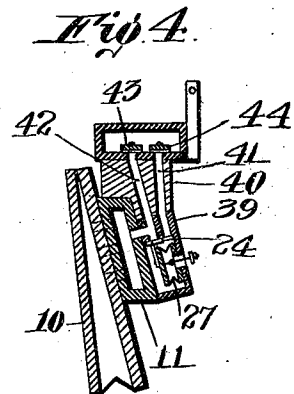
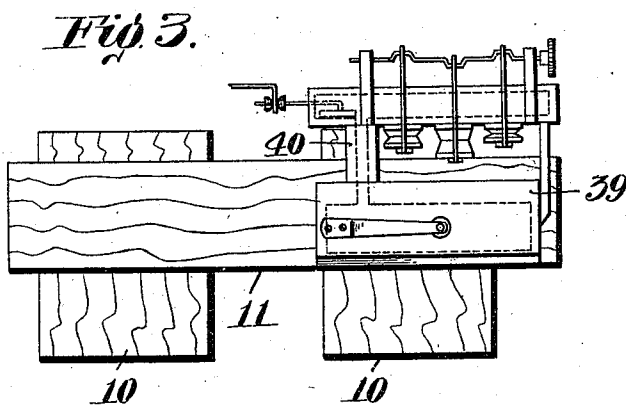
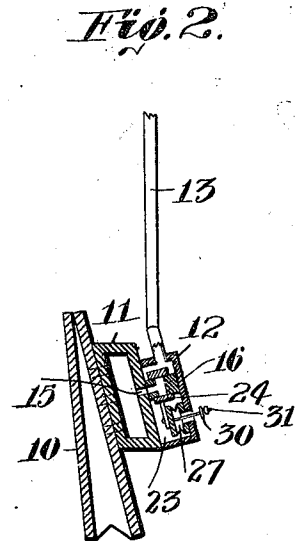
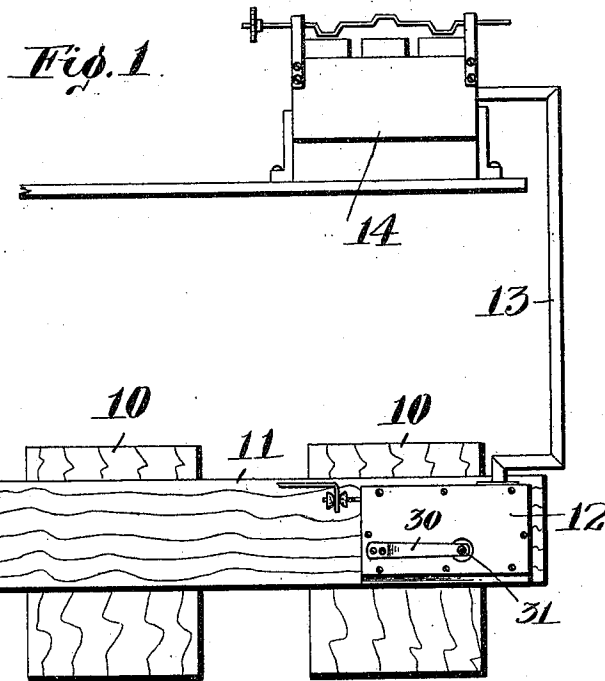


T. DANQUARD.
PNEUMATIC GOVERNOR.
APPLICATION FILED APR. 18, 1908.

983,879.

Patented Feb. 14, 1911.

