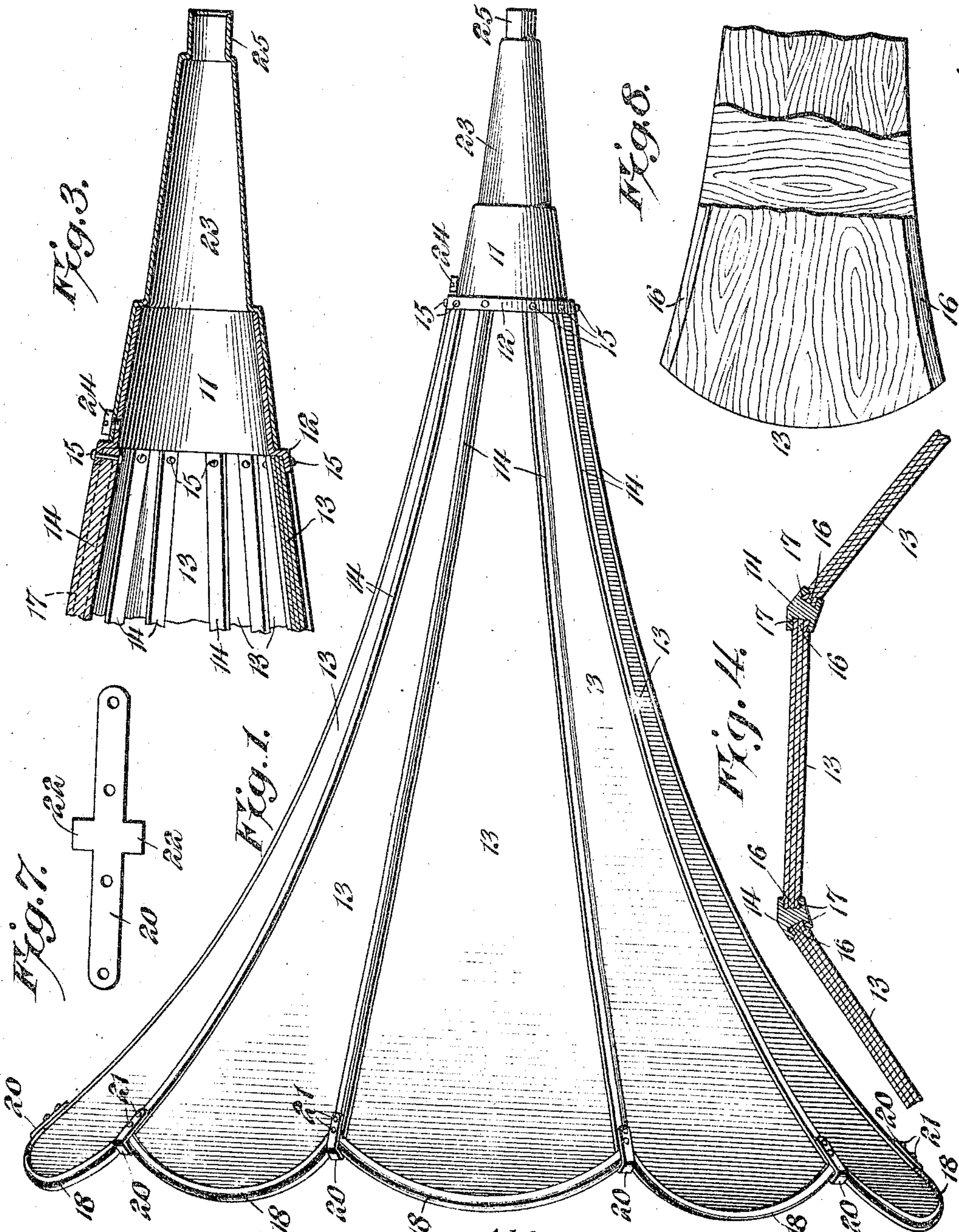


921,676.

