

(No Model.)

2 Sheets—Sheet 1.

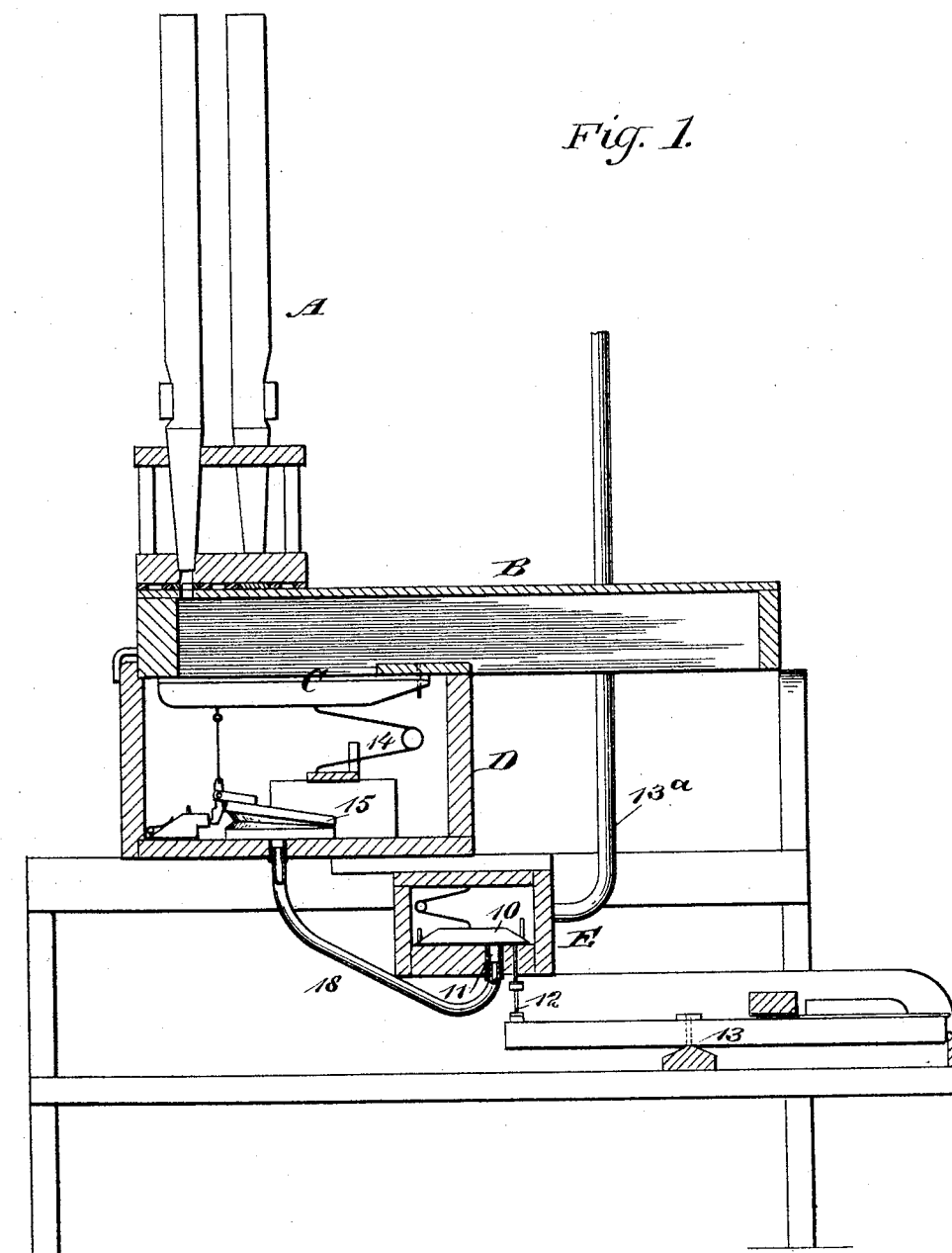
W. SCHWARZE.

MEANS FOR OPERATING PRESSURE BOX BELLOWS OF ORGANS.

No. 498,087.

Patented May 23, 1893.

Fig. 1.



