

(No Model.)

W. H. EASTMAN.
MECHANICAL TELEPHONE.

No. 348,896.

Patented Sept. 7, 1886.

Fig. 1.

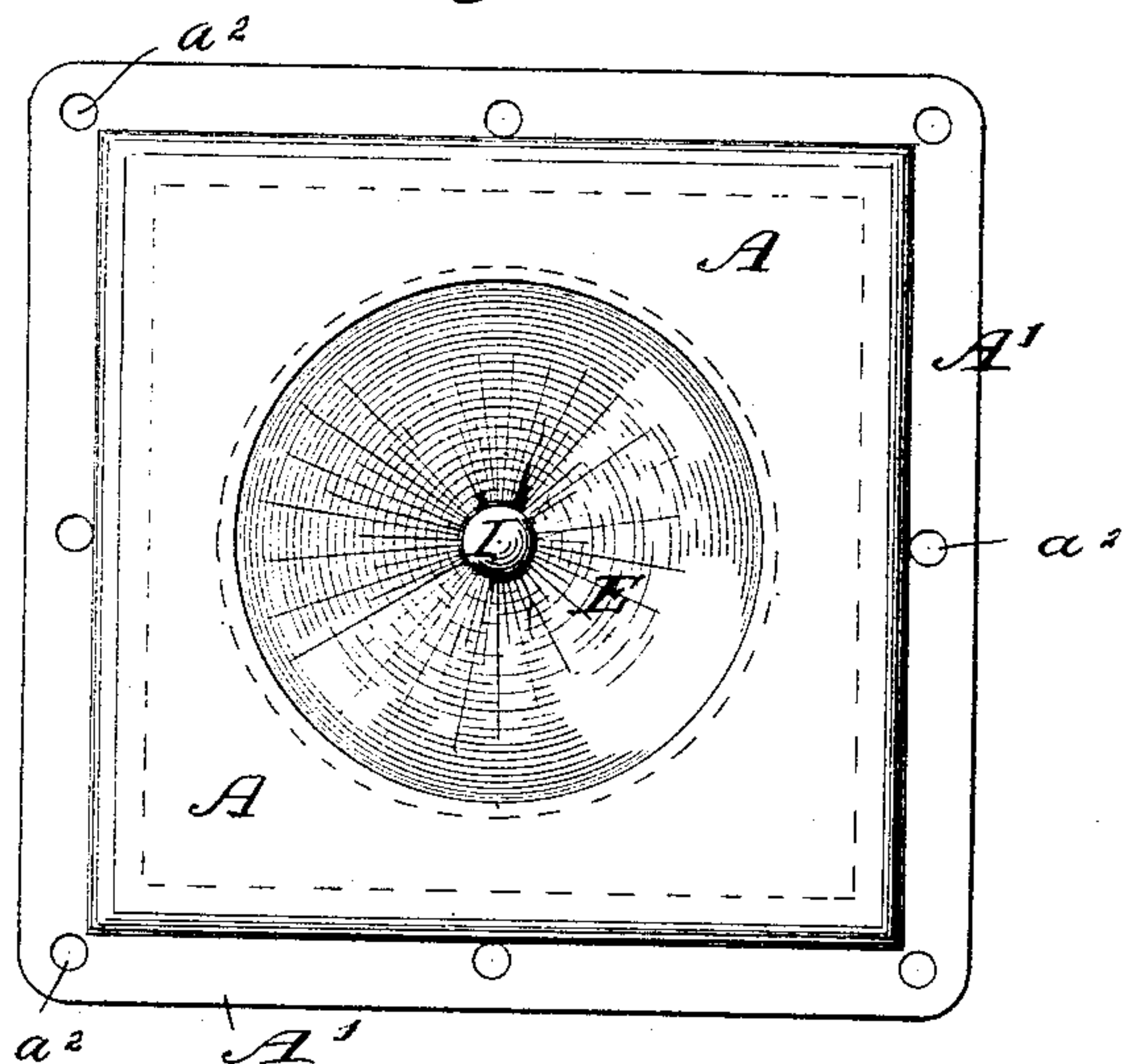


Fig. 2.

