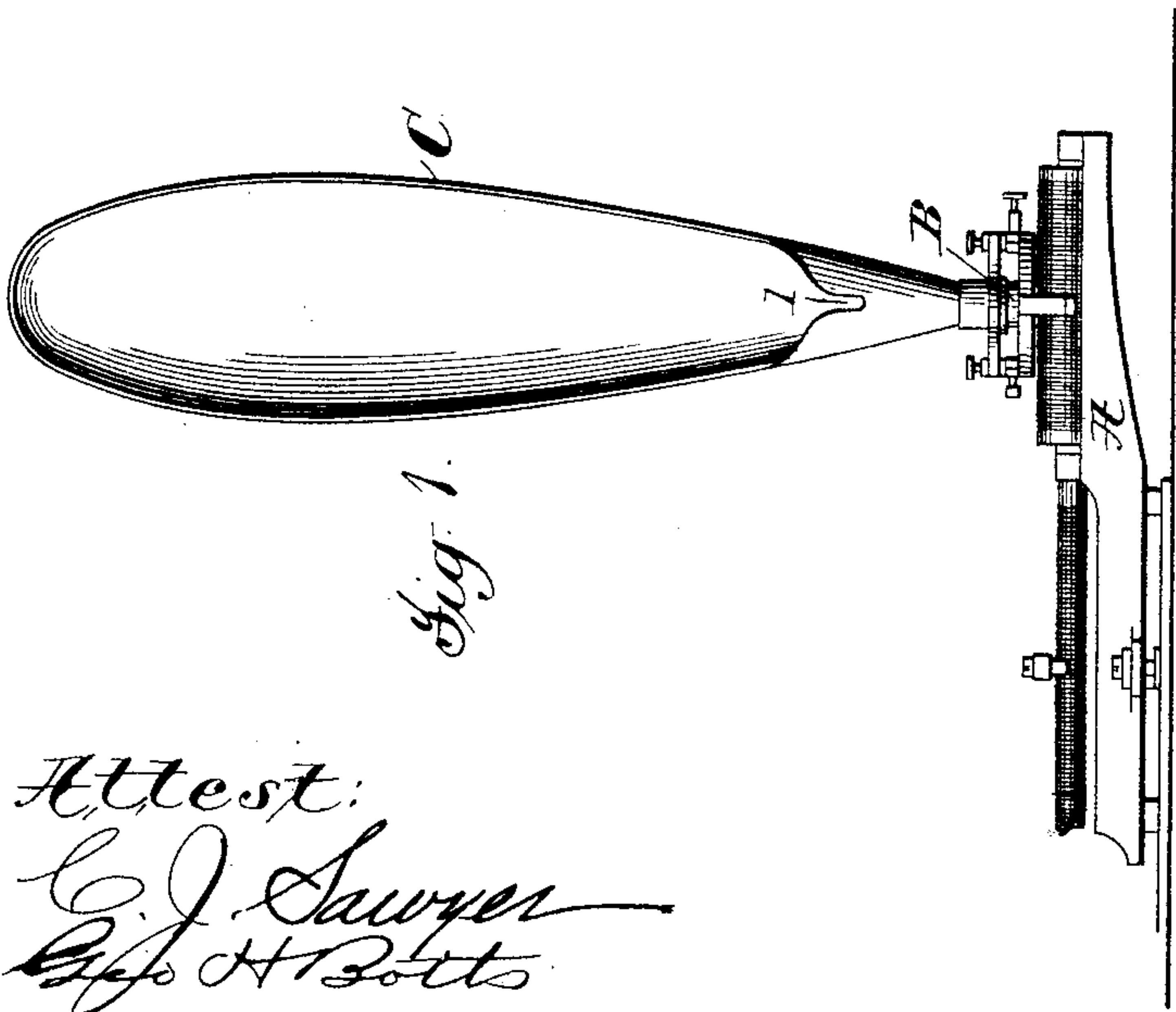
