(No Model.)

M. BRAY.

MANUFACTURE OF REED PLATES.

No. 280,787. Patented July 10, 1883.

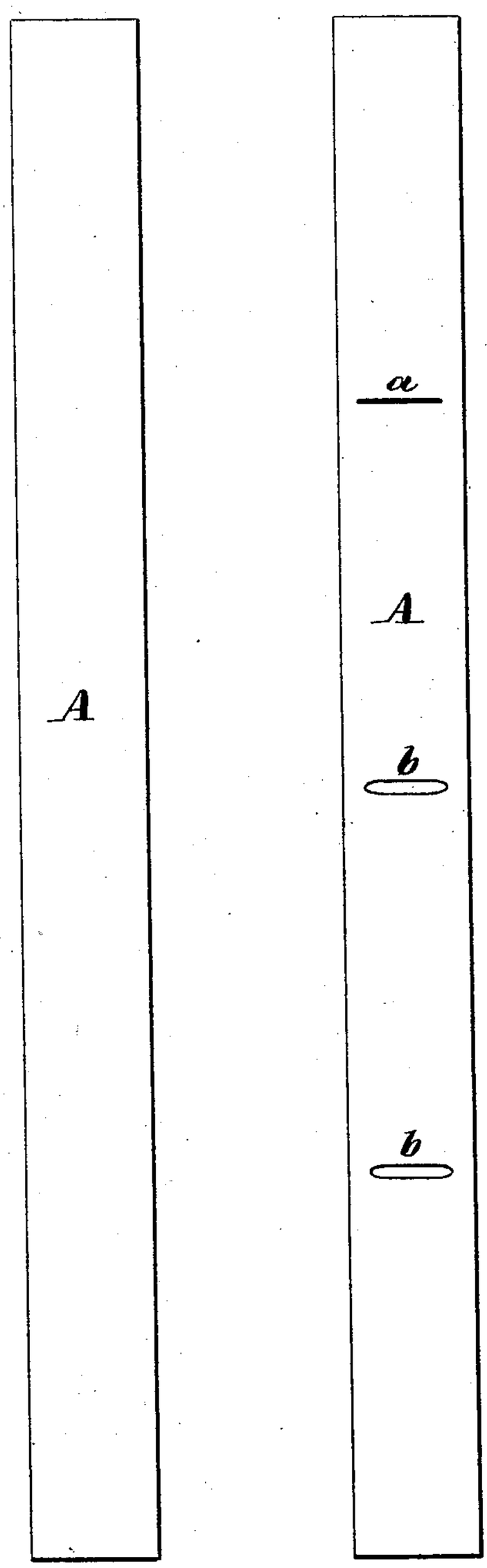

Fig. 1.

Fig. 2.

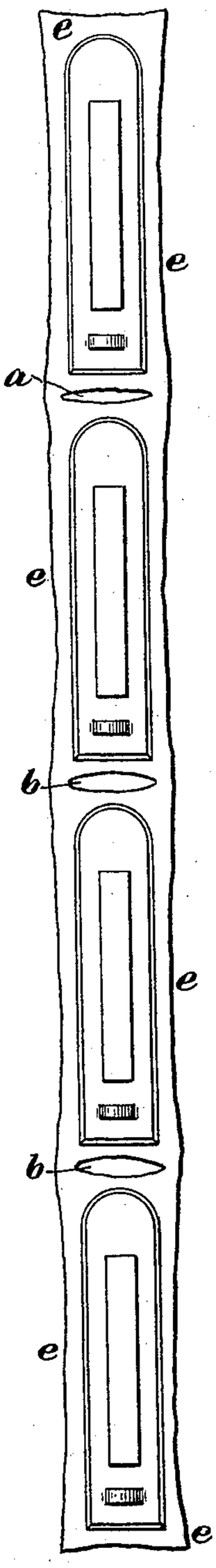

Fig. 3.

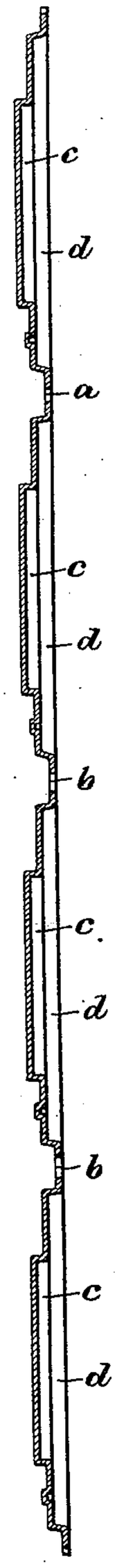

Fig. 4.

Witnesses:
E. A. Hemmenway.
Walter E. Lombard.

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UNITED STATES PATENT OFFICE.

MELLEN BRAY, OF NEWTON, MASSACHUSETTS.

MANUFACTURE OF REED-PLATES.

SPECIFICATION forming part of Letters Patent No. 280,787, dated July 10, 1883.

