone system, the combination, with a vibrating diaphragm, of two or more line-wires connected therewith, and provided with mechanism whereby the pull of one or all of the wires may be transferred from the diaphragm to the frame within which it is mounted, substantially as set forth.

2. In an acoustic or mechanical telephone, the combination, with a vibrating diaphragm, and with a supporting-frame therefor, of two or more guide-bars secured to said frame and adapted to serve as guides for two or more sliding yokes, and permit them to be brought singly or together to bear upon a stirrup connected directly with the vibrating diaphragm, each yoke being connected with a transmitting-line, and provided with means for moving it upon its guide-bars, substantially as set forth.

3. In an acoustic or mechanical telephone, the combination, with the diaphragm B and frame A therefor, of two or more guide-levers,

C, pivoted to the frame at one end, and bearing at their other end upon a stirrup secured to the diaphragm, a sliding yoke upon each guide-lever to be connected with each line-wire, and means whereby the said sliding yokes may be moved back and forth upon the said guide-levers, substantially as and for the purpose set forth.

4. In an acoustic or mechanical telephone, the combination, with a vibrating diaphragm, and with two or more line-wires leading thereto, of a stirrup attached to the diaphragm, two or more guide-levers attached to the frame of the telephone and leading to the stirrup, each lever having mounted thereon a sliding yoke to which may be attached one of the line-wires, means for sliding the yoke upon the guide-levers, and a guide-ring in the rear of the device, through which to lead the several line-wires, substantially as and for the purpose set forth.

Signed at New York, in the county of New York and State of New York, this 14th day of October, A. D. 1885.

ANDREW W. STEIGER.

Witnesses:

JOHN A. CABOT,
JACOB FELBEL.