H. MEYER.

AUXILIARY STOPPING DEVICE.

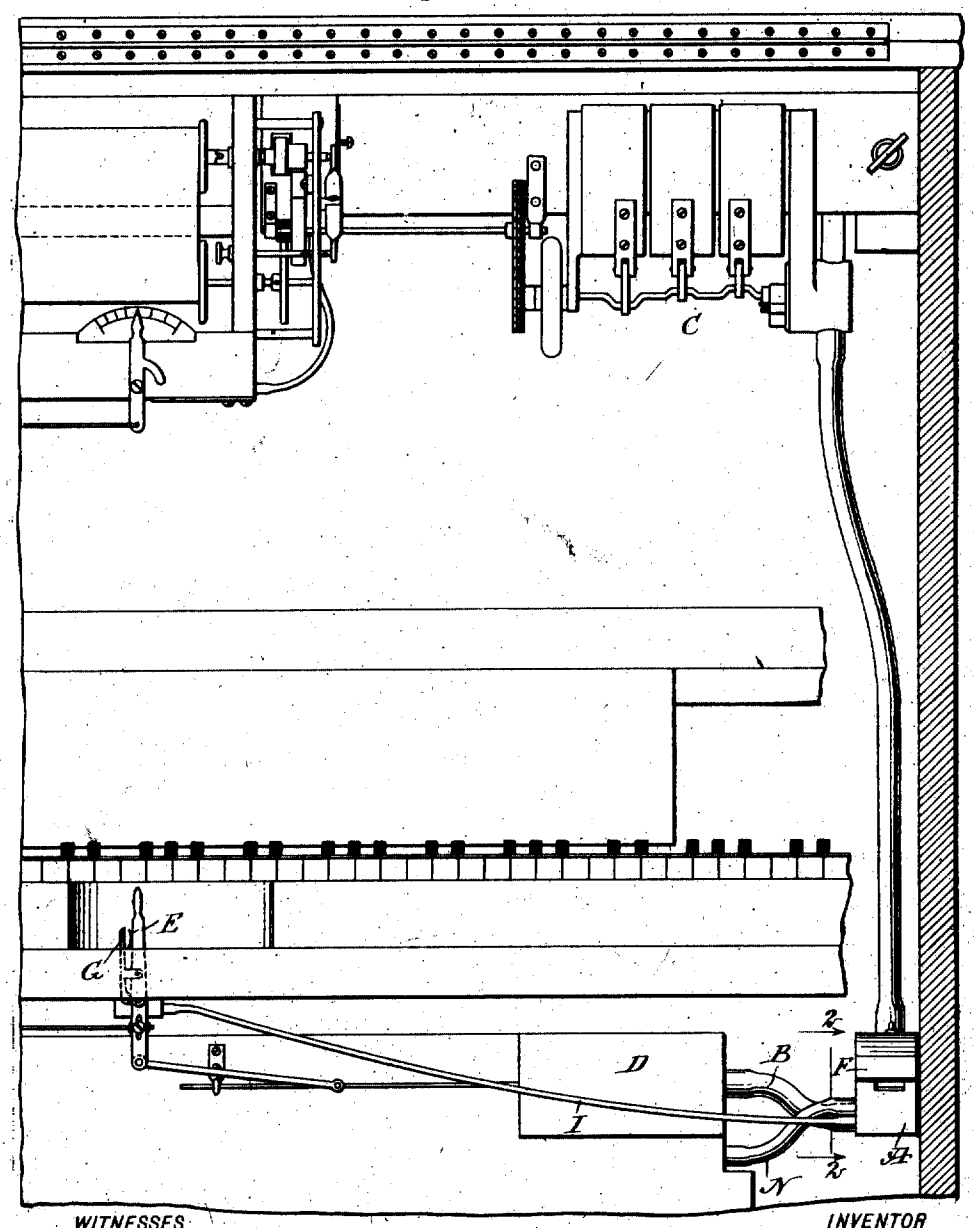
APPLICATION FILED SEPT. 26, 1908.

1,002,073.

Patented Aug. 29, 1911.

3 SHEETS—SHEET 1.

Fig. 1,



WITNESSES

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3 SHEETS—SHEET 2.

Fig. 2.