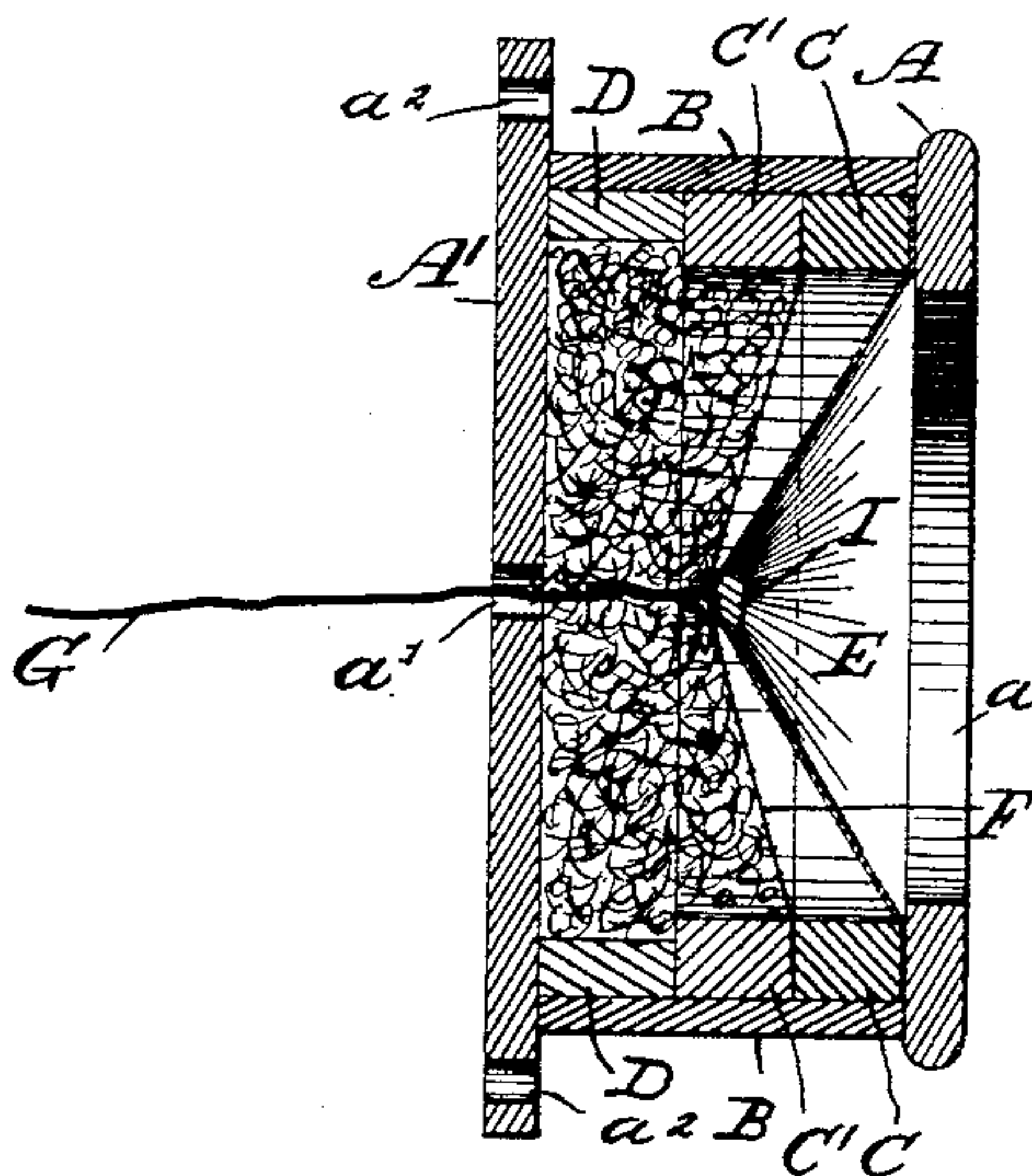


Fig. 3.

