

(No Model.)

A. A. KNUDSON.
MECHANICAL TELEPHONE.

No. 300,713.

Patented June 17, 1884.

Fig. 1,

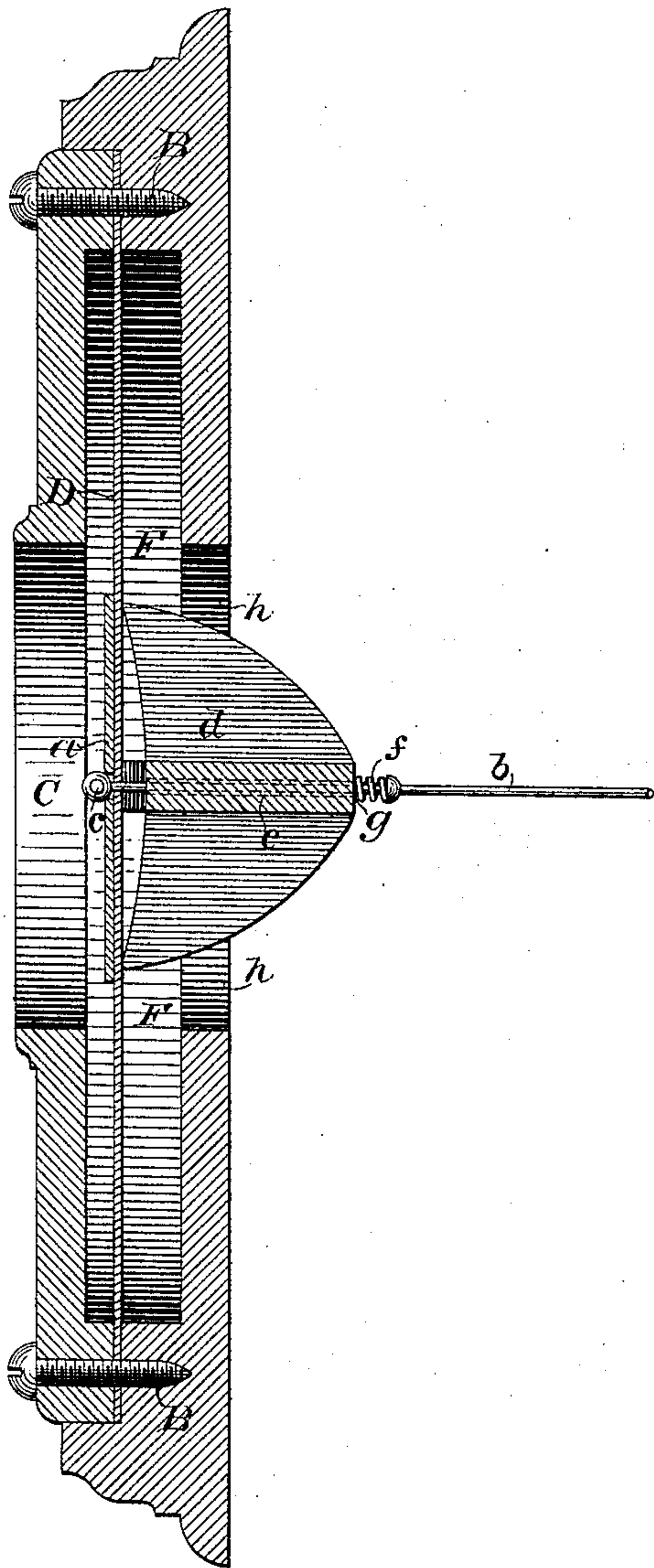
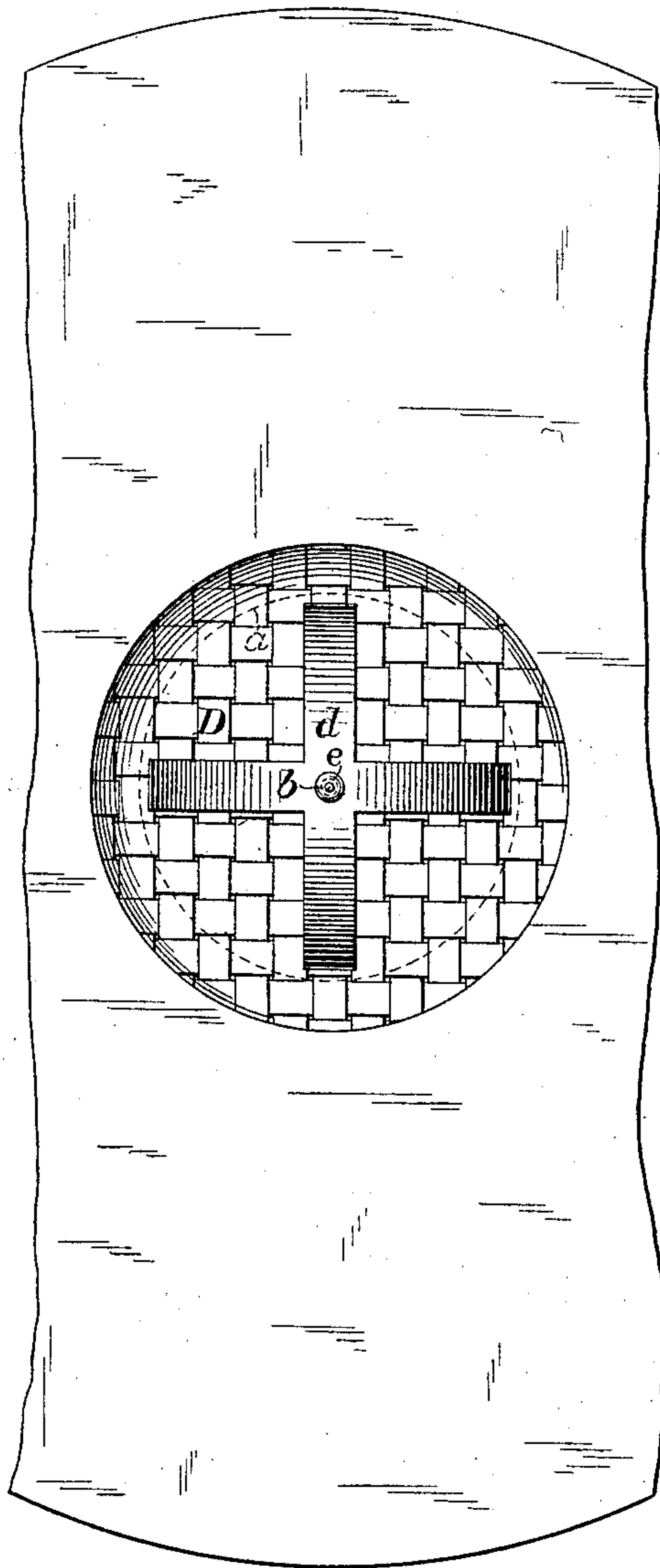


