(No Model.)

R. W. WEISSENBORN.

HARMONICA.

No. 435,163. Patented Aug. 26, 1890.

Fig. I.

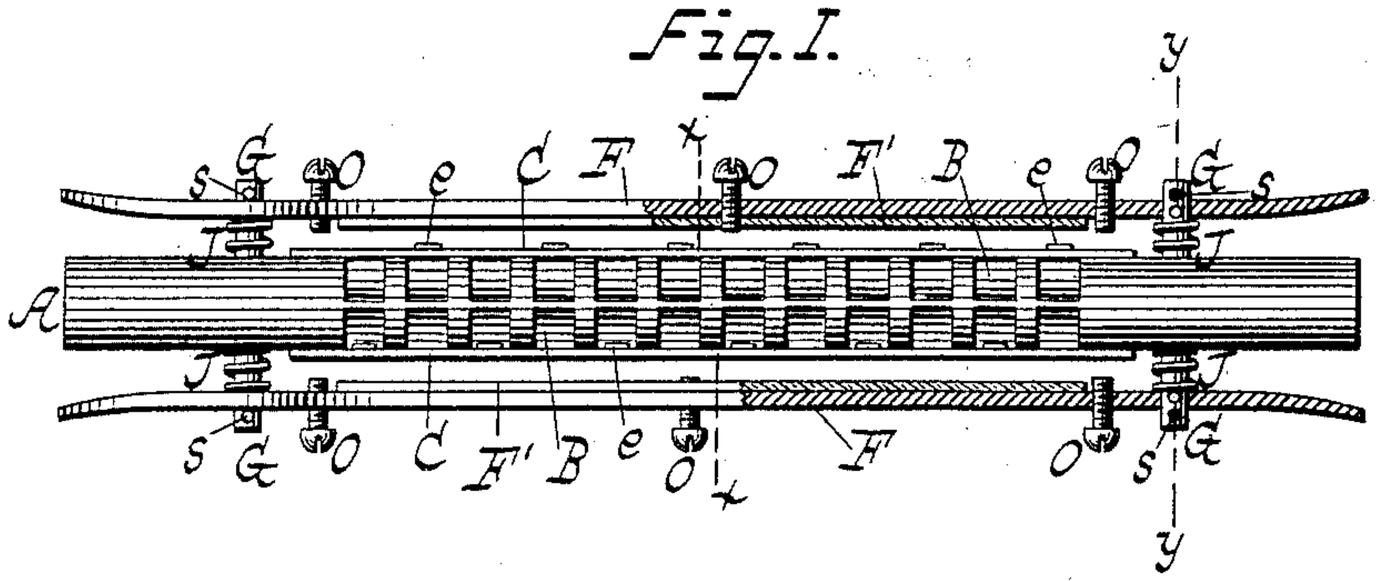


Fig. II.

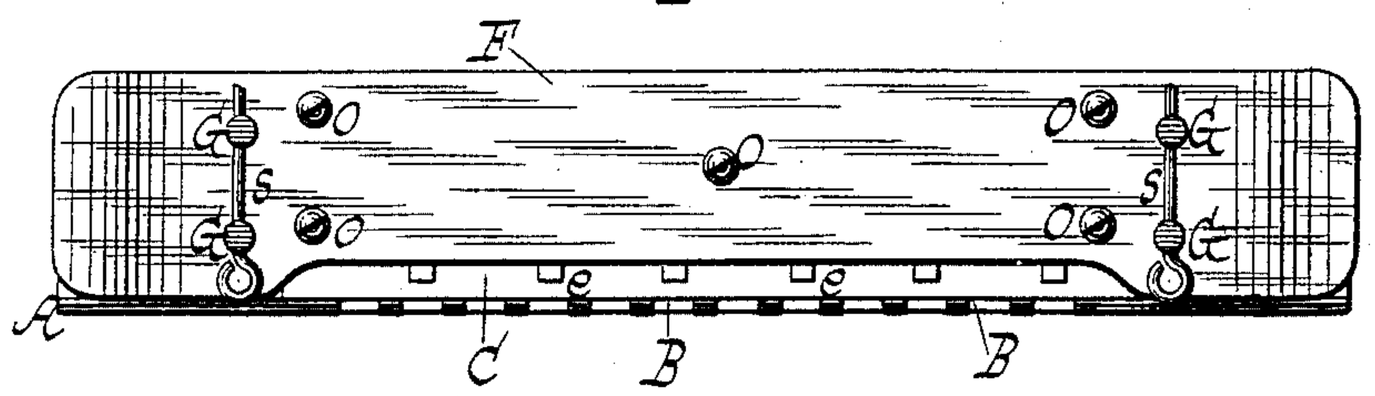


Fig. III.