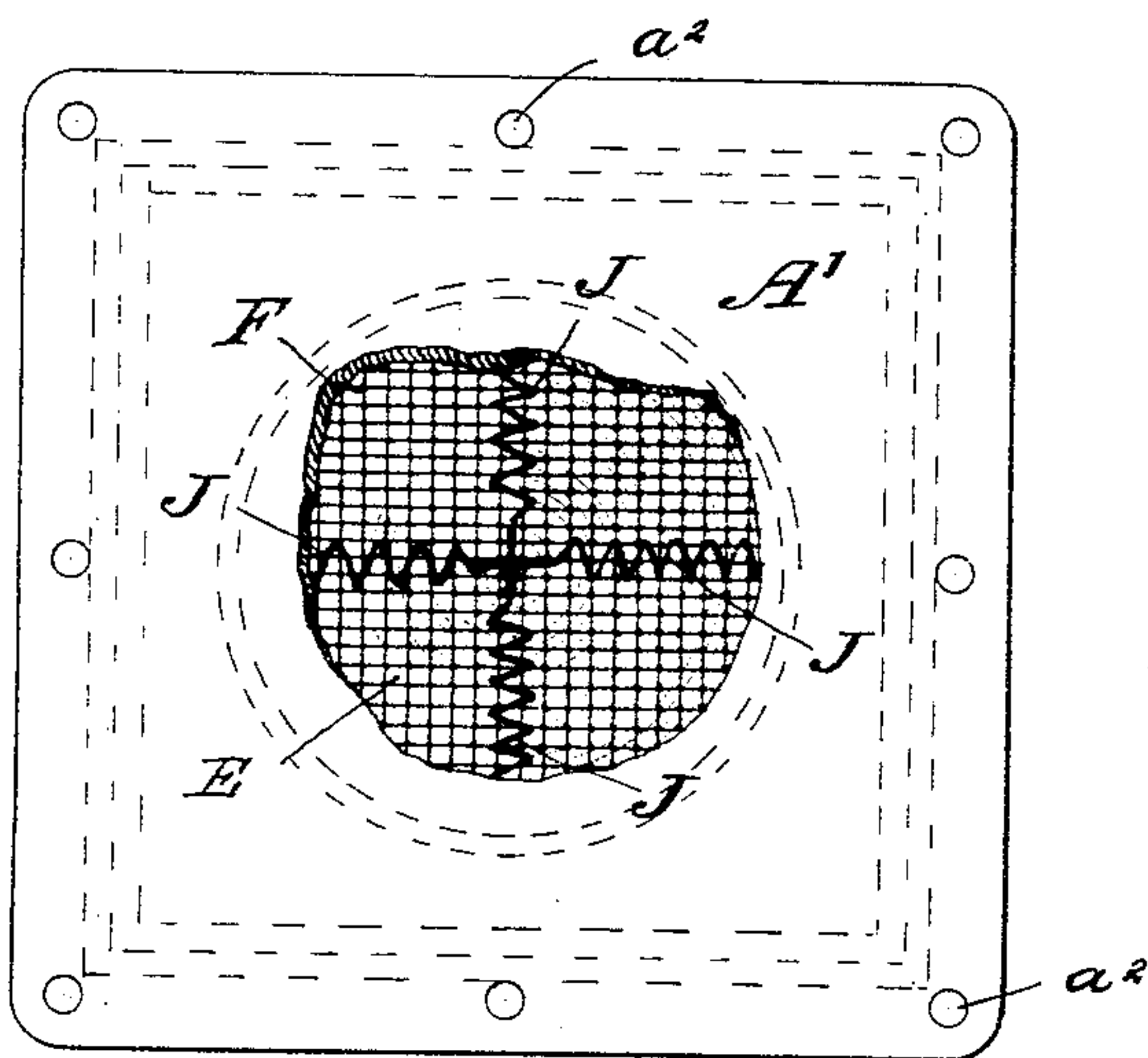