Application filed April 12, 1883. (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 certain new and useful Improvements in the Manufacture of Reeds and Reed-Plates for Musical Instruments, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention is designed as an improvement upon the invention shown and described in an application filed in the United States Patent Office by George W. McClintock and myself, February 10, 1883, and numbered 84,587, in which application is described an improved method or process of making a reed-plate or a combined reed and reed-plate, in carrying out which process a piece or plate of sheet metal of a thickness but slightly in excess of the required thickness of the reed-tongue to be formed is submitted to the action of swaging or embossing dies to form therein the desired cavity and throat by raising the metal composing the middle portion of the plate, and forming around said middle portion, at or near the edge of said plate, a vertical or nearly vertical rim, in order to stiffen the reed-plate, and especially for the purpose of increasing the thickness thereof at or near its edge to adapt it to fit the grooves in the reed-boards as heretofore made.

My present invention is designed to further facilitate the manufacture of said reeds and reed-plates; and it consists in subjecting a strip or ribbon of sheet metal of a thickness but slightly greater than the desired thickness of the reed-tongue to be formed to the action of suitable swaging or embossing dies to form therein a number or series of double recesses, the smaller or inner recesses being adapted to form the throats of the reed-plates, and the larger recesses being each surrounded by a vertical or nearly vertical rim to increase the thickness of said reed-plates, or, in other words, to convert said strip or ribbon of metal into a series of partially-formed or unfinished reeds and reed-plates in a condition to be cut or separated from said strip, and submitted to the final operations of trimming the reed-plates, and milling, bending, and tuning the reed-tongues, as described in the prior application above referred to.

It also consists in an improved blank from which to make a series of reeds and reed-plates, formed of a strip or ribbon of sheet metal having a number of transverse cuts or slits therein, partially separating said strip and dividing it into a number of sections connected together by narrow ties of the metal at each edge of the strip, each section being adapted to have a reed-plate formed therefrom, as will be further described.

In the accompanying drawings, Figure 1 is a plan of a strip of sheet metal from which the reeds and reed-plates are to be formed. Fig. 2 is a plan of a similar strip having transverse slits formed therein. Fig. 3 is a plan of a strip after being acted upon by the swaging or embossing dies to form therein a series of unfinished reed-plates, and Fig. 4 is a longitudinal section of the same.

In the manufacture of reeds and reed-plates, according to my present invention, a strip, A, Fig. 1, of sheet metal, of an even thickness slightly greater than the required thickness of the reed-tongue to be formed, is first submitted to the action of suitable dies to form therein a number of transverse cuts or slits, *a b b*, at stated intervals, thus partially severing the strip A, and dividing it into a number of sections connected together by narrow ties of the metal at each edge of the strip A. The said cuts or slits may be formed by simply dividing the metal to make a cut, as at *a*, Fig. 2, or by punching out narrow pieces, as at *b b*. The blank thus prepared is then fed in the direction of its length between swaging or embossing dies, to form therein a series of double recesses, as before mentioned, and is delivered from said dies in the form shown in Figs. 3 and 4, each section of the blank A being adapted to have formed therefrom a single reed-plate and reed. The action of the embossing-dies is the same as described in the application before referred to, each reed-plate being formed with two recesses, *c* and *d*, therein, the recess *c* serving, when the whole is completed, as the throat of the reed-plate, and the cover of said recess *c* serving to form the reed, while the recess *d* is formed for the purpose of increasing the thickness of the reed-plate to adapt it to fit the grooves in the reed-board, as heretofore made, and the vertical or nearly vertical rim surrounding said recess *d* serves

to stiffen and strengthen the reed-plate. The reed-plates are now ready to be submitted to the final operations for finishing the same, which consists in separating the reed-plates from each other, trimming the horizontally-projecting irregular flanges *e*, or cutting them away altogether, milling to separate the sides and one end of each reed-tongue from its reed-plate, and then milling, bending, and tuning the reed-tongues, all as described in said prior application. The action of the swaging or embossing dies is to draw in the metal at the sides and ends of the reed-plates between the corners thereof, so that the edges of the plates will form irregular lines curving inward. Hence the object of the cut or slits *a b b* is to allow of the drawing in of the metal and prevent too much stretching thereof at the ends of the reed-plates.

The width of the strip A and the distance apart of the slits *a b b* may be varied, according to the size of the reed-plate which it is desired to form. The action of the embossing-dies upon the sheet-metal strip or blank A is to bend or emboss and slightly stretch the metal to the desired shape, as distinguished from compressing and displacing or condensing and forcing out the surplus metal, as would be the case when forming the desired recesses or depressions in a rolled-metal bar or rod, as described in Letters Patent No. 242,811, granted to me June 14, 1881.

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

1. The within-described ribbon of blanks from which to make reed-plates or combined reeds and reed-plates, which consists of a strip or ribbon of sheet metal provided with a series of transverse slits partially severing the same and dividing it into a number of sections, each section being adapted to have formed therefrom a single reed-plate or a combined reed and reed-plate, substantially as set forth.

2. The process of forming reeds and reed-plates, which consists in forming in a strip of sheet metal of an even thickness, but slightly in excess of the required thickness of the reed-tongue to be formed, a series of transverse slits partially severing said strip and dividing it into a series of sections, submitting said strip to the action of swaging or embossing dies to bend or strike up portions of said strip to a different plane to form therein a series of recesses, thereby converting said strip into a series of partially-formed or unfinished reeds and reed-plates, and then submitting the same to the final operations of separating and trimming the reed-plates, and milling, bending, and tuning the reeds, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 3d day of April, A. D. 1883.

MELLEN BRAY.

Witnesses:
E. A. HEMMENWAY,
WALTER E. LOMBARD.