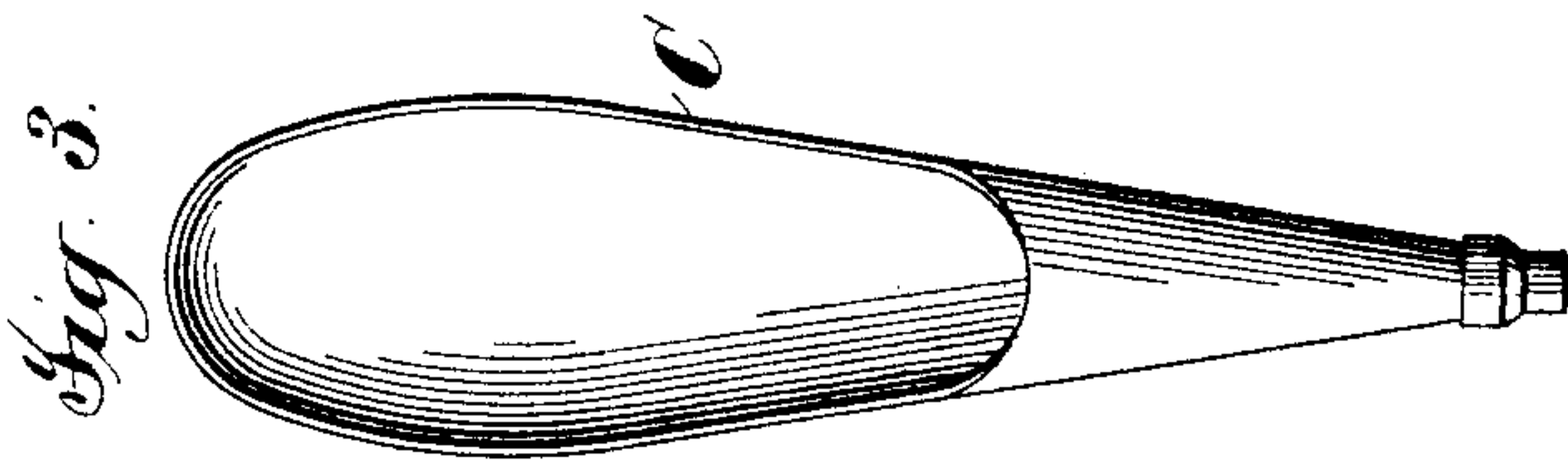
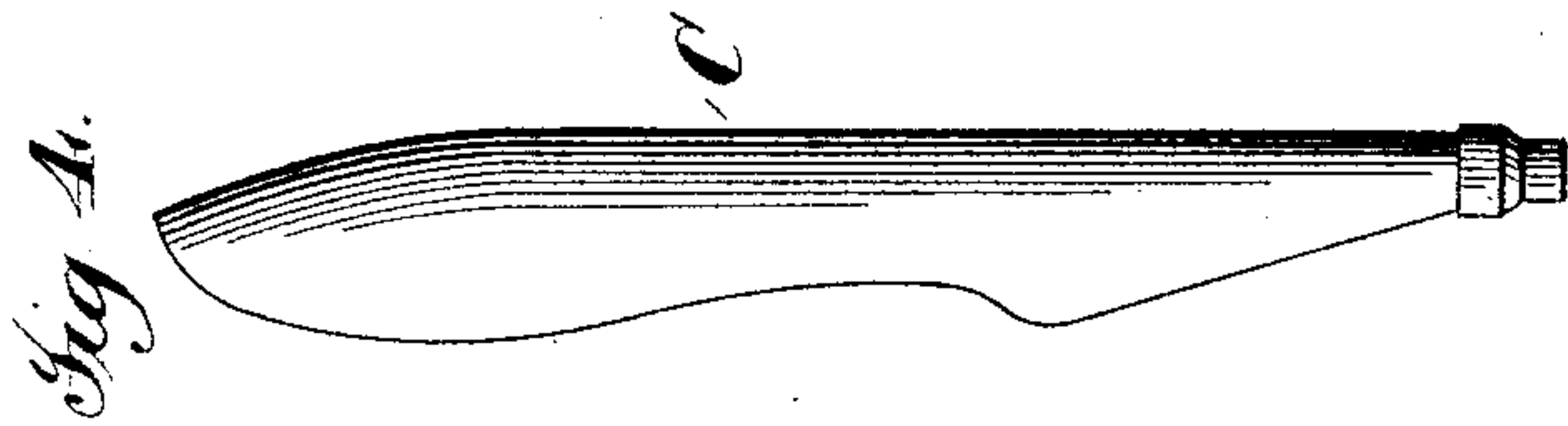
