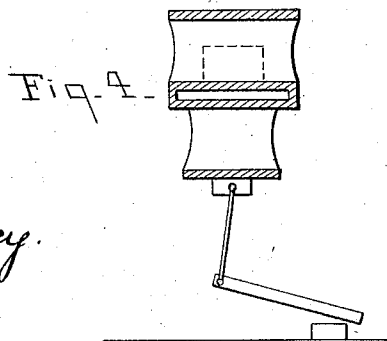
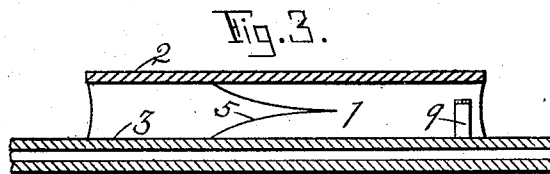
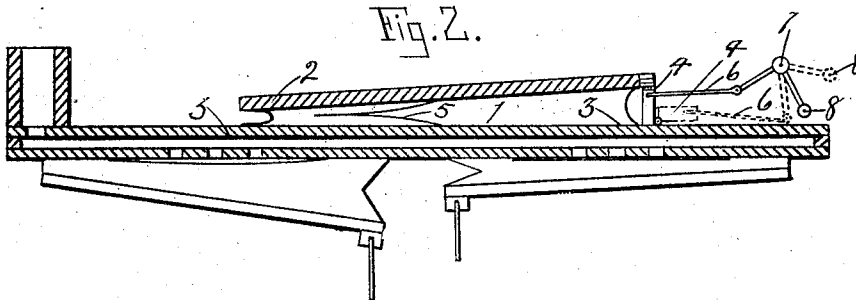
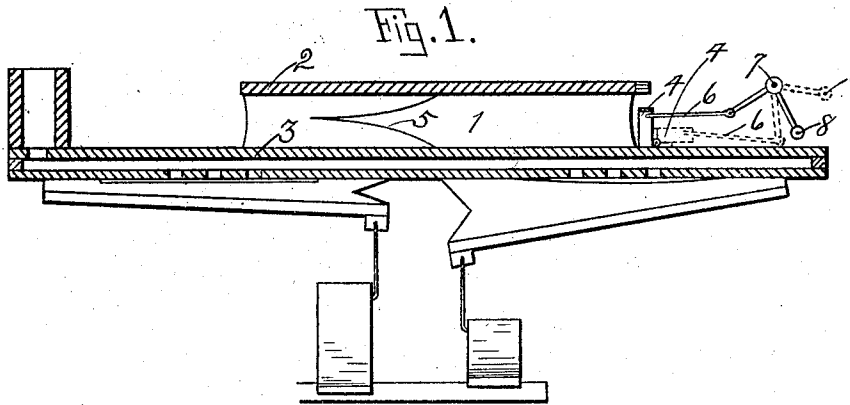


R. A. GALLY.  
MUSICAL INSTRUMENT BELLOWS.  
APPLICATION FILED OCT. 9, 1911.

1,034,098.

Patented July 30, 1912.



Witnesses:  
*J. W. Macy.*  
*J. S. East.*

Inventor:  
*Robt. A. Gally.*

# UNITED STATES PATENT OFFICE.

ROBERT A. GALLY, OF CINCINNATI, OHIO, ASSIGNOR TO THE BALDWIN COMPANY,  
OF CINCINNATI, OHIO.

## MUSICAL-INSTRUMENT BELLOWS.

1,034,098.

Specification of Letters Patent.

Patented July 30, 1912.

Application filed October 9, 1911. Serial No. 653,638.

*To all whom it may concern:*

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

Previous endeavors in the art of expression bellows have usually employed double reservoirs, supplemental springs etc., which add to their cost and complication.

The object of my invention is to secure greatly varied and quickly responding expression changes, particularly for player pianos, by a single reservoir and spring means, the construction of which I now set forth.

Figure 1 is a front view in section showing my special reservoir with the accompanying pumps and pedals, Fig. 2 being the same bellows with the reservoir partly collapsed. Fig. 3 shows a modified position of the spring in the reservoir, and Fig. 4 is a vertical section taken at right angles to Fig. 1.

My reservoir 1, when at rest and during the first part of its motion, is of a square acting form with its moving board 2 and fixed board 3 substantially parallel, similar to that of a pipe-organ; but during the second part of its motion, owing to the interruption of the motion of one end of the movable board 2 by the block 4 or equivalent interrupting means, the movable board 2 acts in the hinged manner of a reed organ or V bellows from the fulcrum of the block 4 at the interrupted end of the board 2. The spring 5 opposes the motion of the board 2 at all parts of the motion of that board, being preferably applied midway between the two ends of said board, so that its action is without change of air tension as the motion of board 2 changes from parallel action to hinged action. When a decided change of tension is desired from the one motion of the board 2 to the other, the spring 5 may be placed away from the midway position, as shown in Fig. 3.

Various other arrangements of spring means may be combined with my interrupting means without departing from the spirit of my invention.

To suit the varied requirements of air supply for different musical compositions

or the personal preference of different users, a manually controlled means can be employed to throw the interrupting means 4 in or out of engagement position with the movable board 2, as by link 6, crank shaft 7 and handle 8. When no throwout means is desired, the interrupting block 4 can be most economically placed inside the reservoir 1, as shown in Fig. 1 by the dotted lines 9, and in Fig. 3.

What I claim as my invention is:—

1. A musical instrument bellows reservoir having a bodily movable board free to move at both ends during the first part of its motion, and means adapted to interrupt the motion of one end of said board during the second part of its motion.

2. A musical instrument bellows reservoir having a bodily movable board free to move at both ends during the first part of its motion, and means adapted to interrupt the motion of one end of said board during the second part of its motion, and a spring means in opposition to the movement of said board during both parts of its motion.

3. A musical instrument bellows reservoir having a bodily movable board free to move at both ends during the first part of its motion, and means adapted to interrupt the motion of one end of said board during the second part of its motion, and a spring means in opposition to the movement of said board during both parts of its motion, said spring means being opposed to said moving board intermediate the two ends of said board.

4. A musical instrument bellows reservoir having a bodily movable board free to move at both ends during the first part of its motion, and means adapted to interrupt one end of said board during the second part of its motion, and a spring means in opposition to the movement of said board during both parts of its motion, said spring means being opposed to said moving board intermediate the two ends of said board and between the interrupting means and the uninterrupted end of said board.

5. A musical instrument bellows reservoir having two substantially parallel boards, one fixed, and one bodily movable and collapsible, a covering around all sides of said boards, and an interrupting means adjacent to one end of said movable board and adapted to interrupt the motion of that end

of the movable board before the complete extent of motion of its other end.

6. A musical instrument bellows reservoir having two substantially parallel boards, one fixed and one bodily movable and collapsible, a covering around all sides of said boards and a block between the two said boards, adjacent one end thereof, and less in dimension than the greatest distance between the boards at that place.

7. A musical instrument bellows reservoir having a bodily movable board free to move

at both ends during the first part of its motion, and means adapted to interrupt one end of said board during the second part of its motion, and manually controlled throw off means combined with said interrupting means to throw said interrupting means in and out of operative position at will.

ROBT. A. GALLY.

Witnesses:

J. W. MACY,  
F. S. GEST.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."