E. SWANSON.

FOLDING PEDAL.

APPLICATION FILED MAR. 27, 1913.

1,074,223. Patented Sept. 30, 1913.

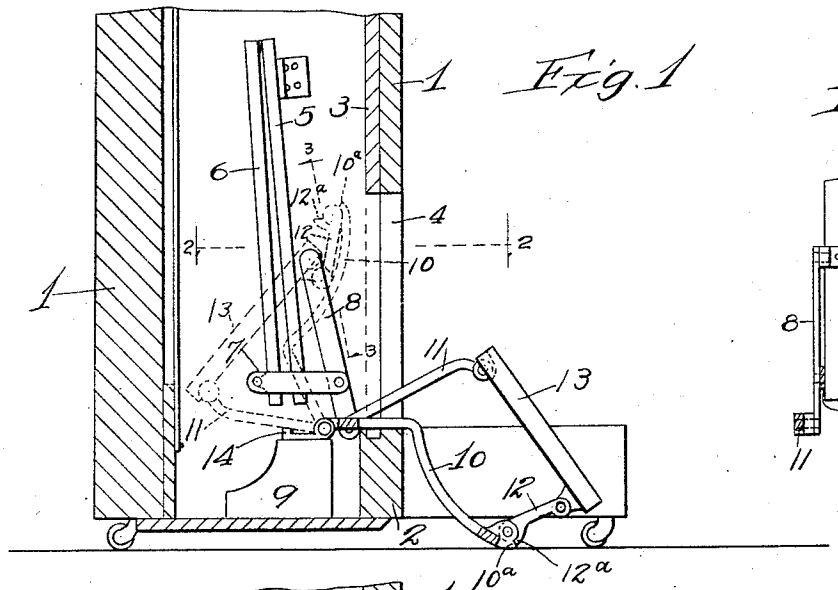

Fig. 1

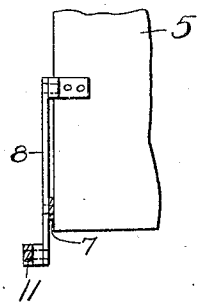

Fig. 3

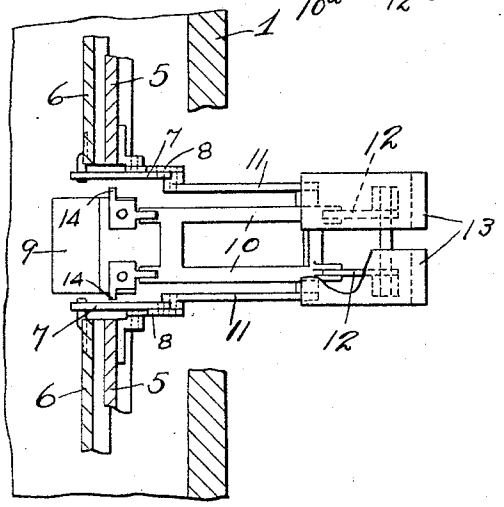

Fig. 2.

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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.

FOLDING PEDAL.

1,074,223. Specification of Letters Patent. Patented Sept. 30, 1913.

Application filed March 27, 1913. Serial No. 757,134.

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 Folding Pedals, 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 folding pedal for operating the pumpers of an automatic piano or like instrument, or to be used in similar situations.

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

In the drawings:—Figure 1 is a fore-and-aft vertical section of the lower portion of a piano case and mechanism therein embodying this invention. Fig. 2 is a section at the line 2—2 on Fig. 1. Fig. 3 is a detail section at the line 3—3 on Fig. 1.

The specific problem to the solution of which this invention is directed arises from the common form and proportions of piano cases in which there is a panel at the front below the manual which slides upward to open the case for the folding pedal construction which passes in through the opening so as to be concealed within the case behind the panel when not in use, and swings out through the opening and down to the floor for use when the pedal is held at its operative position. In the cases indicated, there is a bottom rail whose upper edge bounds the opening at the lower side, and for which a certain minimum height from the floor is requisite or desired; and since the height of the keyboard from the floor is fixed, and the sliding panel in its upward movement cannot pass a certain point on account of the manual keys extending across the plane in which the panel slides, it follows that the panel cannot be wider than half the distance from the upper edge of the bottom rail to the horizontal plane which the upper edge of the panel cannot pass without colliding with the keys; and the opening through which the folding pedal must pass into and out of the case is limited in vertical width to something less than this minimum width of the panel.

The detail construction of the devices shown and about to be described is dictated by the necessity of making the pedal support suitably rigid for service when the pedal is swung outside the case and in use, and yet permit the entire structure to swing back readily and with certainty as to its position and movements, through an opening in the front of the case, which can be closed by a panel limited in dimensions as above indicated; but it should be understood that the invention is not limited to combination with the casing having such restricted opening.

In the drawings, 1 represents the piano case.

2 is the bottom rail at the forward side of the case.

3 is the panel in the forward side of the case which closes the opening, 4, through which the pedal passes into and out of the case in its folding and unfolding movement.

