

(No Model.)

2 Sheets—Sheet 1.

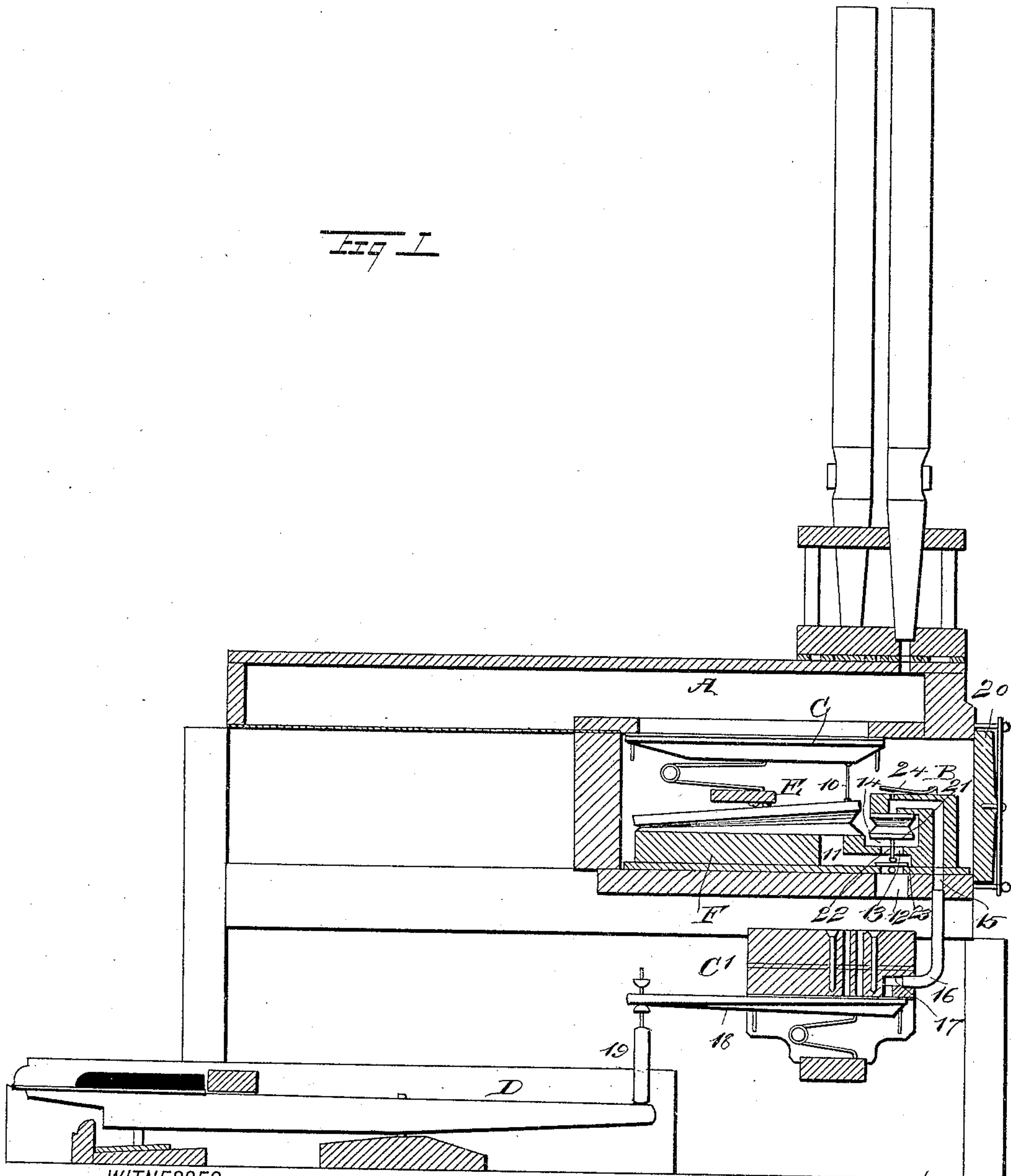
P. BAGGSTROM.

TUBULAR KEY AND PNEUMATIC VALVE ACTION FOR ORGANS.

No. 525,578.

Patented Sept. 4, 1894.