2 SHEETS—SHEET 1.



Witnesses:

C. F. Mason.
E. M. Allen.

Inventor:
T. Danquard.
By Attorneys

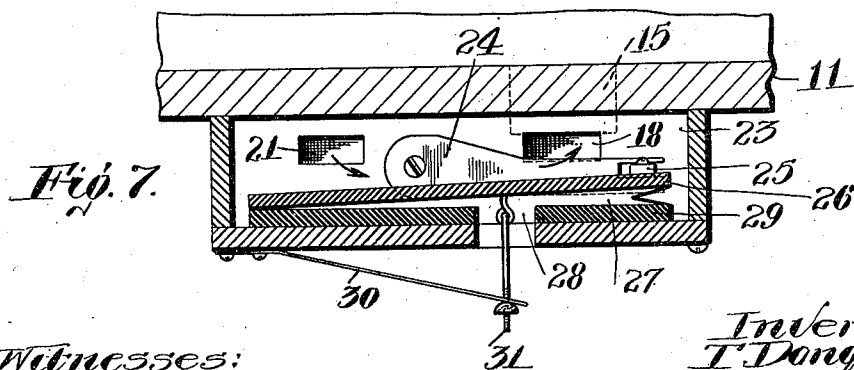
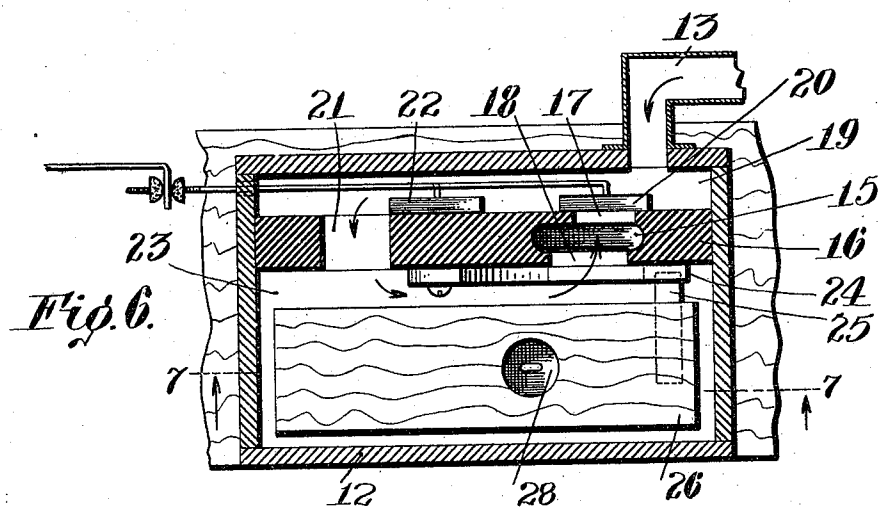
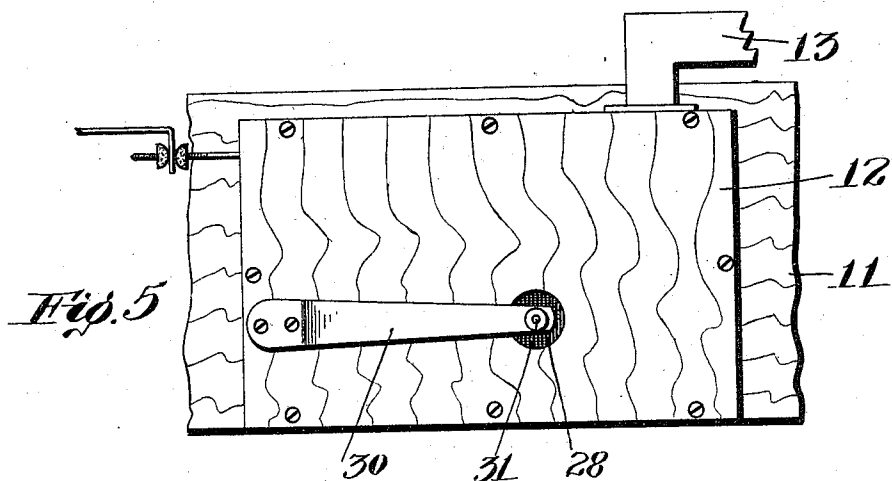
Southgate & Southgate.

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UNITED STATES PATENT OFFICE.

THOMAS DANQUARD, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO
AUTO PNEUMATIC ACTION CO., OF NEW YORK, N. Y., A CORPORATION OF NEW
YORK.