5 is the fixed board of the pumper bellows extending up and down in the case and having the moving board, 6, positioned behind it and hinged at its upper end for swinging backward and forward at its lower end in the case. In order to obtain adequate distance rearwardly from the pivotal connection of the member by which the pedal operates the moving board of the pumper, said moving board is connected by a link, 7, extending forwardly past the fixed board, 5, to a lever, 8, which is hinged at its upper end on the forward side of the fixed board, and connected near its lower end to said link, so that the moving board of the bellows derives its swinging movement from a similar swinging movement of the lever, 8, which, by this construction, is positioned considerably farther forward in the case than said moving bellows board, 6. Upon a fixed member, 9, located within the case back of the bottom rail, 2, there is hinged a pedal-positioning bar or frame, 10, whose hinge-pivot is positioned substantially as high as the upper edge of the bottom rail, 2, and which extends from its pivot out forwardly across the top of the bottom rail, and thence down forwardly to the floor for supporting the pedal at operative position. The hinge-pivot of the bar or frame, 10, is far enough rearward of the bottom rail so that when the said bar is folded up to carry the pedal into the case, it can pass entirely into the case without being swung back of its said hinge pivot. To the lower end of

the lever, 8, there is pivoted at one end a bellows-operating link, 11, and to the outer or floor-supported end of the bar or frame, 10, there is pivoted a short link, 12. The pedal, 13, is pivotally connected at its toe end to the link, 11, and at its heel end to the link, 12. The link, 12, is constructed so as to be stopped in swinging about its pivot to the bar or frame, 10, with an outward and upward trend, so that it positions the heel pivot of the pedal at a suitable distance above the floor. This is conveniently effected by coöperating shoulders, 10^a and 12^a, on the bar, 10, and link, 12, respectively. Other means for effecting the stoppage of the link at the proper position may readily be substituted.

With the construction described, when the frame or bar, 10, is at its outer position resting upon the floor, the pedal is properly positioned for operating the pumper by means of the link 11. When the frame or bar, 10, is swung up rearward about its pivot to the fixed member, 9, after it reaches a certain position in the upward swing, the weight of the pedal causes its heel end to swing about the pivot of the link, 12, to the bar, 10, said link and bar folding together, so that, whereas, at the floor position the most extended member of the construction is the pedal, at the position resulting from the movement last described the most extended part is the bar, 10; and whereas, if the pedal had remained at its relatively extended position with respect to the bar, the total structure would not have been passed in through the opening, 4, it readily passes through that opening when the pedal has dropped, so that the end of the frame or bar, 10, is the most extended part requiring provision for passage through said opening. In the movement described, of the pedal swinging at its heel about the pivot of the link, 12, the movement of its toe end is accommodated readily by the swinging of the link, 11, about its pivot to the lever, 8. And in the further rearward and upward swinging movement of the bar, 10, the entire structure folds back into the case in the position shown in dotted line in Fig. 1. To stop the parts at the proper position so that they may be readily folded outward again for use, a stop, 14, may be provided in the rear part of the case which is reached by the toe end of the pedal or by the link, 11, at the position at which the inward folding movement should be arrested.

I claim:—

1. In combination with a case, a fixed member and a movable member within the case; a pedal-controlling bar hinged at one end to the fixed member and mounted to swing about its hinge pivot from a position wholly within the case to a position at which its free end is outside the case; a link pivotally connected to said free end; a link connected to the moving member, and a pedal having its toe end connected with the last-mentioned link and having said first-mentioned link directly pivoted to its heel.

2. In combination with a case, a fixed member and a movable member within the case; a bar pivotally connected at one end to the fixed member and mounted to swing about its pivot from a position wholly within the case to a position at which its free end is outside the case; a link pivoted to said free end; a second link connected within the case for operating the moving member, and a pedal pivotally connected at its toe end with the last-mentioned link and at its heel end with the first-mentioned link, the latter being provided with means for stopping it as to movement about its pivot to the bar at a position at which it trends up forwardly from said pivot.

3. In combination with the case having a bottom rail at its forward side, a fixed member within the case positioned behind said bottom rail, and a moving member at a higher position within the case; a pedal-positioning bar having one end pivoted to said fixed support substantially as high as the top of the bottom rail and mounted to swing about its pivot from a position entirely inside the case to a position at which its free end is outside the case, said bar being shaped to extend from its pivot forwardly across the upper edge of the bottom rail, and thence down forwardly to reach the floor; a link pivoted to the floor-supported end of said bar; a link pivotally connected within the case for operating the moving member, and a pedal having its toe end pivotally connected with the first-mentioned link.

4. In combination with the case, a fixed member and a moving member within the case, a pedal-positioning bar pivoted at one end to the fixed member and mounted to swing about its pivot from a position wholly within the case to a position at which its free end rests upon the floor outside the case; a link pivoted to said free end; a second link pivotally connected within the case for operating the moving member; a pedal pivotally connected at its toe end with the last-mentioned link, and at its heel end with the first-mentioned link, and a stop in the case for limiting the swinging of the said second link behind its pivotal connection.

5. In combination with the case, the pumper bellows therein having its fixed board extending up and down and its moving board behind the fixed board hinged at the upper end for swinging toward and from said fixed board; a lever pivoted on the forward side of the fixed board, and a link extending therefrom past the fixed board

and pivotally connected with the moving board; a pedal-positioning bar having one end connected at a fixed pivot within the case and mounted to swing about its pivot from a position entirely within the case to a position at which its free end extends to the floor outside the case; a link pivoted to said free end; a second link pivoted to said lever, and a pedal pivoted at its toe end to said second link, and at its heel end to the first-mentioned link.

In testimony whereof, I have hereunto set my hand at Steger, Illinois, this 22nd day of March, 1913.

EMIL SWANSON.

Witnesses:
H. C. WEHLAN,
J. N. GANSEN, Jr.