*Fig 1*



WITNESSES:

*H. Walker*  
*J. H. Acker*

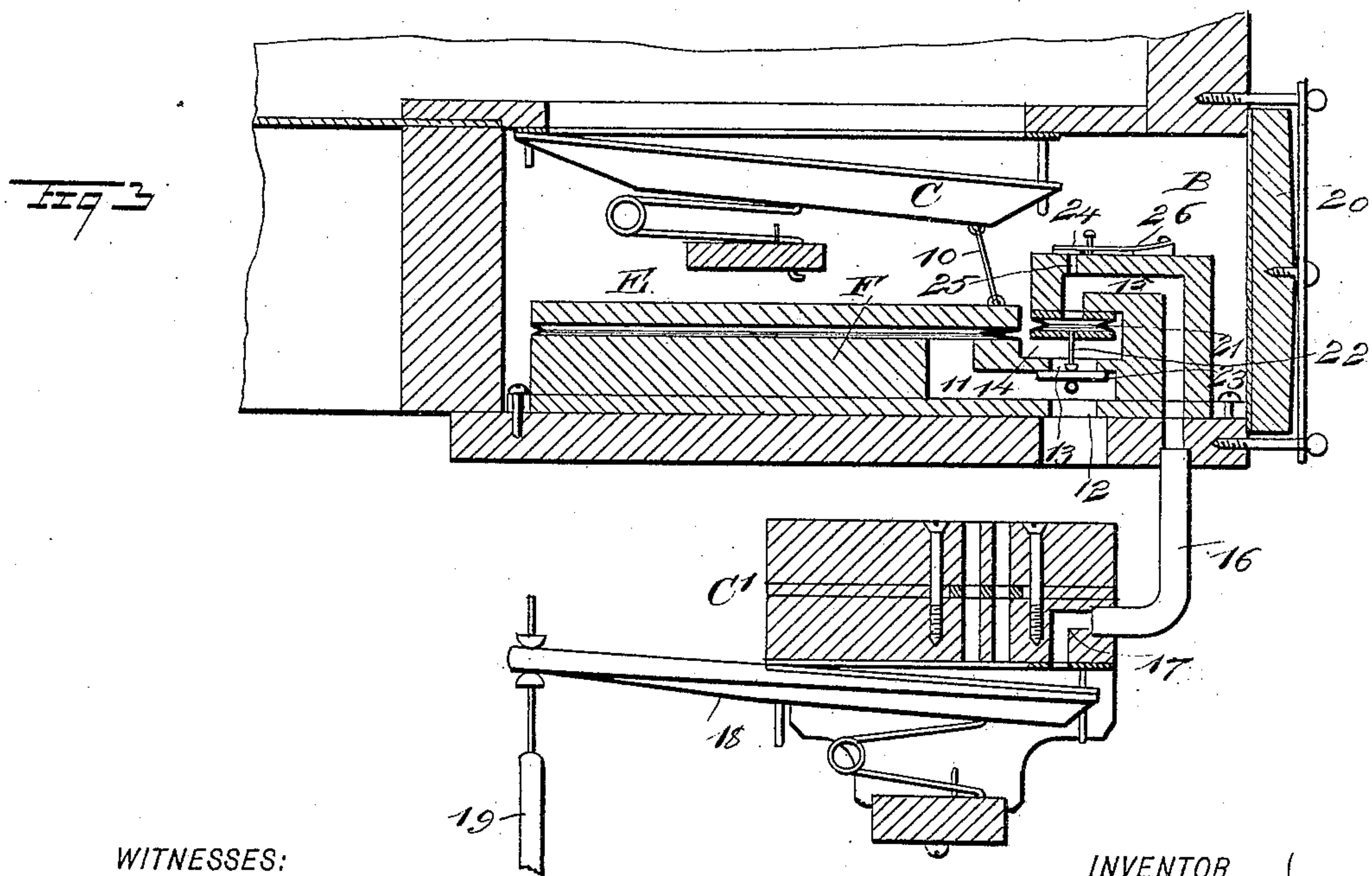
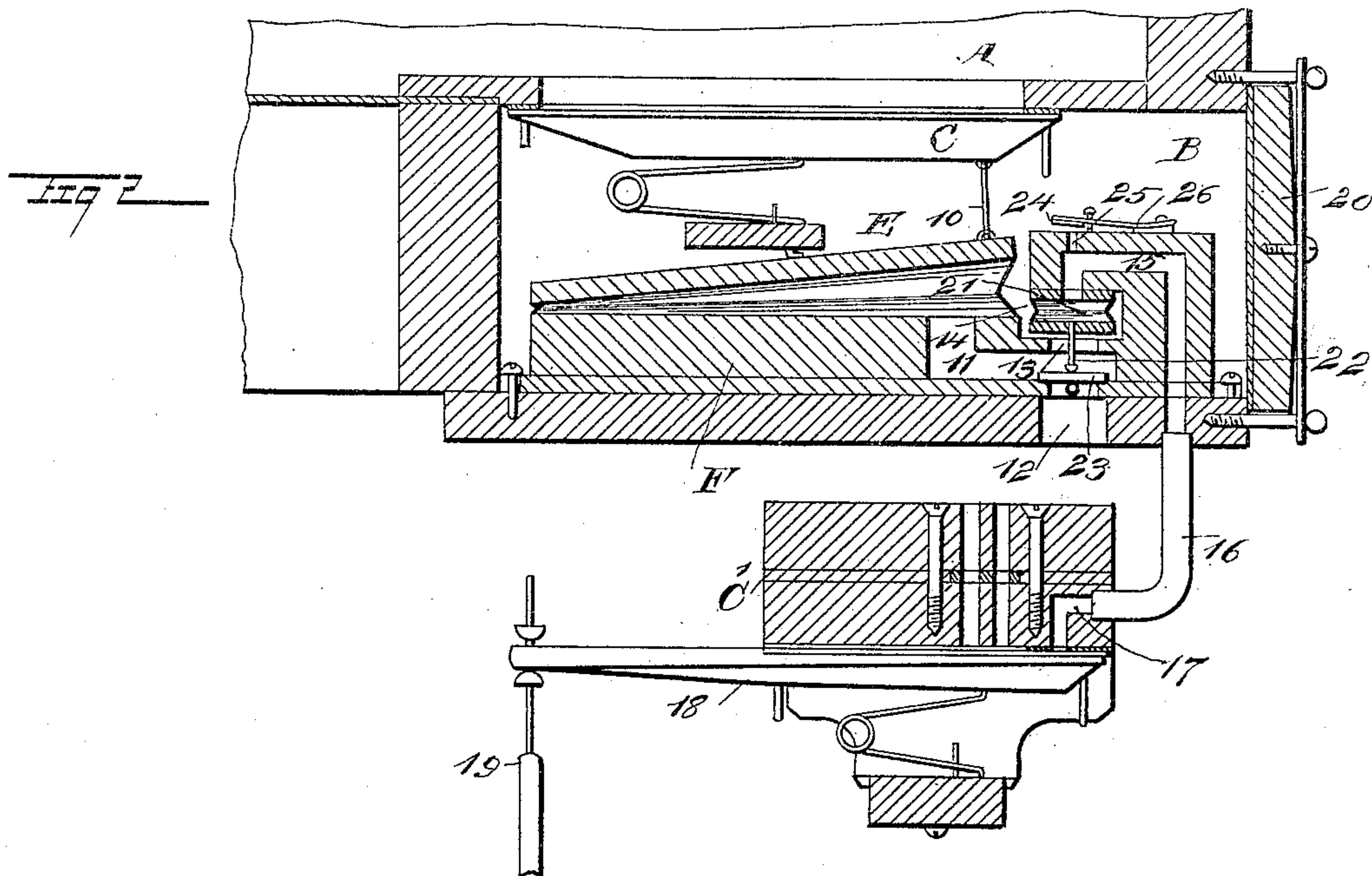
INVENTOR

