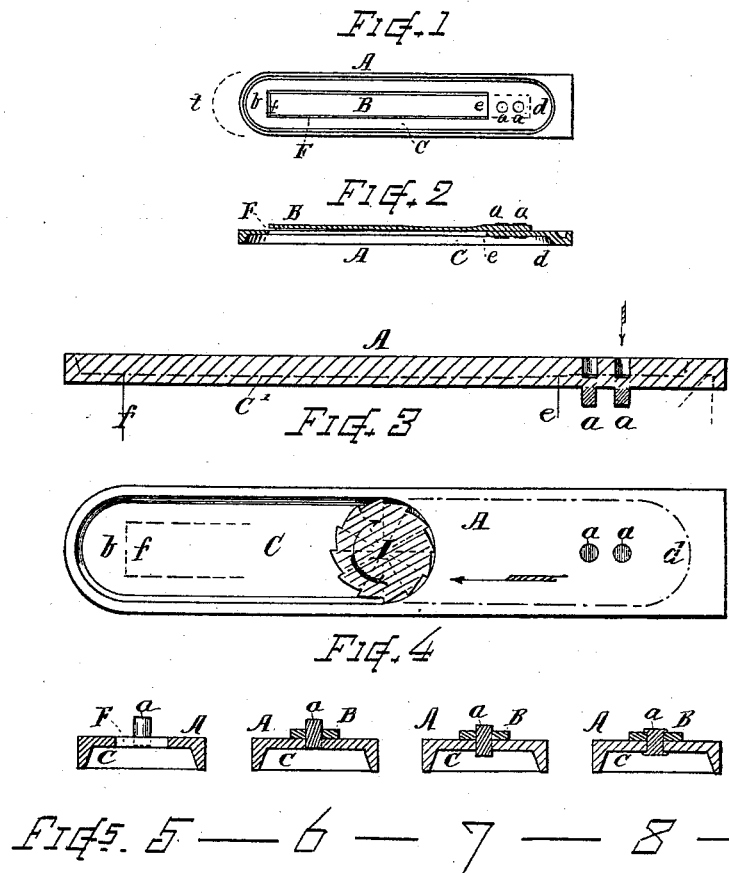


(No Model.)

L. A. WOOD.
MANUFACTURE OF ORGAN REEDS.

No. 347,546.

Patented Aug. 17, 1886.



WITNESSES.

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TO ALICE P. CARPENTER, OF BRATTLEBOROUGH, VERMONT.

MANUFACTURE OF ORGAN-REEDS.

SPECIFICATION forming part of Letters Patent No. 347,546, dated August 17, 1886.

Application filed December 22, 1884. Serial No. 150,923. (No model.)

To all whom it may concern:

Be it known that I, LUCIUS A. WOOD, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in the Manufacture of Organ-Reeds; and I declare the following to be a description of my said invention sufficiently full, clear, and exact to enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

The object of my present invention is to save stock, reduce the cost of production, and produce a superior-toned reed; and the nature of my invention consists in the peculiar method of forming the plate and rivets, as more fully hereinafter explained.

In the drawings, Figure 1 is a bottom view of an organ-reed constructed in accordance with my invention. Fig. 2 is a longitudinal section of the same. Fig. 3 is a longitudinal section of the blank plate, illustrating the manner of forming the tongue-connecting rivets. Fig. 4 is a view illustrating the manner of milling out the chamber in the plate. Figs. 5, 6, 7, and 8 are cross-sections illustrating the method of riveting the tongue-connecting studs. Figs. 3 to 8, inclusive, are drawn to an enlarged scale.

