

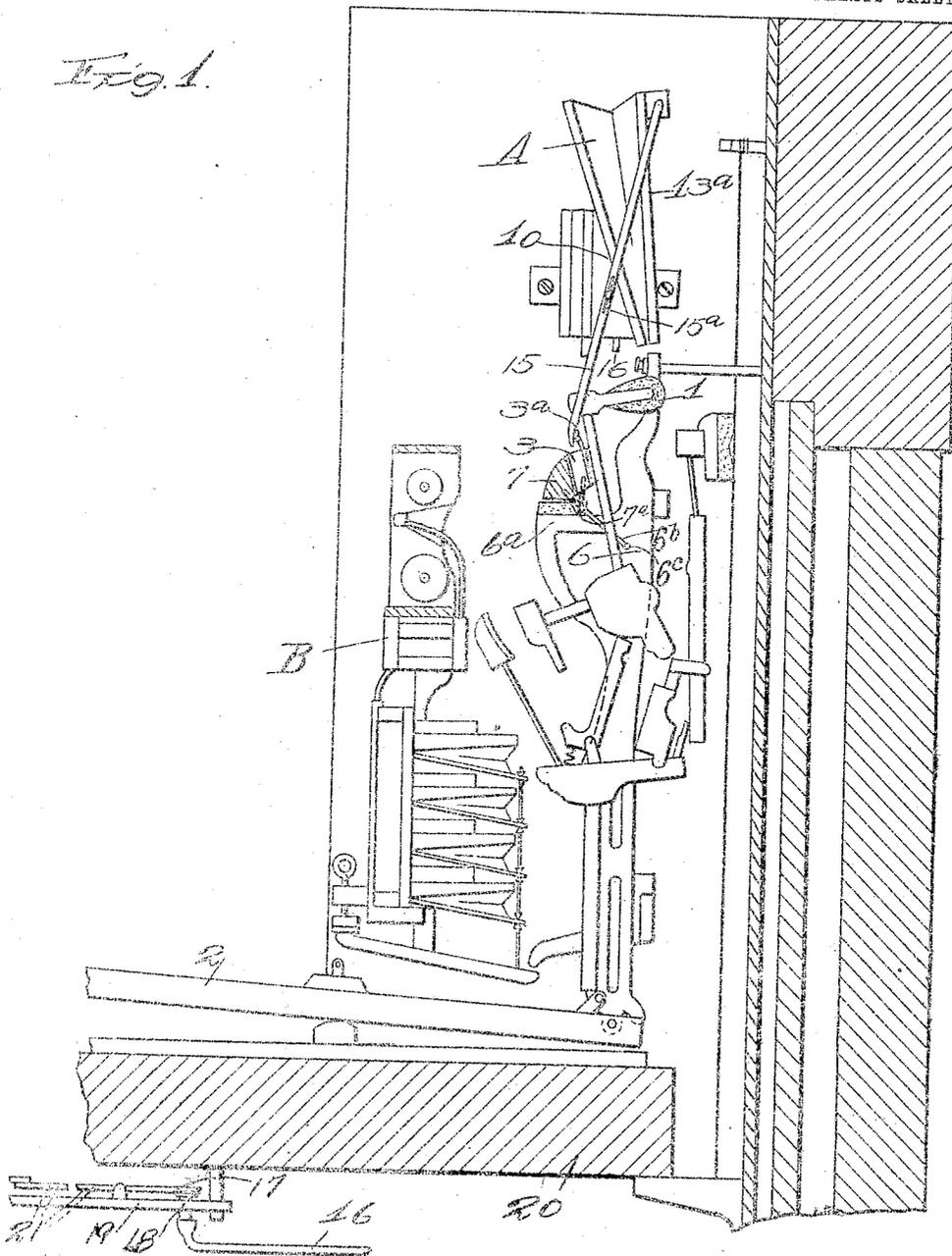
E. SWANSON.
 HAMMER REST RAIL OPERATING DEVICE FOR PLAYER PIANOS.
 APPLICATION FILED JUNE 30, 1913.

1,082,369.

Patented Dec. 23, 1913.

2 SHEETS—SHEET 1.

Fig. 1.



