

No. 885,268.

PATENTED APR. 21, 1908.

A. S. MARTEN.  
HORN.

APPLICATION FILED NOV. 17, 1906.

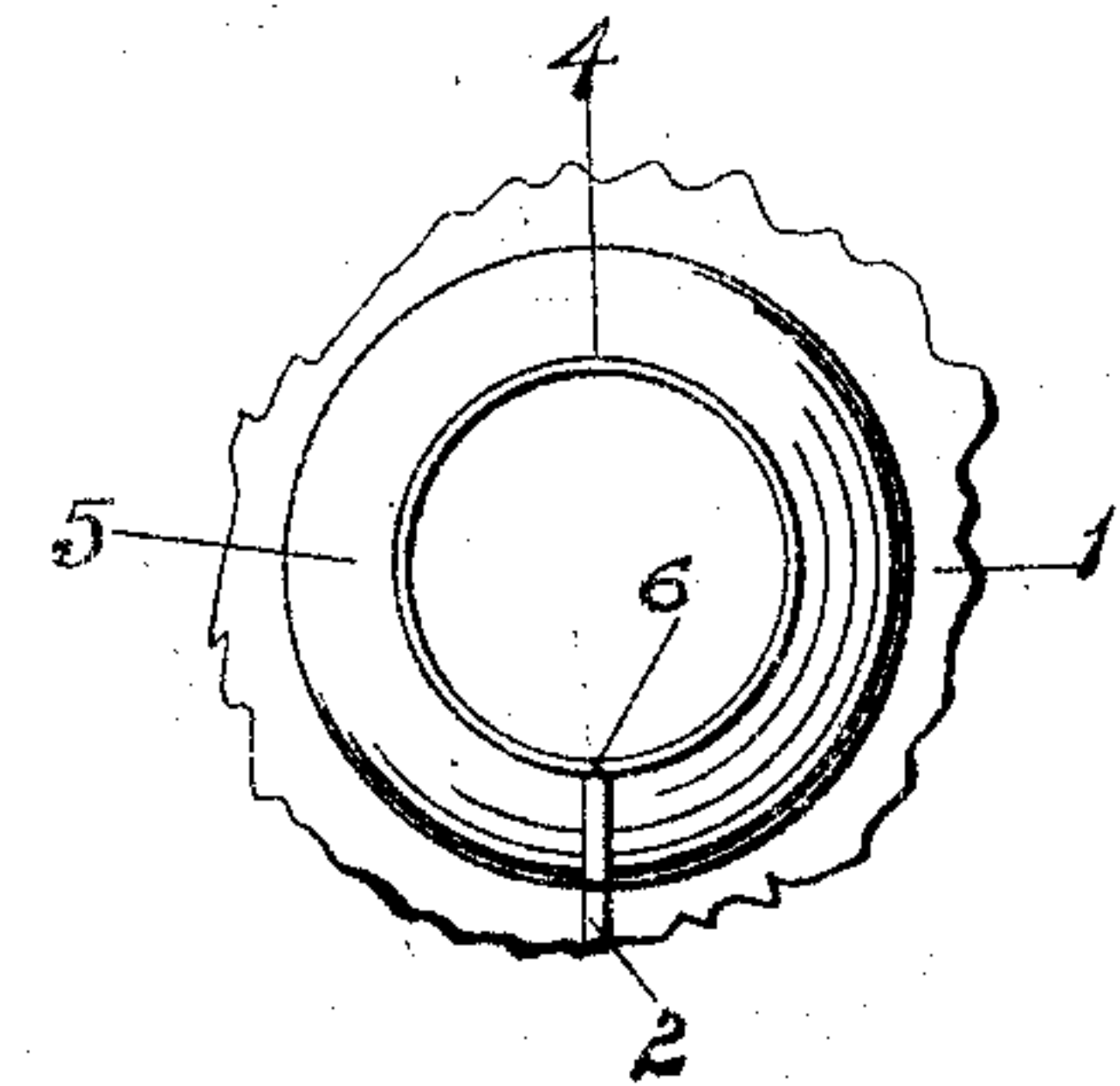


FIG. 3.

