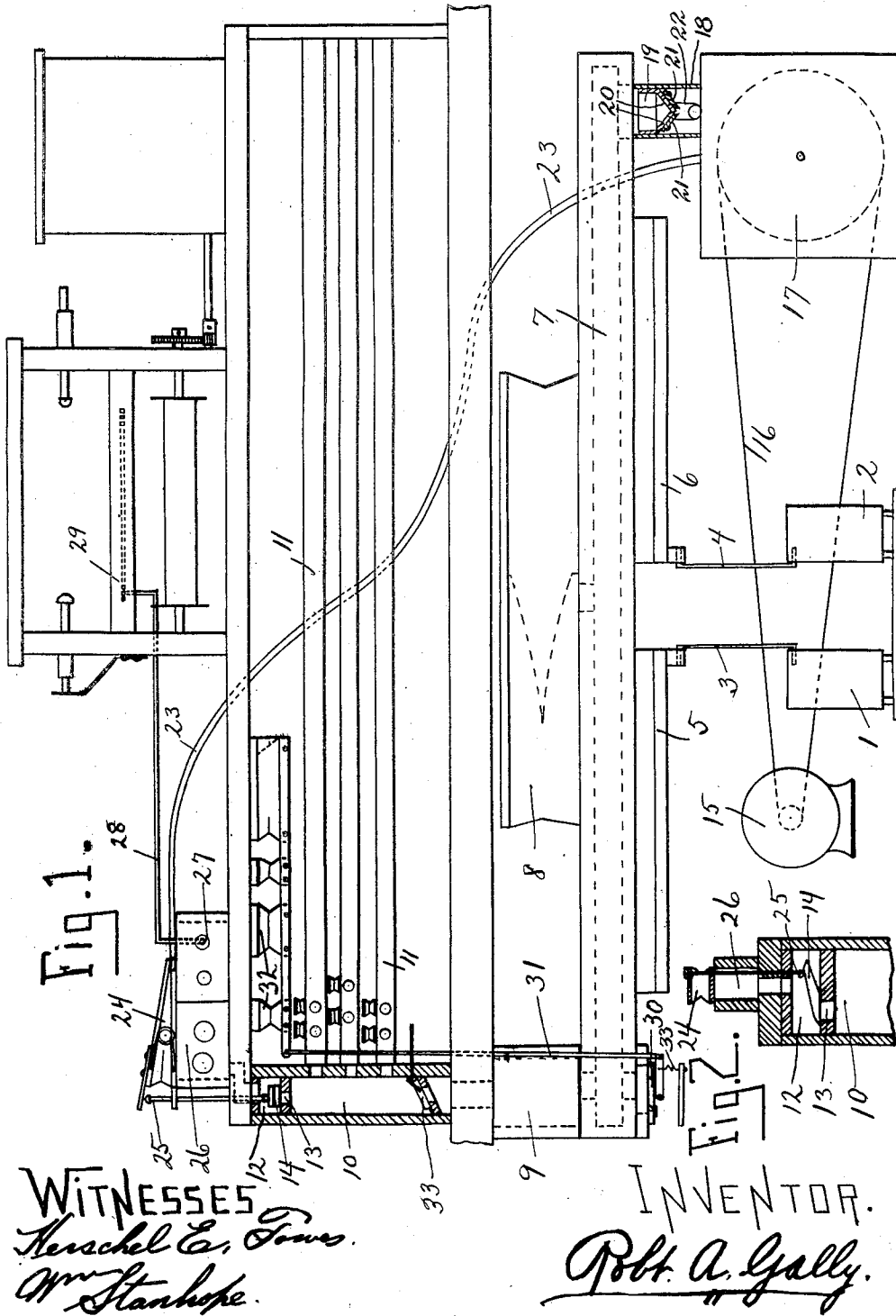


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MUSIC PLAYER FOOT AND POWER INTERCHANGE.  
APPLICATION FILED JULY 28, 1917.

1,258,555.

Patented Mar. 5, 1918.



# UNITED STATES PATENT OFFICE.

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## MUSIC-PLAYER FOOT AND POWER INTERCHANGE.

1,258,555.

Specification of Letters Patent.

Patented Mar. 5, 1918.

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*To all whom it may concern:*

Be it known that I, ROBERT A. GALLY, a citizen of the United States, and residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Music-Player Foot and Power Interchanges, of which the following is a specification.

Previous automatic music players employing both foot and power means for operating bellows or other wind inducing apparatus, have either allowed one of the said means to pump while the idle one remained connected to the air supply of the player, permitting extra loss of air from two sets of pumper valves, or have employed two air check means, one to each of two independent foot and power pumping means, as in White, #1,168,294, Jan. 18, 1916, while in the present invention an air check is used against the air connection of the power pumper while the foot pumper is operating, certain pneumatic expression controls being then cut off from air service, but when the power pumper is operated, the check to the pneumatic expression devices is shifted to connect them to the air service for their operation while the air check from the power pumper to the player is opened.

