W. HESS, Jr.

TALKING MACHINE HORN.

APPLICATION FILED JULY 9, 1906.

981,648.

Patented Jan. 17, 1911.

2 SHEETS—SHEET 1.

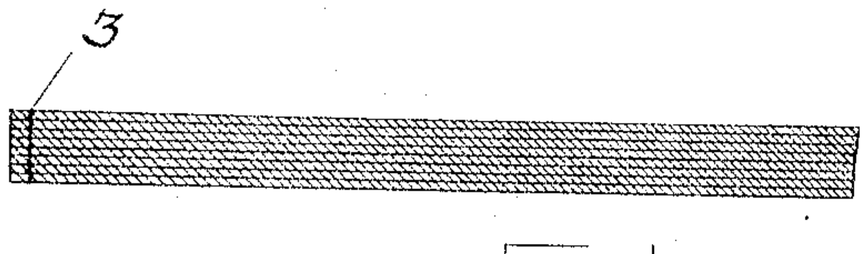


FIG 1

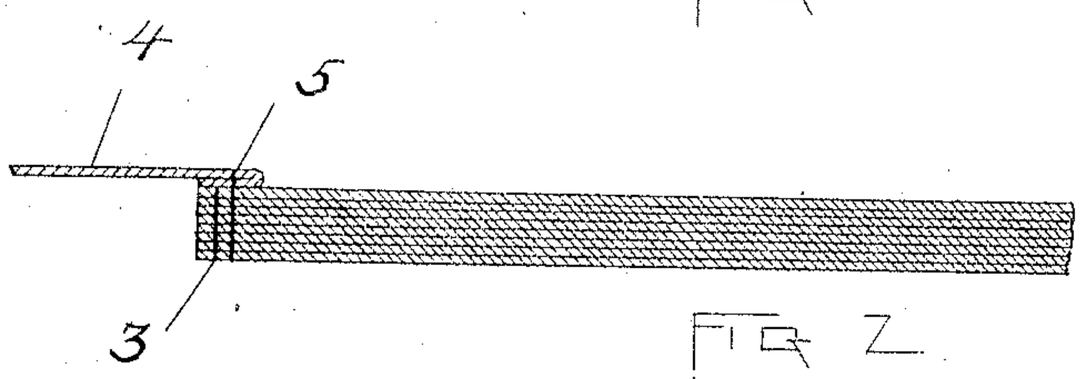


FIG 2

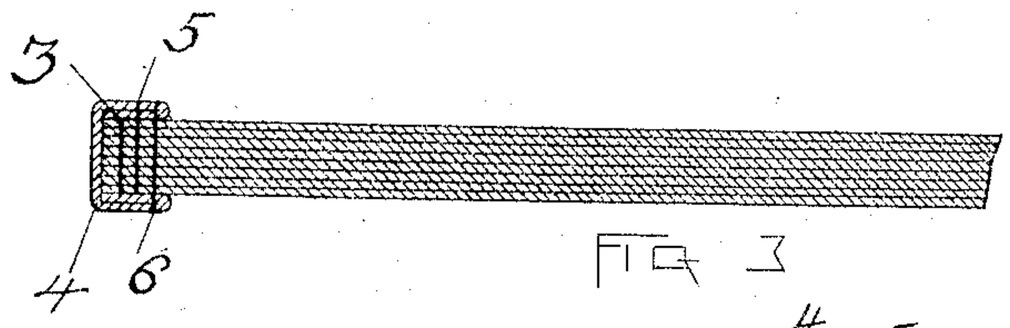
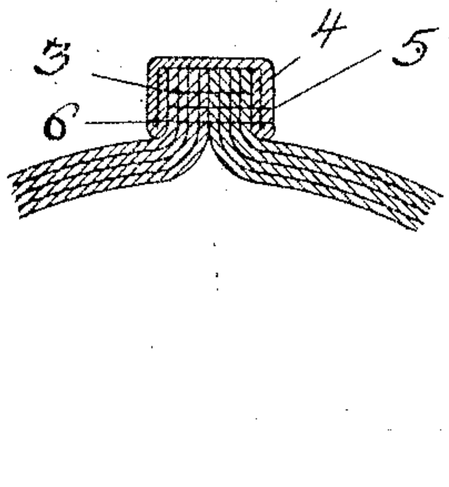
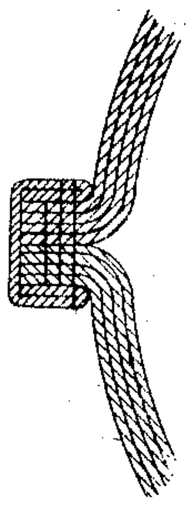