WITNESSES:

J. H. Griswold
C. Sedgwick

INVENTOR

W. Schwarze
BY
Wm. H. 2
ATTORNEYS.

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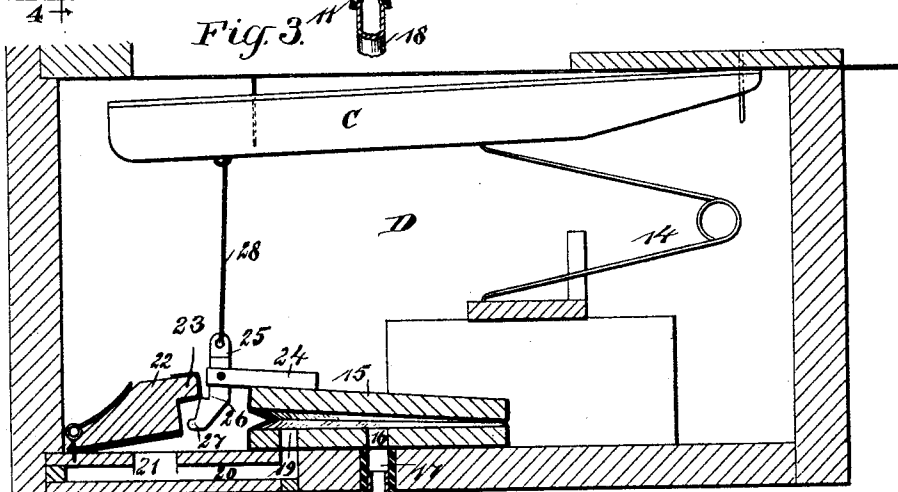
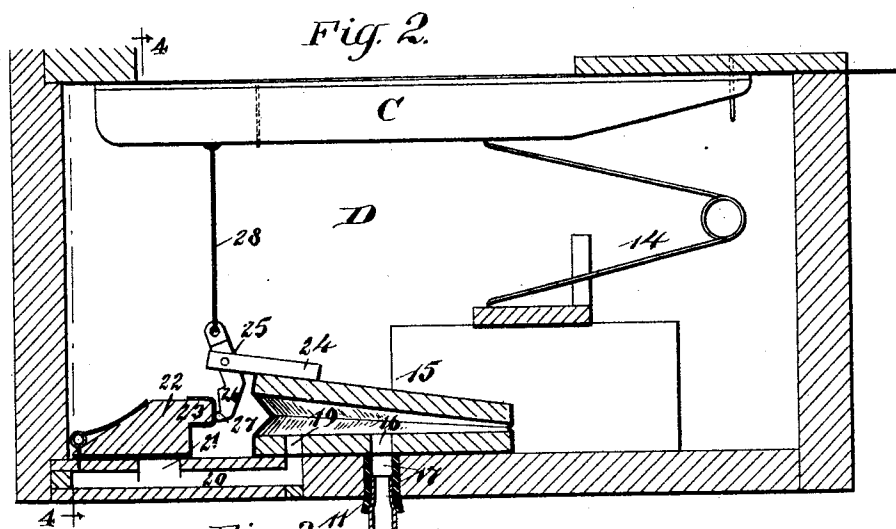
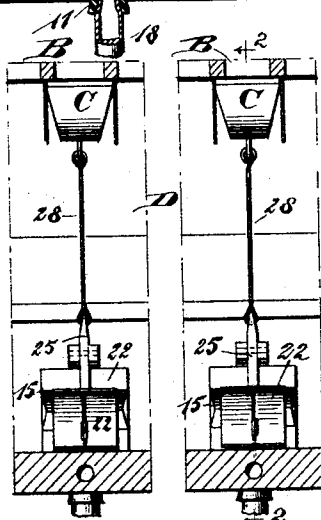


Fig. 4.



WITNESSES:
J. McQuinnell
C. Sedgwick

INVENTOR
W. Schwarze
BY *Munn*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM SCHWARZE, OF BROOKLYN, NEW YORK.

MEANS FOR OPERATING PRESSURE-BOX BELLOWS OF ORGANS.

SPECIFICATION forming part of Letters Patent No. 498,087, dated May 23, 1893.

Application filed June 29, 1892. Serial No. 438,440. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM SCHWARZE, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Means for Operating the Pressure-Box Bellows of Organs, of which the following is a full, clear, and exact description.

My invention relates to improvements in organs, and it has for its object to provide means whereby it is rendered possible to obtain a quick response between the keys of organs and the pipes thereof, enabling the keys of such instruments to be manipulated with like facility as the keys of a piano.

The invention consists in the particular construction and combination of parts as hereinafter described and pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts, in all the views.

Figure 1 is a vertical sectional view of a portion of an organ, illustrating the application thereto of the method and the means of carrying it out. Fig. 2 is an enlarged transverse section taken through the pressure box of the organ, practically on the line 2—2 of Fig. 4, the bellows being shown in its expanded position and the pallet closed. Fig. 3 is a similar view to that shown in Fig. 2, the bellows however being shown as depressed and the pallet open; and Fig. 4 is a vertical section taken practically on the line 4—4 of Fig. 2, illustrating two bellows and the connections between the bellows and their pallets.

The organ pipes A and the sounding board B, are of the usual construction and are connected in the usual manner, as are likewise the pallets C, belonging to the sounding board and serving to establish communication between the pressure box D and the organ pipes. The pressure box D, is located in the usual manner and is constructed in the ordinary way with a slight exception to be hereinafter set forth, and beneath the pressure box the exhaust boxes E, are located, these boxes being likewise of the usual construction and location, the spring-pressed valve 10 therein being made to cover an opening 11, in the bottom, and the valves of the exhaust boxes are

connected by links 12, or otherwise, with the keys 13 of the organ.

