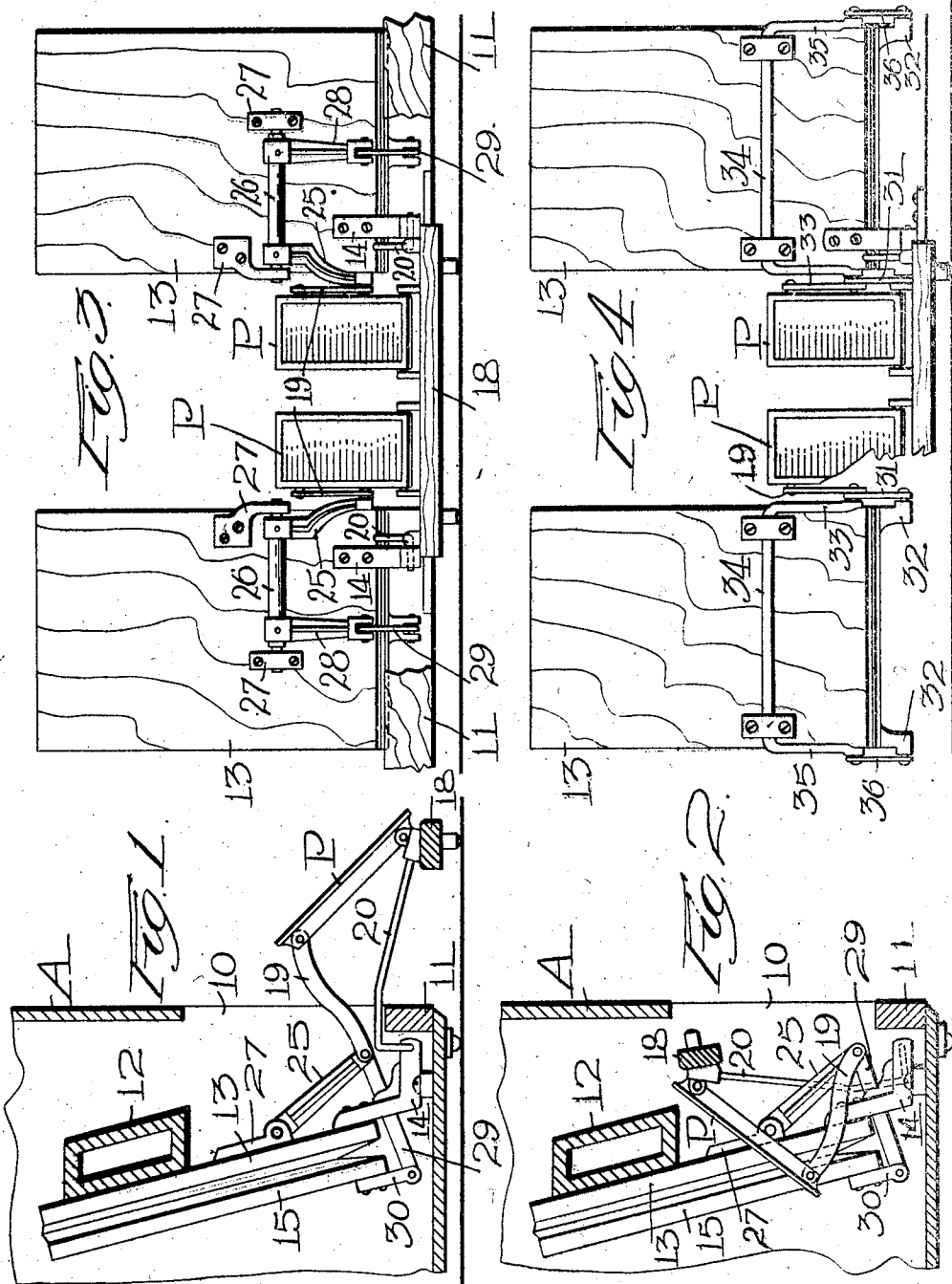


T. DANQUARD.
PUMPING DEVICE.
APPLICATION FILED JUNE 30, 1910.

1,017,084.

Patented Feb. 13, 1912.



Witnesses

C. F. Mason
C. M. Allen

Inventor
Thomas Danquard
By Attorneys

Southgate & Southgate

UNITED STATES PATENT OFFICE.

THOMAS DANQUARD, OF NEW YORK, N. Y., ASSIGNOR TO AUTO PNEUMATIC ACTION CO., A CORPORATION OF NEW YORK.

PUMPING DEVICE.

1,017,084.

Specification of Letters Patent.

Patented Feb. 13, 1912.

Application filed June 30, 1910. Serial No. 569,773.

To all whom it may concern:

Be it known that I, THOMAS DANQUARD, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented a new and useful Pumping Device, of which the following is a specification.

This invention relates to a bellows and folding pedal construction for a musical instrument.

The principal objects of the invention are to provide a simple and effective construction by which the bellows can be operated from a pedal located at the side thereof in such a way as to get a perfectly even strain on the bellows, thus doing away with the loss of power produced by the usual side connections and reducing the strain on the parts.

