

T. DANQUARD & F. O. PFANNSTIEHL.

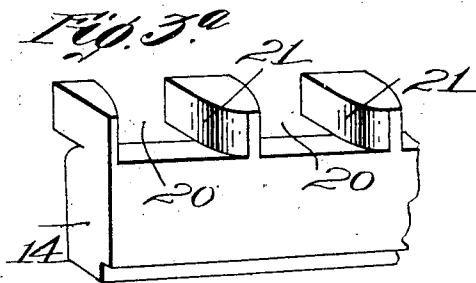
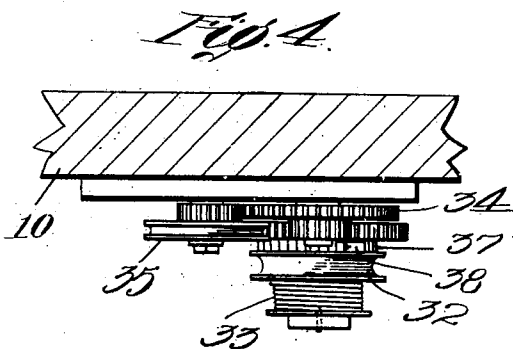
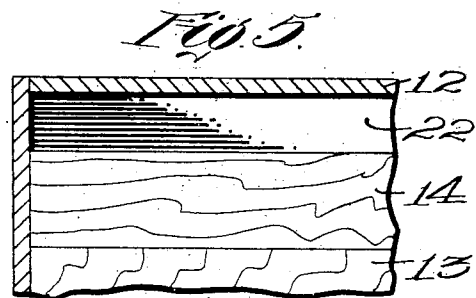
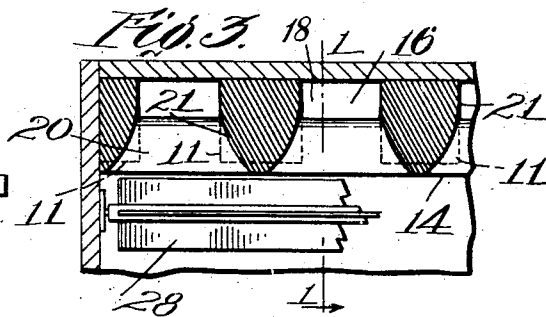
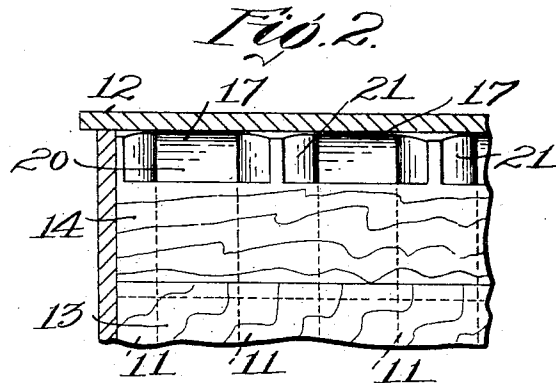
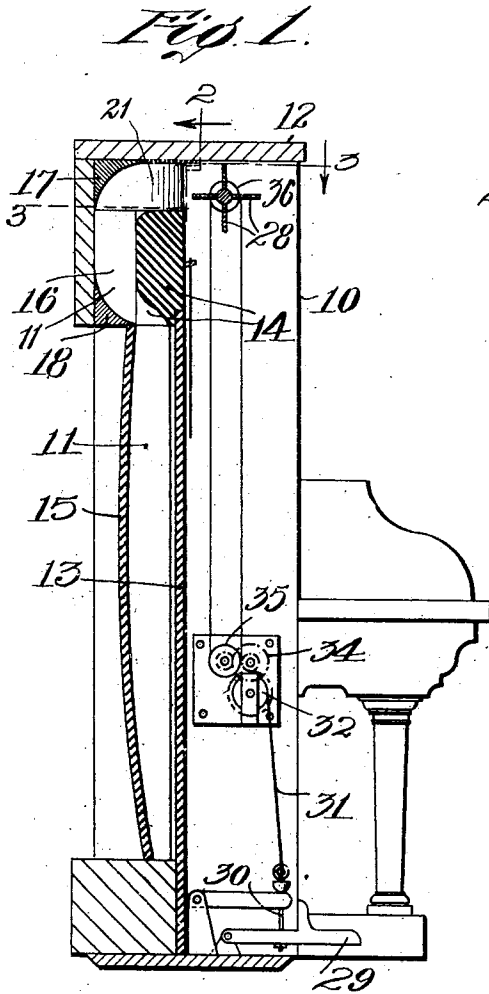
PIANO.

APPLICATION FILED MAY 4, 1908.

948,391.

Patented Feb. 8, 1910.