A. R. GUNNIUS.
SOUND AUGMENTING HORN.
APPLICATION FILED JAN. 6, 1908.

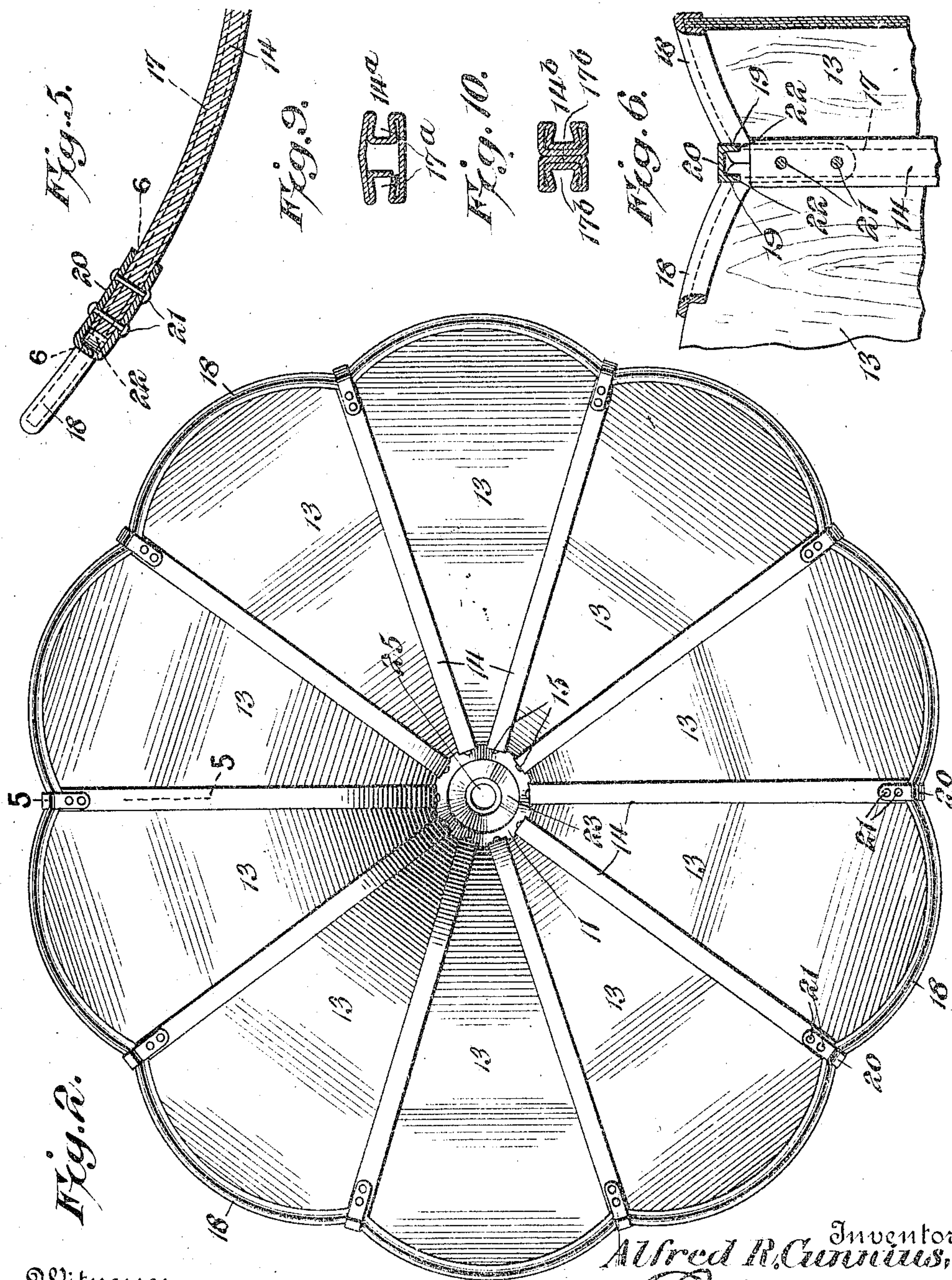
Patented May 18, 1909.
2 SHEETS—SHEET 1



Witnesses
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UNITED STATES PATENT OFFICE.

