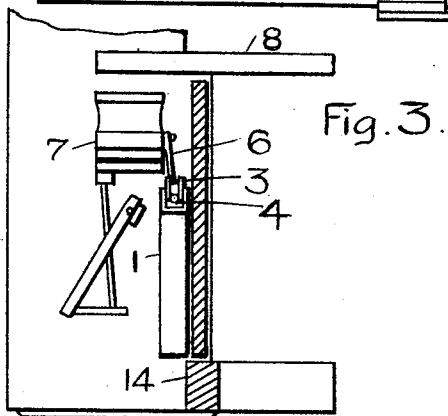
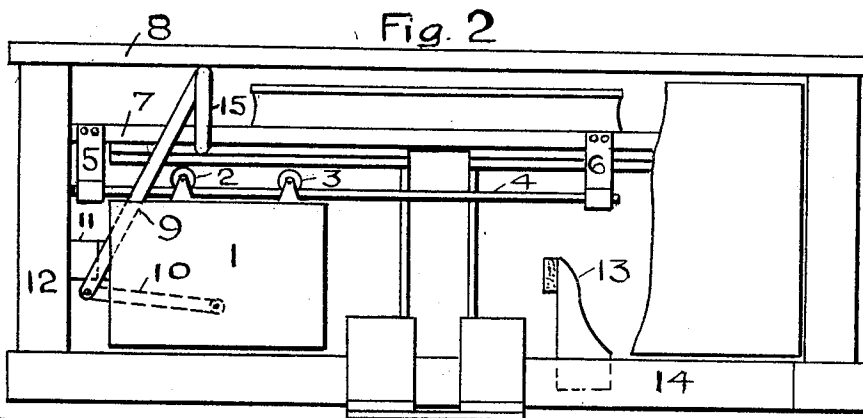
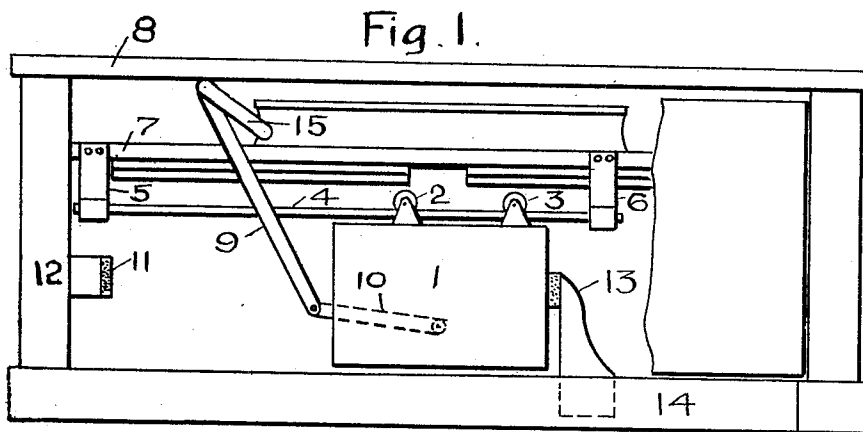


R. A. GALLY.
PIANO CASE SLIDE DOOR DEVICE.
APPLICATION FILED JUNE 6, 1912.

1,103,193.

Patented July 14, 1914.



Witnesses:
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UNITED STATES PATENT OFFICE.

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PIANO-CASE SLIDE-DOOR DEVICE.

1,103,193.

Specification of Letters Patent.

Patented July 14, 1914.

Application filed June 6, 1912. Serial No. 702,008.

To all whom it may concern:

Be it known that I, ROBERT A. GALLY, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Piano-Case Slide-Door Devices, of which the following is a specification.

The object of my invention is a slide-door for the opening in the lower frame of a player-piano case behind which door the pumper pedals are concealed, so hung as to take small space and be easy and convenient of operation.

Previous devices of this character have been more cumbersome and harder of operation.

In the drawings Figure 1 is a front view of the lower part of the piano with the lower frame or panel partly cut away to show the details of the slide-door and its attachments, the slide-door being closed; Fig. 2 is a similar front view with the slide thrown open; and Fig. 3 a view from the left end of the case with that end or "case-side" removed to expose the chest 7, door 1, and parts 3, 4 and 6.