PNEUMATIC GOVERNOR.

983,879.

Specification of Letters Patent.

Patented Feb. 14, 1911.

Application filed April 18, 1908. Serial No. 427,869.

To all whom it may concern:

Be it known that I, THOMAS DANQUARD, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented a new and useful Pneumatic Governor, of which the following is a specification.

This invention relates to a governing device for pneumatic motors, and while capable of general use for that purpose, is especially adapted for controlling motors used for operating the so-called pneumatic musical instruments and players.

The principal objects of the invention are to provide a simple, convenient and inexpensive construction of this character in which an expansible and collapsible governor pneumatic is employed which is entirely disconnected internally from the motor and wind-inducing devices, and does not communicate with the wind-way between them, but which is operated in an efficient, uniform and positive manner by the outer air with which the interior of the governor is in communication; also to so arrange said governor as to be sensitive to the conditions of air tension in the passages or wind-way connecting the motor and bellows so that said passages or wind-way are choked when the governor pneumatic expands on account of the great preponderance of the pressure of the atmospheric air; also to provide a convenient and effective construction for carrying out the above indicated purposes.

Further objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings which show certain forms in which the invention may be carried out, and in which—

Figure 1 is an elevation showing one way in which the governor can be connected with the motor and bellows; Fig. 2 is a vertical transverse sectional view of part of the same; Fig. 3 is a view similar to Fig. 1 showing how the invention may be used connected directly with the motor; Fig. 4 is a vertical transverse sectional view of the same; Fig. 5 is a plan of the form of governor pneumatic shown in Figs. 1 and 2; Fig. 6 is a horizontal sectional view with the top removed, and Fig. 7 is a sectional view on the line 7—7 of Fig. 6.

In the form shown in Figs. 1, 2, 5, 6 and

7, the wind-inducing devices or bellows 10 are connected with a main wind-trunk 11 which communicates through the governor box 12 with a pipe or channel 13 connected with the motor 14. The governor box is provided with a passage 15 communicating with the main wind trunk 11 or any other form of wind-inducing devices with which the invention is used. This channel or passage is shown as located in a partition 16 and communicates with two ports 17 and 18. The port 17 communicates with a passage 19 which communicates directly with the pipe or tube 13. The port 17 is controlled by the usual re-roll valve 20. Through the partition 16 there is another port 21 which is controlled by the usual tempo valve 22, and this port, as well as the port 18 communicates with a chamber 23. In this chamber is located a valve 24 for controlling the port 18. This valve may be of any desired construction, but is shown herein, as arranged to swing on a pivot to control this port. It is connected as by a bar 25 with the movable leaf 26 of the governor pneumatic 27 which is located in the chamber 23. This governor pneumatic is located outside the regular path of air through the wind-way formed by the passages 13, 19, 17 and 15 or 13, 19, 21, 23, 18 and 15 between the motor and wind-inducing devices, and is entirely closed against interior communication therewith by its imperforate leaf 26, but it is controlled by the conditions of air tension in the wind-way on account of being connected directly with the outer air through a port 28 in its fixed leaf 29 which is mounted on the inside of the governor box. A spring 30 is employed to normally hold the governor pneumatic contracted, this spring being connected with the movable leaf thereof in an adjustable manner by a rod 31. It will be observed that the governor pneumatic works inside of the chamber 23 which is connected with the exhaust bellows through the port 18 which is closed, or partly closed as the case may be, by the valve 24 which is controlled by the governor pneumatic itself, and yet the governor pneumatic is not connected directly or internally with the wind-way, but on the contrary is internally connected with the outer atmospheric air through the port 28. The governor casing is open at the bottom and

is preferably screwed against the windchest in any ordinary or convenient manner. It has been found in practice that this invention controls the air pressure in a simple and convenient manner, and without any serious complications in the construction.

