

C. E. PETERSON.
PNEUMATIC PIANO PLAYER.
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Fig. 1.

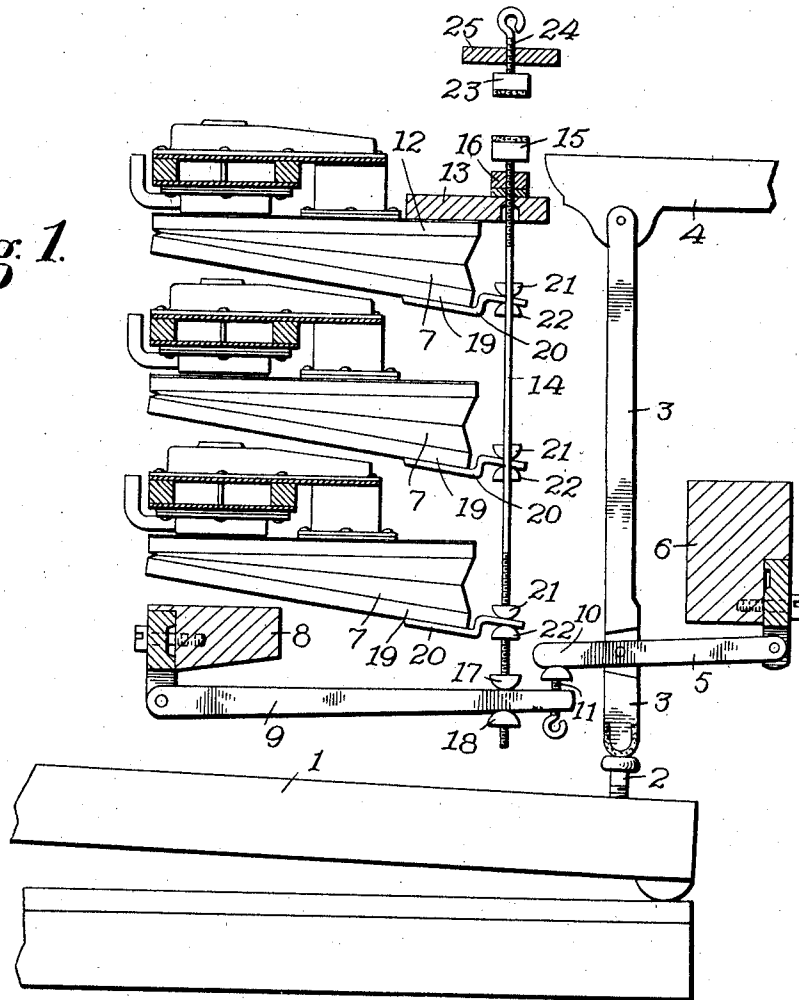
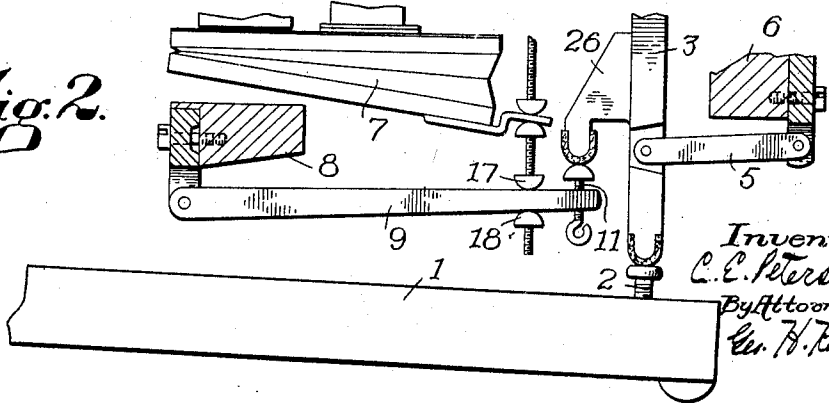


Fig. 2.



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PNEUMATIC PIANO-PLAYER.

1,389,694.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CLAUS E. PETERSON, a citizen of the United States, residing at Worcester, in the county of Worcester and Commonwealth of Massachusetts, have invented a new and useful Improvement in a Pneumatic Piano-Player, of which the following, together with the accompanying drawings, is a specification.

My present invention relates to a new and improved connection between the wippen of a piano action and the pneumatically operated bellows of a piano player, comprising the construction hereinafter described, the novel features being pointed out in the appended claims.

Referring to the accompanying drawings, Figure 1 represents a preferred form embodying my invention.

Fig. 2 represents a modification.

Like reference characters refer to like parts in the different figures.