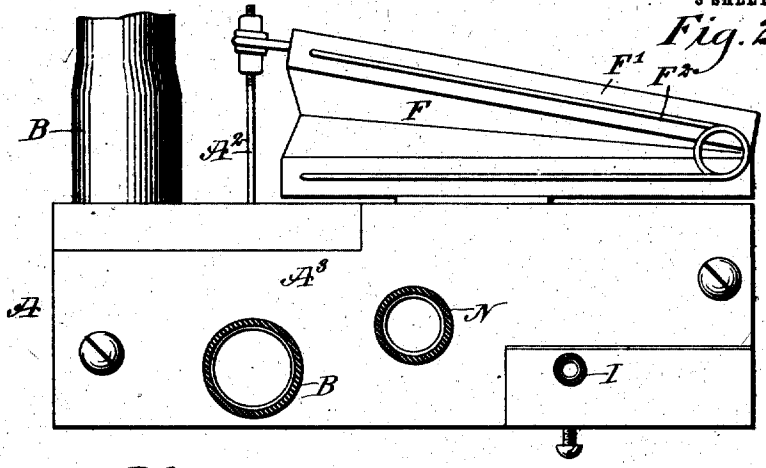


Fig. 3.

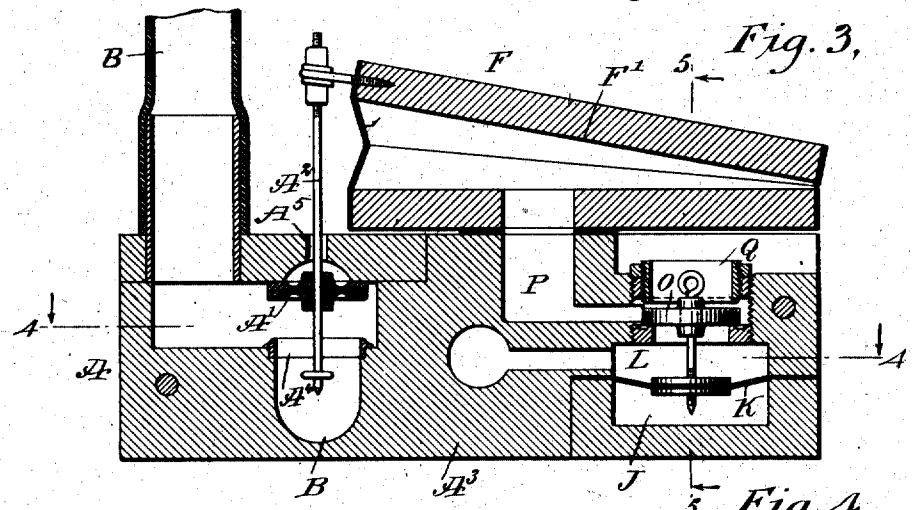
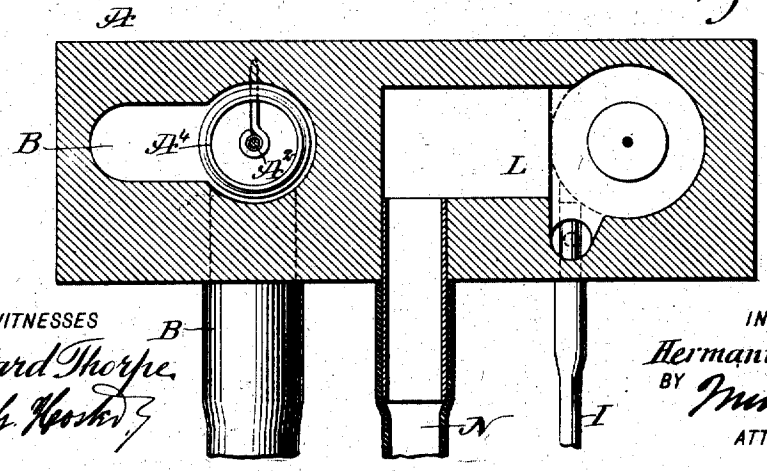


Fig. 4.



WITNESSES

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3 SHEETS—SHEET 3.

