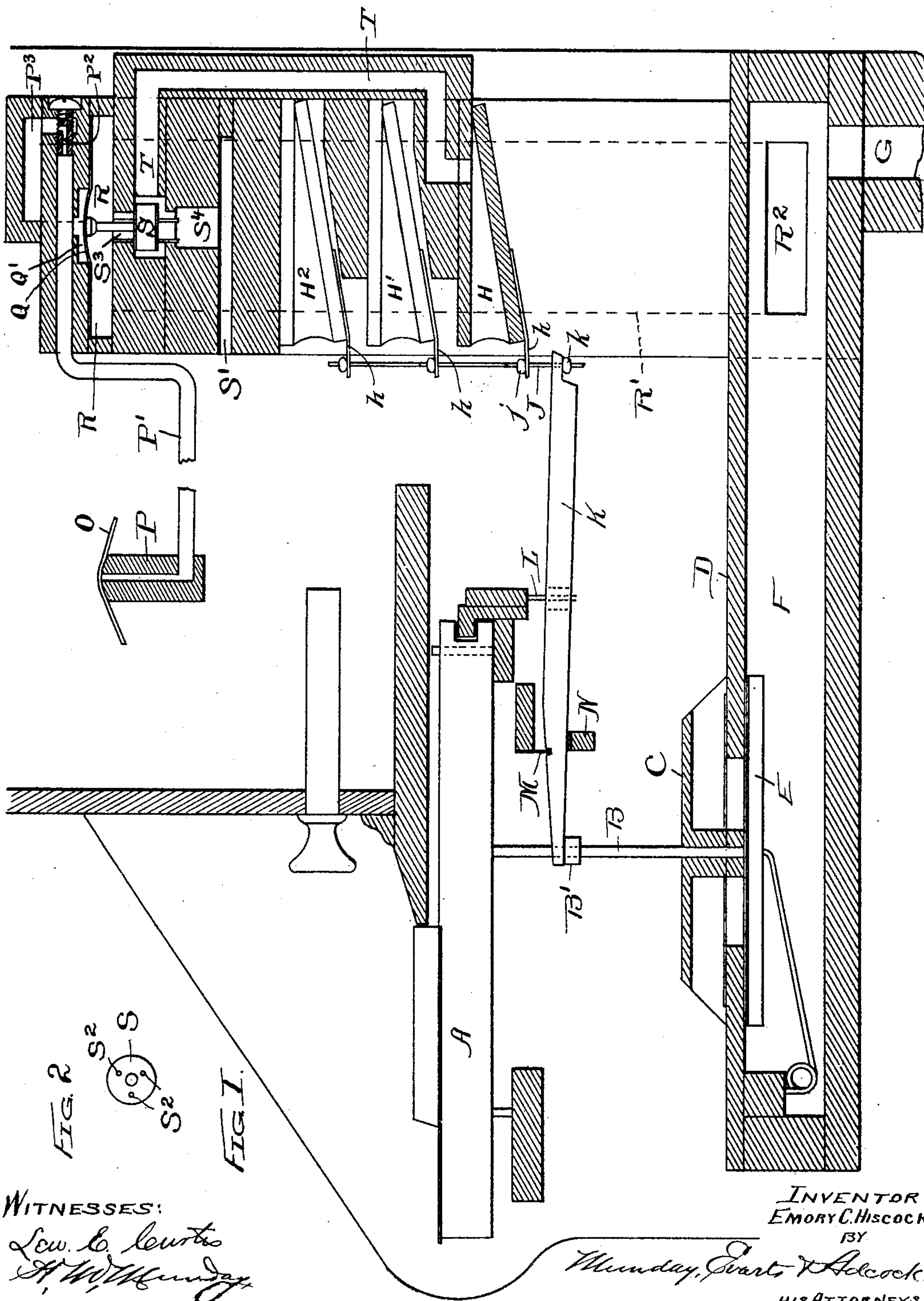


No. 638,245.

Patented Dec. 5, 1899.

E. C. HISCOCK.
SELF PLAYING ORGAN.
(Application filed June 23, 1899.)

(No Model.)



UNITED STATES PATENT OFFICE.

EMORY C. HISCOCK, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE W. W. KIMBALL COMPANY, OF SAME PLACE.

SELF-PLAYING ORGAN.

SPECIFICATION forming part of Letters Patent No. 638,245, dated December 5, 1899.

Application filed June 23, 1899. Serial No. 721,525. (No model.)

To all whom it may concern:

Be it known that I, EMORY C. HISCOCK, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Self-Playing Organs, of which the following is a specification.

This improvement, which relates to self-playing organs, is designed mainly to increase the effective area of the sounding-board without increasing its size. To this end instead of arranging the pneumatics, by which the reed-valves are opened, in a chest and mounting such chest upon the back portion of the sounding-board, as in the customary construction, so that the effective area of the board will be diminished by the extent to which it is covered by the chest, I now place said pneumatics in the open air and entirely out of contact with the board, and thereby greatly increase the area of surface which aids in the production of the sound-waves. I also connect the pneumatics to the exhaust of the organ by passages which, instead of entering the valve or exhaust chamber below the sounding-board through openings in the board in the usual manner, are extended down at each end of the board and far enough to connect with the ends of the exhaust-chamber, thus obviating the cutting of an opening in the board and leaving it intact, so that its effectiveness as a sounding-board is not impaired, as it is in prior constructions.