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ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

P. BAGGSTROM.  
TUBULAR KEY AND PNEUMATIC VALVE ACTION FOR ORGANS.  
No. 525,578. Patented Sept. 4, 1894.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

PETER BAGGSTROM, OF BROOKLYN, NEW YORK.

## TUBULAR-KEY AND PNEUMATIC-VALVE ACTION FOR ORGANS.

SPECIFICATION forming part of Letters Patent No. 525,578, dated September 4, 1894.

Application filed May 15, 1894. Serial No. 511,310. (No model.)

*To all whom it may concern:*

Be it known that I, PETER BAGGSTROM, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Tubular-Key and Pneumatic-Valve Action for Organs, of which the following is a full, clear, and exact description.

My invention relates to a tubular key and pneumatic valve action for organs, and it has for its object to so construct the valve arrangement in the wind chest, and to so manipulate said valves from the keys that a light touch on the latter will produce a prompt speech from the tubes, the action being particularly advantageous for utilizing the coupling at present universally used between the several key boards. And a further object of the invention is to so improve upon the valve action for organs that the said action will need no regulation, since there will be comparatively nothing in its structure to get out of order.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth and pointed out in the claim.

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 section through the sounding board, wind chest and exhaust box of an organ, and the improvements applied thereto. Fig. 2 is an enlarged section similar to that shown in Fig. 1, illustrating the position of the bellows and valves when the sounding board pallet is closed; and Fig. 3 is a section similar to that shown in Fig. 2, illustrating the position of the parts when the valve has been acted upon to open the sounding board pallet.

The sounding board A and the wind chest B, are of the usual construction, and the exhaust box C', is located at a convenient point adjacent to the wind chest, and is operated from the keys D. The sounding board pallet C, is likewise of the ordinary construction, and is operated by a bellows E, located in the wind chest.

A block F, is secured upon the floor of the wind chest, which block is made thicker at

its rear end than at any other portion of its length, the rise of the rear end of the block being abrupt. The wind chest bellows E, is securely attached to the upper face of the reduced portion of the said block F, and the upper board of the bellows, which is movable, is connected with the sounding board pallet through the medium of a link 10.

