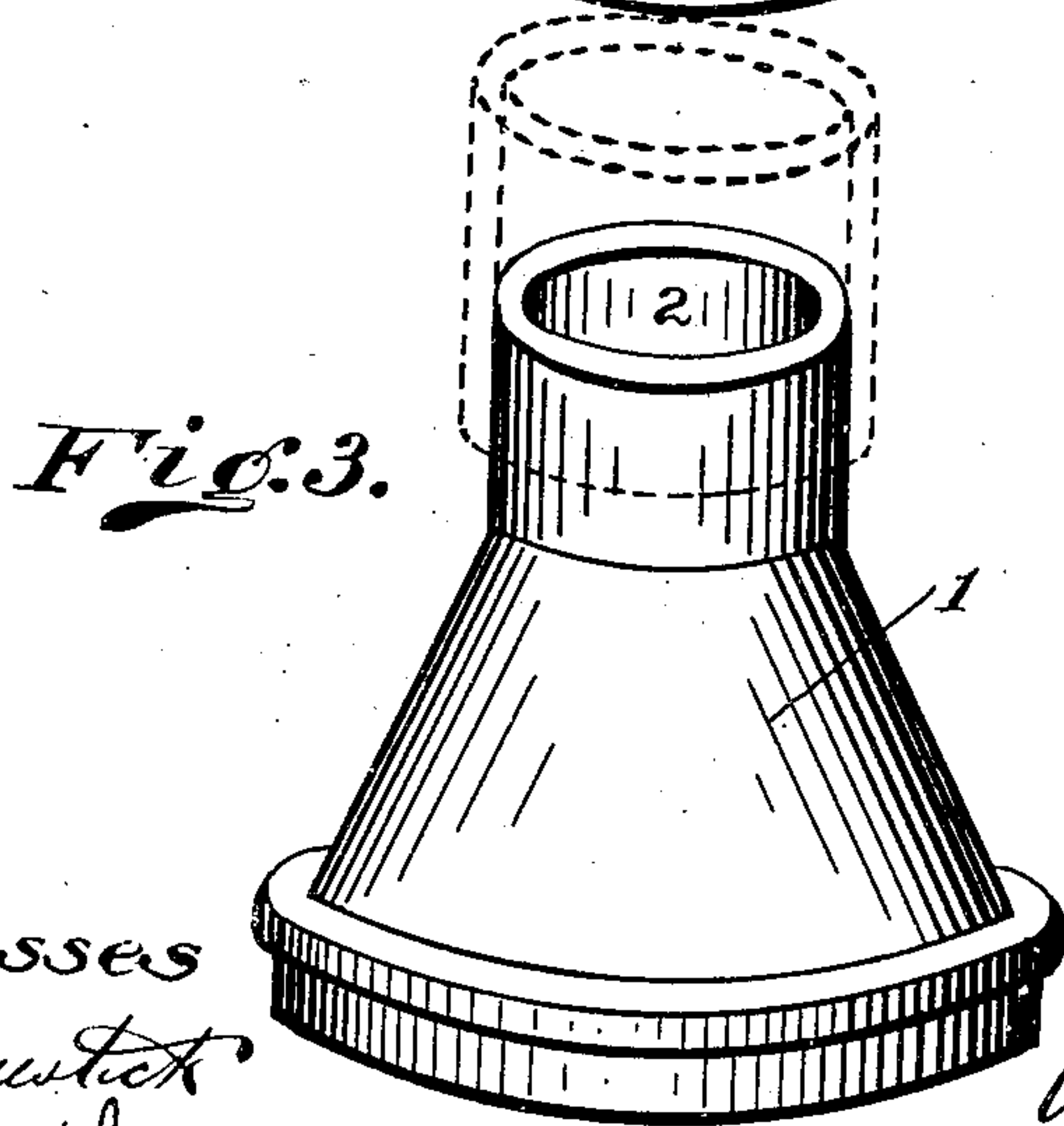
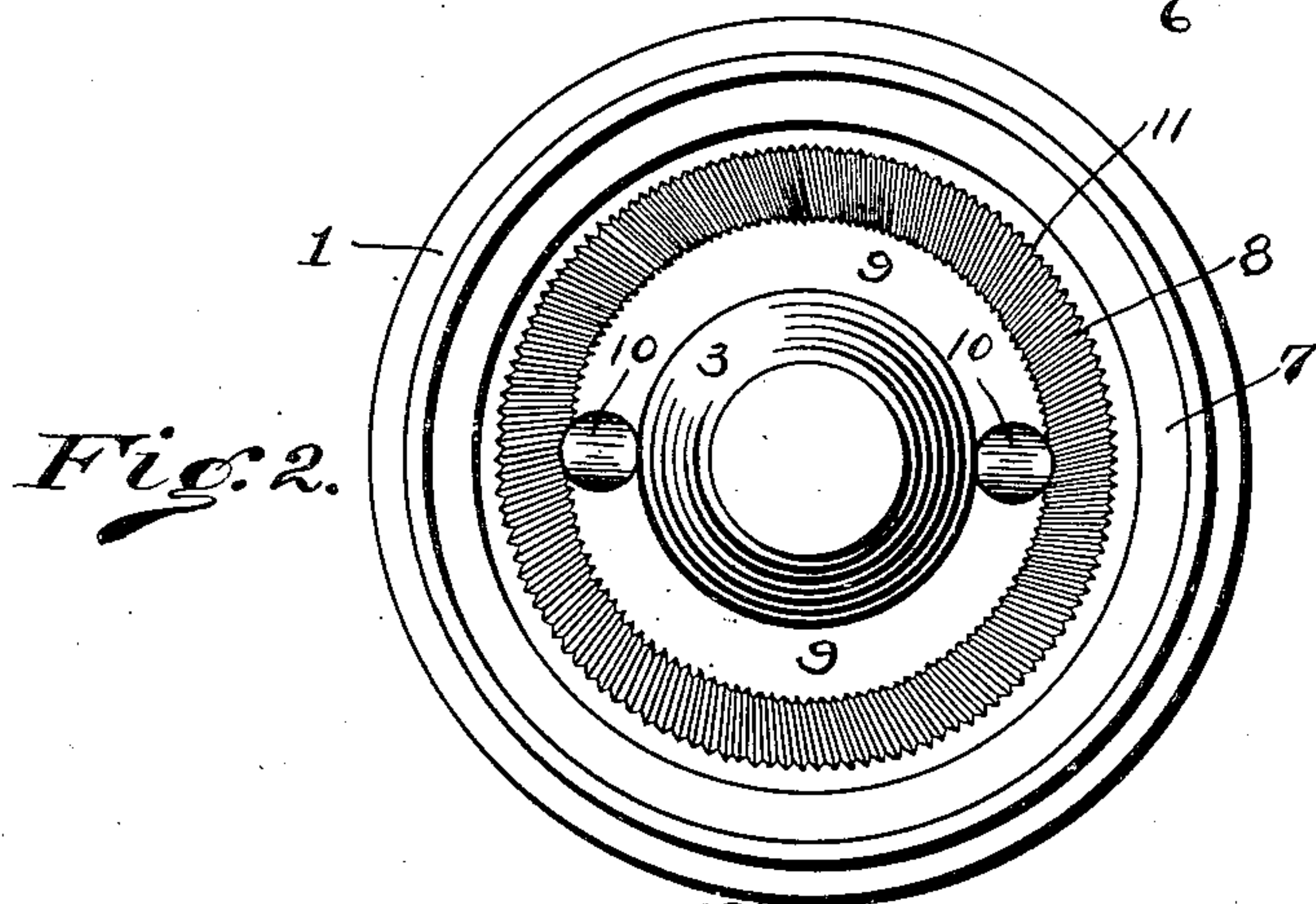
