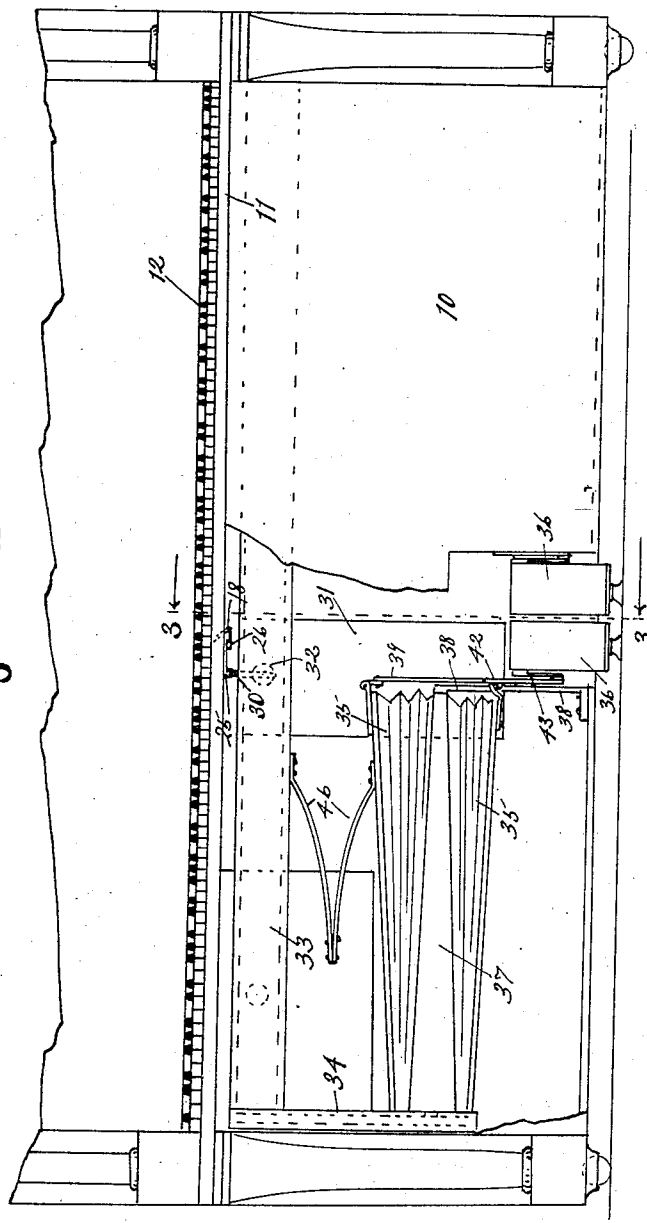
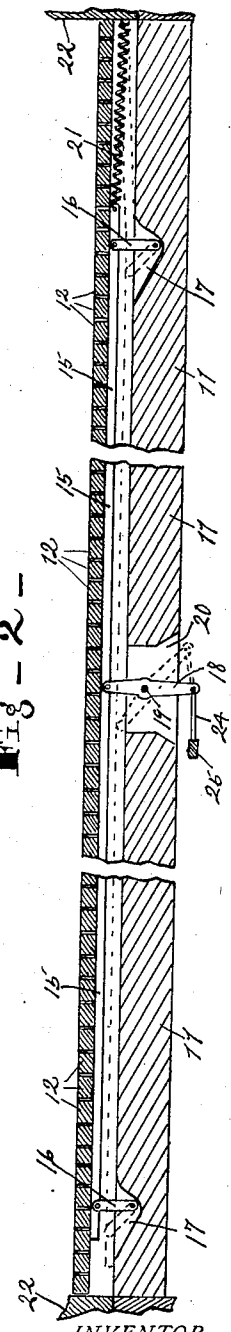


