O. SCHWEMBERGER.

MEANS FOR DETACHING AND SUPPORTING THE BACK OF A PIANO.

APPLICATION FILED JULY 6, 1914.

1,167,436.

Patented Jan. 11, 1916.

2 SHEETS—SHEET 1.

Fig. 1.

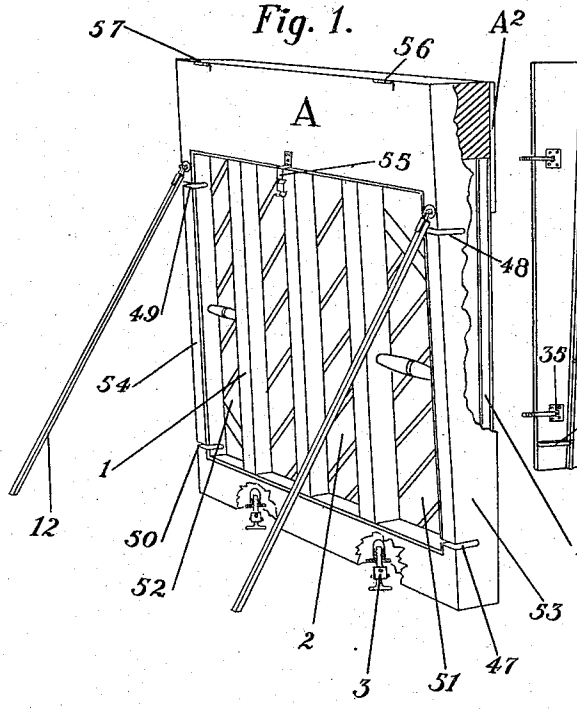


Fig. 2.

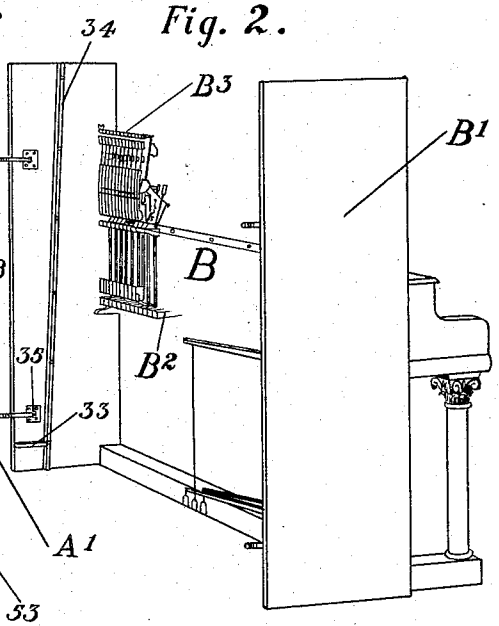


Fig. 3.

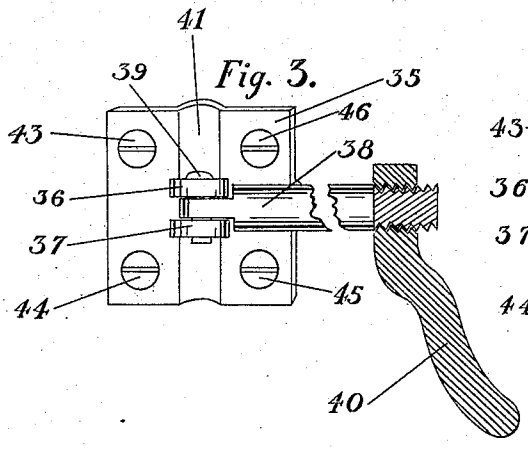
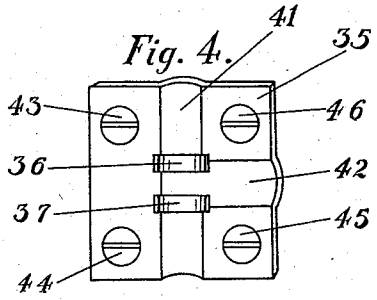


Fig. 4.



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2 SHEETS—SHEET 2.

Fig. 5.

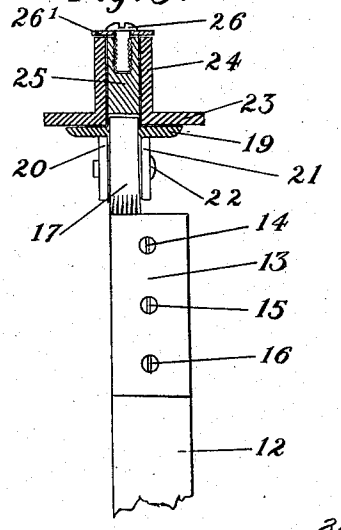


Fig. 8.