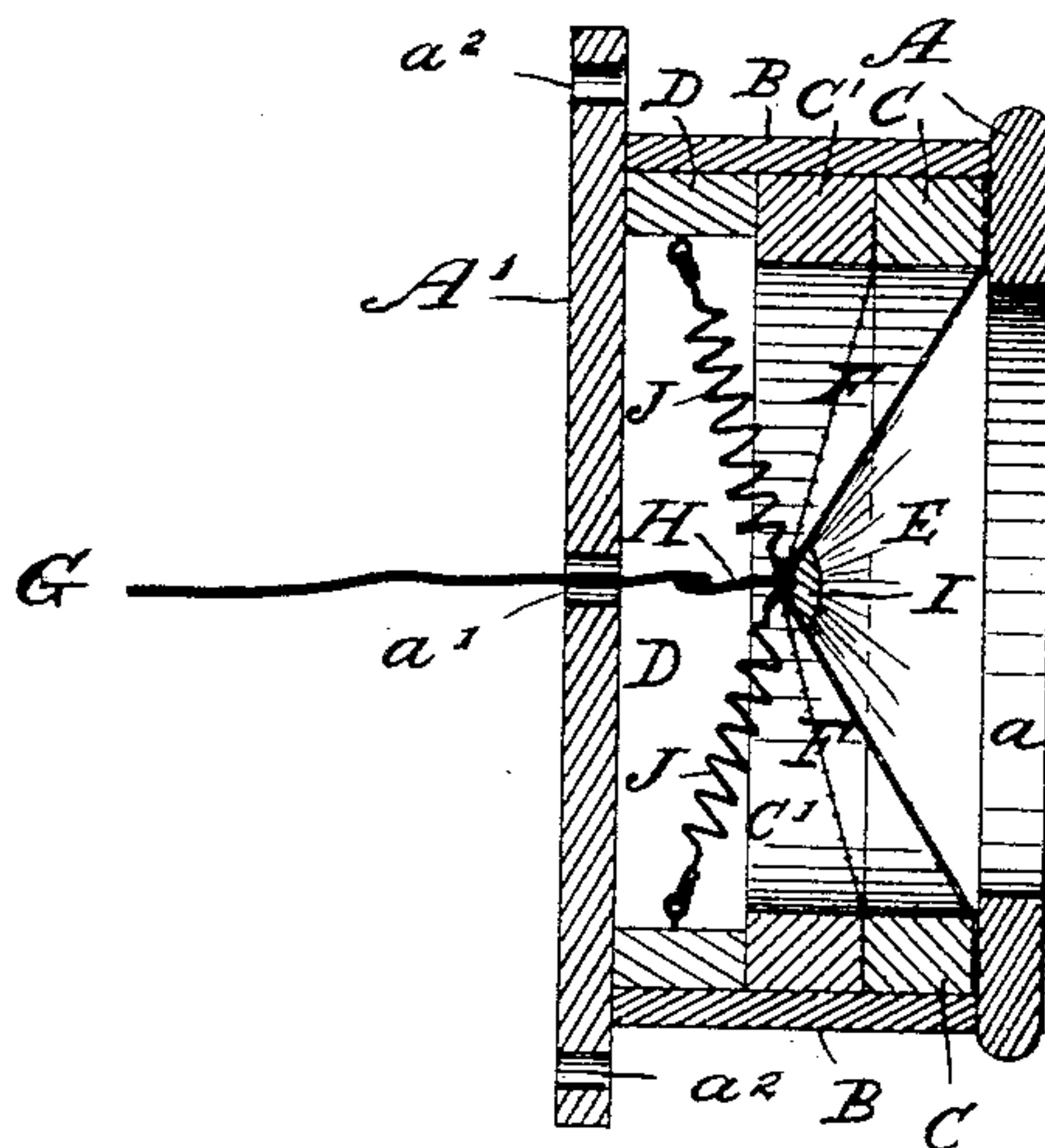