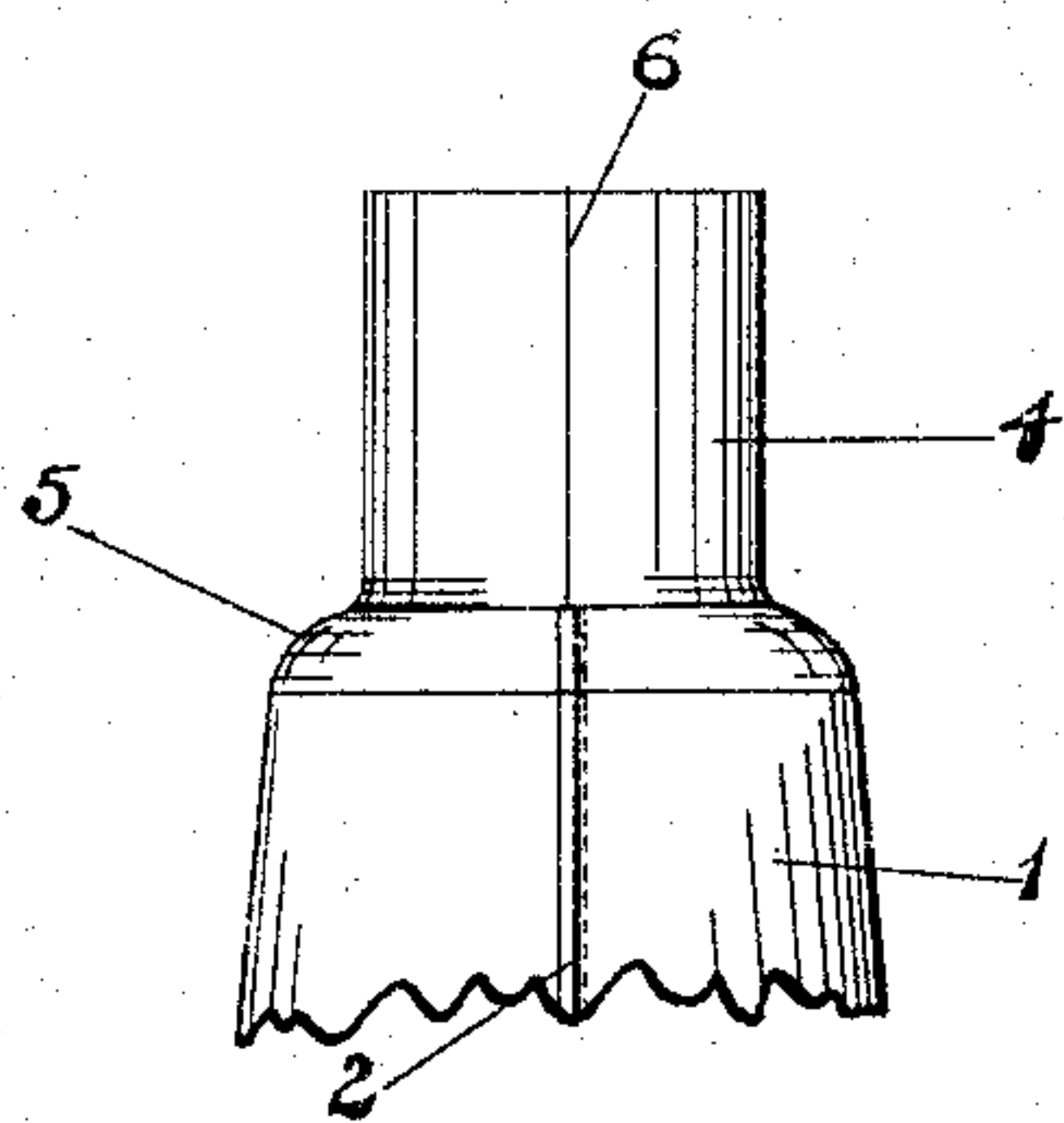


FIG. 2.