In the form of the invention shown in Figs. 3 and 4 it is used in direct connection with the motor, and is inclosed in a single box 39, the upper portion 40 of which is preferably made of a stout piece of wood so that it can contain a passage 41 which corresponds in a general way with the passage 18 above described, and a passage 42 which is controlled by the tempo valve 43. A re-roll valve 44 is mounted at the end of the passage 41 as above. The passage 42 connects with the main wind trunk 11, and the governor pneumatic 27 operates in the manner above described. In this form the heavy tension communicates with the motor through the passage 42 and the regulated tension through the passage 41. In this case the body of the motor itself contains the two valves 43 and 44, but the principle is the same as that above described.

While I have illustrated and described two preferred forms of the invention, I am aware that many modifications may be made therein by any person skilled in the art without departing from the scope thereof as expressed in the claims. Therefore, I do not wish to be limited to the particular form of the invention shown and described, and details of construction thereof, but

What I do claim is:—

1. The combination with a motor, a wind inducing device and a wind-way connecting them, of a governor box and a passage communicating with each other, a governor pneumatic in said box for controlling the exhaust of air therethrough, a tempo valve controlling communication between the box and passage, a port connecting the wind inducing device and passage, and a valve independent of the tempo valve and governor pneumatic for controlling said port.

2. In a governing device for a pneumatic motor, the combination of a governor box having a partition therein and provided with a passage on one side of the partition, and a governor pneumatic in the box on the other side of the partition, said partition having a passage therein through which air is exhausted and provided with two ports communicating with said passage in the partition, one communicating with the first named passage, and the other with the main part of the governor box, a valve for the latter port connected with the governor pneumatic, a valve independent thereof for controlling the other port, said partition also having a port extending through the same from one side to the other, a valve independent of said other valves for control-

ling the last named port, and a motor communicating with said first named passage.

3. In a governing device for a pneumatic motor, the combination of a wind-way adapted to be connected with the motor and with a wind-inducing device, a governor for communicating freely with the wind-way having a passage from the governor box to the motor connection, a valve for controlling said passage, a collapsible pneumatic for operating said valve located within said governor and substantially surrounded thereby, the stationary leaf of said pneumatic having an opening to the external air, a spring for normally holding said pneumatic in collapsed condition, a valve for controlling said wind-way independently of the governor controlled valve, and a third valve adapted to control said passage independently of the other two valves.

4. In a governing device for a pneumatic motor, the combination of a wind-way adapted to be connected with the motor and with a wind-inducing device, an inclosed governor box communicating freely with the wind-way having a passage from the governor box to the motor connection, a valve for controlling said passage, a tempo valve located in position to close the same passage, a collapsible pneumatic for operating the first named valve located within said governor box and substantially surrounded thereby, the stationary leaf of said pneumatic having an opening to the external air, and the movable leaf being connected with the first mentioned valve for operating it, a port connecting the wind-way with the passage to the motor independently of said governor box, and a re-roll valve for controlling said port.

5. A governor for a pneumatic motor having a passage for communicating with the motor, a chamber, a port between said passage and chamber, a valve for controlling said port, a passage for communicating with the wind-inducing devices, ports from the last named passage to the first named passage and to said chamber, a valve for controlling the first of said last two named ports, a valve for controlling the second of said ports, and a governor pneumatic located in said chamber for operating said last named valve.

6. A governor for a pneumatic motor having a passage for communicating with the motor, a chamber, a port between said passage and chamber, a valve for controlling said port, a passage for communicating with the wind-inducing devices, ports from the last named passage to the first named passage and to said chamber, a valve for controlling the first of said last two named ports, a valve for controlling the second of said ports, and a governor pneumatic located in said chamber for operating said last

named valve, said governor pneumatic being closed against internal communication with said chamber and passage and having a port communicating freely with the outer
5 air, whereby the reduction of tension in the passages and chamber will result in collapsing the governor pneumatic.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses.

THOMAS DANQUARD. [L. s.]

Witnesses:

A. F. SMITH,
C. L. JENKINS.