

T. W. GRAYDON.
Audiphone.

No. 225,364.

Patented Mar. 9, 1880.

Fig. 1.

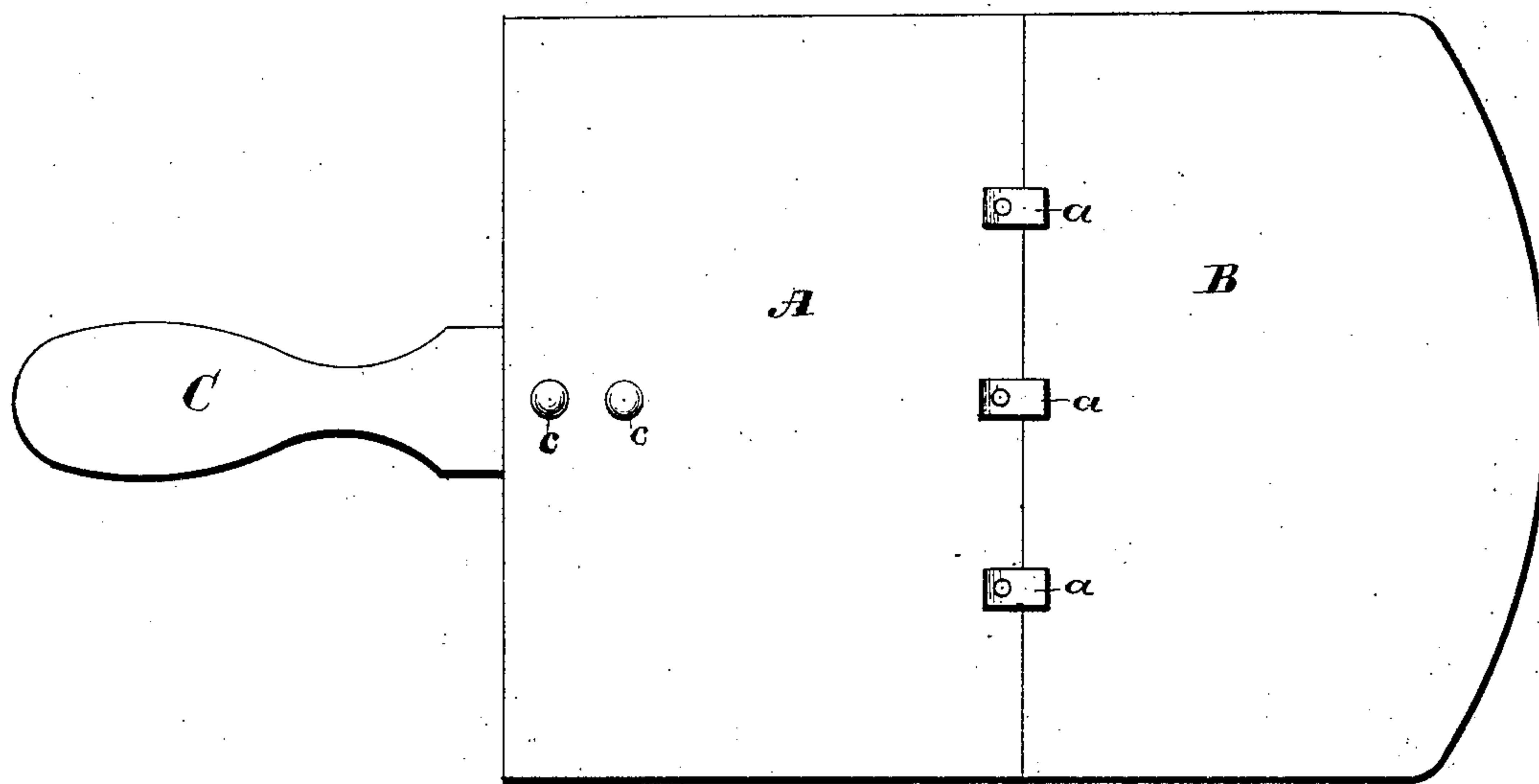
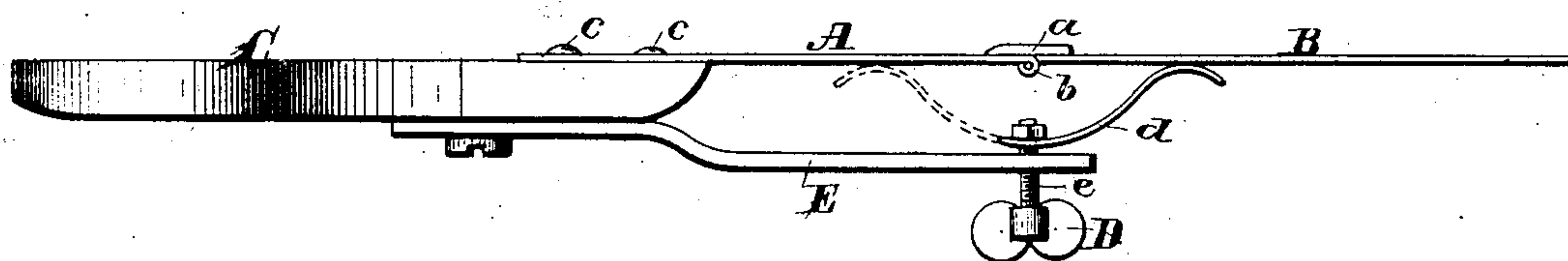