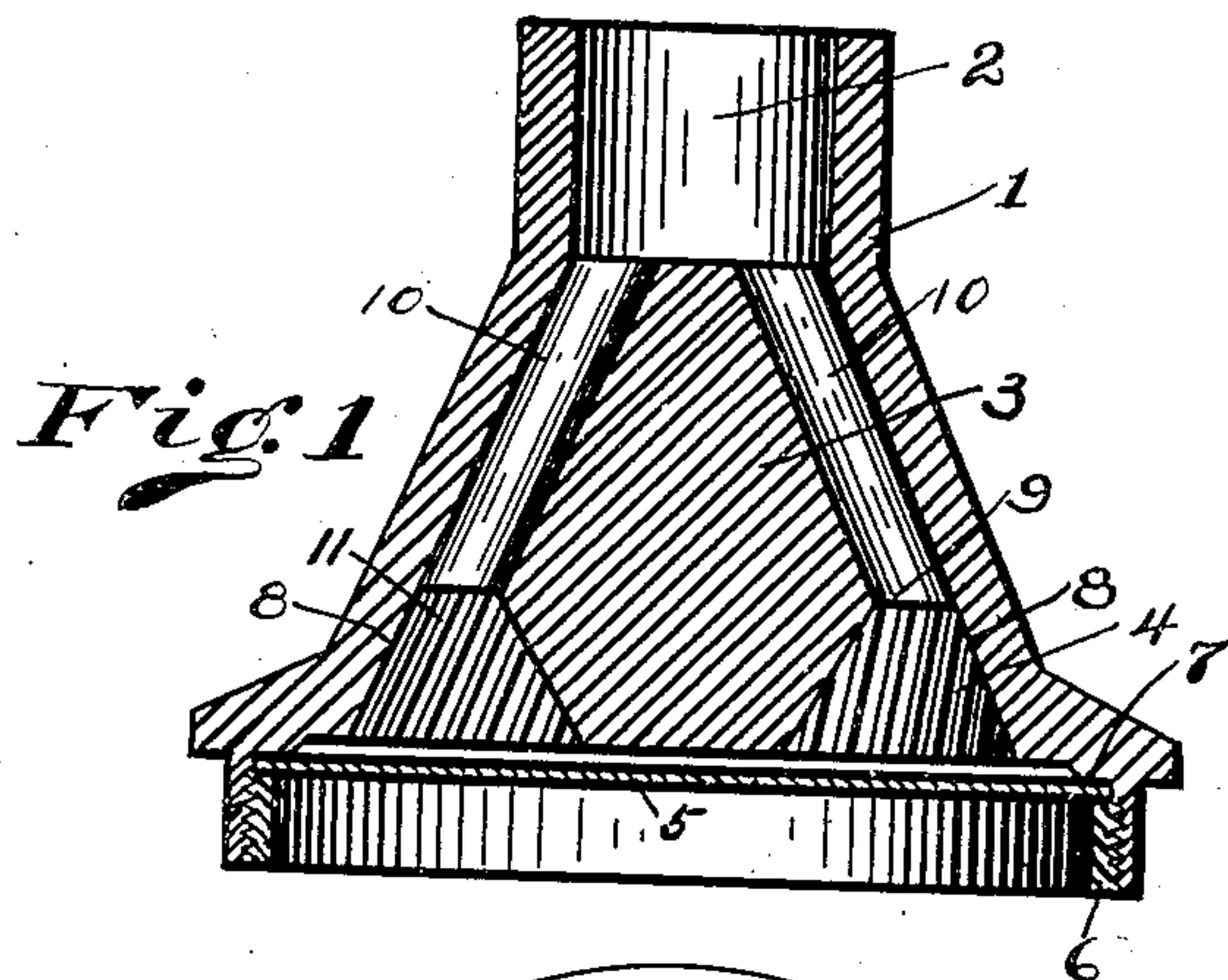


