

UNITED STATES PATENT OFFICE.

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REGISTER-STOP FOR PIPE-ORGANS.

SPECIFICATION forming part of Letters Patent No. 626,414, dated June 6, 1899.

Application filed August 27, 1898. Serial No. 689,652. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS B. FELGEMAKER, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Register-Stops for Pipe-Organs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to register-stops for pipe-organs; and it consists in certain improvements in the construction thereof, as will be hereinafter fully described, and pointed out in the claims.

The invention is illustrated in the accompanying drawings as follows:

Figure 1 shows a plan view of the device; Fig. 2, a section on line 2 2 in Fig. 1; Fig. 3, a sectional view of the stop-lever mechanism.

A marks an air-chamber from which the pipes B are supplied, the air passing from the air-chamber A through a port a , a valve A' , port a' , and opening a^2 . There is a chamber A for each register, and this chamber is in communication through ports—such as a , a' , and a^2 —with all the pipes of the same register. Air under constant pressure is contained in a chamber C and is normally cut off from the air-chamber A by the valve c . When the valve c is open, the air passes through the port C' , chamber C^2 , and port a^3 to the chamber A. The valve c is carried by a stem c' . This stem is connected with the movable plate c^2 of a bellows-motor c^3 . The bellows-motor is connected by the ports C^4 and C^5 with the chamber C. Two valves d and d^2 , carried by the stem d' , operate at the ends of the port C^5 , the valve d closing the port C^5 to the atmosphere and the valve d^2 controlling the port C^5 at its entrance to the chamber C. These valves d and d^2 are so arranged on the stems d' that when one of them is closed the other is open. The stem d' is connected with the movable plate d^3 of a bellows-motor D. The duct D' leads from the bellows-motor D through a port e^2 to a chamber E. (See Fig. 3.) A valve e normally closes the port e^2 , and a spring e' assists the air-pressure in closing the valve e . A stop-lever F is connected by a stem e^4 with the valve e . By moving the

stop-lever F the valve e is opened and air which is maintained under pressure in the chamber E passes through the port e^2 and port D' to the bellows-motor D. This raises the plate d^3 , carrying the stem d' and valves d and d^2 upwardly, so that the valve d^2 closes the port C^5 at its entrance to the chamber C and the valve d opens the port C^5 to the atmosphere. The area of the movable plate c^2 of the bellows-motor c^3 is somewhat larger than the area of the valve c , so that when the air-pressure is reduced in the bellows-motor c^3 the air-pressure, being greater upon the greater area of the bellows-motor, effects a movement of said motor and a consequent raising of the valve c and passage of air from the chamber C to the chamber A, where it is let into the pipes as each key is touched. The chamber C runs transversely of the chambers A and contains air from which all the different registers are supplied. The number may be increased indefinitely. When the stop-lever F is moved back to its normal position, the valve e is closed. A valve e^5 , carried by the stem e^4 , closes the passage e^3 while the valve e is open. When the valve e is closed, this valve e^5 opens the passage e^3 , which is in communication with the port e^2 , to the atmosphere, thus reducing the pressure in the duct D' and bellows-motor D. This reduction of pressure in the bellows-motor and the air-pressure in the chamber C effect a movement of the plate d^3 of the bellows-motor D and a consequent closing of the valve d and an opening of the valve d^2 . This opening of the valve d^2 allows the air in the chamber C to pass through the ports C^5 and C^4 into the bellows-motor c^3 , where by reason of the greater area of the plate c^2 it is moved downwardly, thus closing the valve c and cutting off the air-supply from the chamber A. A passage c^4 leads from the chamber C^2 to the atmosphere, and a valve c^5 , carried by the stem c' , opens this passage when the valve c is closed and closes it when the valve c is open. The result of this is that when the valve c is closed, and thus cuts off the air from the chamber A, the air in the chamber A is immediately reduced to atmospheric pressure through the opening c^4 , so that when keys are operated to effect tones from other registers the air in the registers cut out is so reduced as to prevent the pipes of that register speaking.

This construction is simple, allows an indefinite multiplication of the registers in a very compact manner, and operates quickly and effectively.

5 What I claim as new is—

1. In a register-stop, the combination with the air-chamber leading to the pipes; of the chamber, C, in communication with said air-chamber; the valve, *c*, controlling said communication; a primary motor as *c*³, operated
10 by the air-pressure in the chamber, C, for controlling the valve, *c*; passages leading from said motor, *c*³, to the air-chamber, C, and to the atmosphere; valves controlling said pas-
15 sages; a secondary motor in the chamber C arranged to open and close said valves alternately, said motor being operated in one direction by air from the stop mechanism and in the opposite direction by the pressure of
20 the air in the chamber C on said motor; a passage leading from said motor; a valve for controlling said passage; and stop mechanism for operating said valve.

2. In a register-stop, the combination with
25 the chamber A, from which air is supplied to the pipes; of the air-chamber C, communicat-

ing with the chamber A, through the passage, C' C² and *a*³; valve, *c*, controlling said pas-
sage; a stem, *c'*, carrying said valve; passage, *c*⁴, from the passage, C², to the atmosphere; 30
valve, *c*⁵, carried by the stem, *c'*, and controlling the passage, *c*⁴; the bellows-motor, *c*³, having its movable part connected with the stem, *c'*; duct, C⁴, and port, C⁵, leading from
said motor, C³, to the atmosphere and to the 35
chamber, C; valve, *d*, controlling the entrance of the port, C⁵, to the atmosphere; valve, *d*², controlling the entrance of the port, C⁵, to the chamber, C; bellows-motor, D, ar-
40 ranged in the chamber C and having the movable part, *d*³, connected with the stem, *d'*; the air-duct, D', leading to the motor, *d*³; an air-supply in communication with the duct, D'; a valve controlling said air-supply; and
45 a stop-lever controlling said valve.

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

AUGUSTUS B. FELGEMAKER.

Witnesses:

M. BURY,

H. Z. LORD.