F. L. CAPPS.

TALKING MACHINE.

APPLICATION FILED JUNE 17, 1915.

1,216,656.

Patented Feb. 20, 1917.

2 SHEETS—SHEET 1.

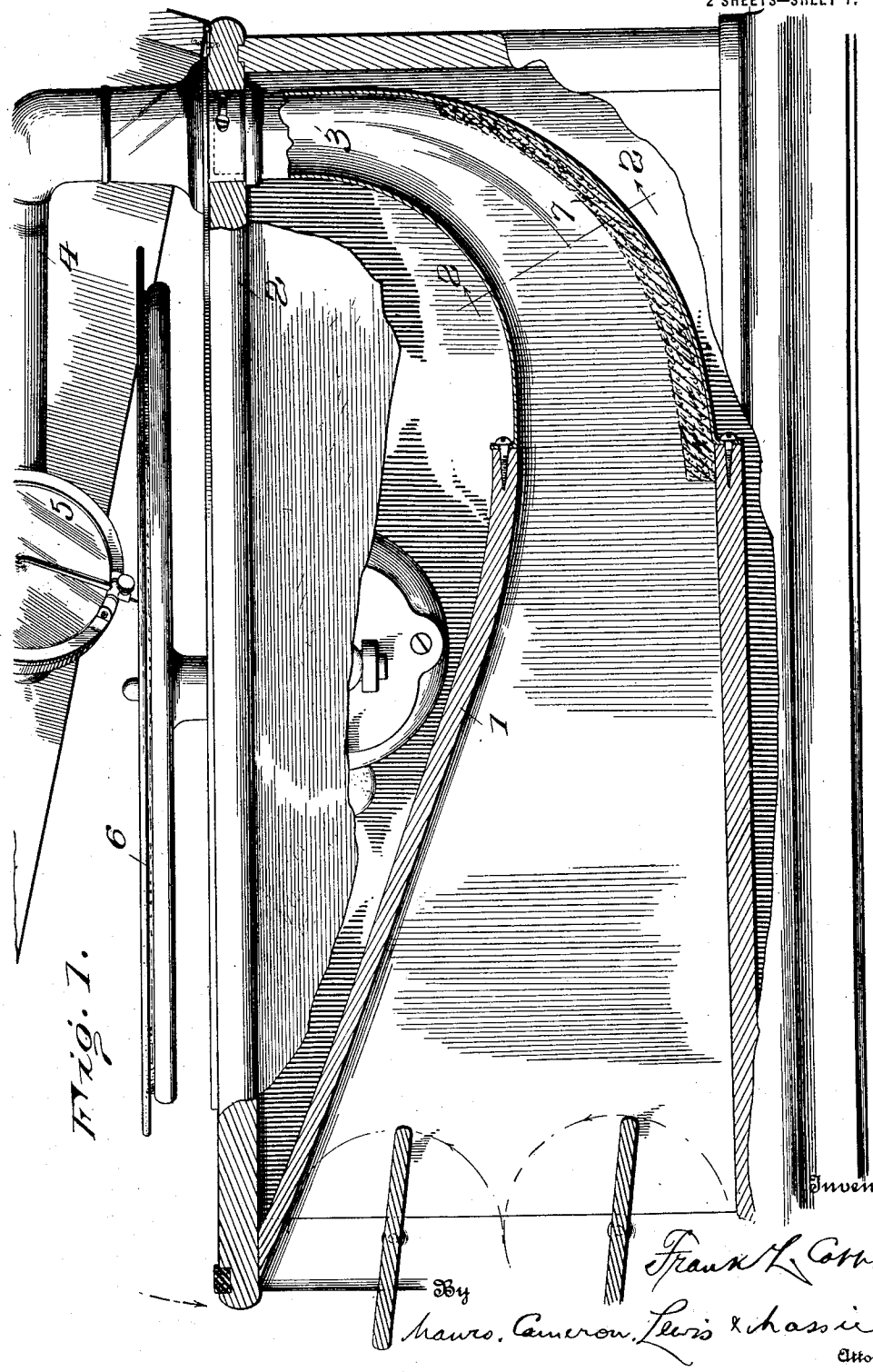


Fig. 1.

