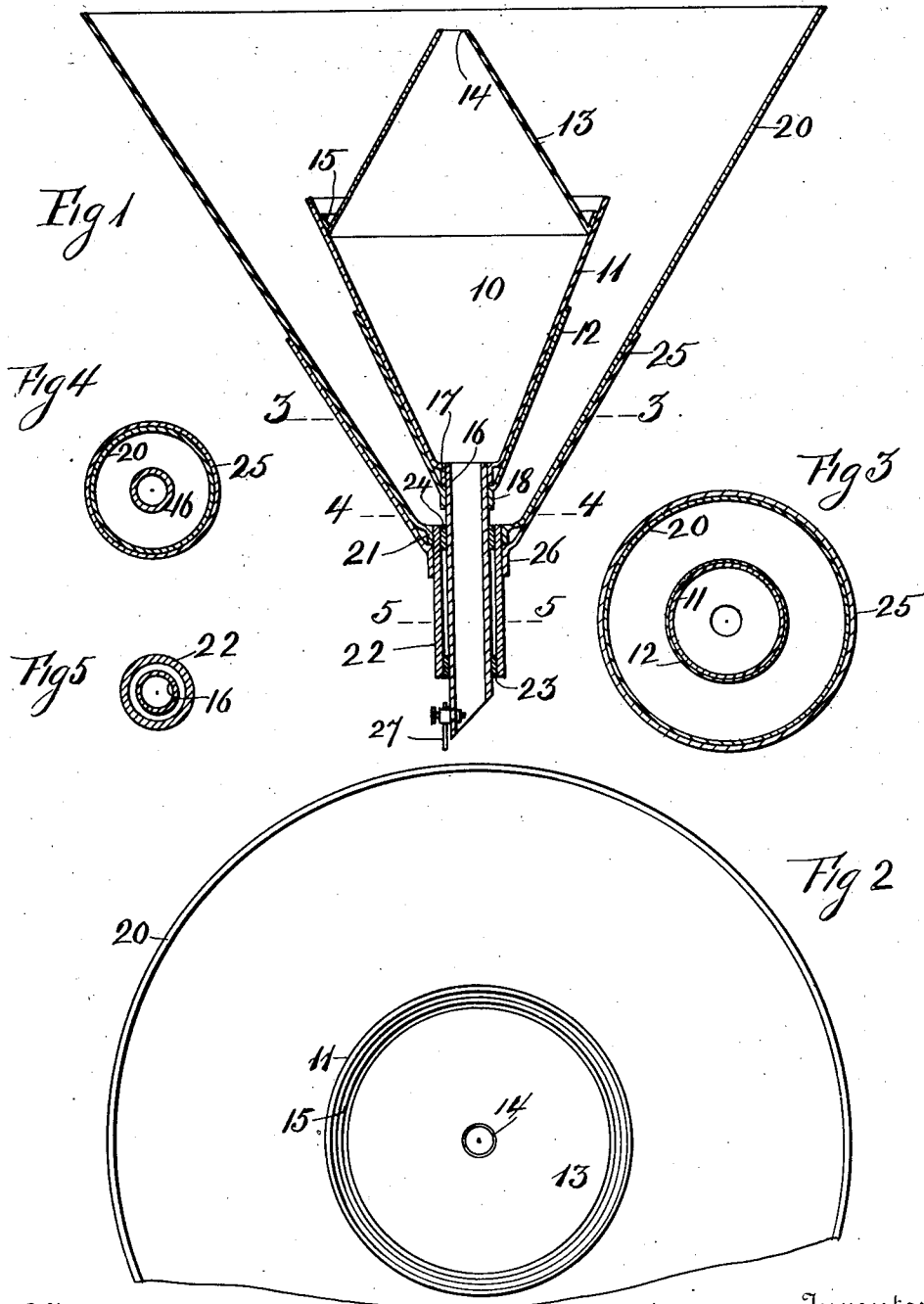


No. 857,209.

PATENTED JUNE 18, 1907.

W. C. SMITH.
SOUND PRODUCING DEVICE.
APPLICATION FILED OCT. 5, 1906.

2 SHEETS—SHEET 1.



Witnesses
S. G. Van Derbeck.
J. M. Cook

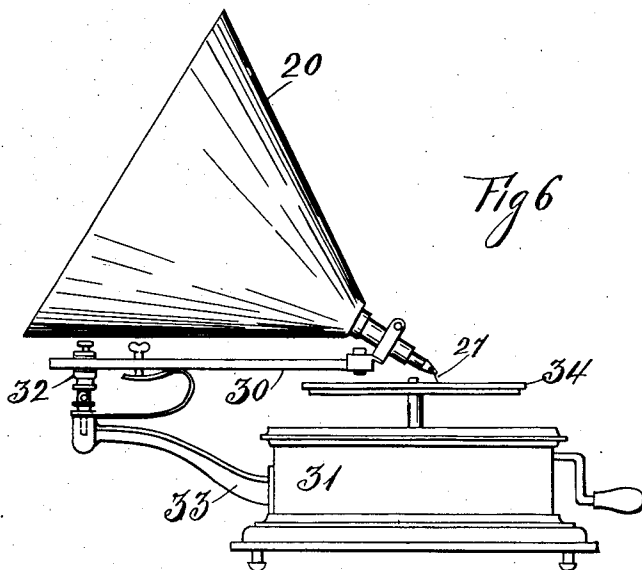
Inventor
William C. Smith
By his Attorney
Attn. Bomerille

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Inventor
William C. Smith
By *Attorney* *At de Romeville*

UNITED STATES PATENT OFFICE.