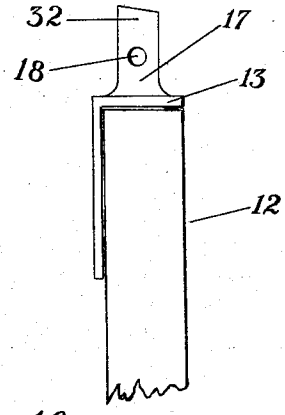


Fig. 10.

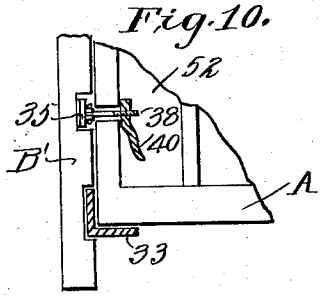


Fig. 6.

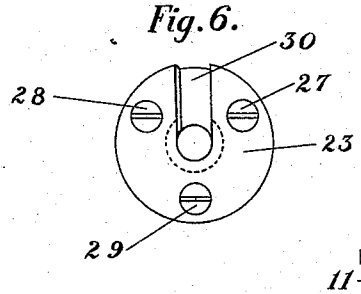


Fig. 9.

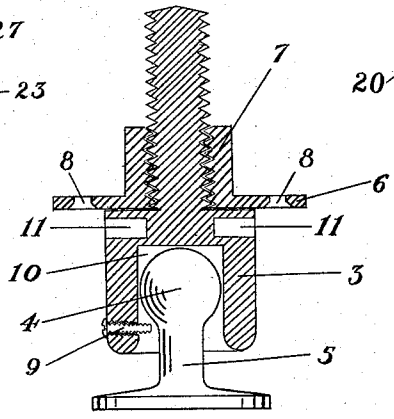
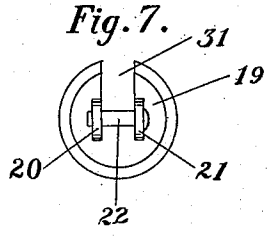


Fig. 7.



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UNITED STATES PATENT OFFICE.

OTTO SCHWEMBERGER, OF CINCINNATI, OHIO, ASSIGNOR OF ONE-THIRD TO DOMENICO VENOSA, JR., AND ONE-THIRD TO ORRIN CADY, BOTH OF CINCINNATI, OHIO.

MEANS FOR DETACHING AND SUPPORTING THE BACK OF A PIANO.

1,167,436. Specification of Letters Patent. Patented Jan. 11, 1916.

Application filed July 6, 1914. Serial No. 849,315.

To all whom it may concern:

Be it known that I, OTTO SCHWEMBERGER, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented new and useful Improvements in Means for Detaching and Supporting the Back of a Piano, of which the following is a specification.

My invention relates to pianos and more particularly to means employed for separating and detaching the front portion from the back portion thereof, said back portion consisting of the back proper, the sounding board, the string frame and strings thereto attached.

The object of my invention is to obtain easy and ready access to the inner parts of a piano for the following purposes: First. To make repairs thereon, thereby saving a very great deal over the usual cost thereof. Second. To attach thereto automatic music rolls and means for operating the same. Third. To make such immediate repairs and adjustment of strings or other parts as a piano player might be able to do. Fourth. To tune the piano in the regular and usual manner and make such repairs as a piano tuner is able to make. Fifth. To facilitate the handling of a piano in moving the same and lessen the danger of injury thereto in the moving process.

I accomplish the aforesaid objects and purposes by the use of the mechanisms described in the following specification and also illustrated in the accompanying drawings in which like reference characters represent like parts in all figures.

Figure 1 is a perspective view of the back and accompanying parts of a piano as aforesaid separated and detached from the front portion thereof and supported in an upright position, the back being brought plainly to view in order to show to better advantage the several members of my invention which are directly attached to, or in some manner engage the back of the piano, a portion of said back being cut away in order to show other parts. The upper and lower portions of the back are regarded as the sides thereof, and the lateral portions of the back are regarded as the ends thereof. Fig. 2 is a perspective view of the front portion of the piano, showing the parts exposed to view by the detachment of the back and its accompanying parts. Fig. 3 is a perspective view of a base-plate and bolt attached thereto together with a sectional view of a crank-nut mounted thereon. Fig. 4 is a detached view in perspective of the aforesaid base-plate, designed to show especially a concave recess therein adapted to receive said bolt when in actual use. Fig. 5 is an elevation of the upper end of one of the props of my invention together with a sectional view of the flange-headed bush to which said upper end is attached, certain parts of said bush being removed in order to show a screw and a tube-shaped swivel mounted thereon. Fig. 6 is a plan view of the flanged-end of the bush of Fig. 5, designed to show especially a slot therein. Fig. 7 is a plan view of a disk-shaped plate and two upright standards projecting therefrom, designed to show especially a slot in said disk-shaped plate. Fig. 8 is an elevation of the upper end of one of said props showing a side of said upper end not shown in Fig. 5. Fig. 9 is a vertical section of one of the jacks on which said back and accompanying parts rest when detached from the front portion of said piano as aforesaid. Fig. 10 is a rear elevation of a detached portion of the left hand lower corner of the piano casing together with the back thereof in their assembled position in accordance with my invention.

