

(No Model.)

2 Sheets—Sheet 1.

C. WARREN.
MUSICAL INSTRUMENT.

No. 499,767.

Patented June 20, 1893.

Fig. 5.

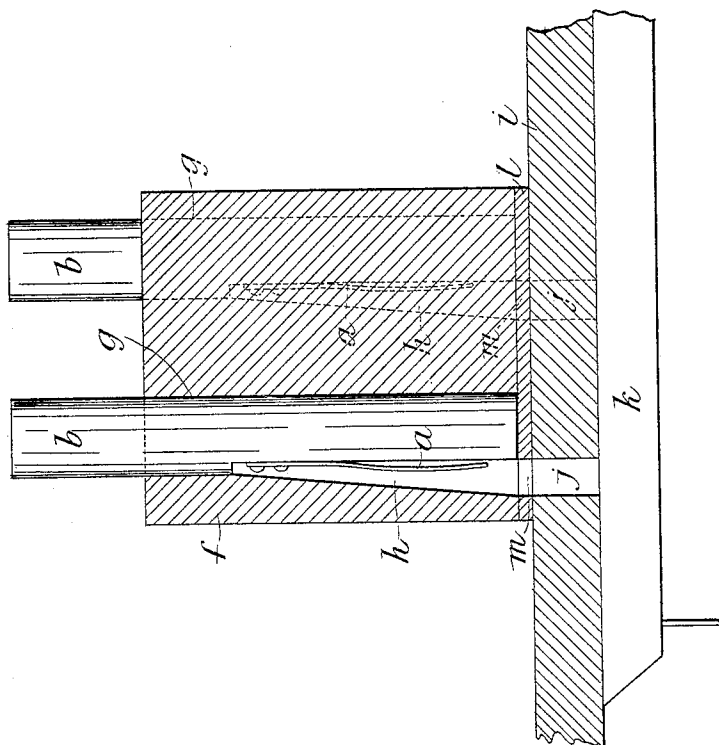


Fig. 4.

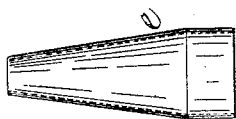


Fig. 3.

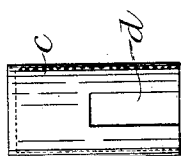


Fig. 2.

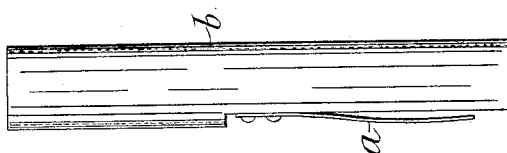
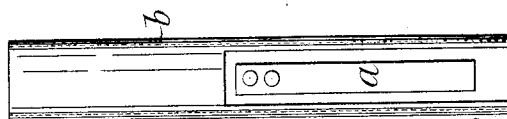


Fig. 1.



Witnesses

John E. Donfield.

Inventor

Charles Warren

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2 Sheets—Sheet 2.

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Fig. 6.

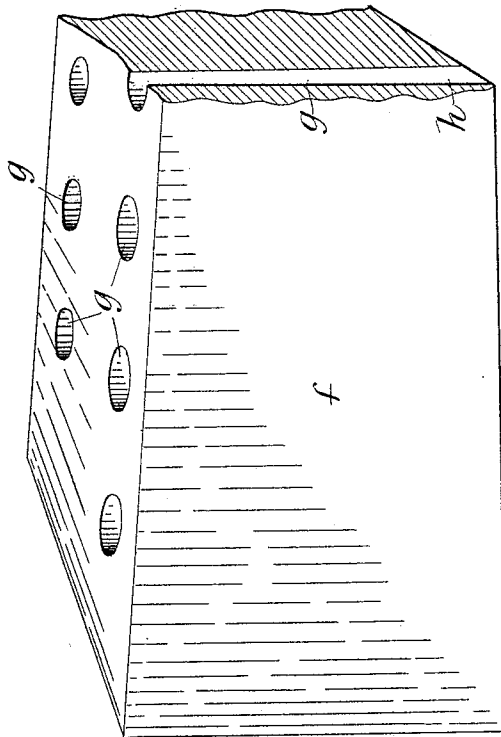
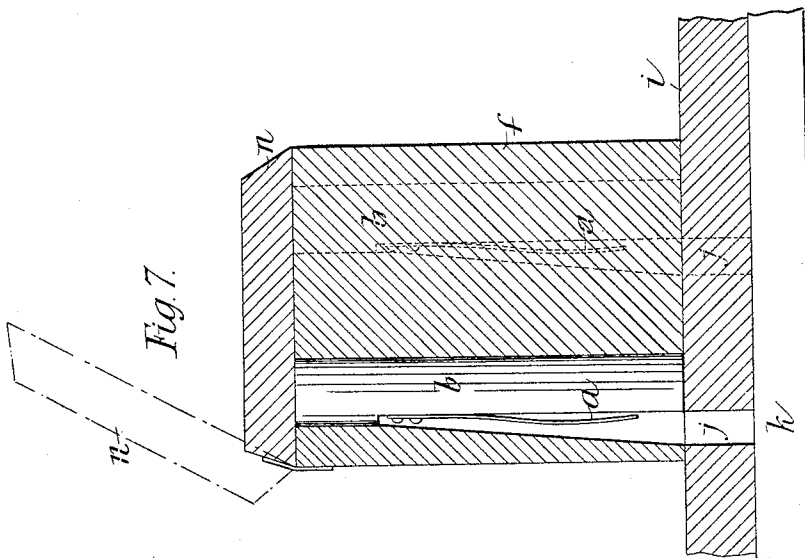


