

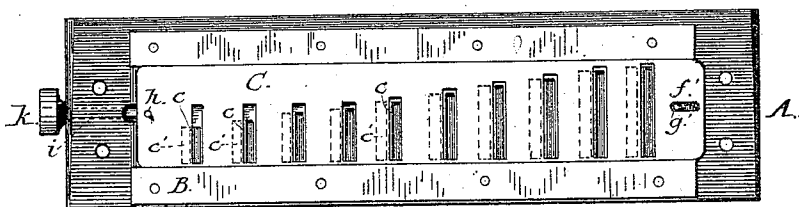
(No Model.)

J. OEFINGER & B. F. BUTLER.  
HARMONICA.

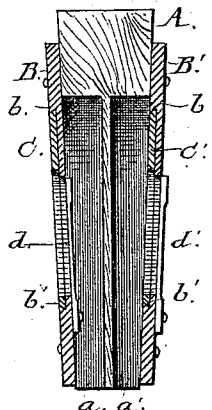
No. 443,607.

Patented Dec. 30, 1890.

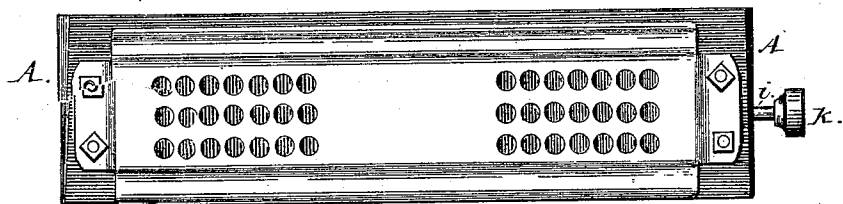
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses:  
Lewis D. Strick  
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# UNITED STATES PATENT OFFICE.

JOHN OEFINGER AND BENJAMIN F. BUTLER, OF GREENFIELD,  
MASSACHUSETTS.

## HARMONICA.

SPECIFICATION forming part of Letters Patent No. 443,607, dated December 30, 1890.

Application filed September 16, 1890. Serial No. 365,160. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN OEFINGER and BENJAMIN F. BUTLER, citizens of the United States, residing at Greenfield, in the county of Franklin and State of Massachusetts, have invented certain new and useful Improvements in Harmonicas; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to certain improvements in harmonicas, and in the application of one or more auxiliary slotted plates adapted to slide over the reeds in the reed-plate, for the purpose of changing the key without reversing the instrument, and thus producing an instrument that need have but one playing side that may be performed upon with greater facility than where the instrument is arranged for different keys on different sides.

In the drawings illustrating the invention, Figure 1 is a view of the instrument, showing one of the auxiliary plates as applied to the reed-plate. Fig. 2 is a transverse sectional view. Fig. 3 is a top view of the instrument complete.

Similar reference-letters indicate like parts in all of the figures.

Referring to the drawing, A is the frame of the harmonica, of the usual form, provided with cells *a a'*, arranged for two sets of reeds, into which the performer blows or draws his breath to vibrate the one or the other of said reeds.

B B' are metal plates secured to the frame A on opposite sides, each of which is provided with a longitudinally-formed dovetail groove *b* or *b'*. These longitudinally-grooved plates have slots *c c'* of equal width, but varying in length, as shown. Secured at one end to plates B B' over slots *c c'* are reeds *d d'*, *e e'*, &c., the other ends of said reeds being free, as usual, for easy vibration over said slots *c c'*.

C C' are plates auxiliary to the plates B B', which fit into the longitudinal grooves *b b'* and slide easily therein. These plates C C' are provided with short slots *f f'*, which fit over projecting pins *g g'*, fixed in the reed-plates. The slots *f f'* and the pins *g g'* serve

as the limiting means to the movement of the auxiliary plates C C'.

*h* is a pin fixed in the frame of the harmonica, which projects outwardly on opposite sides and connects with the opposite plates C C'. To this pin *h* is connected a rod *i*, which runs through the frame A, and on the outer end of said rod is a thumb-button *k*.

It will be noticed that the reed-plates B B' have twice the number of slots that the auxiliary plates C C' have. Alternate slots and corresponding reeds in the plates B B' represent two different musical keys, so that when the rod of the auxiliary plates C C' is moved inward the slots C C' come opposite the reeds representing one key, and when said rod is moved inward, or in an opposite direction, the slots in said auxiliary plates will come opposite the reeds representing another key. It is obvious that by this arrangement it becomes necessary only for the performer while playing a tune in two keys to move the thumb-button connected with the sliding plates the given limit to change the instrument from one key to another instantaneously.

Harmonicas of ordinary construction have but one plate on either side of the frame through which the performer blows or draws his breath to produce a given number of notes in one key, whereas our improvement gives the performer an opportunity to play in two keys without any change of the instrument with reference to his mouth.

We are aware that instruments have been made in which two mouth-pieces and corresponding reeds have represented two different keys; but in such it is necessary that the instrument be reversed in the hands of the performer. They do not, therefore, afford the facility to the performer that our instrument does, besides ours has economical advantages over such instruments.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a harmonica, the combination, with the harmonica-frame, of the reed-plates provided with slots and reeds, as described, and the auxiliary slotted sliding plates adapted to move in planes adjacent to and parallel with said reed-plates, as set forth.

2. The harmonica-frame provided with cells,  
as described, and reed-plates having longi-  
tudinal dovetail grooves, limiting-pins, double  
slots, and corresponding reeds, in combina-  
5 tion with auxiliary plates adapted to slide in  
the grooves of the reed-plates, provided with  
slots corresponding with the slots of the reed-  
plates, a pin connecting the two auxiliary  
plates fixed in the harmonica-frame, the lim-  
10 iting-slots of the auxiliary plates, and the rod

for operating said plates, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN OEFINGER.

BENJAMIN F. BUTLER.

Witnesses:

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