A is the back and accompanying parts of the piano.

A′ is the sounding board and A^2 is the string frame and strings thereto attached.

B is the front portion of the piano, consisting of the casing B′, the keys B^2 and the action B^3. It is to be noted that the linear horizontal dimension of said casing is greater than its vertical dimension, consequently what would appear to be the sides of said casing are its ends, that is to say, said horizontal dimension is from end to end, and said vertical dimension is from side to side.

1 is one of the upright beams of said back proper.

2 is one of the intervening open spaces between said beams.

3 is one of the jacks on which said back rests when detached.

4 is the ball-shaped head of the bearing

portion of the base 5 of said jack, said head being adapted to give a ball and socket movement to the upper portion of said jack.

6 is the flanged head of the internally threaded bush 7.

8 are perforations therethrough adapted to receive the screws that secure said jack to the underneath face of said back proper.

9 is one of three screws adapted to prevent said ball-shaped head from dropping out of the cubical-shaped socket 10, when said back is lifted clear of the floor.

11 are recesses, adapted to be received in the end of an operating lever.

12 is one of the props adapted to support said back in an upright position.

13 is a metal strip attached to the upper end of said prop by means of screws, such as 14, 15, 16.

17 is an extension of said strip having therethrough the perforation 18.

19 is a disk-shaped plate having upright standards 20 and 21 and the pivotal rivet 22 passing therethrough, said rivet being adapted to be received in said perforation 18 and to pivotally support the upper end of said prop between said upright standards 20 and 21.

23 is the flanged-head of the bush 24, and 25 is a sleeve-shaped swivel integrally connected with said disk-shaped plate 19 and positioned within said bush.

26′ is a disk-shaped metal washer having a centrally positioned perforation therethrough and a diameter approximately equal to that of the end of said bush which it engages.

26 is a screw on which said swivel is mounted, said screw being adapted to be received in said perforation through said washer and to engage a threaded recess in the end of said swivel. The length of the screw 26 being a trifle longer than the tapped recess into which it is screwed and the thickness of the washer 26′, its head will easily turn on said washer, and at the same time the said bush, said swivel, said disk-shaped plate, said metal strip and said upper end of prop will be loosely but securely held together. Said bush and its flanged-head are let into said back proper so that it is flush with the back face thereof and securely attached thereto by means of screws, such as 27, 28, 29. Thus it is to be noted that the disk-shaped plate of Fig. 7 is brought into engagement with the flanged head 23 of said bush 24 and is held there by means of the screw 26.

30 is a slot in the flanged-head of said bush, and 31 is a similar slot in said disk-shaped plate, the one being adapted to aline with the other, and both being adapted to receive the extreme end portion 32 of said metal strip, when the lower end of said prop is moved in a direction away from said back proper. It is in this way that said prop is prevented from moving one way or the other laterally, a movement liable to result in said back toppling over and falling to the floor.

To describe the operation of the aforesaid device more fully, when said prop is moved toward said back, the said extreme end 32 is brought out of said alining slots 31 and 30, in which position it can be rotated in either direction after the general manner of the arm of a human being. But when the lower end of said prop is moved away from said back, said extreme end 32 passes through slot 31 and into slot 30, in which position said prop is locked firmly as to any lateral movement or movement away from said back. It is in this position that it becomes a safe prop for such an article as the back of a piano.

33 is a bracket securely attached to the inside surface of one end of the casing B′, a similar one being securely attached in a similar position to the inside surface of the other end of said casing, said brackets being adapted to support said back A when in an assembled position.

34 is an upright strip securely attached to the inside surface of one end of said casing, a similar one being securely attached in a similar position to the other end of said casing, said strips being adapted to engage the front corners of said back A when in an assembled position and support it forwardly.

35 is one of four similar plates each having upright standards as 36 and 37 and a bolt attached thereto, as 38, by means of a rivet passing therethrough, as 39, and crank-nuts, as 40, and concave recesses, as 41 and 42, and screws passing through said plates, as 43, 44, 45 and 46, said bolt and said crank-nut being adapted to bind said back firmly to said casing, said recess 41 being adapted to receive the tool in drilling the holes through which the rivet 39 passes, and recess 42 being adapted to receive said bolt when pointing rearwardly. Said plates, by means of said last-mentioned screws are securely attached to the inside surface of said casing rearwardly of said upright strips and embedded therein so that said plates and said bolts when pointing rearwardly are flush with the inside surface of said casing. Said plates are so positioned on said casing that said bolts will aline with the slots 47, 48, 49 and 50 in said back, which are adapted to receive said bolts, and said crank-nuts will pass into the open spaces 51 and 52 in which they are adapted to be turned manually and tightened against the inside surfaces of the outside beams 53 and 54.