WILLIAM C. SMITH, OF PATERSON, NEW JERSEY.

SOUND-PRODUCING DEVICE.

No. 857,209.

Specification of Letters Patent.

Patented June 18, 1907.

Application filed October 5, 1906. Serial No. 337,620.

To all whom it may concern:

Be it known that I, WILLIAM C. SMITH, a citizen of the United States, and a resident of Paterson, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Sound-Producing Devices, of which the following is a specification.

This invention relates to a sound producing device which is specially applicable to talking machines and the like. Its organization comprises means for producing sound without the metallic effects of ordinary horns and vibrating diaphragms, securing also full loud tones, which are generally not obtained with apparatus that produces soft and modulated notes.

In the drawings Figure 1 represents a vertical axial section of the invention, Fig. 2 is a partial top plan view of Fig. 1, Fig. 3 is a section of Fig. 1 on the line 3, 3, Fig. 4 shows a section of Fig. 1 on the line 4, 4, Fig. 5 represents a section of Fig. 1 on the line 5, 5 and Fig. 6 shows a talking machine with my invention connected therewith.

The invention is shown to comprise an inner horn 10, which consists of the conical sides 11 connected to the conical supports 12, and covered with the cap 13 having the opening 14 in its apex. The cap 13 has formed at its lower edge the flange 15 which joins with the walls 11 a little below the upper end thereof. An inner tube 16 extends from the conical sides 11, a flange 17 of the sides 11 making the necessary connection between the tube 16 and the sides 11. A flange 18 extends from the support 12 and is also connected with the inner tube.

On the outside of the horn 10 is located the outer horn 20 which has the flange 21 extending therefrom, and the latter is joined with an outer tube 22 that encircles the inner tube 16, and is held in place by the sound insulating rings 23 and 24 (preferably of rubber) which separate the said tubes. A secondary conical support 25 joins with the horn 20, has the flange 26, which latter is secured to the outer tube 22. A stylus 27 extends from the tube 16 in the usual way.

In Fig. 6 I have represented the horn 20 supported by means of an arm 30 of a talking machine 31. The arm 30 is adjustably held in a clamp 32, that is pivoted to a bracket 33 of the talking machine.

The tubes 16 and 22 are preferably made of bamboo stems, although other fibrous ma-

terial may be used. The outer tube 22 need not necessarily be made of fibrous material.

The inner horn 10 is generally made of paper and the like material, while the outer horn 20 may be of fibrous or other material.

To use the invention it is connected to a talking machine as shown in Fig. 6, the record imparting through the stylus 27 vibrations to the inner tube 16, which vibrations are amplified by the inner horn 10, and modulated by its cap 13. Sound waves recede from the horn 10 and are diffused by means of the outer horn 20, the latter performing the function of a megaphone, carrying and increasing the loudness of the sound coming from the inner horn 10. The sound insulating rings 23 prevent sound waves being directly transmitted from the inner tube to the walls of the outer horn.

Having described my invention I claim:

1. In a sound producing device the combination of an inner tube, a horn extending therefrom, an outer tube encircling said inner tube, a sound insulator between the tubes, and a horn extending from the outer tube.

2. In a sound producing device the combination of an inner tube, a horn extending therefrom, an outer tube encircling said inner tube, a sound insulator between the tubes, a horn extending from the outer tube, and a stylus extending from the inner tube.

3. In a sound producing device the combination of an inner tube of bamboo, a horn extending therefrom, an outer tube of bamboo encircling said inner tube, a sound insulator between the tubes, a horn extending from the outer tube, and a stylus extending from the inner tube.

4. In a sound producing device for a talking machine the combination of an inner tube of bamboo, a conical horn extending from the tube, a sound insulator around the tube, an outer tube of bamboo around the insulator, and a conical horn extending from the outer tube.

5. In a sound producing device the combination of an inner tube, a horn extending therefrom, a cap having an opening connected with the horn, an outer tube encircling said inner tube, a sound insulator between the tubes, a horn extending from the outer tube and encircling the other horn.

6. In a sound producing device the combination of an inner tube, a horn extending therefrom, a conical support for the horn sup-

ported on the said tube, a cap having an opening secured to the horn, an outer tube encircling the inner tube, sound insulating rings between the outer surface of the inner tube and the inner surface of the outer tube, a horn extending from the outer tube, a support for the outer horn secured to the outer tube, and a stylus connected with the inner tube.

10 7. In a sound producing device for a talking machine the combination of an inner tube of bamboo, a paper horn having a flange, the flange fastened to the tube, a conical paper support for the horn having a flange, 15 the latter secured to the tube, a pair of rub-

ber sound insulators around the tube, an outer tube of bamboo around the insulators, an outer paper horn having a flange with the latter fastened to the outer tube, a conical paper support for the outer horn having a flange with the latter fastened to the outer tube. 20

Signed at the borough of Manhattan in the county of New York and State of New York this 4th day of October A. D. 1906.

WILLIAM C. SMITH.

Witnesses:

S. G. VAN DERBECK,
M. H. COOK.