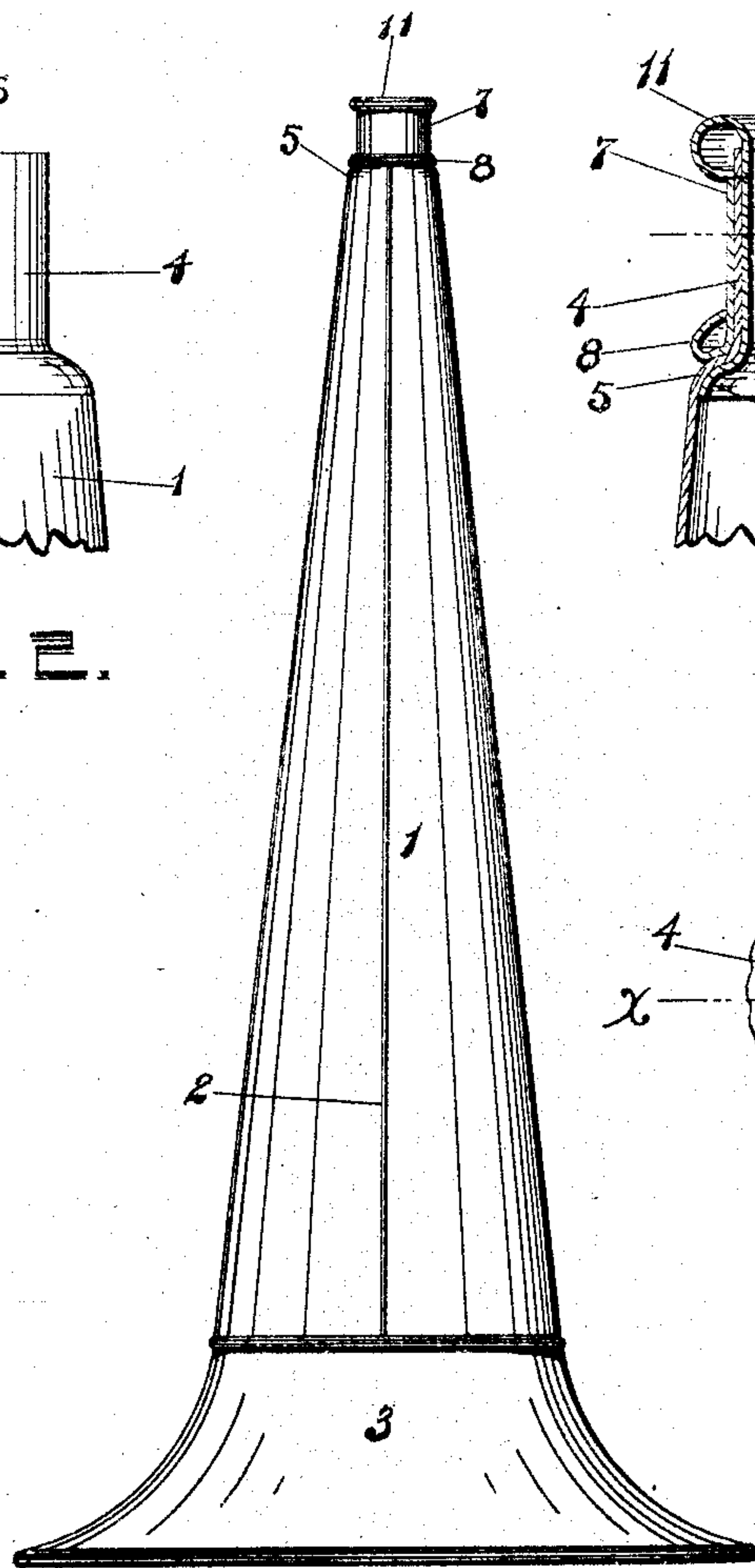


FIG. 1.