FIG 3





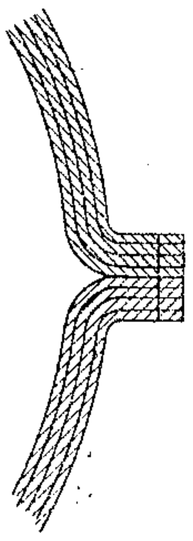


FIG 4

WITNESSES

J. L. Fuller.

J. Donsbach.

INVENTOR

Wendell Hess Jr.

By Crosby & Curtis

Attys

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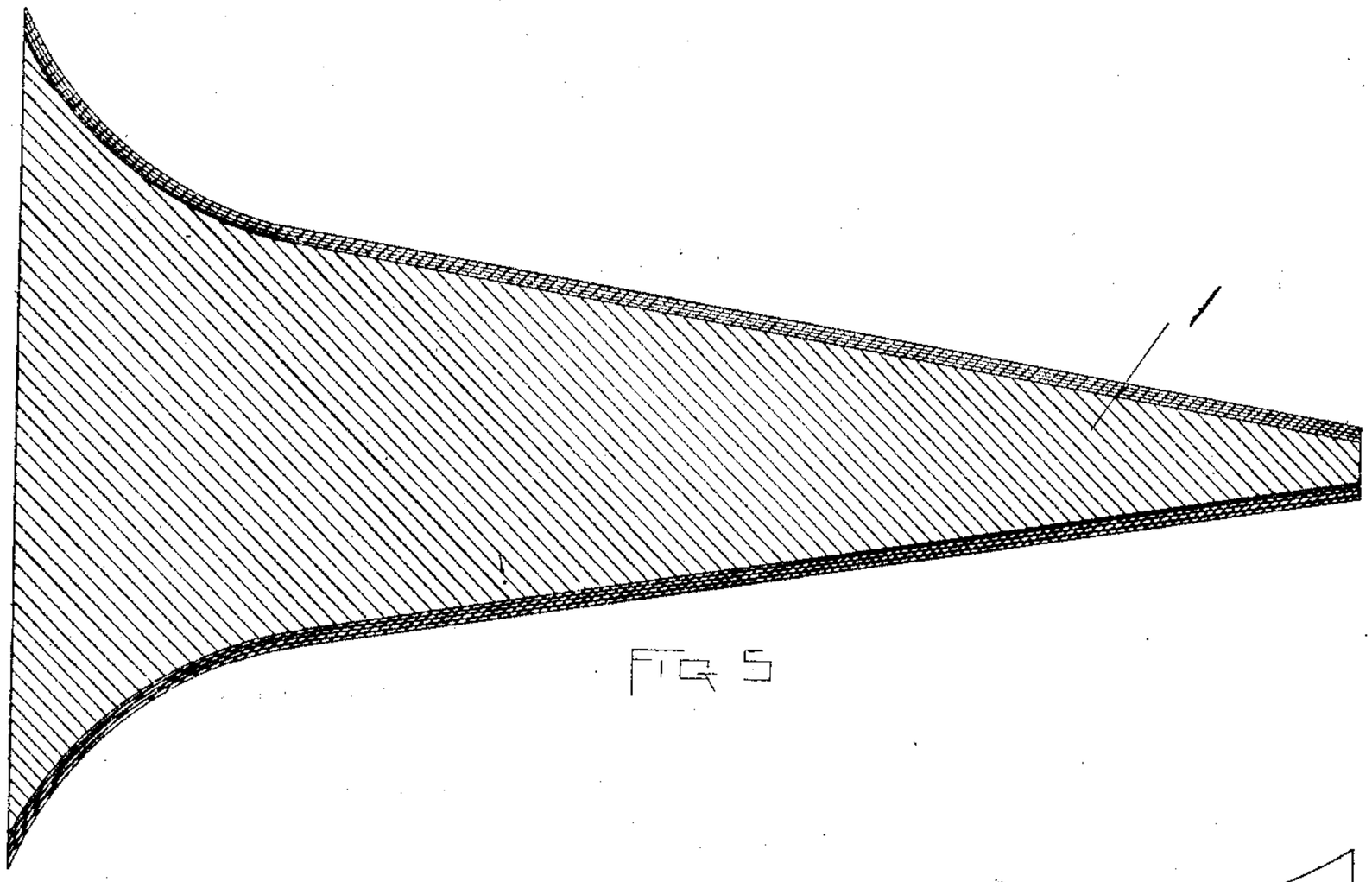

