C. WARREN.
INTERIOR PLAYER PIANO.
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1,011,293.

2 SHEETS-SHEET 2.

Witnesses:
Frank Blanchard
Norman L. Burton

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By: P. E. Sawyer and P. T. Burton
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To all whom it may concern:  

Be it known that I, Charles Warren, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented and useful improvements in Interior-Player Pianos, of which the following is a specification, reference being had to the drawings forming a part thereof.

The purpose of this invention is to provide an improved construction of a piano having interior devices for automatic playing, with particular reference to so positioning the various elements of the automatic mechanism as to avoid obstructing the sound or such access to the piano strings and action as is necessary in tuning and other ordinary care of the instrument.

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

In the drawings:—Figure 1 is a front elevation of a piano equipped with this invention having the front panels of the case removed, a portion of the pumpers being broken away to show the parts behind. Fig. 2 is a detail section at the line 2–2 on Fig. 1.

The drawings represent a customary form of upright piano having a pneumatic action for automatic playing, which is seen in front elevation at A, positioned above the manual keys at the rear part thereof. The controlling mechanism comprising the tracker, B, roll carriage, C, and rolls, D, D', therexon and motor, E, of familiar pneumatic type, is positioned above the pneumatic action, A, for operating the pneumatic action there are provided customary pumpers, F, F', and two exhaust chambers, G, G, or retaining bellows. The pumpers are mounted under the rear portion of the manual as close up against the foundation board, K, as possible, allowing only room for vibration of the moving members of the pumpers, the lower wall of the pumpers being the fixed wall and carried by rigid hangers, f, f, suspending it from the foundation board, K, the upper wall being the moving wall and playing in the triangular space between the lower fixed wall and foundation board. The exhaust chambers or receiving bellows are located in upright position at the two ends of the case substantially beyond the range of the manual, in a space which is otherwise unappropriated in an ordinary upright piano case, laterally beyond the string board, so that the lower end portion of the string board having the pins to which access is necessary for tuning, is unobstructed so far as the several bellows or other parts relating to the automatic devices are concerned. In order that both pumpers may operate upon both exhaust chambers and their respective retaining bellows, the two exhaust chambers, G, G, are connected by an air trunk, L, which extends longitudinally of the instrument above and at the rear of the pumpers; and each pumper is connected by a short air trunk, L', with the exhaust chamber at the corresponding end of the instrument.

In order to afford ready access to the upper portion of the string board and the hammer action, the controlling mechanism comprising the tracker, roll carriage and rolls and motor has those several elements mounted together as a unitary structure upon a longitudinally extending carrying bar, N, provided at its opposite ends with lever arms, N', pivotally connected at n', to the two ends of the case so that the entire operating mechanism constituting said unitary structure may be swung downwardly from operative position so as to rest immediately above the manual, thus exposing, without obstruction, all the upper part of the string board and hammer action. The pneumatic action A, is also constructed for easy removal from operative position so as to give free access to the portion of the string board immediately behind it, for any purpose for which such access may be required, although, as a matter of fact, said pneumatic action is positioned in front of the strings intermediate their ends where no access to them is required for tuning or attention in the ordinary care of the piano. Such removability of the pneumatic action, however, is attained by erecting a shelf or base P, by means of upright posts or legs, P', extending from the foundation board, K, opportunity for reaching said foundation board between the manual keys being obtained at a sufficient number of points where the keys are customarily diverged for reaching proper terminal positions at their rear ends for engagement with the hammer action. The shelf may be rigidly or removably secured in position by any convenient means. Upon this shelf the lower ends of the two end chambers, A', A'.
of the pneumatic action, A, are, stepped, being checked in all horizontal directions by cleats, P₂, P₃, on the upper surface of the shelf, and being held firmly to the shelf by hooks, P₃.

I claim:

1. In combination with a manually operable upright piano, an interiorly positioned pneumatic action for automatic playing, and exhaust chambers or receiving bellows for operating such pneumatic action located in upright position at the ends of the system of manual keys beyond the string-occupied portion of the lower end of the string board.

2. In combination with a manually operable upright piano, an interiorly positioned pneumatic action for automatic playing; exhaust chambers for operating such pneumatic action located in upright position at the ends of the system of manual keys beyond the string-occupied portion of the lower end of the string board, and pumps for such exhaust chambers located horizontally between the same immediately below the manual.

3. In combination with a manually operable upright piano, an interiorly positioned pneumatic action for automatic playing; exhaust chambers for operating such pneumatic action located in upright position at the ends of the system of manual keys beyond the string-occupied portion of the lower end of the string board; pumps for such exhaust chambers located side by side in horizontal position between the exhaust chambers and immediately below the manual, each pumper being directly connected with the exhaust chamber at the corresponding end of the manual, and an air trunk connecting the two exhaust chambers at the rear side of such chambers.

In testimony whereof, I have hereunto set my hand, in the presence of two witnesses, at Chicago, Illinois, this 7th day of August, 1909.

CHARLES WARREN.

In the presence of—

JULIA S. ABBOTT,
CHAS. S. BURTON.