

(No Model.)

O. R. CHASE.
TYMPANUM FOR BANJOS.

No. 305,148.

Patented Sept. 16, 1884.

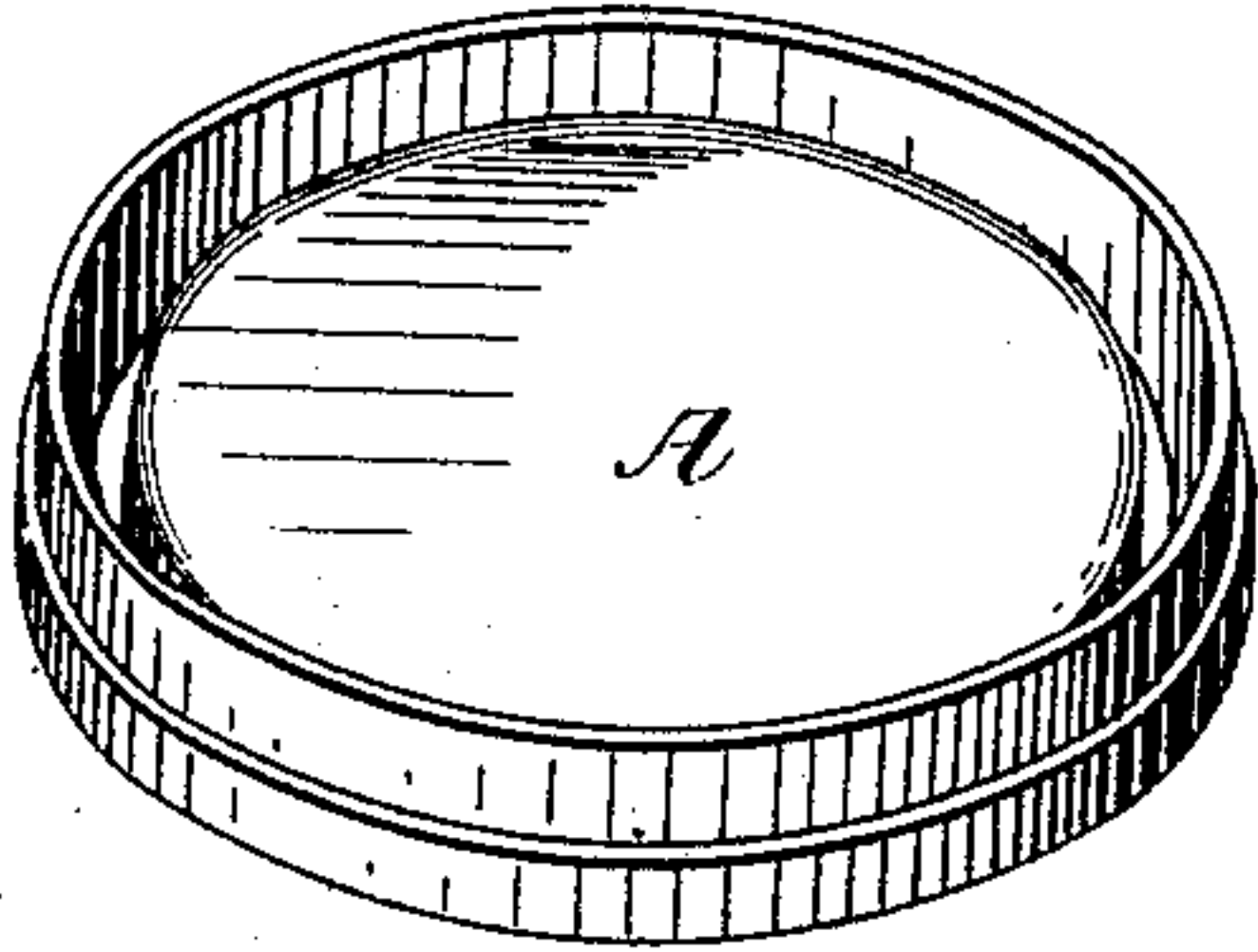


Fig-1-

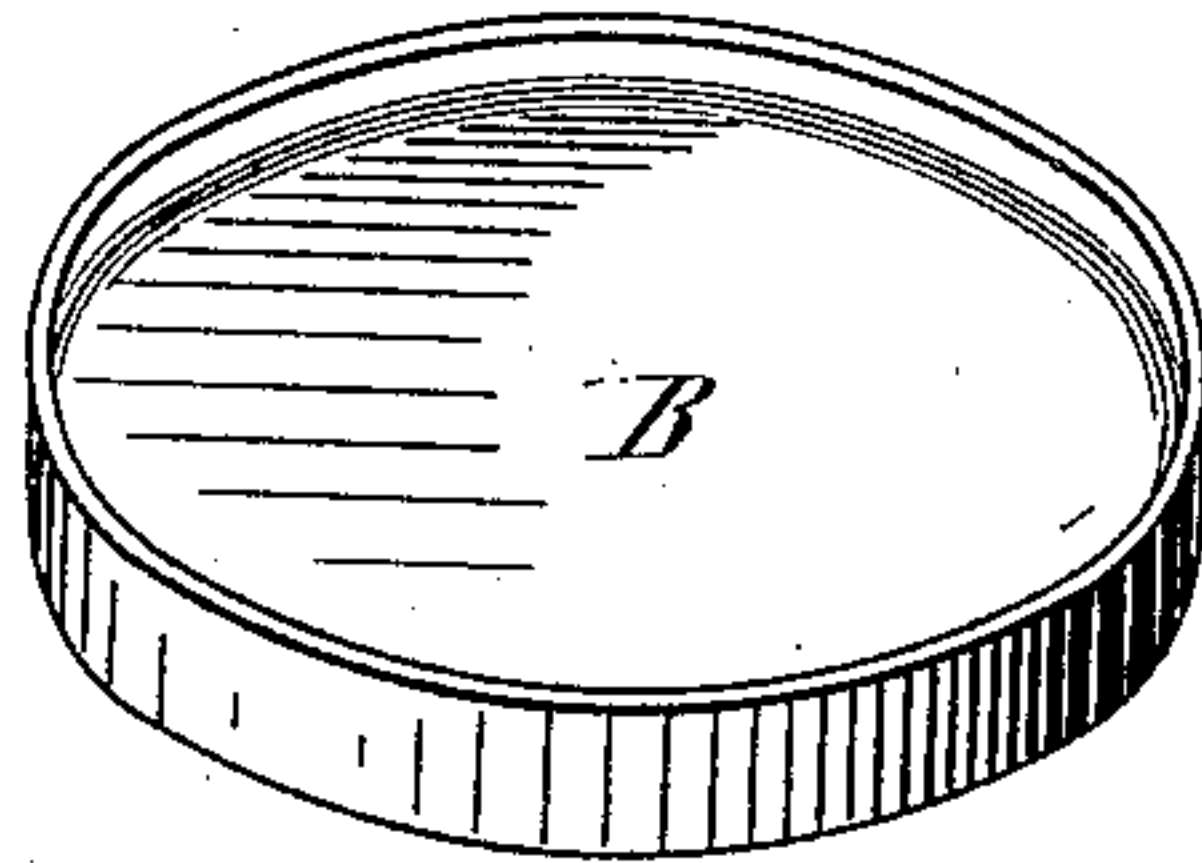


Fig-2-

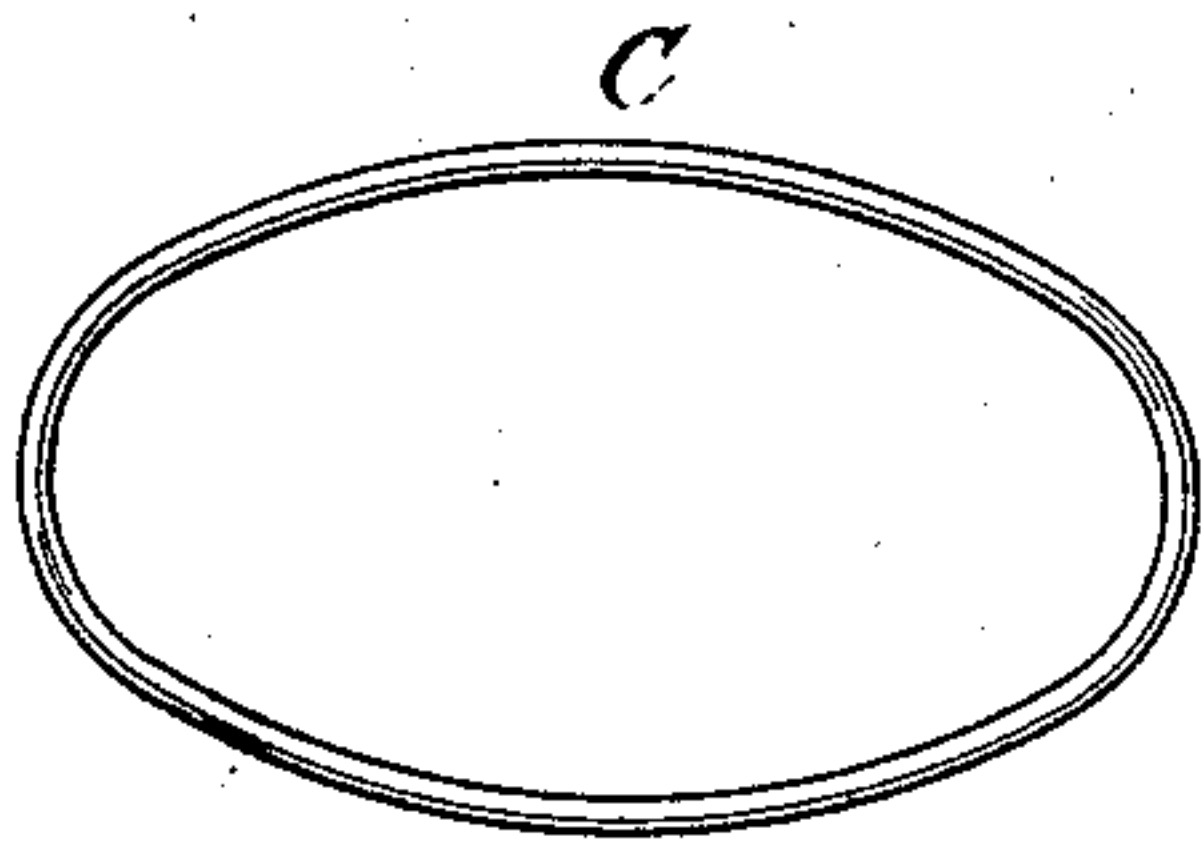


Fig-3-

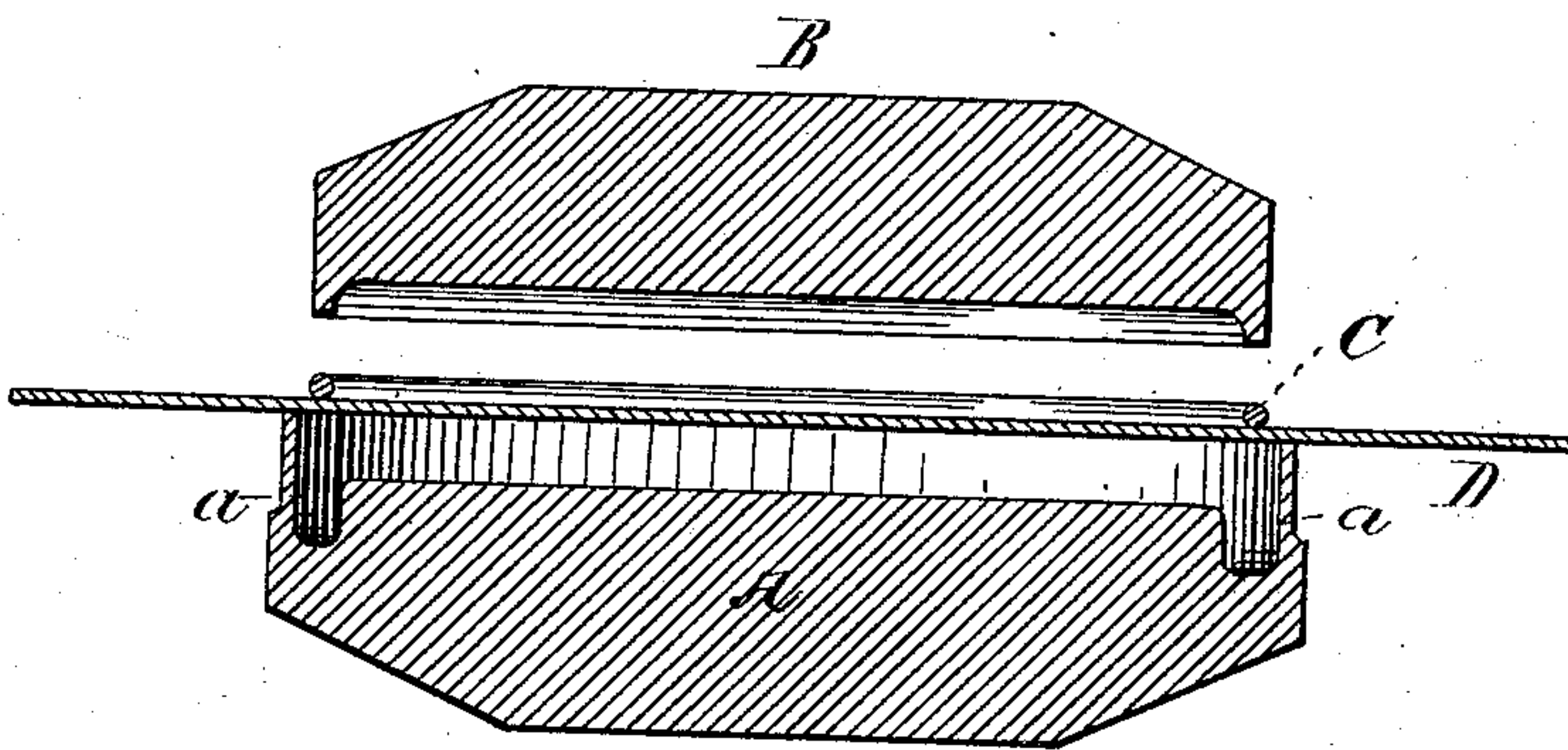


Fig-4-

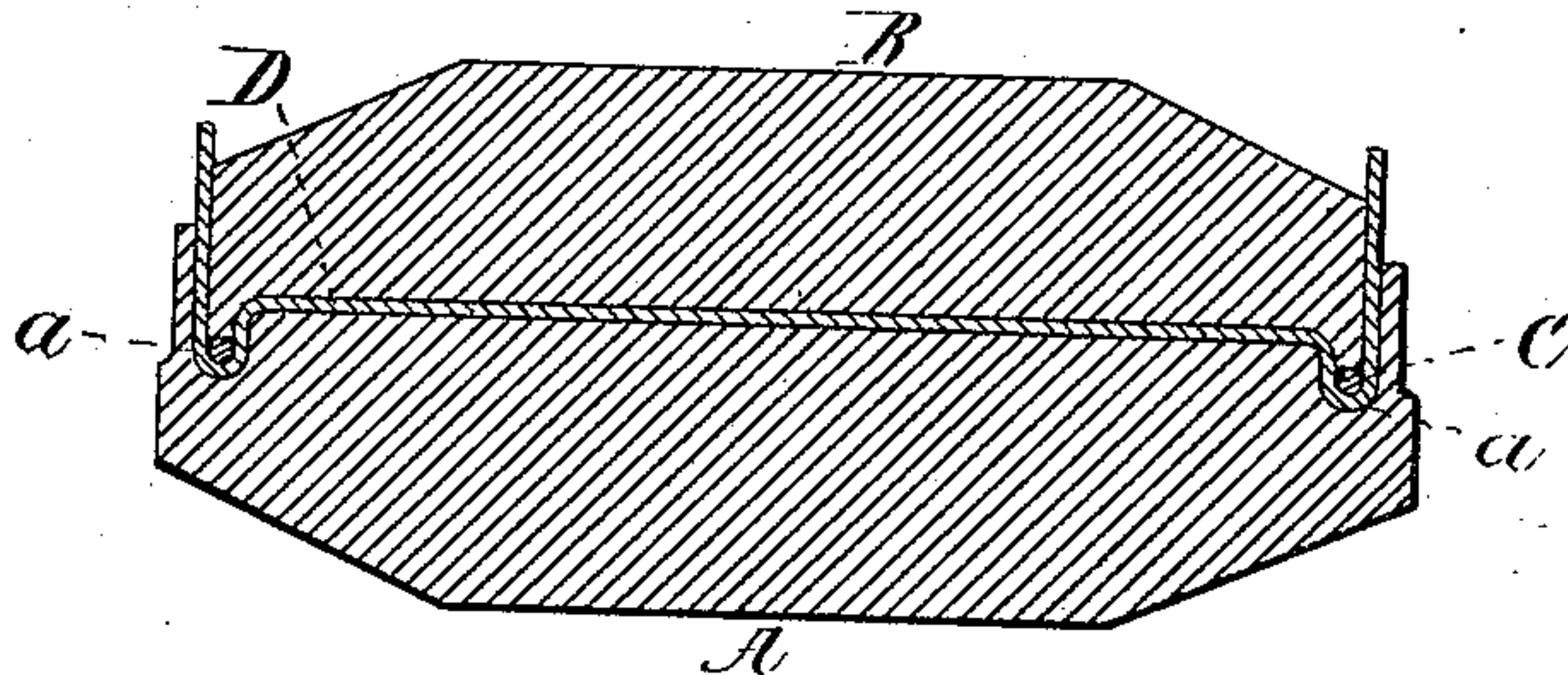


Fig-5-

WITNESSES

Frank G. Parker
G. A. P. Codwise

INVENTOR

O. R. Chase
by
J. B. H. Downer
att'y.