ALFRED R. CUNNIUS, OF BROOKLYN, NEW YORK.

SOUND-AUGMENTING HORN.

No. 921,676.

Specification of Letters Patent.

Patented May 18, 1909.

Application filed January 6, 1908. Serial No. 409,587.

To all whom it may concern:

Be it known that I, ALFRED R. CUNNIUS, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented a new and useful Sound-Augmenting Horn, of which the following is a specification.

The principal object of the present invention is to provide a horn, particularly useful in connection with phonographs, graphophones and similar sound reproducing instruments, which is comparatively simple in construction, and is composed of sections made of wood or other suitable material that will eliminate to a very material degree, harshness of tone, imparting clearness and fullness of tone that is so much desired.

A further object is to provide a horn that is very ornamental in appearance, and can be highly finished, the parts being comparatively simple, and the different sections being held securely in place.

The preferred embodiment of the invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a side elevation of the horn, showing the reducer in place thereon. Fig. 2 is a front elevation of said horn. Fig. 3 is a detail longitudinal sectional view through the smaller end thereof. Fig. 4 is a detail cross sectional view therethrough. Fig. 5 is a detail longitudinal sectional view on the line 5—5 of Fig. 2. Fig. 6 is a sectional view on the line 6—6 of Fig. 5. Fig. 7 is a detail view of one of the clip blanks. Fig. 8 is a detail view of a portion of one of the horn sections, the parts being broken away to illustrate the arrangement of the veneers. Figs. 9 and 10 are cross sectional views illustrating modifications of the tie strips.

Similar reference numerals designate corresponding parts in all the figures of the drawings.

The smaller end of the horn comprises a metallic tapered cuff 11 provided at its larger end with an annular enlargement 12, forming an external annular shoulder. The body of the horn comprises a plurality of tapered sections 13, longitudinally curved and flat in cross section, said sections being preferably constructed of a plurality of layers of wood veneer glued together and having the grain crossed or disposed in angular relation, as illustrated in Fig. 8. The inner and smaller ends of the sections are located in the enlargement 12. Tie strips 14 are located be-

tween the adjacent edges of the various sections and have their inner ends located in the enlargement 12, and secured thereto by rivets or other suitable fasteners 15. The opposite longitudinal margins of the sections 13 are provided with continuous longitudinal dovetails 16 and the tie strips 14 have continuous dovetail grooves 17 in their opposite sides that are angularly disposed and receive said sections. It will be noted that the channels forming the dovetails are cut solely in the outside layers and do not extend completely through the same.

The outer end edges of the sections 13 are inclosed by metallic binding strips 18. These strips are abutted at their ends against one another and against the outer ends of the tie strips 14, as will be evident by reference to Fig. 6. They are furthermore provided adjacent to their ends and in their outer sides with sockets 19. The various abutting ends are secured together by substantially U-shaped clips 20 that embrace the ends as shown in Figs. 5 and 6, and are secured to the tie strips by rivets 21 or other suitable fasteners. These clips are provided at their outer ends with inwardly extending tongues 22 which tongues engage in the sockets 19. As a result, the clips interlock with the binding strips, preventing their separation and said clips engaging over the ends of the binding strips, serve to prevent their movement away from the tie strips and cover the joints between the parts.

For certain instruments of a well known type, the cuff 11 is slipped into the end of the reproducer tube, but for other types of machines, a reducing sleeve 23 is employed, the outer end of which is enlarged and snugly receives the cuff 11, being abutted against the external shoulder thereof and detachably fastened thereto by a screw 24, which screw may also be employed for securing the cuff 11 in place on the instrument, when the sleeve is not in use. This sleeve is provided at its inner end with a contracted tubular nipple 25 on which the end of the sound conveyor tube may be placed as will be evident, said nipple forming an annular internal shoulder that abuts against the end of the cuff.

