(No Model.)

H. PARIS.

HARMONICA.

No. 574,625. Patented Jan. 5, 1897.

Fig. 1.

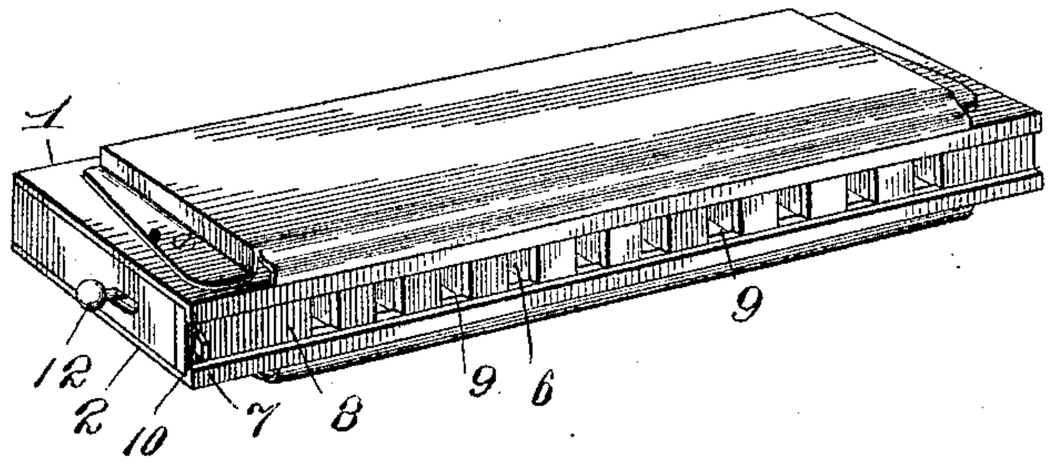


Fig. 2.

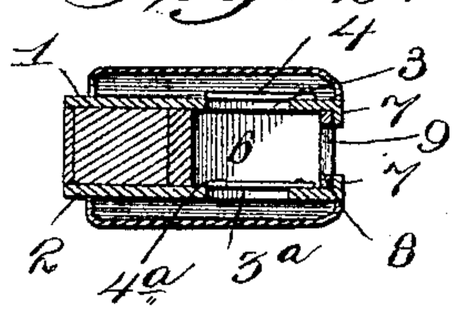


Fig. 3.

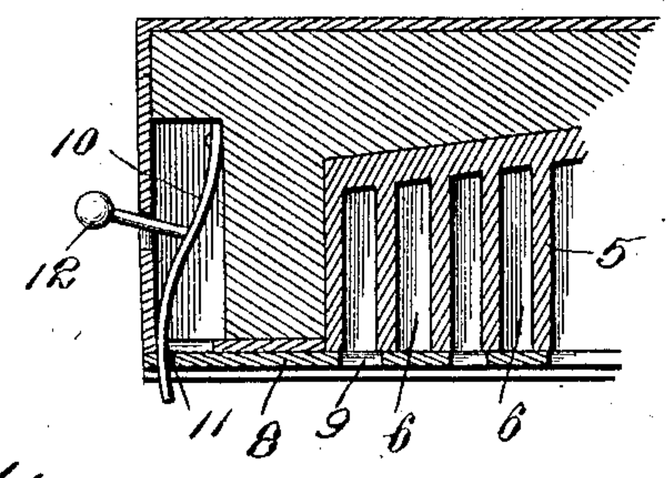


Fig. 4.

