R. A. GALLY. MUSICAL INSTRUMENT BELLOWS. APPLICATION FILED JAN. 15, 1916.

1,233,864.

Patented July 17, 1917.



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UNITED STATES PATENT OFFICE.

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MUSICAL-INSTRUMENT BELLOWS.

1,233,864.

Specification of Letters Patent.

Patented July 17, 1917.

Application filed January 15, 1916. Serial No. 72,282.

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 Óhio, have invented certain new and useful Improvements in Musical-Instrument Bellows, of which the following is a specification.

In my prior Patents #1,034,098, of July 10 30, 1912, and #1,056,093, of March 18, 1913, are shown two means of effecting a compound motion of the bodily movable board of a bellows reservoir, the first part of the motion of such board in parallel planes, and

- 15 the latter part of the motion of angular or hinged bellows manner of operation, one of the ends moving and the other end standing still during such latter motion. Such construction produced double the speed of
- change of air capacity during such latter part of the motion of such board as during the first part of such motion. As it is sometimes desirable to have a greater difference of speed of change of air capacity an im-
- 5 proved form is now shown wherein a block or similar interrupting means is used, but instead of at the end of the board as in my said Patent #1,034,098, is herein set forth and claimed as "at a point distant from both ends but nearer one end than the other end."

In the drawing, Figure 1 shows the movable board 1 before motion is commenced; Fig. 2 shows the same board as it has completed its first part of motion with both ends moving in similar direction, but just contacting with the interrupting means 2; and Fig. 3 shows the same board 1 after contact with the interrupting means 2, the two ends, 3 and 4, of said board, moving in opposite directions, as shown by the arrows and dotted lines.

It will be seen that with the position of the interrupting means 2 distant from both ends of the movable board 1 but nearer one end 3 than to the other end 4, the later period of motion of said board 1 will be with the minor surface A balancing against a similar surface B at the other side of the interrupting means, such two surfaces therefore being neutralized, and the effective capacity changes of the reservoir being accomplished by the remaining surface C. With the prior structure of my Patent #1,034,098, the entire surfaces of A, B and

C were acting on angular motion from the end of A where the interrupting means was placed, thus being much less difference of air capacity change from the initial parallel motion of the board than in the present 60 structure where so much of the surface is neutralized by the balanced condition of surfaces A and B.

It is understood that the bellows reservoir now described is connected to any suit- \$5 able pumpers, as 5 and 6, and also to the action of a musical instrument in the usual manner as by channel 7, the spring 8 being positioned in opposition to the collapsing movement of the board 1.

What I claim as my invention is:-1. A musical instrument bellows reservoir having a bodily movable board free to move at both ends in the same direction during the first part of its motion, and 75 means adapted to interrupt the later motion of said board at a point distant from both ends, but nearer one end than to the other end.

2. A musical instrument bellows reser- 80 voir having a bodily movable board free to move at both ends in the same direction during the first part of its motion, and means adapted to interrupt the later motion of said board at a point distant from both ends 85 but nearer one end than to the other end, and permitting the continuation of the movement of one end of said board in the same direction as before the said interruption at the said point distant from both ends. 90

3. A musical instrument bellows reservoir having a bodily movable board free to move at both ends in the same direction during the first part of its motion, and means adapted to interrupt the later motion 95 of said board at a point distant from both ends but nearer one end than to the other end, and permitting the continuation of the movement of one end of said board in the same direction as before the said interrup- 100 tion at the said point distant from both ends, and permitting the movement of the other end of said board in the opposite direction of its movement than that before the said interruption of the point distant from 105 both ends.

4. A musical instrument bellows reservoir having a bodily movable board free to move at both ends in the same direction during the first part of its motion, and means 119

adapted to interrupt the later motion of said board at a point distant from both ends but nearer one end than to the other end, and permit a further movement of the board

5 in opposite directions at its two ends.
5. A musical instrument bellows reservoir having a bodily movable board free to move at both ends in the same direction during the first part of its motion, and means 10 adapted to interrupt the later motion of said board at a point distant from both ends, but nearer one end than to the other end, and a spring opposed to the motion of said board.

6. A musical instrument bellows reservoir 15 having a bodily movable board free to move at both ends in the same direction during the first part of its motion, and means adapted to interrupt the later motion of said board at a point distant from both ends, but nearer 20 one end than to the other end, and permit a further movement of the board in opposite directions at its two ends, and a spring opposed to the motion of said board.

ROBT. A. GALLY.

Witnesses: PAUL HEUGGE, N. KEISER.

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