Referring to the accompanying drawings, 1 denotes one of the keys of a piano having at its inner end a screwthreaded capstan 2, upon which the usual abstract 3 of a piano action rests. The abstract 3 is pivoted at its upper end to a wippen 4 and near its lower end is pivotally connected with a lever 5, pivotally supported upon a rigid portion 6 of the framework of the piano. The pneumatic action comprising a series of motor bellows 7, three of which are shown in Fig. 1, is supported in the usual manner in a framework, not shown, which is made removable from the piano, as is customary in pneumatic playing actions. Pivotally attached to a bar 8 of the removable framework is a lever 9 which extends beneath the extended end 10 of the lever 5. The lever 9 carries at its end an adjusting screw 11. The pneumatic motor bellows 7 are arranged in tiers one above the other, and the stationary leaf 12 of the upper tier of bellows carries a guide block 13, through which pass the vertically slidable striker wires 14. All the striker wires 14 are of the same length and carry at their upper screwthreaded ends nuts 15 and 16. The lower ends of the striker wires 14 are also screwthreaded and carry nuts 17 and 18 which contact with the lever 9. Attached to the movable leaves 19 of the motor bellows are arms 20 having holes near their free ends through which the striker rods 14

pass. The striker rods 14 are provided with screwthreaded sections corresponding with the arms 20 with which they are designed to connect. This connection is accomplished by placing upon the rods 14 leather nuts 21 and 22 just above and below the arms 20.

Whenever one of the motor bellows 7 is actuated its arm 20 will slide freely upon one of the striker rods 14 unless the leather nuts 21 and 22 are placed upon the striker rod. Whenever these nuts 21, 22 are present, however, the movement of the movable leaf 19 will cause the striker rod connected therewith to be lifted, which will in turn lift the free end of the lever 9 and by the contact of the adjusting screw 11 with the extended end 10 of the lever 5 will cause the abstract 3 to be lifted, thereby rocking the wippen 4 and actuating in the usual and well known manner the string striking mechanism of the piano. When the abstract 3 is actuated in the manner above described, by the collapsing movement of any one of the motor bellows, the abstract will be lifted off the capstan screw 2 and whenever the abstract is actuated by the key 1 the extended end 10 of the lever 5 will be lifted off the adjusting screw 11.

By the construction embodying my improvement I am enabled to secure a delicate adjustment of the pneumatic operating mechanism, with the note producing mechanism of the piano. This adjustment is accomplished by adjusting the nut 16 on the striker wire 14 to limit the downward drop of the movable leaf of the motor bellows with which the striker wire is connected. The adjustment of the lever 9 relatively to the striker wire is accomplished by adjustment of the nuts 17 and 18, and when these have once been adjusted a further and more delicate adjustment between the lever 9 and the lever 5 is accomplished by means of the screw 11. The nut 15 is arranged to contact with a block 23 carried upon the end of an adjusting screw 24 which is held in a bar 25 of the framework of the piano. The screws 24 are adjusted to limit the upward throw of each of the striker wires 14, and consequently the upward movement of the movable leaves 19 of the pneumatic bellows with which said striker wires are connected by the nuts 21 and 22.

In Fig. 2 I have shown a modification which consists in attaching to the abstract

3 a block 26 extending over the adjusting screw 11, causing the abstract 3 to be lifted by the upward movement of the free end of the lever 9. In the modified form shown in Fig. 2 the lever 5 serves only to pivotally connect the lower end of the abstract 3 with the rigid framework of the piano, the extension 10 being omitted.

I claim,—

1. In a pneumatic piano player, a series of pneumatic motors each having a movable leaf, arms extending from said movable leaves, a series of levers pivoted to a fixed framework and extending beneath said arms, striker wires of uniform length connecting said arms and said levers, stops for limiting the upward movement of said striker wires, and means for operatively connecting the free ends of said levers with the sound producing mechanism of a piano.

2. In a pneumatic piano player, a series of motor pneumatics horizontally disposed, arms extending from each of said pneumatics, levers pivoted at one end to a fixed framework and extending beneath said arms, wires connecting said arms with said levers and means independent of said levers for limiting the longitudinal movement of said wires in a downward direction, and means for operatively connecting the free ends of

said levers with the sound producing mechanism of a piano.

3. In a pneumatic piano player, a series of motor pneumatics horizontally disposed, arms extending from said pneumatics, levers pivoted at one end to a fixed framework and extending beneath said arms, wires connecting said arms with said levers, means independent of said levers for limiting the upward movement of said wires, and means for connecting the free ends of said levers with the sound producing mechanism of a piano.

4. In a pneumatic piano player, a series of motor pneumatics horizontally disposed, arms extending from each of said pneumatics, levers pivoted at one end to a fixed framework and extending beneath said motor pneumatics, striker wires of equal length connecting said arms with said levers, means for limiting the longitudinal movement of said striker wires in each direction, and means for operatively connecting the free ends of said levers with the sound producing mechanism of the piano.

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Witnesses:

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