Viewed from the rear, 58 is the left hand

lower corner of the piano back. By referring to Fig. 10, it can be seen how the back of the piano, in its assembled position which, according to my invention, is its normal position, rests on and is supported by the bracket 33. It can be seen also how plate 35 and bolt 38 are flush with the inside of the piano casing, and the position of said bolt and its nut 40 when said back and said casing are in their assembled and normal position.

55 is a spring catch securely attached to the rear face of the upper portion of said back and centrally positioned from end to end thereof, said catch having two off-sets inwardly, one off-set being adapted to support horizontally one of said props and the other adapted to support the other, when not in use.

56 and 57 are two portions or leaves of hinges, the other portions, counterparts of 56 and 57, being attached to detachable cap or cover that fits over and covers the top of the piano. Said leaves of hinges have the customary lugs extending laterally from the edges thereof and have also the customary perforations running horizontally therethrough, so that a rod run through said perforations which are adapted to aline when said cap is put in place on the top of said piano completes said hinges and thereby hingedly attaches said cap to the rear upper edge of said back. When said rod is detached from said alining perforations, said cap is disengaged from said back and can be easily and readily removed.

It is to be noted that in the assembling of the several parts of a piano, the prevailing custom has been and now is to glue the lateral outside faces of the back to the abutting inside faces of the casing, thus making the back absolutely non-detachable from the piano casing. Aside from the inconvenience resulting therefrom, as aforesaid, it is thought that the quality of the tone of a piano has been and now is injured thereby. For it is well known, that the masters in the manufacture of violins made use of a glue that expanded and contracted simultaneously with the wood, and that the art of making such a glue has long since been a lost one.

The first piano having its parts assembled in accordance with my invention manifests a quality of tone superior to that of those assembled in the usual way.

Having thus described my invention in detail and by illustrations, I will now describe it as a working mechanism. Beginning with the two portions of the piano as described above in the relative positions indicated in Figs. 1 and 2, the aforesaid jacks are first brought into use and said back is raised to a point wherein the lower face of said back is a little higher than the bracket 33. The front portion of the piano is then moved rearwardly until the lower corners of the back pass over said brackets, as 33, and the front lateral corners of said back abut the strips, as 34. Said jacks are now brought into use again and said back is let down onto said brackets, as 33. As soon as said back engages said brackets, it is tilted forwardly and rests against said strips, as 34. Said bolts 38 are now moved around and inwardly into said slots in said back and said crank-nuts tightened against said beams 53 and 54 as aforesaid. Said props are now folded inwardly and hung up on said catch 55, said cap is put into position over the top of said piano, and the two portions thereof are in this manner properly assembled. By reversing this assembling process the aforesaid two portions can be again separated and detached the one from the other, the two portions thereof again assuming the relative positions indicated in the drawings. It is to be noted that the aforesaid props, in a plane approximately parallel with the back face of said back, have a rotary movement on the swivel 25, and that they do not have this movement in any other plane.

Having thus described my invention in detail, by illustration and as a working mechanism, what I claim is:—

1. The combination with a piano case having ends, of a back detachably secured to said ends, jacks securely and permanently secured to the lower end portion of said back, said back in its normal position within the casing of said piano being adapted to hold and suspend said jacks, which, in their turn, are adapted when elongated normally to engage the floor on which said piano rests and support said back independently of said casing.

2. The combination of a piano casing having sides and ends, of a back detachably secured to said ends, jacks securely and permanently attached to the lower side of said back, brackets attached to the inside faces of the ends of said piano casing, upright strips attached also to the inside faces of the ends of said piano casing, slots extending horizontally through the back edges of the upright ends of the frame work of said back, metal plates having bolts with crank-nuts mounted thereon pivotally attached thereto attached to the inside faces of said upright ends of said piano casing above said brackets, metal plates having props swivelly and pivotally attached thereto attached to the rear face of the upper side of said back, a spring catch having two offsets inwardly, one offset being adapted to support horizontally one of said props and the other adapted to support similarly the other, when not

in use, said catch being securely attached to the rear face of the upper side of said back and centrally positioned from end to end thereof, and a detachable lid adapted to cover the top of said piano.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

OTTO SCHWEMBERGER.

Witnesses:
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G. SCHULTZ.

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