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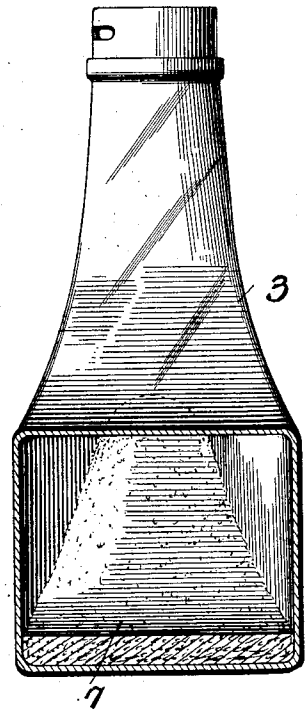
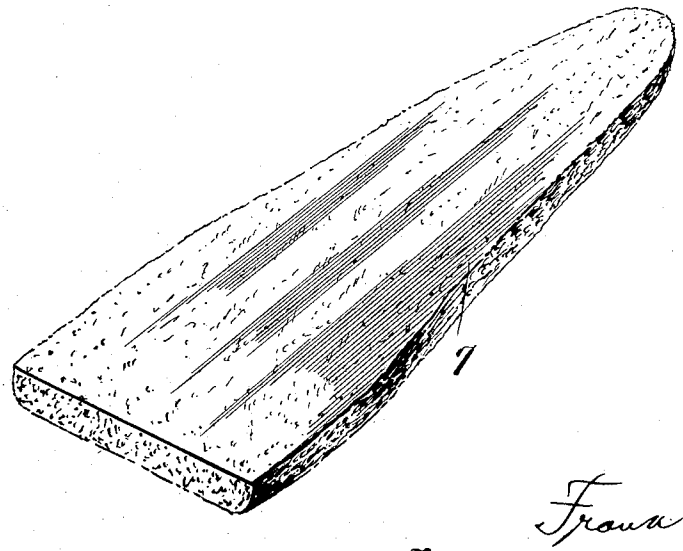


Fig. 2.

Fig. 3.



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UNITED STATES PATENT OFFICE.

FRANK L. CAPPS, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO AMERICAN GRAPHOPHONE COMPANY, OF BRIDGEPORT, CONNECTICUT, A CORPORATION OF WEST VIRGINIA.

TALKING-MACHINE.

1,216,656. Specification of Letters Patent. Patented Feb. 20, 1917.

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To all whom it may concern:

Be it known that I, FRANK L. CAPPS, a citizen of the United States, and a resident of Bridgeport, Connecticut, have invented a new and useful Improvement in Talking-Machines, which invention is fully set forth in the following specification.

This invention relates to talking machines, and has for its object to eliminate or greatly decrease the scratchy noises which occur, to a greater or less extent, in all reproductions of sound on such machines, and particularly on disk machines in which the record is composed of a hard thermoplastic material.

It is well known to those familiar with this art that, in the reproductions from the record, there occurs a scratchy foreign noise which has been attributed to various causes, but which, whatever its cause, materially interferes with the pleasant reproduction of the sound. I have discovered that, to a very large extent, these scratchy foreign noises may be suppressed by employing a pad of felt or other equivalent material in the neck or throat of the horn connected with the machine.

The inventive idea may be embodied in a variety of forms, one of which, for the purpose of illustrating the invention, is shown in the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section through a machine of the inclosed horn type, illustrating the pad in position and with parts shown in elevation;

Fig. 2 is a transverse section on the line 2—2 of Fig. 1, looking in the direction of the arrows; and

Fig. 3 is a perspective view of the pad.

Referring to the drawings, in which like reference numerals indicate like parts throughout the several views, 1 is the horn of the machine, here shown as inclosed in the ordinary or any suitable box or casing 2 and having its upper end or neck portion 3 communicating with the usual or any suitable tone-arm 4 carrying the reproducer 5 in operative relation with the record 6.

As shown, the neck or throat 3 of the horn is gradually expanded or enlarged from a point where it joins the tone-arm connection and is curved, as shown, so as to direct the sound from a vertical to a horizontal direction, as will be readily understood from an inspection of Fig. 1 and as is common in this art. Located on the interior of the neck or throat of the horn, and on the bottom concave portion thereof, is a pad 7 of wool or other equivalent animal fiber, which pad is tapered longitudinally, as shown in Fig. 3, so as to conform to the shape of the lower concave portion of the horn, as will be better understood by an inspection of Fig. 2. I prefer to construct this pad of good quality of felt of moderate firmness, but the invention is not limited to a felted fabric, as other fabrics embodying compactly arranged woolen fibers can be used. I prefer a pad having a thickness varying from one to three sixteenths of an inch, though if desired it may be somewhat thinner or thicker than this.