In the drawings Figure 1, is a front view of the special checks, the two air pumping devices, and only so much of the player apparatus and connections as is necessary to illustrate the present invention; and Fig. 2, is a view of the details of the expression check viewed from the left of Fig. 1.

Foot pedals 1 and 2 are connected by any suitable means as 3 and 4 to corresponding pumps 5 and 6 of any desired type or position, which pumps are adapted to induce air service in an air chest 7 to supply the various parts of the player apparatus, a reservoir as 8 of any well known type being usually desirable to steady the air foot pumping and its supply to the player. Usual air connections or chests as 9 and 10 are provided from the air supply chest 7 to the chests 11 of the note playing action, etc. An additional air chamber 12 is provided having a port 13 from chest 10 to chest 12, and a check or valve 14 is placed over said port 13 in said chest 12 to close or open connection between the said two chests for

respective conditions required by foot or power pumping, as will be described later.

An electric or other power motor as 15 is connected by a belt 16 or other means to drive an air pumper or bellows device 17, which power pumper 17 has a pipe or wind way 18 connecting the said power pumper to the air chest 7 and thus serve air for the player apparatus.

To prevent the loss of air through any valves or other leakage parts of power pumper 17 while the foot pumps 5 and 6 are operated, a check means 19 is placed in the connection between the power pumper 17 and the player air service 7, said check 19 being of any practical form, a desirable special design being herein shown, the special merits of which as a valve *per se*, will be made the subject of a separate application.

This check 19 as shown is a hollow cylindrical main form, having its lower end beveled from two opposite sides of said cylinder, and flat seat pieces as 20 are fastened air tight to these beveled parts, and each such seat has a port therein over which a valve 21 is hinged at its upper part. A spring 22 serves to overcome the weight of the two valves 21 and hold them lightly to their seats. This form of check is claimed in a separate application #190,672. When the electric or other power pumper 17 is operated, the valves 21 are drawn open sufficiently to allow air service to the chest 7 and player apparatus, but when the foot pumps as 5 and 6 are operated, the valves 21 are held to their seats and no air is drawn from the power pumper 17 by said foot pumps. While the present description is for suction air service, pressure air may be used by suitable reversal of the direction of closing of the valve 21, and corresponding reversal of all other air connection, valves, etc.

A tube 23 connects the power pumper 17 to a pneumatic 24 which is adapted to open the check valve 14 whenever said pneumatic 24 is collapsed by the suction from power pumper 17 when said power pumper is operating. The pneumatic 24 has a rod 25 which extends down through the upper wall of chest 12 and to the extended heel of the check valve 14 as shown in Fig. 2, the downward action of pneumatic 24 and rod 25 and

heel end of valve 14 serving to tip up the other end of said valve 14, and thereby open the port 13, thus connecting the air service of chamber 10 to chamber 12 and through chamber 12 to an automatic expression controlling chest 26 which has any suitable number of valves or other expression actuating devices as 27, connected by tubes as 28 to any tracker device as 29.

Any suitable expression actuating or controlling devices may be employed with the present special system of checking such expression devices during foot pumping, which expression action if not so checked would in many cases be undesirable, because not convenient for the feet to follow the sudden changes of air supply called for by such automatic expressions, and it would be especially undesirable for the automatic expression control to operate when foot pumps were acting, when such expression controls actuate a free out air limiting valve as 30 of the present showing, which valve 30 is controlled by a connection 31 to the said valve 30 from control reservoirs or chambers 32, which chambers 32 are actuated by valves or devices 27 heretofore described as controlled from the tracker means 29 through the tubes as 28. A spring 33 acts to close the valve 30.

When a valve or cut off as 34 is provided to cut off air supply from the note playing action during the rewinding of the music sheet, such closing of cut off 34 prevents any action of the expression actuating means 27, etc., even when the power pumper is operating and the pneumatic 24 is collapsed and valve 14 open between chamber 10 and chambers 12 and 26. This is especially useful when a free out air limiting device as 30 is used, as if the expression actuating means as 27, etc., were located at the side of cut out valve 33 toward the pumps instead of toward the player action chests 11, such control and expression limiting free out would be causing air loss, making rewinding by power air service impossible.

Many modifications can be made, and many styles of expression devices or air pumps and foot pedals be substituted for those now shown for illustrating the present invention, and yet not depart from the invention herein claimed; and it is to be understood that the free out air device herein shown is claimed in a separate application #179,414; but what I herein claim as my invention is:—

1. Auto-pneumatic music playing devices; auto expression actuating devices therefor; air service chambers connected to said playing devices and to said expression actuating devices; air pumper means and foot actuated means connected to the said pumper means; air pumper means and power actuated means connected to the latter said pumper means;

both of said air pumper means connected to said air service chambers; an air check means between said power actuated pumps and said air service chambers and playing devices and adapted to allow air flow from said chambers and devices to said power pumps when said power pumps are operated, and said check adapted to check the air flow from said power pumps to said chambers when said foot pumps are operated, and an air check means between said expression actuating devices and said air service chambers and adapted to cut off said expression actuating devices from said air service during the operation of said foot pumping devices, and to connect said expression actuating devices to said air service during the operation of said power pumping devices.