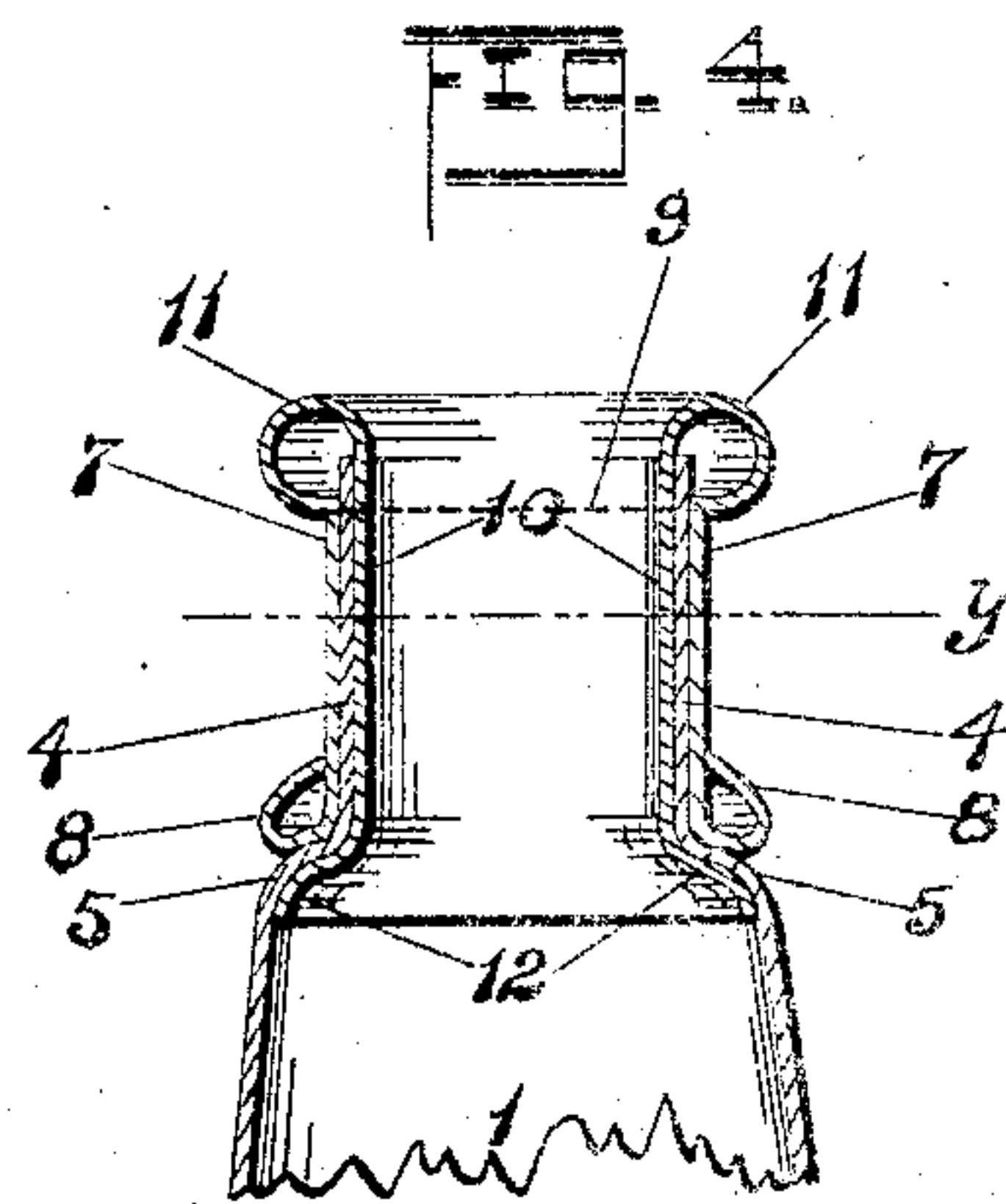


FIG. 4.