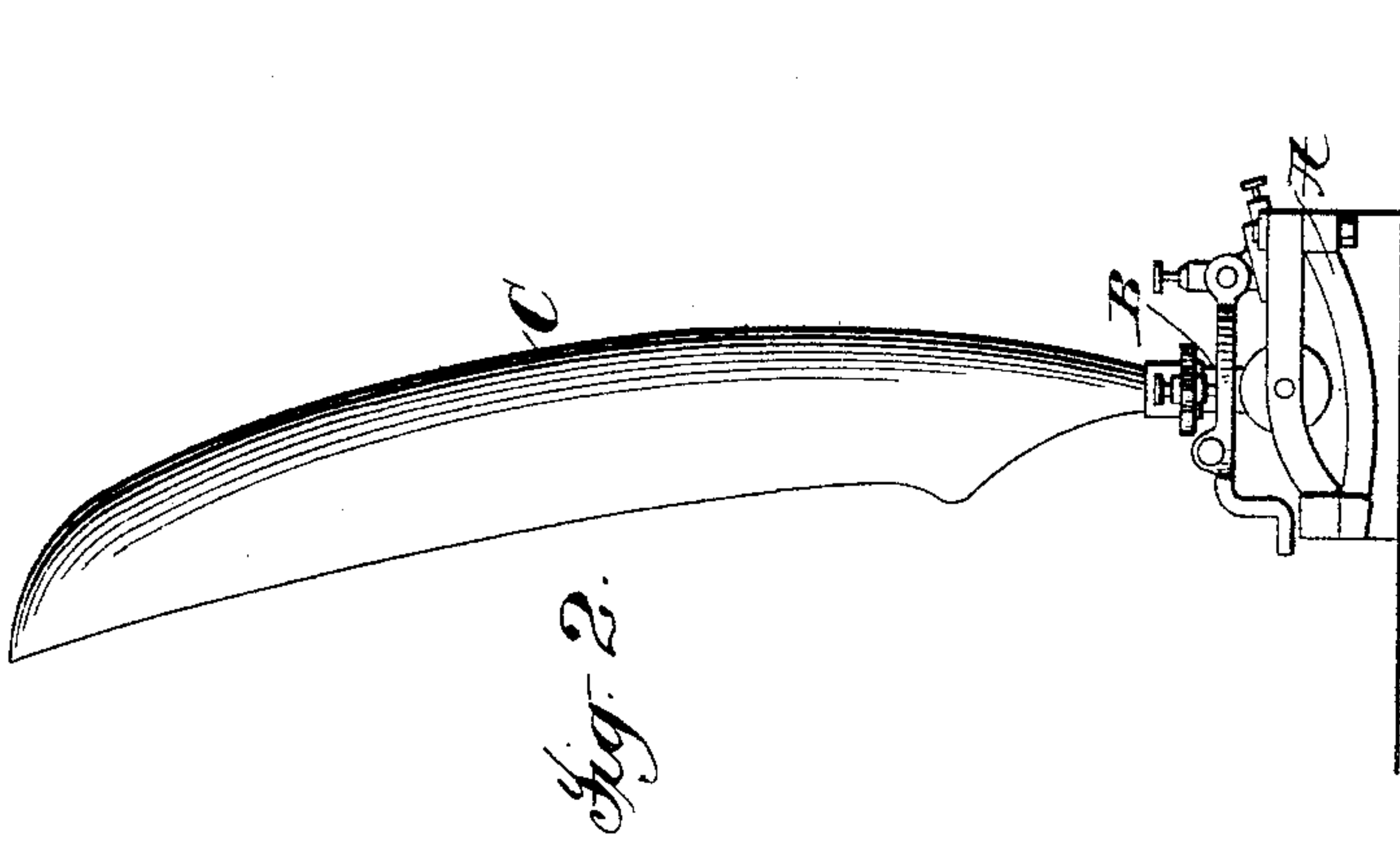