2. Auto-pneumatic music playing devices; auto expression actuating devices therefor; air service chambers connected to said playing devices and to said expression actuating devices; air pumper means and foot actuated means connected to the said pumper means; air pumper means and power actuated means connected to the latter said pumper means; both of said air pumper means connected to the said air service chambers; an air check means between said power actuated pumps and said air service chambers and playing devices and adapted to allow air flow from said chambers and devices to said power pumps when said power pumps are operated, and said check adapted to check the air flow from said power pumps to said chambers when said foot pumps are operated, and an air check means between said expression actuating devices and said air service chambers; a pneumatic and operative connections therefrom to said air check means and adapted to open said means when said pneumatic is collapsed, and an air connection from the interior of said pneumatic to said power pumps.

3. Auto-pneumatic music playing devices; auto expression actuating devices; air service means and connection therefrom to said playing devices and to said expression devices; foot actuated air pumping means and power actuated air pumping means both connected to said air service means; an air check means between said air service means and said expression devices; and means connected to said power pumping means and adapted to open said air check means by action of said power pumping means.

4. Auto-pneumatic music playing devices; auto expression actuating devices; air service means and connection therefrom to said playing devices and to said expression devices; foot actuated air pumping means and power actuated air pumping means both connected to said air service means; an air check means between said air service means and said expression devices; and means con-

5 nected to said power pumping means and adapted to open said air check means by action of said power pumping means, and allow said air check means to be closed when  
5 said power pumping means is inoperative.

10 5. Auto-pneumatic music playing devices; auto expression actuating devices; air service means and connection therefrom to said playing devices and to said expression devices; foot actuated air pumping means and  
10 power actuated air pumping means both connected to said air service means; an air check means between said air service means and said expression devices; and means connect-  
15 ed to said power pumping means and adapted to open said air check means by action of said power pumping means, and allow said air check means to be closed when said power pumping means is not operated.

20 6. Auto-pneumatic music playing devices; auto expression actuating devices; air service means and connections therefrom to said playing devices and to said expression devices; foot actuated air pumping means and  
25 power actuated air pumping means both connected to said air service means; an air check means between said air service and said expression devices; and a collapsible pneumatic and operative connections therefrom  
30 to said air check means, said pneumatic adapted to open said air check means when said pneumatic is collapsed; and an air connection from the interior of said pneumatic to the air service of the said power pumping  
35 means.

7. Auto pneumatic music playing devices and air chests therewith; air service means thereto; air limiting means to the said air service means; a cut out valve between said  
40 playing devices and their chests and the said air limiting means; expression actuating means having air connection to the air service at the side of said cut out valve toward said playing devices, and connections  
45 from said expression actuating means to said air limiting means; and an air check in the said air connection between said expression actuating means and the said air service.

50 8. Auto pneumatic music playing devices and air chests therewith; air service means thereto; air limiting means to the said air service means; a cut out valve between said playing devices and their chests and the  
55 said air limiting means; expression controlling means having air connections to the air service at the side of said cut out valve toward said playing devices, and connections from said expression controlling

means to said air limiting means; and an air 60 check in the said air connection between said expression controlling means and the said air service.

9. Auto pneumatic music playing devices and air chests therewith; air service means 65 thereto; air limiting means to the said air service means; a cut out valve between said playing devices and their chests and the said air limiting means; expression actuating means having air connections to the 70 air service at the side of said cut out valve toward said playing devices, and connections from said expression actuating means to said air limiting means; and an air check in the said air connection between said ex- 75 pression actuating means and the said air service; and means adapted to open and close said cut out valve.

10. Auto pneumatic music playing devices and air chests therewith; air service means 80 thereto; air limiting means to the said air service means; a cut out valve between said playing devices and their chests and the said air limiting means; expression actuating means having air connections to the air 85 service at the side of said cut out valve toward said playing devices, and connections from said expression actuating means to said air limiting means; and an air check in the said air connection between said ex- 90 pression actuating means and the said air service; and means adapted to open and close said cut out valve, and means adapted to open and close said air check when said cut out valve is open. 95

11. Auto-pneumatic music playing devices and air chests therewith; air service means thereto; air limiting means to the said air service means; a cut out valve between said 100 playing devices and their chests and the said air limiting means; expression actuating means having air connections to the air service at the side of said cut out valve toward said playing devices, and connections 105 from said expression actuating means to said air limiting means; and an air check in the said air connection between said expression actuating means and the said air service; two air service inducing means; means adapted to open and close said air 110 check and connections from one only of the said air inducing means adapted to open and close said air check.

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Witnesses:

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