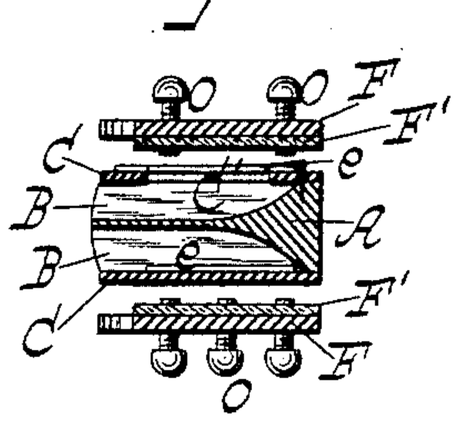


Fig. IV.

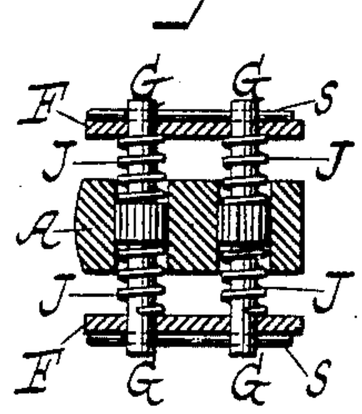
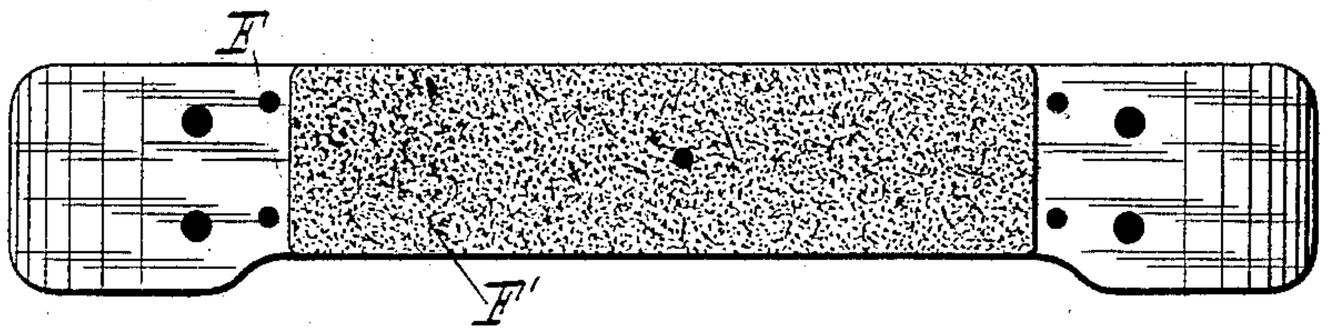


Fig. V.



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HARMONICA.

SPECIFICATION forming part of Letters Patent No. 435,163, dated August 26, 1890.

Application filed January 2, 1890. Serial No. 335,603. (No model.)

To all whom it may concern:

Be it known that I, RUDOLPH W. WEISSENBORN, a citizen of the United States, residing at Jersey City, Hudson county, and State of New Jersey, have invented a new and useful Improvement in Harmonicas, of which the following, taken in connection with the accompanying drawings, is a full, clear, and accurate description.

The object of my invention is to incorporate in a harmonica or mouth-organ a mechanical device adapted to be manipulated by the player for controlling the volume of sound produced by reeds of the instrument; and to this end it consists in combining with one or both reed-plates a damper or dampers which are adjustable in relation to said plates, thereby serving to regulate the passage of air through the sound-openings; also, of springs for automatically adjusting said damper or dampers in one direction, and of the particular construction of the damper or dampers, as hereinafter more fully described.