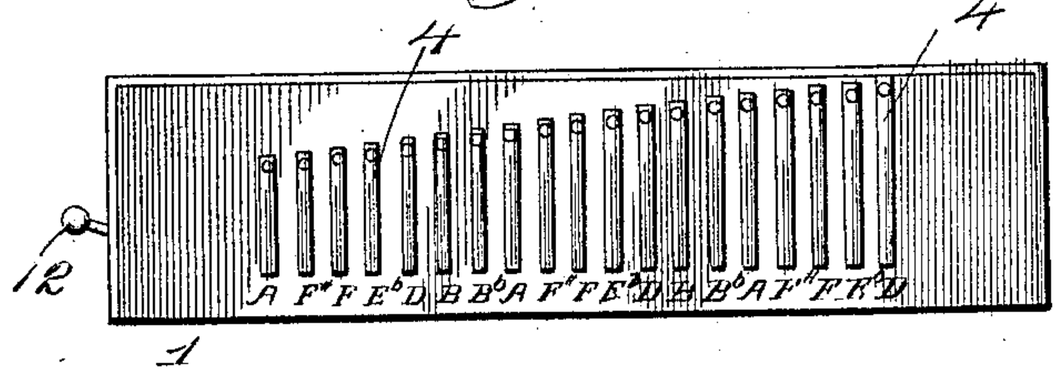
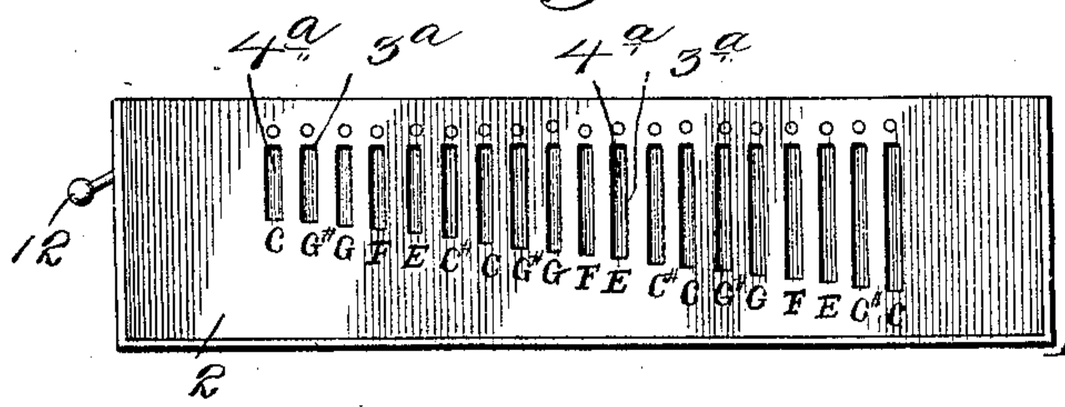


Fig. 5.



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UNITED STATES PATENT OFFICE.

HUGH PARIS, OF RAT PORTAGE, CANADA.

HARMONICA.

SPECIFICATION forming part of Letters Patent No. 574,625, dated January 5, 1897.

Application filed January 25, 1896. Serial No. 576,851. (No model.)

To all whom it may concern:

Be it known that I, HUGH PARIS, a subject of the Queen of Great Britain, residing at Rat Portage, in the district of Rainy River and Province of Ontario, Canada, have invented a new and useful Harmonica, of which the following is a specification.

My invention relates to harmonicas or mouth-organs, and has for its object to provide means for controlling the admission of air to the cells or chambers in which the reeds are located, whereby a succession of sounds at intervals of a semitone, as in playing a chromatic scale, may be produced from the oppositely-located "inhaling" and "exhaling" reeds without transferring the blast of air backward or in opposite directions along the mouthpiece.

I attain the above object by employing a shifting or movable mouthpiece, each of the openings of which is adapted to register with a plurality of reed cells or chambers, whereby the blast of air may be introduced into a plurality of the cells or chambers without moving the lips upon the mouthpiece.

Further objects and advantages of this invention will appear in the following description and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of an instrument constructed in accordance with my invention. Fig. 2 is a transverse section of the same. Fig. 3 is a partial longitudinal section to show the means for operating the mouthpiece. Fig. 4 is a side view of the instrument with the casing removed, the relative pitches of the different reeds being indicated. Fig. 5 is a similar view of the opposite side of the instrument.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 and 2 represent, respectively, the reed-plates, provided with the usual slots 3 and 3^a and the contiguous reed-tongues 4 and 4^a, and the interval between said reed-plates is divided by webs or partitions 5 to form a plurality of reed cells or chambers 6, in each of which at opposite sides are arranged an inhaling and an exhaling or an inlet and an outlet reed designed to be sounded, respectively, by inhalation and exhalation.

