

(No Model.)

R. W. PAIN.
AUTOMATIC HARMONICA.

No. 251,930.

Patented Jan. 3, 1882.

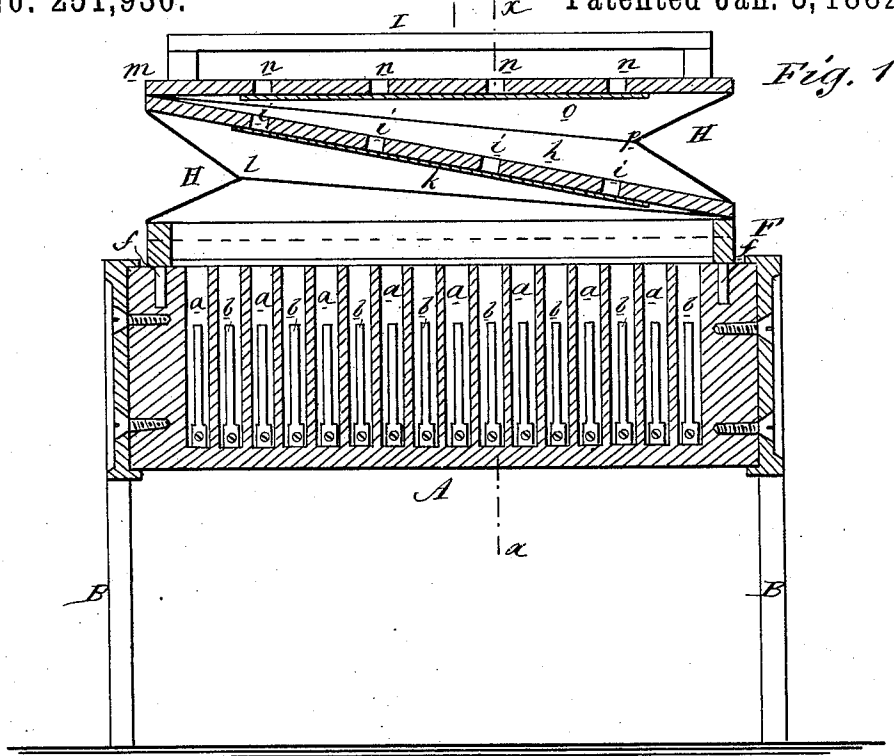


Fig. 1

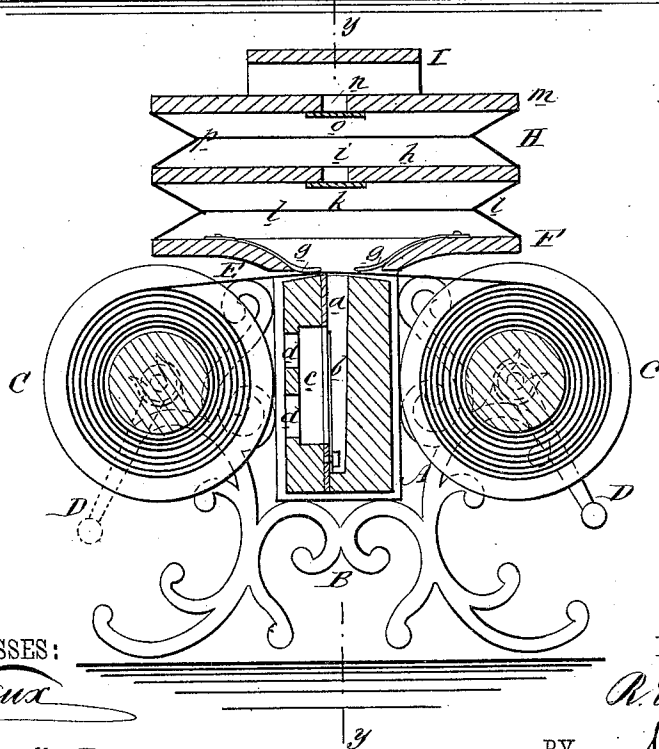


Fig. 2

WITNESSES:

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AUTOMATIC HARMONICA.

SPECIFICATION forming part of Letters Patent No. 251,930, dated January 3, 1882.

Application filed June 23, 1881. (No model.)