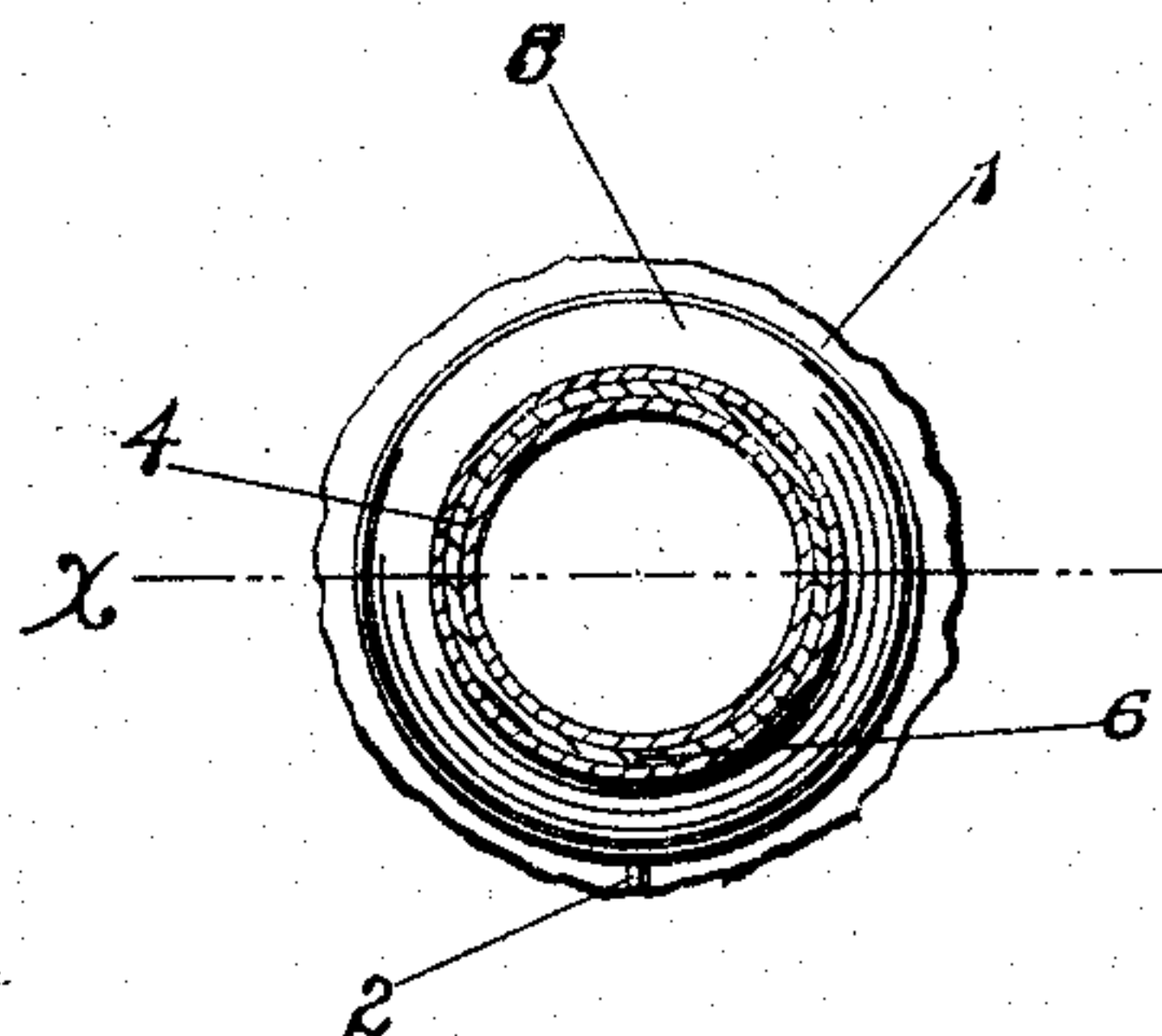


FIG. 5.

WITNESSES

*Frederick G. Gorman*

*Ethel B. Reed*

INVENTOR

**ALBERT S. MARTEN.**

BY

*Russell M. Everett*

ATTORNEY.