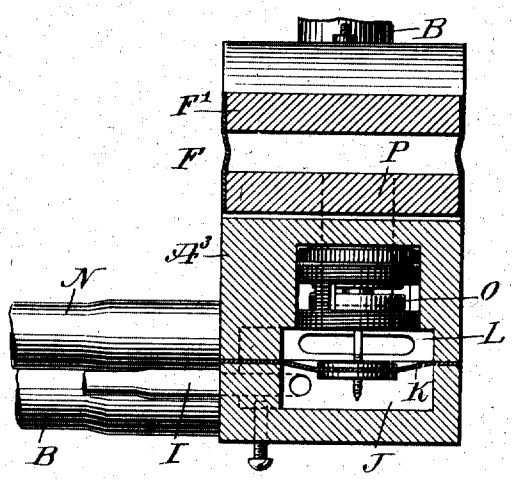


Fig. 5,

Fig. 6,

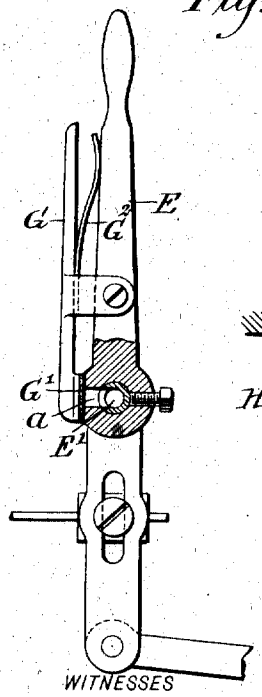
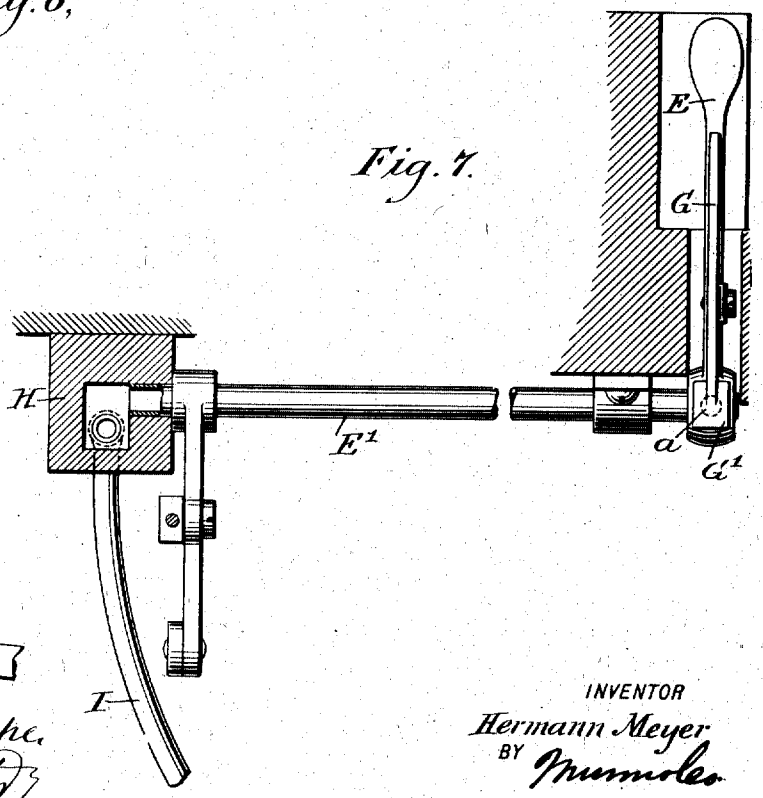


Fig. 7.



WITNESSES

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UNITED STATES PATENT OFFICE.

HERMANN MEYER, OF NEW YORK, N. Y.

AUXILIARY STOPPING DEVICE.

1,002,073. Specification of Letters Patent. Patented Aug. 29, 1911.

Application filed September 26, 1908. Serial No. 454,849.

To all whom it may concern:

Be it known that I, HERMANN MEYER, a citizen of the United States, and a resident of the city of New York, borough of the Bronx, in the county and State of New York, have invented a new and Improved Auxiliary Stopping Device, of which the following is a full, clear, and exact description.

The invention relates to piano players, self-playing pianos and like instruments, and its object is to provide a new and improved auxiliary stopping device, more especially designed to enable the performer to stop the motor quickly while playing and when the music calls for a rest, and without the performer changing the position of the tempo lever or removing his hand therefrom.

The invention consists of novel features and parts and combinations of the same, which will be more fully described hereinafter and then pointed out in the claim.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a front elevation of the improvement as applied to a self-playing piano; Fig. 2 is an enlarged transverse section of the same on the line 2—2 of Fig. 1; Fig. 3 is a cross section of the auxiliary stopping valve and the pneumatic for actuating the same; Fig. 4 is a sectional plan view of the same on the line 4—4 of Fig. 3; Fig. 5 is a sectional front elevation of the same on the line 5—5 of Fig. 3; Fig. 6 is an enlarged front elevation of the tempo lever, parts being in section; and Fig. 7 is a side elevation of the tempo lever and transverse section of the adjacent parts of the case.