(No Model.)

F. S. KINNEY.
PHONOGRAPH RECEIVER.

No. 538,263.

Patented Apr. 30, 1895.



Attest:
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Inventor:
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UNITED STATES PATENT OFFICE.

FRANCIS S. KINNEY, OF PEQUANAC, NEW JERSEY.

PHONOGRAPH-RECEIVER.

SPECIFICATION forming part of Letters Patent No. 538,263, dated April 30, 1895.

Application filed May 2, 1894. Renewed February 26, 1895. Serial No. 539,809. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS S. KINNEY, a citizen of the United States, residing at Pequananac, county of Morris, and State of New Jersey, have invented certain new and useful Improvements in Phonographs, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The object of the present invention is to provide an improved recording apparatus of that class known as phonographs or graphophones, by which a record of sound waves is produced by a style operated through a vibrating diaphragm by the sound waves to be recorded, the record thus produced being in turn used in the same or another machine to reproduce the recorded sounds.

The present invention relates particularly to the receiver or sound conducting tube through which the sound waves are transmitted to the diaphragm.

In constructions heretofore in use, the sound waves have been transmitted to the diaphragm by using a funnel shaped receiver connected at its small end to the diaphragm frame either directly or by a flexible tube, the sound waves entering the large end of the funnel and longitudinally of the latter. The results attained have been fairly satisfactory in recording the human voice in speaking and low voices in singing, provided care and skill be exercised in regard to the position of the speaker or singer, but no satisfactory results have been secured in recording high voices in singing and similar sounds.

I provide a phonograph recording apparatus, by which greatly improved results may be secured, especially in recording high voices in singing and similar sounds, by the use of a receiver having a mouth piece closed at the back to form a wall receiving the sound waves from the voice and with the mouth piece contracting to form a funnel extending transversely to the mouth piece and through which the sound waves pass to the diaphragm. The general form of the receiver, therefore, corresponds to that of an animal's ear in that the sound waves enter against a wall at the back of the ear and pass from the receiver at its base. The ear form is also preferably used for the opening forming the mouth piece, this

being made of the elongated or oval form to secure the best results, although good results may be secured with other forms.

For a full understanding of the invention, a detailed description of constructions embodying the same in the preferred form will now be given in connection with the accompanying drawings forming a part of this specification and the features forming the invention then be specifically pointed out in the claims.

In the drawings, Figure 1 is a front view of a phonograph recording apparatus provided with my improved receiver. Fig. 2 is a side view. Figs. 3 and 4 are similar views of a slightly modified receiver.

Referring to said drawings A is the phonograph or graphophone which may be of any form desired, that shown being the well known Edison phonograph. To the diaphragm frame B of this phonograph is attached the receiver C so that the sound waves entering the receiver are transmitted to the diaphragm which operates the style. This receiver is shown in Figs. 1 and 2 as having an elongated or oval opening at the front through which the sound waves enter and closed at the back, which is curved downward and in cross section, the receiver gradually contracting to form a funnel connected to the diaphragm frame at its smaller end, directly or by a short tube. At the bottom of the opening or top of the funnel the receiver is preferably provided with a short slit 1, as shown. The receiver, and especially its upper part, is preferably made of quite thin resonant material. I have secured good results with metal. It may be made thicker or otherwise strengthened at the lower part. The receiver is shown as quite large, such as is preferably used in recording singing, but it will be understood that the same form may be used for smaller receivers.

The particular curve at the back of the receiver and the taper of the funnel shown in Figs. 1 and 2 are not essential, although excellent results have been secured with the receiver shown in these figures.

In Figs. 3 and 4 is shown a receiver in which the back wall is approximately straight and the funnel longer, with which very good results have been secured.

Many other variations in the form of the re-

ceiver may be made while retaining the features of the invention, as defined by the claims, and I am not to be limited to the exact form of any part of the receivers shown.

5 What I claim is—

1. A phonograph recording receiver closed at the back of the opening for the sound waves, and having its funnel extending from said opening transversely to the direction in
10 which the sound waves enter, substantially as described.

2. A phonograph recording receiver having at the back of the opening for the sound waves a wall curved in cross section and receiving the sound waves, and having a funnel
15 contracting from said wall and the base of the opening and extending transversely to the di-

rection in which the sound waves enter, substantially as described.

3. A phonograph recording receiver closed 20 at the back of the opening for the sound waves, and having its funnel extending from said opening transversely to the direction in which the sound waves enter, and having a slit at the base of the opening, substantially 25 as described.

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

FRANCIS S. KINNEY.

Witnesses:

C. J. SAWYER,
T. F. KEHOE.