An opening is made in the bottom board of the bellows, which is in communication with a channel 11, formed in the block F, and the said channel extends to the lower portion of the thicker section of this block, and is provided with an outlet 12, extending through the bottom board of the wind chest; and the channel 11, is provided with an inlet 13, located immediately above the outlet 12, the inlet being in communication with a recess 14, produced horizontally in the inner end surface of the thicker section of the block, the said recess 14 being likewise in communication with the interior of the wind chest, such communication taking place between the said inner face of the extension of the block and the rear end of the wind chest bellows E.

What may be properly termed the exhaust channel 15 communicates with the upper portion of the recess 14, and is carried horizontally in a rearwardly direction through the extension of the block F near the top, and thence vertically downward through the bottom of the wind chest; and this exhaust channel is connected by a tube 16 with an exhaust channel or port 17, produced in the exhaust box C', which in this instance is of substantially block-like construction; and the discharge end of the latter exhaust port 17 is normally closed by a pallet 18, having a coupling connection 19, with one of the keys D. It may here be remarked that the rear end of the wind chest is closed by a board 20, removably placed in position, so that access may be had to the wind chest and the valves and bellows thereof inspected and repaired if necessary, in a convenient and practical manner.

A valve-operating bellows 21, is located in the recess 14 of the block F, the top board of this small bellows being attached to the upper wall of the said recess and this bellows is in communication with the exhaust channel 15 in the said block. A valve stem 22, is se-



cured to the bottom or movable board of the bellows and extends downward through the inlet opening 13 of the main channel 11 in the block, in communication with the main bellows of the wind chest; and this valve stem carries at its lower end a valve 23, capable of alternate action to open or close either the exhaust channel 12 or the opposing inlet channel 13.

10 A suction valve 24, is located over a port 25, produced in the upper face of the extension of the block F and leading directly into that portion of the channel 15 in communication with the valve bellows 21. The suction valve 24 is controlled by a spring 26, made fast at one end to the upper face of the block.

It is evident from the foregoing description that all of the main channels and ports, together with the main bellows of the wind chest and the valve bellows, are located in or upon the block F; therefore, by severing the connection between the main bellows E and the sounding board pallet C, this block may be removed through the opening uncovered by the front board 20 of the wind chest, and all of the parts carried thereby minutely inspected in a convenient manner, and cleaned and repaired if such action be necessary.

30 In operation, as long as the pallet 18 is closed the tube 16 and the small valve bellows 21 will be filled with organ wind pressure from the wind chest B entering through the upper port 25 in the block F. This pressure exceeds the atmospheric pressure, and consequently the lower portion of this bellows is carried downward by its own weight and the weight of the valve 23, causing the said valve to close the exhaust opening 12 in the channel of the main bellows E. Therefore the bellows E becomes inflated with the wind pressure in the wind chest entering at the recess 14 and passing through the inlet 13 into the main channel 11 leading to the said bellows; and this action insures the wind chest pallet C being and remaining closed. When a key D is pressed downward it will cause the pallet 18 of the exhaust box C' to open and uncover the exhaust port 17

in the said exhaust box. The wind will now escape from the valve bellows 21 through the exhaust channel 15 and connected tube 16, the suction of the air in exhausting being sufficient to close the suction valve 24, thus shutting off the supply of wind from the wind chest; and as the valve bellows exhausts its air the valve 23 will be carried upward and will close the inlet 13 of the main channel 11, opening the outlet or exhaust channel 12, whereupon the air will exhaust from the main wind chest pallet bellows E, said bellows will collapse, and the pallet C of the sounding board connected with the bellows will be opened, as shown in Fig. 3, enabling the tube it controls to speak. When the key is released the action first described is repeated, the suction valve opening by reason of the force of the spring the moment that the exhaust channel 15 is closed at the exhaust box C'. It is furthermore evident that all of the parts are so constructed that they may be effectively used in an exceedingly small space.

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

In the construction of organs, the combination, with a block adapted to be located in the wind chest and removably attached thereto, of a bellows adapted for connection with a sounding board pallet supported by the said block, the block being provided with a channel communicating with the bellows and having an exhaust and air supply opening, a valve controlling both the supply and exhaust openings of the said bellows channel, a small bellows secured to the block, located at a recess therein over the said supply opening and connected with the said valve controlling the same, and a suction valve located upon the upper portion of the block, controlling a port, which port leads into a channel communicating with the valve controlling bellows, the said channel being made to extend through the block, as and for the purpose specified.

PETER BAGGSTROM.

Witnesses:

J. FRED ACKER,  
C. SEDGWICK.