The reed-plates or equivalent parts of the instrument are extended toward the front ends of the webs or partitions to form guides 7, in which are fitted the side edges of a sliding or shifting mouthpiece 8, preferably constructed of bone or its equivalent, and provided with a plurality of blast-openings 9. The movement of this mouthpiece must be sufficient to provide for causing the registration of each blast-opening with at least two of the reed cells or chambers, whereby the performer, without sliding the lips upon the mouthpiece, may sound the reeds in either cell or chamber.

The advantage of this construction will be apparent upon a comparison of Figs. 4 and 5, in which are shown the relative pitches of the reeds carried, respectively, by the reed-plates. It will be seen that while all of the sounds constituting a chromatic scale are arranged upon the two reed-plates the contiguous degrees of that scale are not arranged in such positions as to occur in order or in relatively opposite positions on the two plates. For instance, the degrees indicated in the drawings as G and G♯ are formed by inlet-reeds on the same plate, and hence said reeds communicate with adjacent but different cells or chambers. In order to sound said reeds in succession, therefore, it is necessary to transfer the blast of air from one cell to the next, and if it is desired to sound the next degree in order in a chromatic scale, which would be A, it is necessary to exhale through the cell or chamber in which the reed for the degree G is located or to return or move the lips in an opposite direction with relation to the instrument. It is in order to avoid this alternate forward and backward movement of the lips upon the instrument in sounding a run consisting of a regular succession of degrees that I employ the sliding or shifting mouthpiece, which can be vibrated with greater facility to transfer the blast of air from one cell or chamber to the next than is possible with the lips, as by a movement of the head or of the instrument.

Various means may be employed for enabling the performer to communicate motion to

the slide, the means shown in the drawings, however, consisting of a spring-tongue 10, attached to one end of the instrument and engaging an opening 11 in the mouthpiece, said tongue having a knob or key 12, which projects longitudinally from the end of the harmonica. The spring is so arranged as to hold the mouthpiece normally in a fixed position, and hence when the knob is released or relieved of pressure it returns the mouthpiece to said normal position. This construction enables the performer to vibrate the slide with rapidity, as it is desired to sound the different notes in succession, and hence gives a far greater range to the instrumnt in the matter of accuracy than can be attained by the lips with the ordinary construction of instruments of this class. Furthermore, the improvement above described provides for playing in any key upon one instrument.

It will be seen that the reed-cells are half-spaced, while the openings in the mouthpiece are full-spaced or are arranged at intervals corresponding with those in harmonicas in general use. By this arrangement an instrument having the range of tones involved by the chromatic tuning above described is brought within the compass of an instrument of the ordinary construction without arranging the openings which are controlled by the lips and tongue of the operator at such short intervals as to increase the difficulty of the performance.

It is obvious that various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

1. The combination with a harmonica having chromatically-tuned half-spaced reeds arranged in half-spaced reed-cells, of a movable mouthpiece having full-spaced openings adapted to register in either position of the mouthpiece with alternate reed-cells, the intermediate parts of the mouthpiece covering the intermediate reed-cells, substantially as specified.

2. The combination with a chromatically-tuned harmonica having half-spaced reed-cells in each of which is arranged a plurality of reeds, the contiguous degrees of the chromatic scale being arranged in contiguous or different reed-cells, while the reeds arranged in the same cell are tuned to sound an interval greater than a semitone, of a mouthpiece mounted to slide longitudinally of the reed-plates and having full-spaced openings adapted to simultaneously communicate with alternate reed-cells, the intermediate reed-cells being closed, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

HUGH PARIS.

Witnesses:

THOMAS PORTOGALLO,

LAURA LAKEMAN.