Air is supplied in suitable quantities to the pressure box by means of a bellows, pump, blower, or other equivalent device, and air is exhausted from the exhaust boxes by means of pipes 13^a, which enter the boxes above the valves, and are connected with any suitable mechanism capable of suction or of producing a vacuum, as the object of the pipes 13^a and the mechanism with which they are connected is to maintain in the exhaust boxes a partial or an entire vacuum if possible.

The pallets C, are held in place by the usual springs 14; and in the pressure box a series of bellows 15, is placed, one beneath each pallet. Each of the bellows is provided with an opening 16 in the bottom thereof, as shown in Figs. 2 and 3, which communicate with openings 17 in the bottom of the pressure box; and in the openings 17 of the pressure box the ends of tubes 18, are introduced, which tubes are in direct communication with the exhaust boxes E, through the medium of the valved openings contained therein, as shown in Fig. 1.

Each bellows 15, is provided with another opening 19, in the bottom thereof, near one of its ends, the rear end, for example; and this opening 19, is in communication with a channel 20, produced in the bottom of the pressure box, there being an independent channel in the wall of the pressure box for each bellows contained within it; and each channel 20, has a port or opening 21, which leads directly into the pressure box back of the bellows; and each port or opening 21 is covered by a spring pressed valve 22, as is best shown in the sectional views in Figs. 3 and 2. These valves are provided with heads 23, adjacent to the bellows, and each bellows at its rear end has attached to its top a bracket 24, in each of which brackets a latch 25, is fulcrumed, the lower or head end of which is preferably provided with two shoulders 26 and 27, both of which shoulders are adapted for engagement with the head portions of the valves at different times, and will when so engaged elevate the valves, permitting the air contained in the pressure box to enter the bellows whose valve has been opened and so inflate the bellows. Each of the latches 25, is connected by

a link 28, with the pallet immediately above it, and with the exception of the channel 20, the pressure box may be made in the usual manner, as has heretofore been stated.

- 5 The operation, and consequently the method of producing tones quickly upon the manipulation of the keys is as follows: By pressing a key the valve connected with it in the exhaust box is raised, and as constant pressure is
10 exerted upon all of the bellows 15, the bellows in communication with this particular exhaust box will have the air taken quickly therefrom by reason of the pressure upon it, and the dropping of the bellows will carry down the
15 pallet connected with the bellows, thus permitting the air in the pressure box to reach the organ pipe and sound a note. When the bellows has been compressed, the key having been struck in the usual way, the upper shoulder 26 of the latch will engage with the head
20 of the valve, and if the key has been struck but lightly the lower shoulder 27, will engage with the valve; and as the bellows will naturally expand slightly, the latch, no matter
25 how the key has been compressed, will elevate the valve and permit the compressed air in the pressure box to enter the channel 20, and consequently the compressed bellows and inflate said bellows; and as the bellows goes up-
30 ward it restores the pallet to its closed position, and releases the latch from the valve, which latter drops and covers the mouth of the channel 20.

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

1. In an organ, the combination, with the pressure box having a channel produced therein containing an inlet and an outlet, and
40 a valve controlling the inlet, of a bellows located within the pressure box, having an opening communicating with the outlet of the box channel, and a latch carried by the bellows

and adapted for engagement with the valve to lift the same, as and for the purpose set forth.

2. In an organ, the combination with the pressure box having a channel produced therein and having an opening leading into the pressure box, of a valve over said opening, a bellows in the pressure box and having an opening in its bottom communicating with said channel, and a latch pivoted to the bellows and provided at its lower end with two shoulders for engaging the valve to raise
55 the same, substantially as and for the purpose specified.

3. In an organ, the combination, with the pressure box provided with a channel in its bottom portion having an inlet and an outlet, both leading into the interior of the box, and a valve located over the inlet, of a bellows located in the pressure box, having an opening communicating with the outlet of the box channel, a latch carried by the bellows
65 and adapted for engagement with the valve, a pallet, and a connection between the pallet and the latch, substantially as and for the purpose specified.

4. In an organ, the combination, with the pressure box provided with a channel in its bottom portion having an inlet and an outlet, both leading into the box, a valve normally closing the inlet, a bellows located over the outlet of the channel and having direct communication therewith, and a trip device carried by the bellows and adapted for engagement with the valve, of an exhaust box, a vacuum-creating device connected with the exhaust box, and a tubular connection between the bellows and the exhaust box, as
80 and for the purpose set forth.

WILLIAM SCHWARZE.

Witnesses:

J. FRED ACKER,
E. M. CLARK.