A further feature of improvement is the locating of the levers, whereby the reed-valves are operated while the organ is playing automatically, above the sounding-board instead of below it, as in the customary construction, and the connecting of said levers to the stickers used in manual playing. By this change I further avoid cutting perforations in the board for the passage of the wires by which power has heretofore been carried from the pneumatics to the levers.

These and further features of invention are fully illustrated in the accompanying drawings, in which I show, at—

Figure 1, a vertical section of that part of an organ to which my invention relates, and at Fig. 2 a plan of the valve employed to control the pneumatics.

In said drawings, A represents one of the keys used in playing the organ manually; B, the sticker-pin, actuated by said key; C, the reed-board; D, the sounding-board; E, the valve controlling the reed and opened by said sticker; F, the exhaust-chamber below the sounding-board and in which the valves E are located, and G the passage leading from said chamber to the exhaust apparatus of the organ. The reed-board may have reed-cells facing both front and rear, as shown.

A portion of the pneumatics forming part of the automatic playing mechanism is shown at H H' H², one being in section. These pneumatics are arranged with their movable sides lowermost, and each movable side is provided with a projecting arm *h*, setting under a button *j* on a vertical wire J, passing through one end of a rocking lever K and provided with a second button *k* below the lever. A stationary guide-pin L passes through the lever, as shown, and the lever rocks upon a fulcrum M, located above it and at one side of its center. A felt-covered rest N is located under the lever and almost directly below the fulcrum. The end of the lever beyond the fulcrum is forked or otherwise adapted to bear upon a button B' on the sticker-pin. With this construction it will be seen that when the pneumatic H is exhausted, its normal condition being one of expansion at the atmospheric pressure, it will collapse and lift the end of lever K to which it is connected, thereby depressing the farther end of the lever and acting through the sticker-pin to open valve E and cause the speaking of the reed controlled by the valve.

The series of pneumatics are exposed to the outer air, as plainly shown by the drawings, so that they are all readily accessible for replacing or repairs. As plainly seen, also, they are entirely above and have no contact with the sounding-board, and consequently do not impair or in any way affect the operation of the latter.

The pneumatics are controlled by the music-sheet O and tracker-range P. The ducts P' of the range are normally exhausted of air by means of bleeding-passages P², connecting them with the exhaust-chamber P³, and each communicates with a chamber Q' over a mem-

brane-motor Q. The chamber R below the membrane may be common to the series of membranes and is constantly exhausted, being connected with the chamber F by passages R' at each end of the sounding-board and opening into chamber F at the end of the latter and below the sounding-board, as seen at R². The chamber P³ may also be common to all the tracker-ducts and be exhausted by passages R'. The membrane Q when air is admitted to its controlling-duct depresses a double-faced valve S, inserted in and acting to regulate the passage T, connecting the pneumatic H with chamber R, and when thus depressed said valve opens communication between the pneumatic and said chamber, so that the former is at once exhausted and collapses, thereby operating lever K, as already set forth. In its normal position, which is that illustrated, said valve shuts off communication between the exhaust-chamber and the pneumatic and allows the latter and that portion of passage T below the valve to fill with air at natural pressure through the passage S', extending from the valve-chamber to the outer air.

It will be noticed that by the construction shown an open unobstructed space extends from the reed-board to the back of the instrument. This space affords ready access from the rear to the reeds, whose cells open to the back of the instrument, and obviates the objection heretofore existing to rearwardly-opening cells.

The valves S are two-faced and are guided in their movements by vertical pins S², secured to the body of the valve and at such distances from its center as will enable them to bear against the walls of the air-passages S³ and S⁴ above and below the valve. These pins are preferably three in number, spaced as shown and passed vertically through the valve, with their ends projecting both above and below the same.

I claim—

1. The self-playing organ having a pneumatic-action located above the sounding-

board and connected to the exhaust by a windway or trunk passing outside the sounding-board and connecting with the exhaust below the plane of the board, substantially as specified.

2. The self-playing organ having a pneumatic-action located above and out of contact with the sounding-board, and connected to the main exhaust-chamber by an end windway or windways entering said chamber at the end, and below the board, substantially as specified.

3. The self-playing organ having a pneumatic-action for operating its sounding devices, located over the rear of the sounding-board, and out of contact therewith, and connected to the exhaust-chamber of the organ by an end windway or windways entering the exhaust-chamber at the end, whereby an open space is left over the board and under the action giving access to the reeds, substantially as specified.

4. The self-playing organ the pneumatics for operating the valves of the sounding devices whereof are located above and out of contact with the sound-board and are mechanically connected to and operate said valves through the sticker-pins, and are also connected to the exhaust-chamber by windways entering said chamber at the end, whereby the effective area of the board is much increased and opportunity for reaching the reeds from the back of the organ is afforded, substantially as specified.

5. The self-playing organ having a reed-board with rearwardly-opening cells, and having its pneumatic-valve-operating action located over the rear of its sounding-board, and also having a free unobstructed space above the board and under the action, rendering such reed-cells convenient of access from the rear, substantially as specified.

EMORY C. HISCOCK.

Witnesses:

H. M. MUNDAY,
EDW. S. EVARTS.