No. 875,352.

PATENTED DEC. 31, 1907.

W. N. HUNTER.
SOUND RECORDER FOR TALKING MACHINES.
APPLICATION FILED JULY 28, 1906.



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WILLIAM N. HUNTER, OF BLANCHESTER, OHIO.

SOUND-RECORDER FOR TALKING-MACHINES.

No. 875,352.

Specification of Letters Patent.

Patented Dec. 31, 1907.

Application filed July 28, 1906. Serial No. 328,172.

To all whom it may concern:

Be it known that I, WILLIAM N. HUNTER, a citizen of the United States, residing at Blanchester, county of Clinton, and State of Ohio, have invented certain new and useful Improvements in Sound-Recorders for Talking-Machines, Telephones, and the Like, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to devices for taking and receiving the sound waves developed by a vibrating diaphragm, whether vibrated directly, or by mechanical action, to collect the waves and deliver the vibrations into a tubular passageway, and the object of the invention is to provide a chamber for the reception of the wave vibrations, with a plurality of passageways therefrom into the conveying tube, whereby the vibrations may be collected, condensed, and delivered more perfectly than with the sound recorders heretofore in use.

Heretofore it has been customary for talking machines and the like to provide a cup shaped chamber in the rear of the diaphragm, which receives the sound vibrations, and to deliver these vibrations from the recorder through a single central passageway. I have ascertained by repeated experiments, however, that if an annular chamber is provided and the sound waves conveyed into the tubular passageway through a plurality of openings from this annular chamber, a very much smoother and better volume of sound is produced, or conveyed by the apparatus.