FIG 5

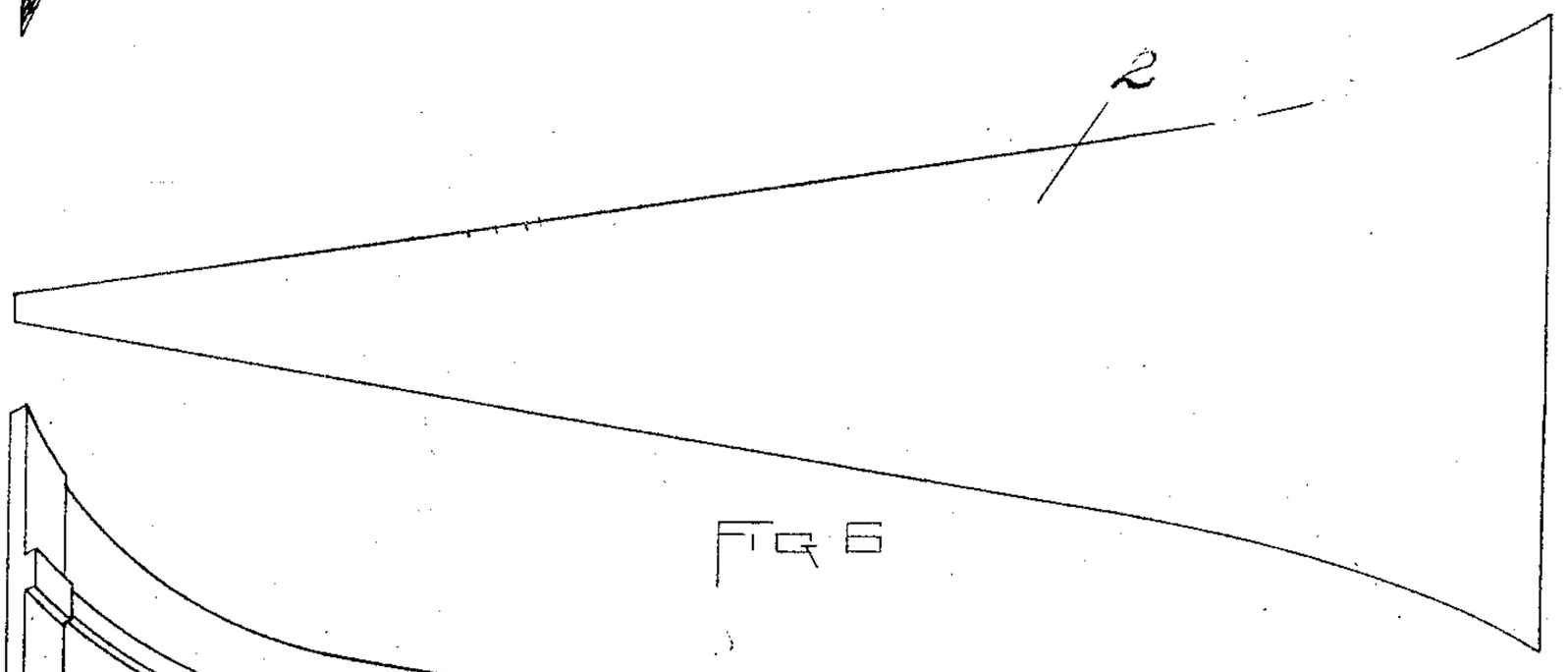

FIG 6

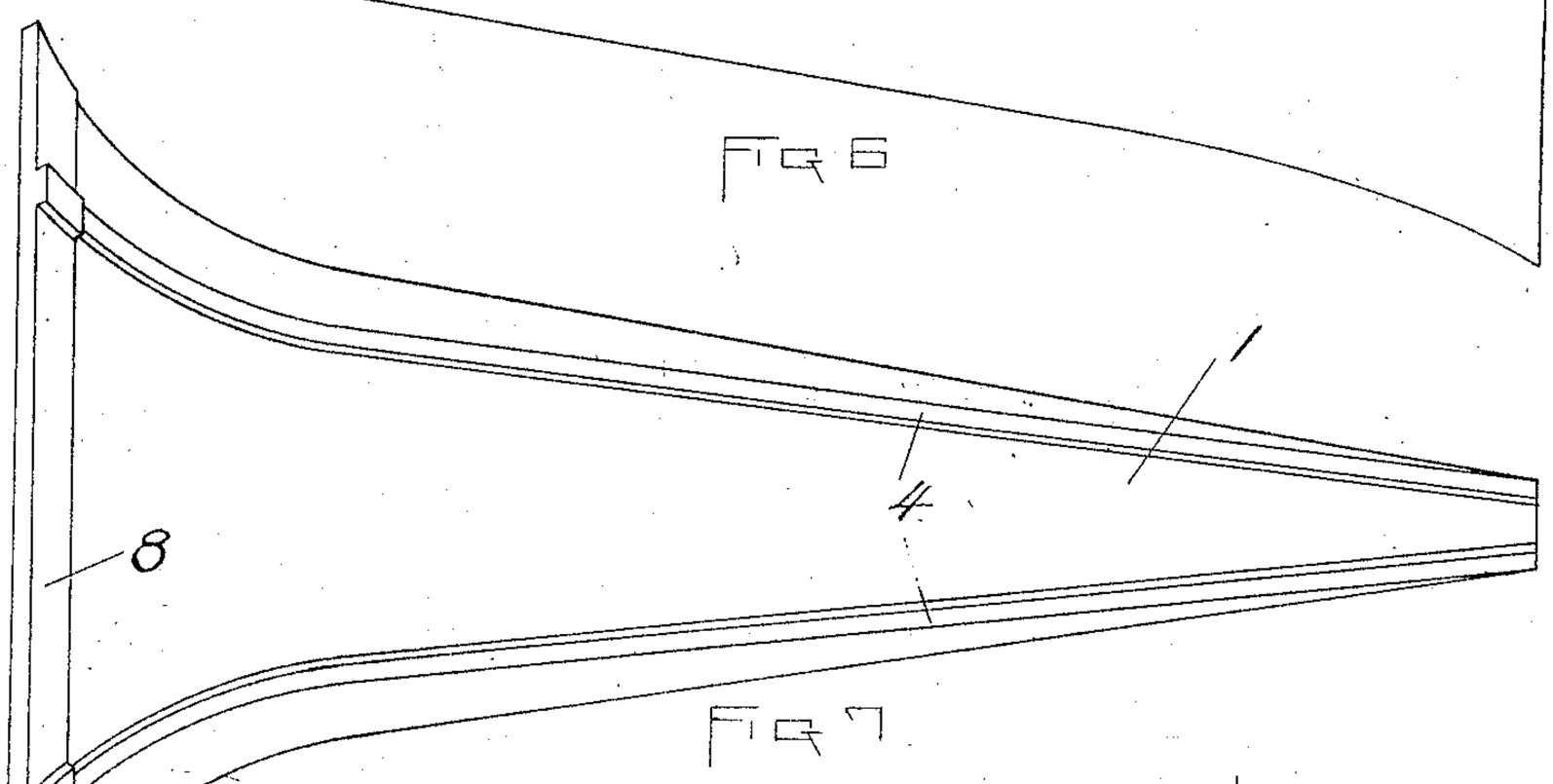

FIG 7

WITNESSES

J. L. Fuller

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UNITED STATES PATENT OFFICE.

WENDELL HESS, JR., OF TROY, NEW YORK.

TALKING-MACHINE HORN.

981,648. Specification of Letters Patent. Patented Jan. 17, 1911.

Application filed July 9, 1906. Serial No. 325,297.

To all whom it may concern:

Be it known that I, WENDELL HESS, Jr., a citizen of the United States, residing at Troy, county of Rensselaer, and State of New York, have invented certain new and useful Improvements in Talking-Machine Horns, of which the following is a specification.

The invention relates to such improvements and consists of the novel construction and combination of parts hereinafter described and subsequently claimed.

Reference may be had to the accompanying drawings, and the reference characters marked thereon, which form a part of this specification. Similar characters refer to similar parts in the several figures therein.

