

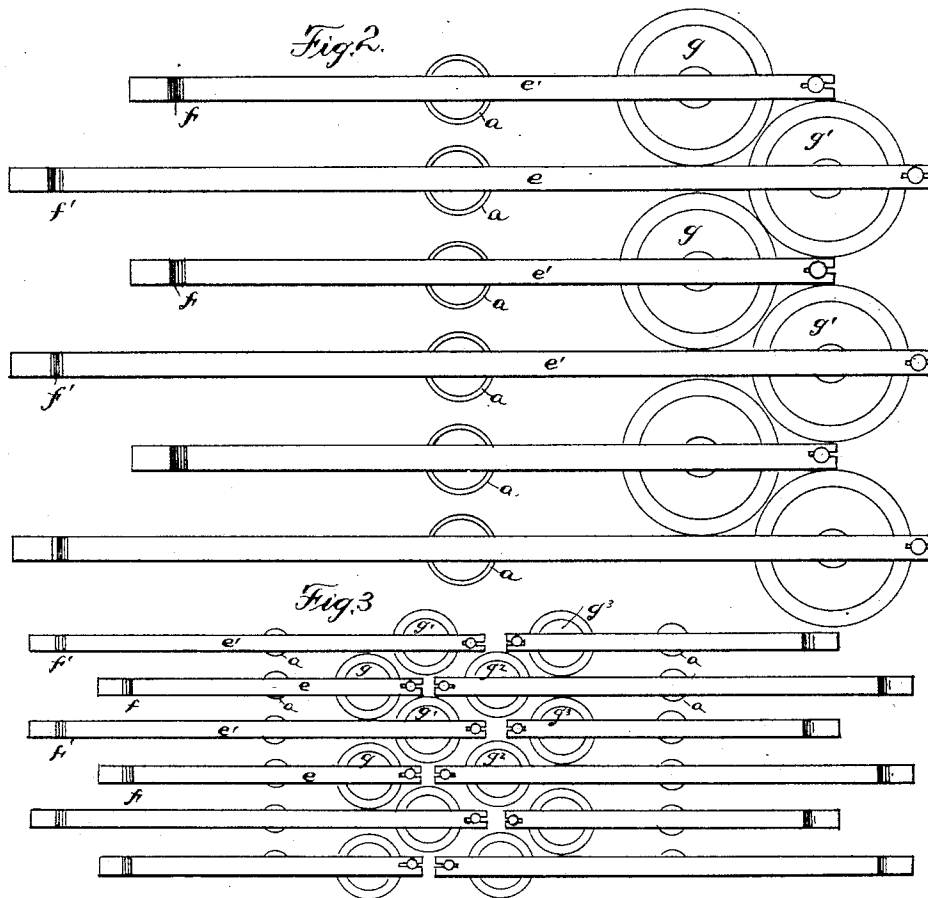
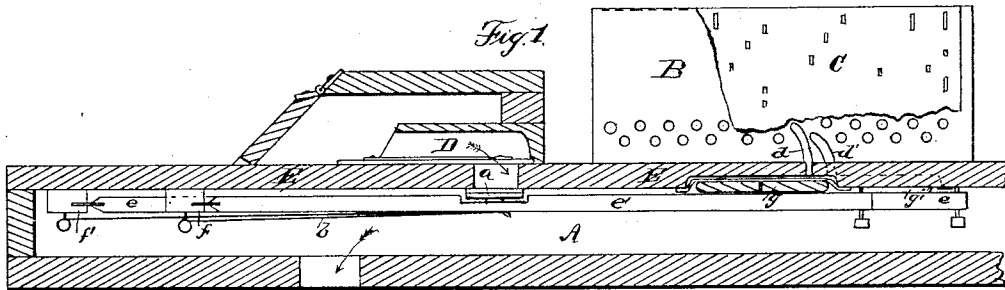
(No Model.)

M. GALLY.

PNEUMATIC ACTION FOR MUSICAL INSTRUMENTS.

No. 351,173.

Patented Oct. 19, 1886.



Witnesses:

Robt. A. Gally.
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UNITED STATES PATENT OFFICE.

MERRITT GALLY, OF NEW YORK, N. Y.

PNEUMATIC ACTION FOR MUSICAL INSTRUMENTS.

SPECIFICATION forming part of Letters Patent No. 351,173, dated October 19, 1886.

Application filed March 17, 1886. Serial No. 195,580. (No model.)

To all whom it may concern:

Be it known that I, MERRITT GALLY, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Musical Instruments, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention consists, principally, in a new and improved construction and arrangement of pneumatic motors and valve-actuating levers for operating the valves of the air-passages of a musical instrument.

The object of the invention is to make a simple and compact action, and one which, by reason of the small number of parts, shall have superior sounding qualities.

In the accompanying drawings, Figure 1 is a transverse section of an organ-action, showing the pneumatic motors, valves, and actuating-levers. Fig. 2 is a plan view showing the arrangement of motors, valves, and levers. Fig. 3 is a plan showing the arrangement of levers for more than one line of valves.

In order that the pneumatic motors *g g'*, Fig. 2, might be large enough to be of sufficient power to operate the valves *a* when arranged in approximately close order, it has been my custom to place the motors in alternate arrangement on both sides of the line of valves and alternate the arrangement of the valve-actuating levers. This construction necessitated the extension of the pneumatic operating-tubes *d* between the valves *a*, to reach the motors placed on one side of the valve-line. To obviate this necessity and to secure a more direct connection of pneumatic tubes and motors I arrange the alternating pneumatic motors *g g'* at one side of the series of valves *a*, and hinge all the valve-actuating levers at the opposite side of the series of valves, as shown in Figs. 1 and 2. This brings the pneumatic motors in direct and easy connection with the tubes of a tracker-range for mechanically operating the motors, as shown, or with any key-operating mechanism, as the case may require.

In order that the leverage on the valves *a* may be uniform I make the levers for the al-

ternating pneumatic motors to differ in length, as shown, so that the positions of the fulcrum *f f* for the several levers will give to the motors an equal leverage on the valves.

The arrangement of the motors, valves, and levers of Figs. 1 and 2 may represent that of a complete organ action in which only one line of valves is required. More than one line of valves, however, may be used, as shown in Fig. 3, in which case the pneumatic motors may be arranged between the two series of valves, as shown.

In Fig. 1 the devices are represented as being operated by exhaust-air; but the construction and arrangement described is alike applicable to actions operated either by pressure or exhaust.

What I claim as my invention is—

1. In a musical instrument, a series of pneumatic motors arranged in alternate order on one side of a series of air-passages provided with valves, in combination with valve-actuating levers, the fulcrum of which are situated on the side of the series of valves opposite to that of the series of pneumatic motors.

2. In a musical instrument, two series of pneumatic motors arranged in alternate order on one side of a series of valves, and valve-levers of different lengths connecting said motors with said valves, all in combination, substantially as set forth.

3. Two lines or series of air-passages having valves and valve-actuating levers, each series of valves arranged to be operated by a series of pneumatic motors placed in alternate order and on one side of the series of valves, the two series of alternating motors arranged between the two series of valves, and the fulcrum of the valve-actuating levers placed on the sides of the series of valves opposite that of the pneumatic motors.

In testimony whereof I affix my signature in presence of two witnesses.

MERRITT GALLY.

Witnesses:

ROBT. A. GALLY.

JOHN W. ESSEX.