Fig. 2,



WITNESSES

Wm A. Skink
Jos. S. Latimer

INVENTOR

Adolphus A. Knudson

By *his Attorneys*

Pope Edgecomb & Butler

UNITED STATES PATENT OFFICE.

ADOLPHUS A. KNUDSON, OF BROOKLYN, NEW YORK.

MECHANICAL TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 300,713, dated June 17, 1884.

Application filed October 30, 1883. (No model.)

To all whom it may concern:

Be it known that I, ADOLPHUS A. KNUDSON, a citizen of the United States, residing in Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Mechanical Telephones, of which the following is a specification.

The object of my invention is to produce a "mechanical" or "acoustic" telephone, so called, which shall more perfectly reproduce the sounds of speech at a distance within the limit of mechanical transmission of sound-waves.

In the accompanying drawings the construction of such an improved telephone is illustrated.

Figure 1 is a sectional view of the telephone; and Fig. 2 is a plan view of a portion of the back of the instrument, showing the construction of the diaphragm.

The telephone is made, preferably, about eight inches in diameter, constructed in two parts, with an internal recess, F F. The two sections of the case are fastened together by the screws B B, which also secure the edges of the composite diaphragm D, thus allowing sufficient space on each side of said diaphragm to admit of its vibrating properly. A circular opening through the front of this case or shell allows the voice of the speaker to impinge directly upon the face of the metallic disk *a*, which rests against the composite diaphragm D. A similar opening, *h h*, through the base of the case, allows space for the placing of the sound-collector, as hereinafter described. The diaphragm D is composed of very thin strips of wood, which, for convenience or utility, may be interwoven, as in what is commonly known as "basket-work," (shown in Fig. 2,) and of which two layers may be used firmly pressed together with a filling of wood, paper, cloth, or other fibrous substance between them. The strips of wood are not necessarily to be arranged in the manner aforesaid. They may be laid parallel to each other and cemented or arranged in any other manner necessary to form a diaphragm which shall be practically continuous, although composed of several parts. A circular metallic disk, *a*, rests upon the diaphragm D, opposite the center of the opening C. A

hole through the center of this disk admits of the passage of the conducting line-wire *b*, the end of which is securely wound around a pin, *c*, of sufficient length to allow its ends to rest on the surface of the disk *a*, and thus prevent the wire from slipping out, while at the same time the tension of the line-wire presses the disk *a* firmly against the diaphragm D.

d d, Figs. 1 and 2, represent a sound-collector, which may be constructed of wood or other resonant material, Fig. 1 showing it in elevation, and Fig. 2 giving an end view. A hole through the center of this sound-collector (shown by the dotted lines *e e*) admits of the passage through it of the line-wire *b*, upon which it moves freely. The base of the sound-collector is slightly concaved, so that its edges alone touch the diaphragm D, against which it is pressed by means of the spiral spring *f*, one end of which is secured to the line-wire *b*, while the other acts against the point of the sound-collector at *g*, the line-wire *b* passing freely through the center of the spiral.

I claim as my invention—

1. In a mechanical telephone, the composite diaphragm made of thin strips of wood woven, folded, cemented, sewed, or otherwise fastened together, substantially as described.

2. In a mechanical telephone, the composite diaphragm made of thin strips of wood, substantially as described, two layers of which are joined together, with a filling of wood, cloth, paper, vellum, or any other suitable material, substantially as described.

3. In a mechanical telephone, the sound-collector *d*, consisting of a block of resonant material mounted upon the line-wire and resting against or secured to the diaphragm, substantially as described.

4. In a mechanical telephone, a composite diaphragm the outer surfaces of which are of wood, in combination with the sound-collector *d*, substantially as described.

In testimony whereof I have hereunto subscribed my name this 26th day of October, A. D. 1883.

ADOLPHUS A. KNUDSON.

Witnesses:

DANIEL W. EDGECOMB,
CHARLES A. TERRY.