# UNITED STATES PATENT OFFICE.

ALBERT S. MARTEN, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO THE TEA TRAY COMPANY OF NEWARK, N. J., A CORPORATION OF NEW JERSEY.

## HORN.

No. 885,268.

Specification of Letters Patent.

Patented April 21, 1908.

Application filed November 17, 1906. Serial No. 343,786.

*To all whom it may concern:*

Be it known that I, ALBERT S. MARTEN, a citizen of the United States, residing at East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Horns, of which the following is a specification.

The objects of this invention are to secure in a sound amplifying horn, a ferrule which shall be strong and stiff and at the same time of finished appearance; to secure a smooth circumferential surface on both the inside and the outside of the ferrule without any longitudinal seams; to avoid soldering and secure joints which are only pressed or reamed together, and to obtain other advantages and results as may be brought out in the following description.

Referring to the accompanying drawings, in which like numerals of reference indicate corresponding parts in each of the several figures, Figure 1 is a side elevation of a horn of my improved construction; Fig. 2 is a similar view of the small end of the body portion of the horn showing its integral ferrule part with the inside and outside sleeves removed; and Fig. 3 is a plan of the same; Fig. 4 is a central longitudinal section of the small end of the horn taken as on line *x*, Fig. 5, and Fig. 5 is a transverse section through the ferrule of the horn as on line *y*, Fig. 4.

In said drawings, 1 indicates the body of the horn made tapering in any usual manner and having a longitudinal seam 2 formed by overlapping and interlocking the edges of the metal. This seam as is usual in horns, projects inwardly in order to provide a smooth exterior, and at the large end of the body 1, is a bell 3 of any ordinary type. At its small end, the said body 1 of the horn has an integral cylindrical ferrule portion 4 swaged down from the body part, and thus when completed, connected to said body by a shoulder 5, as shown in Figs. 2 and 3 more particularly. The longitudinal seam 2 of the horn body stops short of the said cylindrical ferrule part 4, and for said ferrule part the edges of the metal simply abut, as shown at 6 in said Figs. 2 and 3. This result is secured by notching the end of the horn body or cutting away the margins of the metal sections as will be understood by those

skilled in the art. The longitudinal seam 1 projecting at the interior of the horn therefore stops at the shoulder 5, and the ferrule portion 4 is smoothly cylindrical on both inside and outside. An outer sleeve or lining 7, preferably made of seamless tubing, and fitting nicely, is then slipped over the said ferrule portion 4, the end edges of said sleeve being adjacent to the shoulder 5, rolled or curled outwardly and backwardly as at 8. The opposite end of the said outer lining 7 preferably terminates somewhat short of the end of the ferrule portion 4. An inside lining or sleeve 10, also preferably of seamless tubing, is then fitted tightly within the ferrule portion 4 of the horn body, and its outer end edges curled or rolled outwardly forward, as at 11, to abut edgewise against the outside of the ferrule portion 4 and engage at their forward sides the outer end 9 of the sleeve 7. The inner end 12 of the inner sleeve 10 is then reamed or pressed outwardly to overreach the shoulder 5 on the inside of the horn and thus prevent the said inner sleeve or lining from escaping outward.

It will be understood that by the above construction, the integral ferrule portion 4 and its inside and outside linings are firmly bound together, so that a solid strong ferrule is provided for the horn. There are no exposed unfinished edges, and both the outside and inside of the ferrule is smoothly cylindrical with no seam. The ferrule is greatly reinforced or strengthened so that it is better able to support the weight of the horn, and furthermore the ferrule may be made to appear of different metal or finish from the body of the horn, and thus enhance its appearance.

The roll 8 of the outer sleeve strengthens and stiffens the horn at the junction of its ferrule and body portion, just where strengthening is especially needed, as for instance when the horn is supported solely by being slipped at its ferrule telescopically upon the neck of a speaker or sound-box. Furthermore, it would be impossible to end a straight cut-off sleeve on the curved shoulder joining the horn body and its ferrule portion, without there being a very obtrusive, unsightly and even dangerous sharp edge. By means of the roll 8, however, the end edge of the outer sleeve is turned in or butted against the



cylindrical part of the sleeve, and a neat, smooth finish secured which cannot scratch or be unpleasant to the touch.