Fig. 7.



Witnesses

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Inventor

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UNITED STATES PATENT OFFICE.

CHARLES WARREN, OF LONDON, ENGLAND, ASSIGNOR OF ONE-HALF TO
GEORGE WHIGHT, OF SAME PLACE.

MUSICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 499,767, dated June 20, 1893.

Application filed August 17, 1892. Serial No. 443,341. (No model.)

To all whom it may concern:

Be it known that I, CHARLES WARREN, a subject of the Queen of Great Britain, residing at London, England, have invented new and useful Improvements in Musical Instruments, of which the following is a specification.

This invention relates to musical instruments of the kind in which a series of vibrating reeds is employed. According to this invention each reed is riveted or otherwise secured to a tube the length and diameter of which correspond with the note to be produced. These reed tubes are inserted into and supported in a rack or board and in conjunction with each tube is a chamber or air passage controlled by a valve or pallet which may be operated by depressing a key or mechanically.

To enable my invention to be fully understood I will describe the same by reference to the accompanying drawings, in which—

Figures 1 and 2 are elevations at right angles to each other of a reed-tube constructed in accordance with my invention; and Figs. 3 and 4 are caps or stoppers which I sometimes use in conjunction with my reed-tubes for varying or modifying the sounds produced. Fig. 5 is a sectional view illustrating the arrangement of the reed-tubes in the rack which supports the same. Fig. 6 is a perspective view of a part of the said rack detached. Fig. 7 is a view similar to Fig. 5 illustrating a modification of my invention.

Similar letters of reference indicate corresponding parts in the several figures.

a, a indicate the reeds and *b, b* the tubes to which the said reeds are riveted the portion of each tube carrying the reed being preferably flattened as indicated in the drawings.

As hereinbefore stated the lengths and diameters of the reed-tubes correspond with the notes to be produced, but I may provide in conjunction with the tubes caps *c, c*, such as shown in Fig. 3, each of which caps is provided with a slot *d* through which the wind passing through the reed will escape, the opening through the said slot being varied by rais-

ing or lowering the cap upon the tube. Or instead of using a cap such as *c* I may use a hollow cone such as *e*, Fig. 4, having an opening at the top and adapted to be fitted onto the tube.

f is the rack in which my reed tubes are carried, the said rack having rows of holes *g, g* formed therein of such a size that the tubes will fit into the same, the said holes being recessed at one side, as shown most clearly at *h*, Fig. 5, in order to afford space for the reeds to vibrate in. These holes *g, g* are preferably so placed that the holes of one row are opposite to the solid portions between the holes of the adjacent row or rows whereby the reed tubes can be placed much closer together than would otherwise be possible.

i indicates the sound board having formed in it holes *j* through which the air drawn or forced through the reeds passes, the said holes being normally closed by the pallets, a part of one of which is indicated by the letter *k* in Fig. 5, the said pallets being operated by any suitable means.

l indicates a sliding plate or board having in it holes *m, m*, corresponding with the holes *j, j*, in the sound board the said plate or board *l* being designed to be operated by a stop to close the holes *j* in the soundboard to prevent the passage of air through the reed tubes.

Instead of using the slide *l* I may use a hinged board *n* as shown in Fig. 7, the said board being adapted to lie closely upon the top of the rack *f* when it is desired to silence the reeds. When, however, the reeds are to sound the said hinged board is moved by a stop, say to the position indicated by the dotted lines in Fig. 7.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. A reed musical instrument, the reeds of which are secured to tubes, and the tubes of which are provided with adjustable slotted caps or their described equivalents, substantially as shown and described.

2. In a musical instrument, the combination of a series of tubes having reeds fixed thereon as described, and a rack having in it a series of recessed holes as described, into which
5 said tubes are fitted, all substantially as set forth.

3. In combination, the tubes having the reeds thereon, the racks having the holes and the recesses therein as described, the sliding

plate *l*, made as described, and the pallets *k*, so the combination being and operating substantially as set forth.

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Witnesses:

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