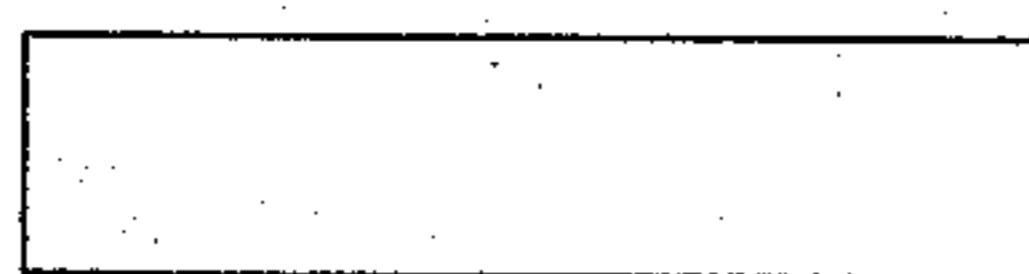


(No Model.)

M. BRAY.  
PROCESS OF MAKING REEDS AND REED PLATES FOR MUSICAL  
INSTRUMENTS.

No. 416,897.

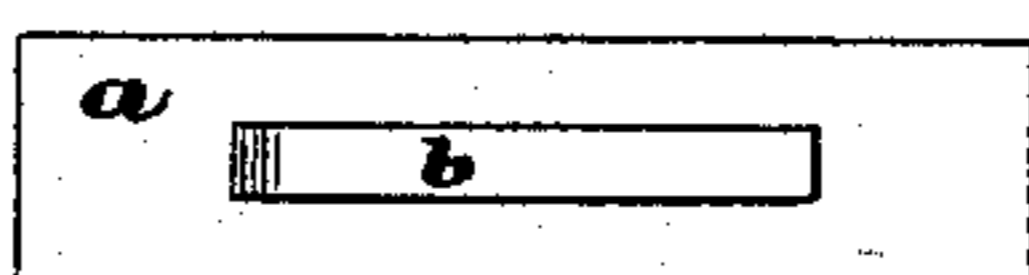
Patented Dec. 10, 1889.



*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



*Fig. 6.*



*Fig. 7.*



*Fig. 8.*

*Witnesses:*  
*Henry H. Kendall.*  
*Walter E. Lombard.*

*Inventor:*  
*Mellen Bray,*  
*by N. C. Lombard*  
*Attorney.*

# UNITED STATES PATENT OFFICE.

MELLEN BRAY, OF NEWTON, MASSACHUSETTS.

PROCESS OF MAKING REEDS AND REED-PLATES FOR MUSICAL INSTRUMENTS.

SPECIFICATION forming part of Letters Patent No. 416,897, dated December 10, 1889.

Application filed August 28, 1889. Serial No. 322,169. (No model.)

*To all whom it may concern:*

Be it known that I, MELLEN BRAY, of Newton, in the county of Middlesex and State of Massachusetts, have invented a new and useful Process of Making Reeds and Reed-Plates for Musical Instruments, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to the manufacture of reeds and reed-plates for musical instruments, and especially to that class of such manufacture in which the reed and reed-plate are integral or formed in one piece, and has for its object the production of such reeds from hard or tempered brass without further compression or condensation of the metal in the process of manufacturing the reed and reed-plate.

My invention consists in the process of forming a reed and reed-plate in one piece from hard or tempered brass by cutting from a sheet or ribbon of brass of the required degree of hardness a blank of the desired shape to form the plate, separating the sides and an end of the reed or tongue from said plate, and forming the throat by means of suitable dies, bending said tongue at its attached end to move said tongue into a different plane to the plate, reducing said tongue to the desired thickness to be given thereto by milling or cutting away stock therefrom, trimming the edges of said tongue by planing or cutting away stock therefrom to give it clearance in the throat, and then bending said tongue to bring it into its proper relation to the throat for practical operation in an instrument.

Figures 1 and 2 of the drawings are respectively a plan and edge view of the blank from which is to be formed a reed and reed-plate according to my invention. Figs. 3 and 4 are respectively a plan and a longitudinal section of said blank after the tongue or reed has been severed along its sides and one end from the plate and thrown into a different plane. Fig. 5 is a transverse section on line  $x x$  on Fig. 4, drawn to an enlarged scale. Fig. 6 is a longitudinal section of same after the tongue has been reduced in thickness by milling or cutting away the stock and trimming its edges. Fig. 7 is a transverse section on line  $y y$  on Fig. 6, enlarged; and Fig. 8 is a longitudinal section after the tongue or reed has been bent into its appropriate position relative to the throat for practical operation in a musical instrument.

In carrying out my invention I first cut from a sheet or ribbon of brass, of the proper degree of hardness to give the desired resiliency to the reed or tongue, a piece of metal of the desired size and shape to form the reed-plate  $a$ . I then separate the sides and an end of the tongue  $b$  from the plate by means of suitable dies, bend said tongue at its attached end, and move it into a plane different to that of the plate, as shown in Figs. 4 and 5. I then subject the tongue to the action of a milling-tool or other cutter to cut away a portion of the stock and reduce said tongue to the required thickness to give the desired tone, and then I trim the edges of said tongue by planing or milling, to slightly reduce its width, to give it the desired clearance as it vibrates through the throat of the plate, and then I bend said tongue to bring it into the proper relative position to the throat of the plate for use in a musical instrument, and the reed and reed-plate are ready for the market, it only requiring slight correction by the tuner's file to give it the desired pitch.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

The process of forming reeds and reed-plates integral from hard or tempered brass by cutting from a sheet or ribbon of brass of the required degree of hardness a blank of the desired size and shape to form the plate, separating the sides and an end of the reed or tongue from said plate, and forming the throat by means of suitable dies, bending said tongue at its attached end to move said tongue into a different plane to the plate, reducing said tongue to the desired thickness to be given thereto by milling or cutting away stock therefrom, trimming the edges of said tongue by planing or cutting away stock therefrom to give it clearance in the throat, and then bending said tongue to bring it into its proper relation to the throat for practical operation in an instrument.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 26th day of August, A. D. 1889.

MELLEN BRAY.

Witnesses:

N. C. LOMBARD,  
J. T. MURRAY.