To all whom it may concern:

Be it known that I, ROBERT W. PAIN, of the city, county, and State of New York, have invented a new and Improved Mechanical Musical Instrument, of which the following is a specification.

This invention relates to mechanical musical instruments or toys in which a perforated sheet of paper is employed to regulate the admission of air to the reeds; and the invention consists in the combination of a perforated strip of paper or music-sheet and a flexible wind-chest or air-compressor pump with an ordinary harmonica or similar instrument, whereby the latter is made to execute tunes automatically.

In the accompanying drawings, Figure 1 is a sectional front elevation of the improved instrument on line *yy* of Fig. 2. Fig. 2 is a sectional end elevation of the same on line *xx* of Fig. 1.

Similar letters of reference indicate corresponding parts.

In the drawings, A represents an ordinary harmonica or musical instrument having a reed-plate fixed in a suitable air-chamber, *c*, and carrying reeds *b b*, riveted thereto over air-ports *d d*, said instrument A being permanently fixed in supporting-standards B, which latter also support the drums C on opposite sides of the instrument A, which are provided with crank-handles D, and carry the perforated music-sheet E.

On the top of the instrument A an open rectangular frame, F, is secured by dowels *ff*, as shown in Fig. 1, from the inner edges of which preferably strips of leather *g* or other flexible material project inward to near the edges of the air-ducts *a*, and are designed to rest on the harmonica A or on the music-sheet E to prevent the escape of air from the bellows H, excepting through said air-ducts *a a*. On the top of this frame, F, is firmly secured the double bellows or air-pump H, for operating the instrument.

The central board or diaphragm, *h*, is provided with air-ports *i i*, controlled by a valve, *k*, hinged on the under side of said diaphragm *h*, and flexible ribs *l* connect the sides and opposite end of the diaphragm *h* with the opposite end and sides of the frame F.

To the free or unhinged end of the diaphragm *h* is hinged the bellows or pump top *m*, of the same dimensions with said diaphragm *h*, and with its free end extending over plumb with the hinged end of the latter. Said top *m* is provided with air-ports *n n*, that are controlled by a valve, *o*, hinged on the under side, and is connected with the diaphragm *h* by flexible ribs *p*.

Fastened on top of the pump or bellows top *m* is a handle, I, whereby the said bellows or pump H is worked. When the said bellows or pump H is drawn upward the valves *k o* open and said pump H is filled with air through the ports *i n*. Then by rocking said pump H laterally, first depressing the free end of the diaphragm *h* and then elevating it, and at the same time depressing the free end of the top *m*, and then elevating the latter and simultaneously depressing the former again, a constant supply of air is admitted into the pump H, and is forced through the perforations (not shown), in the music-sheet E and through the air-ducts *a* to operate the reeds *b b* and to give out musical notes. While working the bellows or pump H with one hand the operator turns with the other hand a handle, D, to draw the music-sheet E over the air-ducts *a a*, whereby the admission of air to the reeds *b b* is regulated. Each drum C being provided with a handle, D, the music-sheet E can be drawn back and forth, so that the tune can be played from beginning to the end or the reverse. These drums C are removable, so that one music-sheet E can be readily replaced by another.

In a prior application I have described a removable air reservoir or chest which is adapted to be set over a perforated music-sheet upon the action-board of an instrument, and which is provided with interior flexible strips to prevent the escape of air from its sides, and I therefore do not wish to cover, broadly, such a construction in the present application; but what I particularly insist upon is the combination of parts by which such a construction is adapted to be used upon an ordinary harmonica or similar instrument.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. As an improved article of manufacture, an automatic harmonica constructed substantially as herein shown and described, consisting of air pump or bellows secured over the
5 air-ducts of an ordinary harmonica, which is supported in a suitable frame carrying a perforated music-sheet.

2. The combination, with a reed-plate fixed in a suitable air-chamber and carrying reeds
10 riveted thereto, said chamber and plate being permanently fixed in supporting-standards, which latter also support drums carrying a perforated music-sheet, of a removable bellows

and pump set on or over said reed-plate, substantially as shown and described.

3. The combination, with the harmonica A,
15 of the open frame F, secured thereto by dowels *f f*, and having strips *g*, and the double bellows or pump H, firmly secured to the top of said frame, substantially as shown and de-
20 scribed.

ROBERT W. PAIN.

Witnesses:

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C. SEDGWICK.