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Inventor:
 Emil Swanson.

by *Burton Burton*

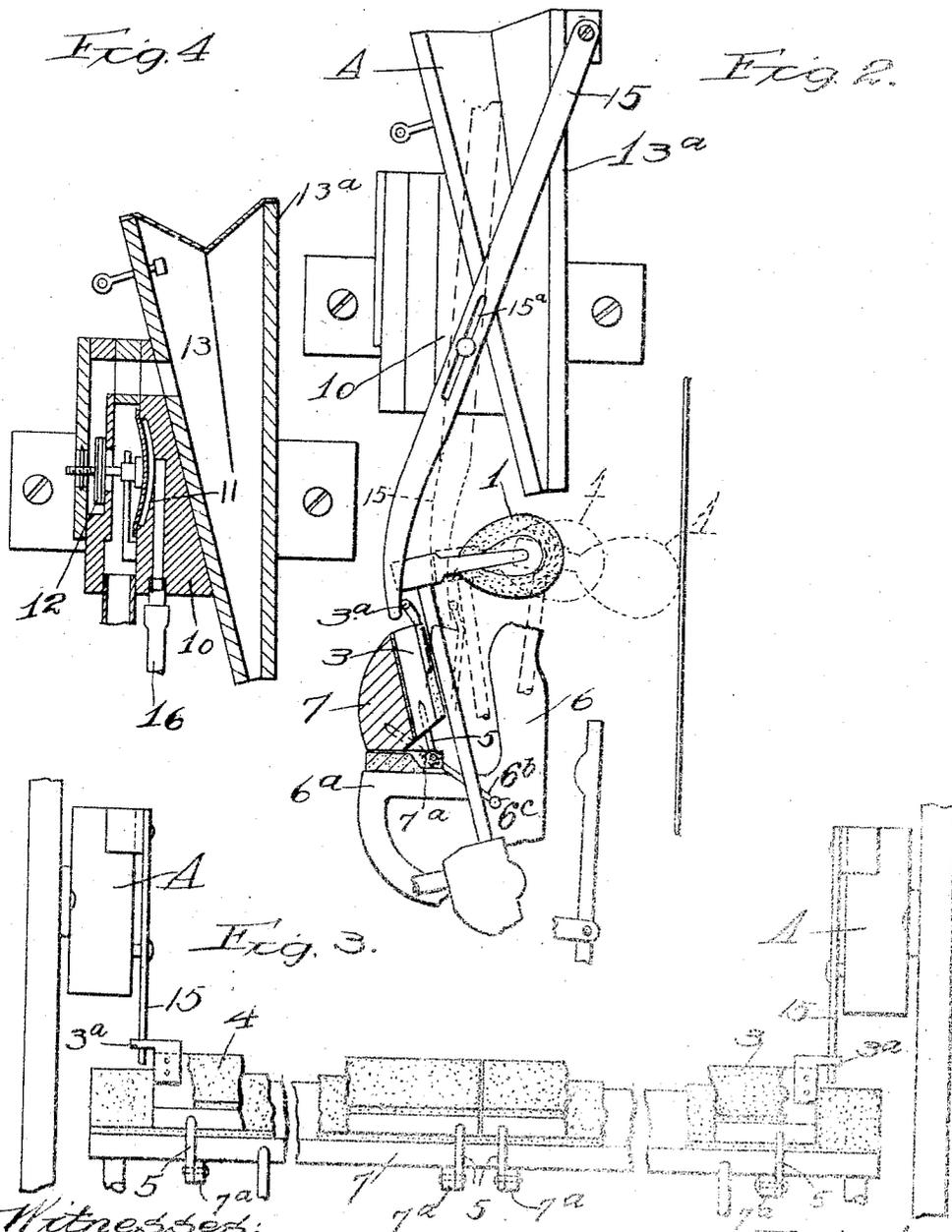
his Attys.

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UNITED STATES PATENT OFFICE.

EMIL SWANSON, OF STEGER, ILLINOIS, ASSIGNOR TO STEGER & SONS PIANO MANUFACTURING COMPANY, OF STEGER, ILLINOIS, A CORPORATION OF ILLINOIS.

HAMMER-REST-RAIL-OPERATING DEVICE FOR PLAYER-PIANOS.

1,082,369.

Specification of Letters Patent. Patented Dec. 23, 1913.

Application filed June 30, 1913. Serial No. 778,572.

To all whom it may concern:

Be it known that I, EMIL SWANSON, a citizen of the United States, residing at Steger, in the county of Will and State of Illinois, have invented new and useful Improvements in Hammer-Rest-Rail-Operating Devices for Player-Pianos, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

The purpose of this invention is to provide an improved construction of the devices for producing soft pedal effect in a player piano by the movement of the hammer rest rail under the control of the operator by means of push buttons or keys which control pneumatic devices for moving the hammer rest rail.

It consists in the elements and features of construction shown and described as indicated in the claims.

In the drawings:—Figure 1 is a vertical fore-and-aft section of a portion of a piano embodying this invention. Fig. 2 is an enlarged detail view of the parts specifically constituting the invention. Fig. 3 is a rear elevation of a portion of the action comprising the hammer rest rail, showing the division of the hammer rest rail and the relative position of the operating devices. Fig. 4 is a detail vertical fore-and-aft section of one of the pneumatic units for operating the hammer rest rail at a vertical plane through the axis of the primary pneumatic valve.