In the accompanying drawings, Figure I represents a side view, partly in section, of a harmonica embodying my invention. Fig. II represents a plan view thereof. Fig. III represents a cross-section thereof on the line *x x*, Fig. I. Fig. IV represents a like section thereof on the line *y y*, Fig. I. Fig. V represents an inverted plan view of a plate forming the damper or dampers.

Similar letters indicate similar parts.

A indicates the stock of a double-harmonica instrument, having at one side a double row of breath-holes B, leading to the reed-plates C, which are secured to the respective faces of said stock, the reed-plates having sound-openings C′, Fig. 3, in which are arranged the reeds *e* in the usual manner.

F indicates two dampers—one to each of the reed-plates C—for regulating the passage of air through the sound-openings C′. Each of said dampers F is composed of a plate, preferably of metal, which lies exterior of either reed-plate C in a plane parallel thereto, and which is movable toward and from the reed-plate. Said damper-plate F is guided in its movement by means of rods G, which are secured to the stock A and extend transversely through the damper-plate, the latter being provided with suitable holes for that purpose.

On each of the guide-rods G is fitted a spiral spring J, which lies at a point inward from either damper-plate F between it and the stock A, and which thus acts on said plate with a tendency to force it outward, said outward movement of the plate being limited by means of clinch-pins *s* on the outer portions of the guide-rods.

Extending transversely through the damper-plate F are set-screws O, which act as stops to regulate the inward movement of said plate by contacting with the outer surface of either reed-plate C or the stock A, these screws being inserted in the damper-plate from an outward direction.

On the inner surface of each damper-plate F, where it is presented to the reed-plate C, is secured a layer F′ of felt, chamois, or other like soft and elastic material to form a packing between the damper-plate and reed-plate when said two plates are brought in direct contact with each other.

When the instrument is applied to use, it is taken hold of by bringing the thumb and forefinger of each hand upon the respective damper-plates F at each end thereof, when by depressing the damper-plates they are caused to approach the reed-plates C, and by simply relieving the damper-plates of pressure they are caused to recede from the reed-plate by the action of the springs J. Said adjustment of the damper-plate F in relation to the reed-plates C has the effect of varying the exposure of the sound-openings C′ and thereby graduating the force of the air carried that is allowed to pass through such openings for actuating the reeds *e*, and hence the degree or volume of sound that may be produced by the reeds can be readily controlled by the player.

The set-screws O are in practice adjusted to register with each other, as shown, and the effect of said screws is to keep the damper-plate F at a fixed distance from the reed-plates C when the damper-plates are depressed, thereby regulating the tone of the instrument.

It may be remarked that a single damper can be used, if desirable, and also that the construction of the damper may be varied.

The movable plate or plates forming the dampers may form the outer plate or plates of the instrument, or these damper-plates may be covered with covering-plates having openings therein, through which the damper-plates can be manipulated.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A harmonica having, in combination with a reed-plate, a damper which is adjustable in relation to said plate and springs for automatically adjusting said damper in one direction, substantially as and for the purposes described.

2. A harmonica having, in combination, a reed-plate, a damper composed of a movable plate exterior and parallel to the reed-plate, transverse guides for said damper-plate, and springs acting on the damper-plate to force it outward, substantially as and for the purposes described.

3. A harmonica having, in combination with a reed-plate, a damper composed of a movable plate exterior and parallel to the reed-plate, transverse guides for said damper-plate, springs acting on the damper-plate to force it outward, and an adjustable stop or stops for regulating the inward movement of the damper-plate, substantially as and for the purposes described.

4. A harmonica having, in combination with a reed-plate, a damper composed of a movable plate exterior and parallel to the reed-plate, rods extending transversely through said damper-plate to act as guides, spiral springs fitted on said rods inward of the damper-plate to force the latter outward, and set-screws extending transversely through the damper-plate to act as stops, substantially as and for the purposes set forth.

5. In a harmonica, a damper composed of a plate of metal with a layer of soft or elastic material on its inner surface, and means, substantially such as herein described, for adjusting said plate in relation to a reed-plate of the instrument, substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand this 4th day of December, 1889.

RUDOLPH W. WEISSENBORN.

In presence of—
HENRY L. HUNTER, Jr.,
HOMER ALBERS.