Having thus described my invention, what I claim as new is:

1. In a horn, the combination of a flaring body having a reduced integral ferrule portion forming with said body an annular shoulder and having a longitudinal joint, an exterior annular enlargement at the extremity of the ferrule, and a seamless sleeve upon the outside of said ferrule portion between said shoulder and annular enlargement.
2. In a horn, the combination of a flaring body having a reduced integral ferrule portion forming with said body an annular shoulder and having a longitudinal joint, an exterior annular enlargement at the extremity of the ferrule, and a seamless sleeve upon the outside of said ferrule portion between said shoulder and annular enlargement having its end next said shoulder fitted thereagainst with the edges rolled outwardly and returned against itself.
3. In a horn, the combination of a flaring body having a reduced integral ferrule portion forming with said body an annular shoulder and having a longitudinal joint, an outward roll at the extremity of said ferrule portion returned against the said ferrule, and a sleeve upon the outside of said ferrule portion between said shoulder and roll having its end edges next the said roll abutting thereagainst.
4. In a horn, the combination of a flaring body having a reduced integral ferrule portion forming with said body an annular shoulder and having a longitudinal joint, a tubular lining inside said ferrule portion having one end curled outwardly over the end edges of the ferrule portion and its other end expanded into the flaring part of the horn, and an outer sleeve upon the said ferrule portion between the said shoulder and curled end of the said lining.
5. In a horn, the combination of a flaring body having a reduced integral ferrule portion forming with said body an annular shoulder and having a longitudinal joint, a tubular lining inside said ferrule portion having one end rolled up over the end edges of the ferrule portion and its other end expanded into the flaring part of the horn, and an outer sleeve upon the said ferrule portion between the said shoulder and said outward roll of the lining having its end next said shoulder fitted thereagainst with the edges rolled outwardly and returned upon itself.
6. In a horn, the combination of a flaring body having a reduced integral ferrule portion forming with said body an annular

shoulder and having a longitudinal joint, a tubular lining inside said ferrule portion having one end curled outwardly over the end edges of the ferrule portion and returned to abut at its edges against the outer surface of said ferrule portion, the other end of said lining being expanded into the flaring part of the horn, and a sleeve upon the outside of said ferrule portion having its edges at one end abutting against the said outward curl of the lining and its other end portion fitted against the said shoulder with the edges rolled outward and returned against itself.

7. In a horn, the combination of a flaring body having a reduced integral ferrule portion forming with said body an annular shoulder and being longitudinally slit from said shoulder to its extremity, an inner tubular lining fitting said ferrule portion and having one end curled outwardly over the extremity of the ferrule portion and its other end expanded into the flaring part of the horn, and a sleeve upon the outside of the ferrule portion between said curl and said shoulder.

8. In a horn, the combination of a flaring body having a reduced integral ferrule portion forming with said body an annular shoulder and being longitudinally slit from said shoulder to its extremity, an inner tubular lining fitting said ferrule portion and having one end curled outwardly over the extremity of the ferrule portion and its other end expanded into the flaring part of the horn, and a sleeve upon the outside of the ferrule portion between said curl and said shoulder having its end next said shoulder fitted thereagainst with the edges rolled outwardly and returned against itself.

9. In a horn, the combination of a flaring body having a reduced integral ferrule portion forming with said body an annular shoulder and being longitudinally slit from said shoulder to its extremity, an inner tubular lining fitting said ferrule portion and having one end curled outwardly over the extremity of the ferrule portion and returned to abut edgewise against the outer surface of said ferrule portion and its other end expanded into the flaring part of the horn, and a sleeve upon the outside of said ferrule portion having its edges at one end abutting against the said returned portion of the inner lining and its other end portion fitted against the said shoulder with its end edges rolled outwardly and returned against itself.

ALBERT S. MARTEN.

In the presence of—

ETHEL B. REED,

FREDERICK GERMANN, Jr.