UNITED STATES PATENT OFFICE.

OLIVER R. CHASE, OF BOSTON, MASSACHUSETTS.

TYMPANUM FOR BANJOS.

SPECIFICATION forming part of Letters Patent No. 305,148, dated September 16, 1884.

Application filed December 31, 1883. (No model.)

To all whom it may concern:

Be it known that I, OLIVER R. CHASE, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Tympanums for Musical Instruments, of which the following is a specification.

These tympanums or heads are used in the drum, banjo, &c. Taking the banjo, for example, the old and usual method of putting on the head or tympanum was as follows: The skin or membrane was thoroughly wet and placed over the banjo-frame. The binding-wire was then put in place, and over this the stretching ring and hooks. Then the hooks were attached and the skin drawn down into its proper shape. The objection to this method is that the membrane or skin is unduly stretched and the strain is unequally distributed, the thinner and softer parts are reduced still weaker by the excessive strain put upon them, and the skin is very much injured in texture and quality. The varying texture and the unequal straining of the head renders it less resonant, and thus seriously injures the musical qualities of the instrument. Another objection to this usual method of putting on a banjo-head is that the part of the skin under the stretching-ring dries very slowly, and by this slow drying is rotted or considerably weakened, so that it is liable to break. I avoid these objections by wetting the skin, pressing it between dies, partially drying, and trimming off the superfluous skin, leaving it in proper shape to apply to the banjo-rim without further manipulation. I carry out this method as hereinafter described.