Fig. 4.



Witnesses.

A. M. Johnson.

W. B. Hill.

Inventor.

W. H. Eastman

per. J. B. Hamilton

Attorney

UNITED STATES PATENT OFFICE.

WILLIAM H. EASTMAN, OF CONCORD, N. H., ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE POPULAR TELEPHONE COMPANY, OF SAME PLACE.

MECHANICAL TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 348,896, dated September 7, 1886.

Application filed November 24, 1885. Serial No. 153,833. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. EASTMAN, a citizen of the United States, residing at Concord, in the county of Merrimac, and State of New Hampshire, have invented certain new and useful Improvements in Mechanical Telephones, of which the following is a specification.

My invention relates to certain telephones, commonly known as "mechanical telephones."

The object of my invention is to avoid too great a ring occasioned by the excessive vibration in center of the diaphragm to lessen the strain on the diaphragm, and to provide means whereby the concave diaphragm may be held in its proper position and at a uniform tension, whether in use or not in use.

My invention consists in details of construction, described below, and pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 represents a front elevation of my improved telephone, Fig. 2 being a vertical section from front to back. Fig. 3 is a rear view having the center portion of the back board broken out, exposing to view the tension-springs. Fig. 4 is a vertical section from front to back, shown without the packing, in order to better illustrate the construction.

Similar reference-letters indicate corresponding parts throughout the various views.

The case consists of the front board, A, having a large central opening, *a*, for the transmission of sound, the back board, A', having a small central opening, *a'*, for the passage of a line-wire, and various holes, *a''*, at intervals, near its edge, for the insertion of fastening-screws for holding the telephone at any desired place, these parts being separated by side boards, B, of suitable width to admit the sounding-boards C C' and the supporting-frame D between the front and back board.

To the sounding-board C is properly secured a parchment diaphragm, E, and to the sounding-board C', or between it and the board C, is fastened a wire screen, F, which comes in contact with the diaphragm only at the center, their outer edges being separated, as seen in Figs. 2 and 4, and by packing the chamber be-

tween the wire screen and the back board, A', with excelsior or a similar material, as seen in Fig. 2, the disagreeable ringing sound, which is so common in this class of telephone, is almost entirely avoided, and from the peculiar position of the wire screen F relative to the diaphragm E the packing is allowed to come in contact with the diaphragm only at its center of vibration. The wire screen has, however, a function aside from the packing—viz., it greatly helps the diaphragm to maintain the line-wire, said screen being in practice very stiff. The line-wire G enters the telephone through the hole *a'* in the back board, A', and is attached in some suitable manner to a short wire, H, projecting through the diaphragm and the screen from a button, I, on the front side of said diaphragm.

In order to maintain the proper tension on the diaphragm, whether the line-wire be connected or not, three (more or less) spiral springs, J, are attached to the short wire H, as near as possible to the button I, their free ends being connected to the side frame, D, or the back board, A', the former construction being shown in Fig. 4.

Having explained the novel features of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a mechanical telephone, the construction herein shown, comprising two sounding-boards, a wire screen, a suitable packing behind said screen, a diaphragm, and suitable springs adapted to maintain a uniform strain on said diaphragm inwardly, all arranged within a suitable case, substantially as and for the purpose specified.

2. In a mechanical telephone, the construction herein shown, comprising two sounding-boards, a supporting-frame interposed between said sounding-boards and the back board, a wire screen, a packing between said back board and screen, a diaphragm, and suitable springs connecting with the said supporting-frame and adapted to maintain a uniform strain on said diaphragm inwardly, all arranged and operating substantially as and for the purpose set forth.

3. In a mechanical telephone, the combination, with the conical diaphragm, of a pack-

ing of suitable material arranged behind the former and a wire screen, substantially as shown, interposed between the packing and diaphragm, and so as to permit the packing
5 to touch the center or apex of the diaphragm only, as set forth.

4. In a mechanical telephone, the combination, with a diaphragm, of suitable excelsior or other packing behind the same and a wire
10 screen interposed between the two and touching said diaphragm at its center, as shown, and

means, substantially as described, whereby a uniform tension is maintained upon said diaphragm independent of the line-wire, all operating as and for the purpose set forth. 15

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM H. EASTMAN.

Witnesses:

J. B. THURSTON,
NATHANIEL E. MARTIN.