Fig. 2.



Attest:

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UNITED STATES PATENT OFFICE.

THOMAS W. GRAYDON, OF CINCINNATI, OHIO.

AUDIPHONE.

SPECIFICATION forming part of Letters Patent No. 225,364, dated March 9, 1880.

Application filed January 30, 1880.

To all whom it may concern:

Be it known that I, THOMAS W. GRAYDON, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented new and useful Improvements in Audiphones, of which the following is a specification.

This invention relates to certain improvements in audiphones, or instruments for transmitting sound to the auditory nerves of a deaf person through the teeth.

To this end my present invention consists of the combination, in an audiphone, of a sectional diaphragm the joined edges or sides of which are parallel with each other, and are hinged together at right angles, or thereabout, to the handle by rule-joints, and provided with stops, so that the sections can be folded one upon the other, to reduce the instrument in size or bulk when not wished for use, or be unfolded or expanded, to secure a diaphragm of large size for use.

In the drawings, Figure 1 is a top front view of an audiphone illustrating the feature of my invention, and Fig. 2 a section of the same combined with a spring for regulating the tension of the diaphragm.

Referring to the drawings, the audiphone is shown as made up of sections, as at A B, hinged together at various points along their contiguous parallel edges by rule-joints or hinges *b*, in such a manner as to fold inwardly one upon the other, to secure compactness and portability.

One of the sections is supplied with lips or projections *a*, which overlap the section with which it is connected, said lips or projections serving as stops to limit the movement of the sections when the same are unfolded, to produce an expanded diaphragm for use.

The rule-joint or hinge may be provided with lips or projections in lieu of using separate stops for limiting the outward movement of the sections.

A suitable handle, such as at C, should be supplied for the diaphragm, to enable the user to manipulate the instrument.

To regulate—that is, to increase or decrease—the tension of the sectional diaphragm when expanded for use, I combine therewith a

spring, such as at *d*, one end being connected with an adjusting-screw, *e*, having a head, D, supported in a bar or bearing, E, while the other end of said spring is made to bear upon one of the sections composing the diaphragm, through which means tension or strain can be exerted upon the sections, to enhance the value of the diaphragm in transmitting sound to the auditory nerves of the user; and, furthermore, said spring serves to retain the sections in the desired adjusted position with respect to each other when the sections are expanded into such a homogeneous diaphragm for use.

It will be seen from the foregoing that an audiphone can be produced under my invention in which compactness and portability is secured, and as the sections are hinged along their parallel edges at various points, a strong, durable, and rigid diaphragm, with its sections always in close contact with each other, is secured, presenting when expanded for use an uninterrupted surface for molecular transmission of sound; and, further, all tendency of the sections to slide one upon the other is avoided, and consequently no disfigurement of the polished surfaces of the sections occur.

The sections will be made of any suitable material, such as metal or hard rubber. Other analogous materials may be employed by imparting to the same an elasticity sufficient to enable the materials to resume their normal straight position after having been subjected to a bending strain.

I do not claim herein anything shown in Letters Patent granted me February 3, 1880; nor do I claim herein the combination of a diaphragm composed of two or more sections hinged or otherwise secured together, so as to be expanded into substantially a homogeneous diaphragm for use, or be closed or folded completely together when not in use, as such is covered by me in an application for patent filed December 9, 1879.

What I claim is—

1. The combination, in an audiphone, of a sectional diaphragm the joined edges or sides of which fold parallel with each other, and which edges or sides are hinged one upon the other by rule-joints having stops, as described, whereby the parts can be folded inward one

upon the other, as and for the purpose specified.

2. In combination with the sections hinged together at various points along their parallel
5 edges, the spring for regulating the tension of the sections when unfolded for use, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

THOMAS W. GRAYDON.

Witnesses:

JAMES L. NORRIS,

JAMES A. RUTHERFORD.