This structure as will be evident is comparatively simple, being angular in cross section, as shown in Fig. 4 and the sections are effectively held together so that there is little chance of their becoming separated.

Thus the dovetail connection between the sections and the tie strips insures a rigid and practically inseparable engagement between the parts and the binding strips are securely held together and to the tie strips. In this construction, moreover, the sections can be finished and highly polished, before they are assembled, and therefore made to match in color and material the case of the instrument with which it is used. Inasmuch as the dovetail forming channels are located solely in the outside layers, said layers will be clamped by the tie strips. By having the detachable reducer shown, said horn can be readily used in coaction with both of the two general types of sound reproducing machines now known.

From the foregoing, it is thought that the construction, operation and many advantages of the herein described invention will be apparent to those skilled in the art, without further description, and it will be understood that various changes in the size, shape, proportion and minor details of construction, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention. For instance, in Fig. 9 there is illustrated a modified form of tie strip, designated 14^a, this tie strip being constructed of sheet metal bent to produce the opposite sides and longitudinal dovetail grooves 17^a in its opposite edges.

Another embodiment of this invention is shown in Fig. 10. In this form of construction the tie strip 14^b is constructed of two pieces of sheet metal that are doubled and substantially U-shaped in cross section, forming the opposite longitudinally disposed dovetail 17^b. The abutting rear faces of the sections are soldered or otherwise secured together.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is:—

1. A sound augmenting horn, comprising a tapered cuff having an annular external shoulder between its ends, a horn body secured to the cuff, a tapered reducing sleeve that detachably fits upon the cuff and has one end abutting against the shoulder, said sleeve having an internal shoulder that abuts against the end of the cuff, and means for detachably securing the sleeve to the cuff.

2. A sound augmenting horn angular in cross section and comprising tapered sections, each section being longitudinally curved and transversely flat and each having its opposite side margins formed into continuous longitudinal dovetails, and tie strips located between the sections, each strip having longitudinal dovetailed sockets in its opposite sides that are angularly disposed with relation to each other and receive the adjacent dovetailed margins of the adjacent sections.

3. A sound augmenting horn, comprising sections, binding elements engaging the ends of the sections, and holding elements connecting the binding elements and having portions interlocked therewith.

4. A sound augmenting horn, comprising sections, binding elements engaging the ends of the sections, and holding elements connecting the binding elements, one set of elements being provided with sockets, the other having tongues that engage in the sockets.

5. A sound augmenting horn, comprising sections, binding elements engaging the ends of the sections and having sockets in their end portions, and holding clips connecting the end portions of the binding elements and having tongues that engage in the sockets.

6. A sound augmenting horn, comprising sections, tie strips connecting the longitudinal margins of the sections, binding strips engaging the ends of the sections, and clips secured to the strips and having portions interlocked with the end portions of the binding strips.

7. A sound augmenting horn, comprising sections, tie strips located between and embracing the longitudinal margins of the sections, binding strips engaging the ends of the sections and having sockets in their end portions, and clips secured to the outer ends of the tie strips, and having spaced inwardly extending tongues that engage in the sockets of the binding strips.

8. A sound augmenting horn, comprising sections, each section consisting of a plurality of layers of veneer, tie strips located between the longitudinal margins of the sections and having dovetailed connections therewith, binding strips covering the outer ends of the section and having their end portions abutted and provided with sockets, and clips covering the outer ends of the tie strips and binding strips and secured to said tie strips, said clips having inwardly extending tongues that engage in the sockets of the binding strips.

9. A sound augmenting horn, comprising a tapered cuff, sections having their inner ends fitted into the cuff, tie strips located between and secured to the sections, said strips having their inner ends located in and secured to the cuff, a tapered reducing sleeve having its larger end detachably fitting upon the cuff, said sleeve being provided at its smaller end with a tubular nipple, and a screw for detachably securing the sleeve to the cuff.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ALFRED R. CUNNIUS.

Witnesses:

MICHAEL SCHREINER,
THOS. F. WRIGHT.