In the manufacture of the reeds in accordance with my invention the blanks for the plates A are cut to the proper size and shape from metal of a thickness corresponding to the required thickness of the reed, and small portions of the metal, *a*, are, by suitable punches, forced out in the direction indicated in Fig. 3, to subsequently serve as rivet-studs for attaching the tongue B to the block or plate A. The studs or portions *a* are punched partially, but not completely, through the plate, their ends being left adhering to the plate A, but at a position where they will escape the milling-cutters, or, in the case of the smaller or higher-toned reeds, at such position that the milling operation will cut the studs to the proper length required therefor. After forcing out the studs *a* the bottom of the plate A is recessed or worked out to a depth substantially as indicated by dotted lines C', Fig. 3, and

preferably on a plane or planes parallel with the top surface of the blank, so as to form the peculiar-shaped chamber C, extending from the toe nearly to the heel of the reed past the rivet-studs *a*, and having front and rear ends that are semicircular horizontally, as shown at *b* and *d*. The chamber or recess C can be produced by means of a suitable square-edged tool rotated as indicated at I, Fig. 4, the end of the tool being set on the top of the blank at *b*, sunk to the depth required, and the blank then fed longitudinally along until the chamber is formed, or in any other suitable manner. The thickness of metal at the tongue-seat, or above the studs *a*, may be left the same, or may be made slightly greater than it is along the forward portion of the plate, as indicated in Figs. 2 and 3, or so as to proportion it to the vibratory power of the tongues in different reeds. The air-slot F is punched through or formed with its forward end occupying the position indicated at *f*, which is much nearer the toe of the plate than is practical with the ordinary method of chambering, and with its rear end at *e* the usual distance from the heel end of the plate. The tongue, which is made in ordinary straight form, is perforated with holes located to match the studs *a*, and is placed over said studs on the back of the plate A, as in Fig. 6. The studs *a* are then forced back through the plate A for a slight distance, so that their inner ends extend into the chamber C or project beyond the milled surface, as shown in Fig. 7. At the same time the adjacent surfaces of the tongue and plate are brought firmly together. The top and bottom ends of the stud or studs *a* are then riveted down, so as to form overlapping heads, or clinched at both ends thereof, one upon the metal of the tongue B and the other on the under side or milled surface of the plate A, as shown in Fig. 8, thereby securing the parts together in a most rigid and perfect manner. In this method of milling out the chambers C and extending said chamber toward the heel beneath the seat of the tongue and beyond the riveting-studs *a* in the manner described, I am enabled to proportion the thickness of metal in the plate at the tongue-seat, so that the plate can yield to the vibrations of the tongue in a very slight degree, thus distributing or less abruptly

breaking up the vibratory action at that point, and consequently giving a smoother and more desirable tone action to the reed. The proportional thickness of the plate A at the tongue-seat may be varied in proportion to the size and power of the vibratory tongues in the different sizes of reeds.

By the method of manufacture herein shown and described I attain the advantages of the chamber extending beneath the heel of the tongue and terminating with a circular end, and this, with the firm uniting of the plate and tongue, gives a healthy vibration and obviates the liability of the "singing" jar or harshness in the tone of the reed, while the forward circular end of the chamber, formed as shown, permits of the air-slot being brought nearer to the toe end of the reed than with the ordinary method of manufacture, so that the plates can be made shorter to a considerable extent (substantially that indicated by dotted line *t*, Fig. 1) than those of ordinary form. Thus I attain a considerable saving in amount of metal used, while producing a superior-toned reed.

I am aware that it is a common practice to secure reed-tongues by means of portions of metal raised from the block or plate, and I do not therefore make claim to such feature, except in the peculiar method of construction herein illustrated and described—viz., the

raising of the studs before milling, and then forcing them back to their final position.

What I claim as of my invention, and desire to secure by Letters Patent, is—

1. In the manufacture of organ-reeds, the within-described method of construction—viz., forcing up portions of metal from the original thickness of the blank to form the studs *a*, then milling out the chamber C past the ends of said stud in the manner set forth, and subsequently forcing backward said studs sufficiently to give an overlapping head or clinch at both ends thereof, and riveting the same down upon the top of the tongue and the under milled surface of the plate, as set forth.

2. The improvement in the manufacture of organ-reeds, which consists in cutting away the under side of a solid reed-plate within its toe end in a horizontally circular form, as at *b*, and thence extending the chamber C backward past the tongue-seat to terminate in a horizontally semicircular end, as at *d*, in rear of the riveting-stud *a*, substantially as set forth.

Witness my hand this 29th day of October, A. D. 1884.

LUCIUS A. WOOD.

Witnesses:

CHAS. H. BURLEIGH,
S. R. BARTON.