Fig - 1 -



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Fig - 2 -



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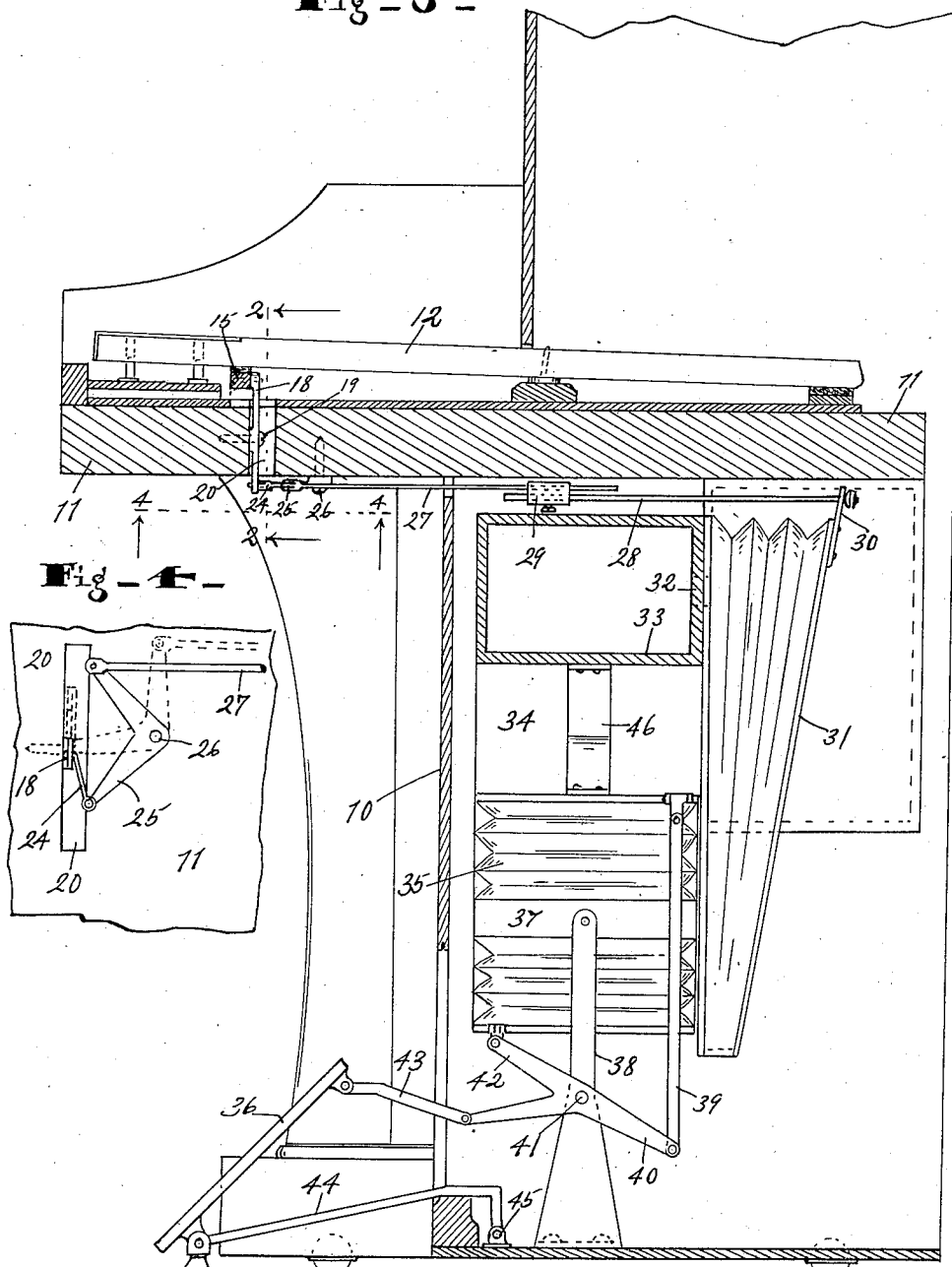
1,014,364.

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PNEUMATIC PIANO.
APPLICATION FILED FEB. 6, 1911.

Patented Jan. 9, 1912.

2 SHEETS-SHEET 2.

Fig - 3 -



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UNITED STATES PATENT OFFICE.

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PNEUMATIC PIANO.

1,014,364.

Specification of Letters Patent.

Patented Jan. 9, 1912.

Application filed February 6, 1911. Serial No. 606,696.

To all whom it may concern:

Be it known that I, WILLIAM G. BETZ, a citizen of the United States, and a resident of Chicago Heights, county of Cook, and State of Illinois, have invented a certain useful Pneumatic Piano; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings.