Another object of the invention is to provide means for accomplishing the above named results which can be connected with a folding pedal, particularly that type of folding pedal shown and described in my previous Patent No. 884,643 granted April 14, 1908 on a folding pedal.

Further objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings in which—

Figure 1 is a transverse sectional view of a portion of a piano case showing a preferred embodiment of this invention in side elevation with the pedals in operative position; Fig. 2 is a similar view showing the pedals folded into the case; Fig. 3 is a front elevation of the same; and Fig. 4 is a similar view of a modification also coming within the scope of this invention.

The invention is shown as applied to a piano case A provided with an opening 10 at its front side which may be closed by any of the usual doors or other devices when the pedals are not in use. At the bottom of it is a lower rail 11. A brace or wind box 12 extends crosswise of the case. The rigid leaves 13 of the bellows are secured to said brace and to brackets 14 and the movable leaves or members 15 of the bellows are pivoted near the top of the rigid leaves.

18 designates a pedal support which may have small feet provided with rubber cushions. The pedals P—P are hinged or pivoted to this support. Rigidly secured to

the support are braces 20, shown herein as bent over the lower rail 11 so as to fit closely to it when the pedals are in operative position and as being pivoted to the brackets 14 behind the lower rail.

It will be understood that the parts so far described are shown herein in substantially the same form as they appear in the above mentioned patent, and that they are so shown to illustrate how this invention can be applied to a folding pedal construction. It will be obvious that the invention is applicable to other types of folding pedals.

It will be understood that each pedal is shown in Figs. 3 and 4 in position at the side of the bellows it operates, or between the two, so that the pedals are not in line with the centers of the bellows. This is the usual location and as a consequence of this it has been customary heretofore to provide a pitman or link to connect each pedal with its bellows located substantially between the pedal and bellows and connected with the edges of both. On account of this construction there has been an uneven strain on the movable leaf of the bellows, and the pedals have a springy feeling when they are being operated. Moreover, on account of this side connection the hinged joint at the top of the bellows is strained and considerable power is lost, thus adding to the difficulty of pumping. To obviate these difficulties each pedal in this case is connected with the bellows by means of a link 19 and an arm 25. This arm is fixed to a horizontal shaft 26 mounted in bearings in brackets 27 that are located on the fixed leaf of the bellows. Therefore the operation of the pedal will result in oscillating the shaft. The shaft is provided with another arm 28 which extends down at the end of the shaft and in the center of the bellows and is connected by a link 29 with a bracket 30 fixed to the bottom of the movable leaf and in the center thereof. By this construction it will be seen that a perfectly even and uniform pressure is applied to the movable leaf and there can be no rocking motion to strain the hinge or lose power.

In the form of the invention shown in Fig. 4 a similar arrangement is shown which accomplishes the same results, but in this case the link 19 is pivoted directly to a link 31 which is pivoted to a bracket 32 at one side of the movable leaf. At the point at

which the links 19 and 31 are pivoted to each other they are also pivoted to an arm 33 which is fixed on, or forms part of, a horizontal shaft 34 extending across the fixed leaf of the bellows. This shaft has another arm 35 at the corresponding point on the other side which is connected by a link 36 with the other bracket 32. In this way the same results are secured.

While I have illustrated and described two preferred embodiments of the invention I am aware that many other modifications can be made therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore I do not wish to be limited to all the details of construction herein shown and described, but

What I do claim is:—

1. The combination with a bellows having a fixed and a movable leaf, of a pedal located at the side of the bellows, a shaft journaled on the fixed leaf, and two arms on opposite ends of the shaft, one connected with the pedal and the other with said movable leaf.

2. The combination with a bellows having a fixed and a movable leaf, of a folding pedal located in position to fold in at the side of the bellows, bearings on the fixed leaf of the bellows, a horizontal shaft mounted in said bearings, a connection between the shaft and folding pedal at one side of the

fixed leaf whereby the operation of the pedal will oscillate the shaft at the center of the fixed leaf, and means on said shaft for moving the movable leaf of the bellows when the shaft is oscillated.

3. The combination with a bellows having a fixed and movable leaf, of a folding pedal located in position to fold at the side of the bellows, a link on the pedal at the side toward the bellows, an arm pivotally connected with said link, a shaft on the bellows on which said arm is mounted, and means on said shaft for exerting an evenly balanced pressure on the movable leaf of the bellows when the shaft is turned, said means comprising an arm on the shaft, and a link pivoted to said arm and to the movable leaf of the bellows, said link and arm being in line with each other and with the center of the bottom of said movable leaf.

4. As an article of manufacture, a bellows having on the fixed leaf thereof a shaft provided with an arm at the center of said leaf pivotally connected with the other leaf and having at the end of the shaft and at the side of the bellows an operating arm.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses.

THOMAS DANQUARD.

Witnesses:

WILLIAM J. KERLEY,
WILLIAM J. BARTEN.