The slide-door 1 is suspended by pulleys 2 and 3, preferably affixed on top of the door, and running on a rod or shaft 4 hung directly over the door and suspended by two hangers 5 and 6 attached to a solid part of the instrument, preferably to the bellows chest 7 when that is placed just below the key-bed 8 as in the present showing.

The use of the suspended rod 4 rather than a side braced track or rail, economizes on both vertical and front and rear space just to the rear of the upper part of the lower frame, which space is especially limited when the bellows 7 is just below the key-bed 8 to leave a clear tone space and access to the lower works of the piano.

That the rod 4 may be as short and rigid as possible, and also to clear pulley 2 from controlling arm 9 when the door is moved to its open position at left, the pulley 2 is fastened well away from the end, next to the controlling arm, thus enabling a minimum length of rod 4 between the hangers 5 and 6. The other pulley, 3, is between the end of the door away from the controlling arm and the middle of the said door.

To obtain an easy swing of the controlling arm 9, it is best to connect to the door 1 near its bottom, as by link 10.

To check the motion of door to a correct position at each end of its motion, a felted stop 11 is fastened to the return 12 or other suitable end part of the case to check the open position of the slide-door 1 and a felted stop 13 is built up from case rail 14 to which it is attached and checks the closed position of the door 1. These checks are preferably about half way between the top and bottom of the door 1, so that when the door is moved quickly, the checking of its motion at either end of the throw will not cause either end of the door 1 to jump hinges 2 or 3 on the rod 4 to cause a noise, as would be the case if the stops 11 and 13 were placed near top or bottom of the door 1.

Any suitable handle as 15 may be employed to operate the slide-door 1 by a controlling arm 9 or other convenient connections, and various modifications may be made in the application of the present invention and yet be subject to claims herein made.

What I claim as my invention is:

1. In a player-piano: a slide-door, pulleys attached at the top thereof, a rod or shaft on which said pulleys are carried, and hangers fixed to said rod, a key-bed, a bellows chest underneath and adjacent to said key-bed and above said door, pulleys and rod, and the said hangers attached to said bellows chest.

2. In a player-piano: a slide-door, pulleys attached at the top thereof, a rod or shaft on which said pulleys are carried, and hangers fixed to said rod and attached to a part of the instrument, one of said pulleys attached to said door at approximately one-third the length of the door from one end, and the other said pulley attached to said door intermediate the other end of said door and the half of its length.

3. In a player-piano: a slide-door, pulleys attached at the top thereof, a rod or shaft on which said pulleys are carried, and hangers fixed to said rod and attached to a part of the instrument, one of said pulleys attached to said door at approximately one-third the length of the door from one end, and the other said pulley attached to said door adjacent the other end of said door.

4. In a player-piano: a slide-door, pulleys attached at the top thereof, a rod or shaft on which said pulleys are carried, and hangers fixed to said rod and attached to a part of the instrument, one of said pulleys attached to said door nearer to the middle of the top of the door than to that end of the door, and the other pulley attached to said door intermediate the other end of said door and the half of its length.

5. In a player-piano: a slide-door, pulleys attached at the top thereof, a rod or shaft on which said pulleys are carried, and hangers fixed to said rod and attached to a part of the instrument, one of said pulleys attached to said door nearer to the middle of the top of the door than to that end of the door and the other pulley attached to said door adjacent the other end of said door.

6. In a player-piano: a slide-door, suspension means at its upper part, and stop means at each of its ends at the extreme position of that end at the limit of its sliding, said stops

being substantially midway the height of the door.

7. In a player-piano: a slide-door, suspension means at its upper part, and stop means at each of its ends at the extreme position of that end at the limit of its sliding, said stops being substantially midway the height of the door, and a controlling means connected to said slide-door below the level of the stop means.

8. In a player-piano: a slide-door, suspension means at its upper part, a controlling means connected to said door at the lower part of said door, and stop means at each of its ends at the extreme position of that end at the limit of its sliding, said stops being intermediate in height between the level of connection of the controlling means to said door and the suspension means.

ROBT. A. GALLY.

Witnesses:

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