The object of this invention is to provide an improved means for locking the ordinary finger keys of a player piano so that they will not move while the piano is being pneumatically operated.

The nature of the invention will be understood from the accompanying drawings and the following description and claims.

In the drawings Figure 1 is a front elevation of the lower part of a player piano, the front plate of the lower left hand corner portion being broken away. Fig. 2 is a vertical section on the line 2—2 of Fig. 3 longitudinally of the piano through the finger keys and adjacent parts, showing the key lock in locking position by full lines and in unlocking position by dotted lines. Fig. 3 is a vertical transverse section through the lower portion of the piano on the line 3—3 of Fig. 1. Fig. 4 is a section on the line 4—4 of Fig. 3.

In the drawings 10 represents the front wall of the piano casing, 11 the key board, and 12 the ordinary finger keys. Beneath the forward portion of the ordinary finger keys a locking bar 15 is located, as shown in Fig. 2, and extends entirely across the piano longitudinally, and is pivoted at each end to a link 16 which is pivoted to the key board 11 within the recesses 17, and about midway said locking bar 15 is pivoted on the upper end of a lever 18 which is fulcrumed at 19 to the key board 11 in an opening 20 which extends through the key board so that said lever projects below the key board, and by this means the locking lever is moved from the locking to the unlocking position, that is, from the full line to the dotted line position shown in Fig. 2. The locking bar is preferably lined with felt on its upper side and it is actuated or moved into locking position against the under side and the keys 12 by a retractile spring 21 which extends from one end of the bar 15 to the end 22 of the casing. The lever 18 is actuated by a link 24, see

Fig. 4, which extends to the bell crank lever 25 fulcrumed by a pin 26 to the underside of the key board 11 and with which a rod 27 is pivoted. This rod 27 is adjustably coupled with a rod 28 by a coupling 29 and extends loosely through a hole, not shown, in an arm 30 of the bellows 31 which is the main air reservoir and in the rear portion of the piano. Said reservoir is in communication through the opening 32 with an air-chamber 33 which extends longitudinally of the piano and from which air is exhausted through a pipe 34 by the bellows 35 which is actuated by the pedal 36, and intermediate means which constitute no part of this invention, as any arrangement may be employed for exhausting the air from the air chamber 33. The bellows 35 is a double bellows having a stationary part 37 mounted on supports 38 and the upper bellows is actuated by a rod 39 connected with a bell crank lever 42 fulcrumed at 41 which has an extension arm 40. The lower bellows is operated directly by the lever 42.

A bar 43 connects the pedal with said lever 42. The lower end of the pedal is pivoted to a bar 44 which is fulcrumed at 45 to enable the pedal to be folded into the piano casing, but this constitutes no part of the present invention.

When the piano is not pneumatically operated, the reservoir 31 will be expanded in the position shown in Fig. 3, and, therefore, will actuate the bell crank lever 25 and hold it in its dotted line position, as shown in Fig. 4, and that will hold the lever 18, see Fig. 2, in its dotted line position, whereby the locking bar is kept down or away from the finger keys 12. This may be said to be the normal position of the piano and then it can be played by the fingers in the ordinary way. When, however, the piano is pneumatically operated the pedals 36 will collapse the reservoir or bellows 31 and, thereby release the spring 21, see Fig. 2. That is, it will draw the locking bar up into locking position and while the piano is pneumatically operated, the finger keys will not move.

I claim as my invention:

A pneumatic player piano including finger keys, a key board, a locking bar under the forward portion of the finger keys, means for moving the locking bar to a locking position, a lever connected with the

locking bar and extending through and fulcrumed in the key board for moving the locking bar to an unlocking position, a bell crank lever fulcrumed to the underside of the key board and connected to said unlocking lever, a bellows provided with an arm extending therefrom having an opening in it, a rod extending from the bell crank lever through said arm and enlarged beyond the arm, and means for exhausting air from the bellows, whereby when the bellows col-

lapses it will permit the locking bar to move into locking position and when the bellows expands it will move the locking bar to an unlocking position.

In witness whereof, I have hereunto affixed my signature in the presence of the witnesses herein named.

WILLIAM G. BETZ.

Witnesses:

H. C. WEHLAN,
OLGA PETERSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."