In performing on instruments of the class referred to, it frequently becomes necessary to temporarily stop the motor in case the music calls for a rest, or the performer desires to temporarily stop the note sheet for producing the desired effects. This stopping of the motor is accomplished by the performer moving the tempo lever to one side to close the motor-controlling valve and to thus bring the motor to a stop, and after the desired lapse of time the performer moves the tempo lever back to the previous position, thereby reopening the motor-controlling valve, starting the motor and causing the note sheet to travel at approximately the same speed it had previous to stopping the motor. Now in practice it is difficult for the performer to so manipulate the tempo lever to bring it to the stopping position and back to an accurate playing position, in a short space of time, and hence the music is not properly executed. With the improvement presently to be described in detail, the position of the tempo lever is not disturbed at all during the temporary stopping of the motor, nor is it required on the part of the performer to remove the hand from the tempo lever. For the purpose mentioned, use is made of an auxiliary stopping valve A, arranged in the connection B, between the motor C and the usual motor-controlling valve D actuated from the hand lever E under the control of the performer. The valve disk A′ of the auxiliary stopping valve A has its stem A^2 connected with the movable member F′ of a pneumatic F, mounted on the valve casing A^3 of the auxiliary stopping valve A, and this pneumatic F is controlled by a hand lever G mounted on the hand lever E, as plainly indicated in Figs. 1, 6 and 7. The hand lever G carries a valve G′ controlling an air port *a*, leading to the interior of the hollow shaft E′ of the hand lever E, the said lever G being pressed on by a spring G^2, to normally hold the valve G in a closed position. The front end of the hollow shaft E′ is closed, while the rear end of the said hollow shaft E′ opens into a chamber H (see Fig. 7), connected by a tube I with an air chamber J formed in the casing A^3, as plainly shown in Figs. 3 and 5. A diaphragm K separates the air chamber J from a suction chamber L connected by a tube N with the main suction chamber of the instrument, as indicated in Figs. 1 and 4. The diaphragm K is connected with a valve O for connecting the suction chamber L with the port P leading to the interior of the pneumatic F, and to connect the said port P with the atmosphere by way of the outlet Q. Normally the valve O connects the interior of the pneumatic F with the atmosphere, so that the pneumatic is inflated and the movable member F′ is held extended by the usual spring F^2, to hold the valve disk A′ in an open position, and consequently the connection B is normally uninterrupted from the valve D to the motor C.

When it is desired to temporarily stop the note sheet while playing, the operator

having hold of the hand lever E with one hand simply presses the hand lever G, to open the port *a*, so that air passes into the hollow shaft E′, and from the latter, by way of the chamber H and the tube I, into the air chamber J, to exert pressure against the diaphragm K, and thereby shift the valve O, to close the outlet Q to the atmosphere and to connect the port P with the suction chamber L, so that the air is drawn out of the pneumatic F and consequently the latter collapses, whereby the valve disk A′ is moved to the seat A^4, to close the connection B, thus cutting off the air from the motor C to bring the latter to a stop. When the desired length of time has elapsed, the operator releases the pressure on the lever G, so that the spring G^2 closes the valve G′ over the port *a*, and the diaphragm K now returns to its original position, thus moving the valve O back to the position shown in Fig. 3, that is, disconnecting the port P from the suction chamber L, and connecting the port P with the atmosphere, to allow atmospheric air to pass into the pneumatic F to re-inflate the same. When this takes place the valve disk A′ is moved off its seat A^4 and the connection B is opened to allow air communication between the valve D and the motor C, to start the latter, and without the operator having shifted the valve D. It is understood that when the valve A′ moves from the open position shown in Fig. 3 to the valve seat A^4 and hence into a closed position, then the said valve A′ uncovers a port A^5 leading to the atmosphere, thus allowing atmospheric air to enter that part of the connection B leading to the motor C, to insure quick stopping thereof.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

A piano player, self-playing piano or like instrument provided with a motor, a motor-controlling valve connected with the said motor for controlling the same, a tempo lever for controlling the said motor-controlling valve, a hollow shaft for the said tempo lever and having an air port, a stopping valve in the connection between the said motor and motor-controlling valve and controlling a port to the atmosphere, a pneumatic for actuating the said stopping valve and having a pneumatic valve, a connection between the said pneumatic valve and the said hollow shaft, and a manually-controlled valve mounted on the said tempo lever and controlling the said air port in the hollow shaft.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HERMANN MEYER.

Witnesses:
THEO. G. HOSTER,
EVERARD B. MARSHALL.