While my improved construction can be employed for the collection and conveyance of sound vibrations delivered directly into the recorder, my device is especially adapted for recorders for talking machines where the vibrations are developed mechanically, and for such machines I have found that extraneous sounds produced by the scratching of the recording point as it passes over the plate or cylinder, upon which is impressed the record to be reproduced are almost completely cut out, so that a pure and sweet volume of sound is reproduced identical with the original sound waves delivered to the apparatus.

In the drawings Figure 1 is a central vertical section of my improved sound recorder. Fig. 2 is a plan view of same. Fig. 3 is a perspective view.

In the drawings, in order to illustrate the construction more effectually, the device as used in connection with the ordinary talking machines is illustrated as enlarged to about twice its natural size.

1 is a cone shaped casing provided with a tubular passageway 2, and a central boss 3 to form at the receiving end of the receptacle an annular chamber 4.

5 is the diaphragm of any suitable material, which is held in position by the ring 6 with its periphery resting on the flange 7, and with washers interposed between the diaphragm and the supporting flange and retaining ring. The central boss 3 which divides the chamber into an annular one is cone shaped with the truncated apex of the cone approaching very close to the diaphragm, but without touching it. The outer walls 8 of the annular chamber 4 converge inwardly, so that a narrow base 9 is provided for the annular chamber. From the base of this chamber two passageways 10—10 are provided which merge into the tubular passageway 2. These passageways 10—10 are on opposite sides, and the outer wall of the annular chamber is provided with grooves 11 as indicated in Figs. 1 and 2, which are cut spirally, as shown, to gather and direct the waves of sound towards the passageways 10—10.

When my apparatus is used as a sound recorder for talking machines, the usual arrangement is provided for conveying the vibrations from the record cylinder, or plate, to the diaphragm by means of a pin or needle attached to the center of the diaphragm.

With the foregoing construction, it will be evident that the central vibration of the diaphragm is not directly conveyed into the sound recorder, and that the vibrations are received therein from the outer portions of the diaphragm and collected by the grooved converging walls into the two passageways, which take the vibrations from the sides.

Without endeavoring to express any theory concerning this matter, I have found that with my construction, as heretofore stated, that the scratching and other mechanical sounds created by the talking machine apparatus are cut out, and that much purer, sweeter, and more natural tones are reproduced than with sound recorders in which the vibrations are collected and conveyed centrally by the recorder.

Having thus described my invention, what

I claim as new and desire to secure by Letters Patent, is:

1. In a sound recorder of the class described, a sound box, with diaphragm therefor, and a collecting chamber for the sound waves of substantial depth, in free communication with and back of the diaphragm, with a central raised portion approaching, but not touching, the diaphragm, and forming an annular collecting chamber, and a tubular passageway for the conveyance of the sound waves, with an opening therefrom into the annular collecting chamber.

2. In a sound recorder of the class described, a sound box with diaphragm therefor, and a collecting chamber for the sound waves of substantial depth, in free communication with and back of the diaphragm, with a central raised portion approaching, but not touching, the diaphragm, and forming an annular collecting chamber, and a tubular passageway for the conveyance of the sound waves, with a plurality of openings therefrom into the annular chamber.

3. In a sound recorder of the class described, a sound box with diaphragm therefor, a collecting chamber of substantial depth for the sound waves at the rear of the diaphragm, said collecting chamber being provided with a converging outer wall, and having a central boss approaching but not touch-

ing the diaphragm, so as to form an annular collecting chamber, a tubular passageway for the conveyance of the sound waves, and an opening therefrom into the annular collecting chamber.

4. In a sound recorder of the class described, a sound box with diaphragm therefor, a collecting chamber for the sound waves at the rear of the diaphragm, with a central boss approaching but not touching the diaphragm, and forming an annular collecting chamber, said chamber being provided with converging inner and outer walls, a tubular passageway for the conveyance of the sound waves, and an opening therefrom into the annular collecting chamber.

5. In a sound recorder of the class described, a sound box having an annular collecting chamber of substantial depth formed therein, a vibratory diaphragm in connection therewith, said annular chamber being provided with a converging outer wall grooved substantially as described, a tubular passageway for the conveyance of the sound waves, and a plurality of openings therefrom into the annular collecting chamber.

WILLIAM N. HUNTER.

Witnesses:

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