Figures 1, 2, 3 and 4, are sectional views illustrating successive steps in the securing together of plies of cloth in the manufacture of my improved phonograph-horn. Fig. 5 is a central, vertical, longitudinal section showing the cloth-body stretched upon a horn-shaped form. Fig. 6 is a plan view of one of the segmental blanks of cloth used in the manufacture of the horn. Fig. 7 is a view in side elevation of the horn with a portion of the edge broken away and shown in central, longitudinal section.

The principal object of my invention is to produce a sound-strengthening device adapted for use in, or in connection with, musical and sound-reproducing instruments.

Other objects of the invention will appear in connection with the following description.

I have shown, and will describe, my invention in its preferred application to the horn of a sound-reproducing instrument; but it is also adapted for use in any case where it is desired to reflect and strengthen sound vibrations.

The invention consists in a body of the desired shape made up of a plurality of plies of cloth stiffened and bound together by a suitable cement or size.

Referring to the drawings wherein the invention is shown in preferred form, 1, represents a phonograph-horn embodying my invention and made in accordance with my improved method. In making such a horn I preferably cut from a web, or webs, of cloth a number of plies, 2, of substantially the form shown in Fig. 6 of the drawings, each blank being approximately a quarter-segment of a phonograph-horn of the desired size. I then superpose one upon another a number of said blanks, double that of the number of plies of which the horn is to be made, and secure all of said plies together along one edge, from the tapered to the flared end of the horn, by a line of stitching, 3, after which I apply to the edges so stitched together a binding strip, 4, one edge of which is first secured by a line of stitching, 5, as shown in Fig. 2, after which the other edge is secured by a line of stitching, 6, as shown in Fig. 3. I have shown in Figs. 1, 2 and 3, eight plies or blanks thus secured together along one edge, it being desired to produce a horn four plies in thickness. After the plies have been thus secured together along one edge, they are opened out between the fourth and fifth plies and four additional plies are applied to each of the four plies so separated, and the edges of each eight plies thus formed are secured together in the manner above described. The unsecured edges of the additional eight plies are then secured together in the same manner completing the inclosure adapted to be made into a horn. The body thus formed is then saturated with starch and is drawn or stretched over a form of the proper size and desired shape and permitted to shrink and dry thereupon. A preferred manner of saturating the fabric with starch is to immerse the fabric in a hot liquid solution of cooked starch until the starch has penetrated to all parts of the fabric and filled the interstices thereof. When the starch has become dry and hard, the plies will be firmly bound together into a practically solid body which will be hard and stiff and adapted to retain the shape imparted by the form. The body thus formed comprises substantially a homogeneous body of hardened starch supported by the plies of fabric embedded therein. After the horn has been thus formed, its end edges are trimmed and covered with a binding strip, 8, which may be an ordinary piece of tape glued or cemented thereupon. At each of the four longitudinal seams a stiffening rib is formed by the stitched-together edges of the plies and the binding strip applied thereto, so that great strength is given to the structure. Any desired cement or size may be employed; and the quality or timbre of the sound reflected or transmitted by the horn can be varied by varying the kind and consistency of the cement, as well as by varying the number of plies of cloth of which the horn is made.

I have shown and described a preferred construction of horn, but I do not wish to be limited thereto, as the manner of constructing the device can be varied in accordance with the use to which the device is to be put and the wishes of the maker or user.

The body of the device may be made up of plies of any desired kind of cloth, knitted or woven, but I prefer to use ordinary woven cotton cloth.

The shape and size of the device can be varied in accordance with the conditions to which it is to be subjected in use.

What I claim as new and desire to secure by Letters Patent is—

1. A sound-strengthening device comprising a substantially homogeneous body of hardened cooked starch, having embedded therein, and saturated therewith, a plurality of plies of cloth.

2. A sound-strengthening horn formed of a plurality of segments each comprising a plurality of plies of cloth sewed together along their neighboring edges, and stiffened and bound together by cement.

3. A sound-strengthening horn formed of a plurality of segments each comprising a plurality of plies of cloth having the neighboring edges of adjacent segments secured together by a stitched seam, and said edges covered by a binding strip, the several plies being stiffened and bound together by cement.

In testimony whereof, I have hereunto set my hand this 5th day of July, 1906.

WENDELL HESS, Jr.

Witnesses:
GEO. A. MOSHER,
E. M. O'REILLY.