The drawings show a piano action of customary construction, comprising the hammers, 1, in their usual relation to the string board and manual (represented by one of the manual keys, 2). The hammer rest rail is shown divided, comprising two members, 3 and 4, the former for the lower or bass half and the latter for the upper or treble half of the instrument, each of said members being hinged to the operating bar, 7, by means of the arms, 5, 5, near the ends of the hammer rest rail members, said arms being pivoted at their lower ends to lugs, 7^a, on the bar, 7. Both hammer rest rail members, 3 and 4, are lodged upon the main hammer-rest-rail operating bar, 7, which extends the entire length of the piano action and is lodged upon the bracket, 6^a, of the action, 6, to which said bar, 7, is pivotally attached by means of the arms, 6^b, rigid

with said bar and pivoted to said frame at 6^c. The bar, 7, is connected at its opposite ends in the usual manner with the soft pedal for operation of the hammer rest rail by the foot when the instrument is used for manual playing. These customary connections for operating the hammer rest rail are not shown in the drawings, but may be of any customary construction. For operating the hammer rest rail during automatic playing, there is mounted upon each end of the case a pneumatic unit, A, the two units being in all respects identical in construction, so that the same description will suffice for both. They each comprise a block, 10, chambered and provided in its chambers with a primary pneumatic, 11, and valve, 12, operated thereby, and passages leading to a motor pneumatic, 13, mounted upon the block, as seen clearly in Fig. 4. The entire pneumatic unit is mounted, as stated, upon the end of the case at a position above the hammer action and substantially within the fore-and-aft depth of the space apportioned to the hammer action; and by being thus positioned, these pneumatic units are accommodated without interfering in any way with the hammer action, and without protruding or requiring space farther forward than is required for the hammer action itself, so that all space forward of the hammer action is available, as is frequently desirable, for positioning the player action, including the roll carriage, tracker box and pneumatic action below the same, all conventionally represented at B in Fig. 1.

The motor pneumatic, 13, is mounted, as shown, with its moving member, 13^a, at the rear, and is preferably hinged at the lower end, so that its actuating movement is derived from the upper end. On the side of the block, 10, there is fulcrumed a lever, 15, which is pivoted at its upper end to the upper end of the moving member, 13^a, of the motor pneumatic, 13, and is slidable on its fulcrum by means of its elongated pivot slot, 15^a, and at its lower end engages a finger, 3^a, which is secured to the hammer rest rail and projects up therefrom for such engagement of the lower end of the lever, 15. The primary pneumatic, 11, is connected by a duct, 16, with a vent opening controlled with a valve, 17, which is mounted in any position convenient for manipulation by the operator. As illustrated, the duct terminates in

a valve block, 18, mounted upon a slide, 19, supported under the piano foundation board, 20, and the valve, 21, for controlling the vent is mounted upon said slide.

5 The construction, mounting and positioning of the slide, 19, for supporting the valve, 21, is the subject matter of my co-pending application, Serial No. 775,860, filed June 26, 1913. The two valves 21, 21, from the
10 two pneumatic units, respectively, whose motor pneumatics actuate the upper and lower hammer rest rail members, respectively, being positioned side by side on the slide, 19, can be operated simultaneously or separately
15 by the two fingers of the performer, and who will thereby control the expression of the base and treble parts at will during the automatic playing of the instrument.

I claim:—

20 1. In a player piano, in combination with the piano action comprising the hammer rest rail thereof, a pneumatic unit comprising a block having mounted on it a primary pneumatic and a valve actuated thereby,
25 and a motor pneumatic controlled by the valve; the motor pneumatic being positioned vertically for fore-and-aft movement of its moving wall, and having said moving wall pivoted at its lower end for operating movement at its upper end, the entire pneumatic
30 unit being mounted above the piano action substantially within the fore-and-aft depth

of the space apportioned to the hammers and hammer rest rail of said action; a lever fulcrumed between its ends on the block, 35 having its upper end connected with the moving member of the motor pneumatic, and its lower end engaging the hammer rest rail of the piano action for moving the latter rearward on collapse of the motor pneu- 40 matic.

2. In a player piano, in combination with the case and piano action comprising the hammer rest rail thereof, a pneumatic unit 45 mounted in the case above the piano action and substantially within the fore-and-aft depth of the space apportioned to the hammers and the hammer rest rail of the piano action, comprising a block and a motor pneumatic mounted thereon, having its mov- 50 ing member at the rear side thereof and pivoted at the lower end; a lever slidably fulcrumed on the block and having its upper end connected to the upper end of said moving member and its lower end engaging the 55 hammer rest rail.

In testimony whereof, I have hereunto set my hand at Steger, Illinois, this 25th day of June, 1913.

EMIL SWANSON.

Witnesses:

H. C. WEHLAN,
GEORGE RINGER.