The pad should be shaped so as to lie snugly within the throat of the horn and to conform to the contour thereof, and while I have shown it in connection with a horn having a neck or throat that is rectangular in cross-section, it is to be understood that it is equally applicable to horns having necks or throats of a cross-sectional form that is not rectangular.

The term "pad" has been used throughout the specification and claims to define a piece of material which is of restricted area and of such dimensions that it does not extend throughout the inner periphery of the inclosing walls of the horn at any transverse section thereof, thereby distinguishing from the linings of the prior art which engage the entire inner surface of the horn for the whole or a part of the length thereof.

What is claimed is:—

1. In a talking machine, a sound conduit adapted to be connected with the sound-box of said machine and provided with a bend whereby sound waves traveling therethrough are deflected, and a pad of sound-suppressing material applied to a wall of the conduit and opposed to the direction of travel of the sound waves prior to their deflection.

2. In a talking machine, a sound conduit adapted to be connected with the sound-box of said machine and provided with a surface adapted to deflect the major portion of the sound waves traveling through said conduit, and a pad of sound-suppressing material applied to said deflecting surface.

3. In a talking machine, a sound conduit adapted to be connected with the sound-box of said machine, a curved portion in said conduit, and a pad of sound-suppressing ma-

terial associated with said conduit at the inner concave surface of said conduit.

4. In a talking machine, a gradually enlarging sound conduit adapted to be connected with the sound-box of said machine, substantially all the inner surface or surfaces of said conduit being bare, a curved portion in said conduit, and a pad of sound-suppressing material associated with said conduit at the inner concave surface of said conduit.

5. In a talking machine, a gradually enlarging sound conduit adapted to be connected with the sound-box of said machine, a curved portion in said conduit, and a pad of felting material having a shape conforming to the curve of the conduit and located at the inner concave surface of said conduit.

6. In a talking machine, a gradually enlarging sound conduit adapted to be connected with the sound-box of said machine, said conduit being tubular part of its length and rectangular the other part, a curved portion in the rectangular part of said conduit, and a pad of felting material associated with the inner concave surface of said conduit.

7. In a talking machine having a tone-arm, the combination of a horn having a curved throat or neck connecting the body of the horn with the tone-arm, and a pad of felted fibers located within said curved throat or neck.

8. In a talking machine having a tone-arm, the combination of a horn having a curved throat or neck connecting the body of the horn with said tone-arm, and a pad of felted fibers located on the inner concave side of said throat or neck.

9. In a talking machine having a tone-arm, the combination of a horn having a curved throat or neck connecting the body of the horn with said tone-arm, and a pad of felted fibers located on the interior concave side of said throat or neck and shaped to conform to the curve of the horn.

10. In a talking machine having a tone-arm, the combination of a horn having a curved throat or neck connecting the body of the horn with the tone-arm, and a pad of wool fibers located within said curved throat or neck.

11. In a talking machine having a tone-arm, the combination of a horn having a curved throat or neck connecting the body of the horn with said tone-arm, and a pad containing wool fibers located on the inner concave side of said throat or neck.

12. In a talking machine having a tone-arm, the combination of a horn having a curved throat or neck connecting the body of the horn with said tone-arm, and a pad of fibers located on the interior concave side of said throat or neck and shaped to conform to the curve of the horn.

13. In a talking machine, the combination of a rectangular horn for modifying and directing sound waves, said horn having a curved portion, the inner surfaces of three of the walls of said horn being entirely bare and the fourth wall partially bare, said last-named wall being adapted to direct the majority of the sound waves, and a pad of sound-suppressing material for covering the fourth wall at the curved portion of said member.

14. In a talking machine, a sound-conduit adapted to be connected with the sound-box of said machine and provided with a sound-deflecting surface, and a pad of sound-suppressing material applied only to said surface.

15. In a talking machine, a sound-conduit adapted to be connected with the sound-box of said machine and provided with a sound-deflecting surface, and a pad of sound-suppressing material applied to and substantially co-extensive with said surface.

16. In a talking machine, a sound-conduit adapted to be connected with the sound-box of said machine and provided intermediate of its length with a bend, and sound-suppressing material applied to the interior of said conduit only at said bend.

17. In a talking machine, a sound-conduit adapted to be connected with the sound-box of said machine, said conduit having a bend provided with sound-suppressing material substantially coextensive with the inner concave surface thereof.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

FRANK L. CAPPS.

Witnesses:
LESLIE S. EASTMAN,
J. S. GRIFFITH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."