In the drawings, Figure 1 is a perspective view of the female or lower die, A. Fig. 2 is a perspective view of the under side of male or upper die, B. Fig. 3 is a perspective view of ring or binding-hook composed of wire or any other suitable material, C. Fig. 4 is a vertical sectional view of both dies and of the ring with skin laid on, but not yet submitted to pressure. The ring is shown in place upon the skin. Fig. 5 is a view of dies with skin between them under pressure.

The lower die consists of a solid piece of metal or other resisting material, having a rim all around a central depressed portion,

which is uniformly flat. Just within the rim there is a groove, *a*, of perhaps a quarter of an inch in width and of somewhat greater depth. The edges of the central depressed portion are rounded to prevent injury to the skin, and the groove is rounded also at the bottom. The upper die has likewise on its under surface a central depressed surface with a rim of less projection than in the lower die. The edges of the rim join this central depressed portion by a slight concave curvature. The upper die is in every way adapted to fit the lower die, allowing the interposition between them of a layer of skin. The ring is a simple hoop of round wire adapted to fit in the groove in the lower die. The wire used for this ring may be about one-eighth or three-sixteenths of an inch in diameter. The shapes of these dies and ring will be best understood by reference to the drawings. These dies are to be of various sizes to correspond with the different sizes of drums, banjos, or tamborines.

I carry out my process as follows: I take any suitable skin and moisten it, preferably with a solution of alum or other astringent. I then place the skin, in its moist condition, over the lower die, which is selected of suitable size for the banjo or other instrument to which the head is to be adapted. I next place the ring shown in Fig. 3 upon the skin, and finally the upper die is placed upon the ring. The whole is then submitted to a pressure of from five hundred to one thousand pounds or more, according to the size of the head or the thickness of the skin operated upon, and is allowed to remain under pressure for some time, according to the thickness of the skin and amount of moisture contained therein, or until it is thoroughly compressed into permanent shape, or as near uniform thickness as possible. I then remove the skin from the dies, and the ring or binding-hook is completely enfolded or enveloped by the skin, and thus serves to preserve the shape of the skin and render it fit for immediate use.

The advantages of my improved method are that the skin is evenly and uniformly compressed, and nearly all stretching is avoided, thus producing a tympanum or head of as nearly even thickness as it is possible to make it. A second advantage is that the head is

all ready to apply to the banjo or other instrument, without subjecting the user to the annoyance and trouble of fitting on the head or sending it back to the manufacturer to be fitted.

5 The edges where strained over the rim are much stronger when the skin is prepared in my way. As ordinarily prepared, the skin is very weak through the rotting previously
10 is that when the alum or astringent solution is, as I prefer, used to moisten the skin, the pores are closed, so that the heads are far less susceptible to changes of the atmosphere, and consequently the instruments are more re-
15 liable.

I am enabled to produce by this process a tympanum or head which has every appearance of an enameled skin, which is far more durable and resonant than any heretofore in
20 use, and which can be produced in any quan-

tity, of any size, adapted for immediate use, completely ready to be applied to the instrument for which they are made by any person of ordinary skill.

Having now described my invention, what 25 I claim as new, and desire to secure by Letters Patent, is—

As a new article of manufacture, a tympanum for banjos and similar musical instruments, consisting of the skin compressed into 30 the shape required to fit upon the shell of the instrument, and having the binding-hoop or ring secured within a fold in its outer edge.

In witness whereof I have hereunto set my hand.

OLIVER R. CHASE.

Witnesses:

WM. B. H. DOWSE,

WM. T. GILBERT.