2 SHEETS—SHEET 1.



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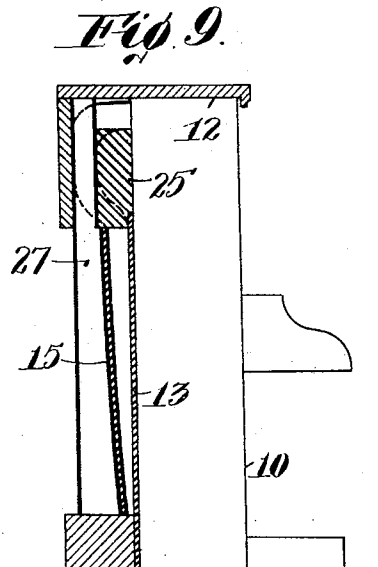
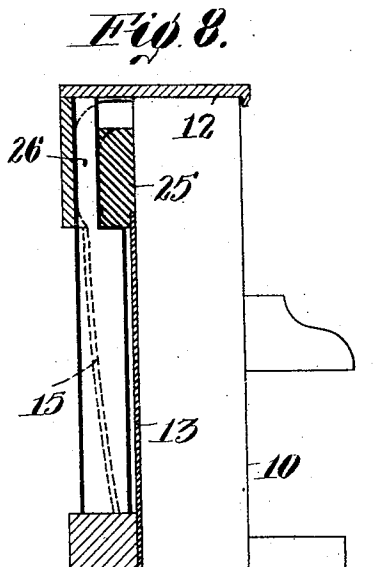
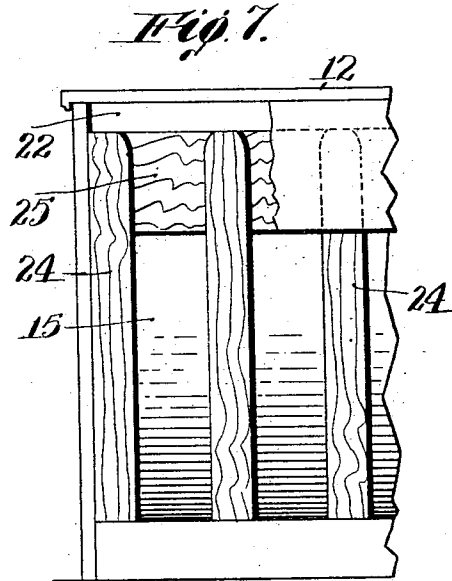
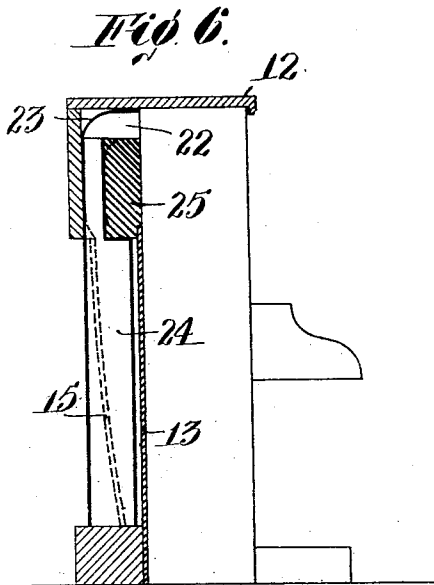
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2 SHEETS—SHEET 2.

948,391.



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UNITED STATES PATENT OFFICE.

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PIANO.

948,391.

Specification of Letters Patent.

Patented Feb. 8, 1910.

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To all whom it may concern:

Be it known that we, THOMAS DANQUARD and FRED O. PFANNSTIEHL, citizens of the United States, both residing at New York, in the county of New York and State of New York, have invented a new and useful Piano, of which the following is a specification.

This invention relates to pianos.

The principal objects of this invention are to provide for improving the sounding effect of musical instruments, to so construct such means as to make it especially convenient for application to the casing of an upright piano, to so arrange the parts for producing the above mentioned effects that the instrument may be constructed in a simple and inexpensive manner, and to combine an improved tremolo therewith.

Further objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings which show certain forms in which the invention may be carried out and in which,

Figure 1 is a vertical transverse sectional view of an upright piano exhibiting a convenient form of the invention on the line 1—1 of Fig. 3. Fig. 2 is a sectional view thereof on the line 2 of Fig. 1. Fig. 3 is a sectional view on the line 3 of Fig. 1. Fig. 3^a is a perspective view of the wrest plank shown in the first three figures. Fig. 4 is a plan of certain details of construction of a tremolo device. Fig. 5 is a view similar to Fig. 2 showing another way in which the invention may be carried out. Fig. 6 is a sectional view thereof. Fig. 7 is a rear elevation, and Figs. 8 and 9 are sectional views showing slight modifications.

The invention is shown as comprising an ordinary casing 10 having the usual vertical rear posts 11, cover 12 and sounding board 13. Over the sounding board is located the wrest plank 14 which may be of any ordinary construction. In order to provide for improving the tone of the instrument, a second or auxiliary sounding board 15 is provided located between the upright posts 11 and spaced from the sounding board 13. In this form the posts cut the sounding board 15 up into sections. The auxiliary sounding board is preferably located behind the main sounding board and is shown as having a vertical curvature being nearer the main sounding board at the bottom than at the top. The

wrest-plank is located over the two sounding boards supported by being secured to the front of the posts and spaced from the rear and top of the casing between posts so as to provide a passage 16 communicating with the space between the two sounding boards at the bottom and with the front of the instrument. This passage extends upwardly and then forwardly and widens out at the top so as to give a free passage for the sound. In order to afford a means for deflecting the sound forward, a plurality of deflecting members 17 are provided having curved surfaces between posts against which surfaces the air will strike in such a manner that it will be deflected forward through the outlet of the passage. These members 17 also preferably are continued at the bottom by pieces 18 having curved surfaces substantially continuous with the curved surfaces of the deflecting members so that the entire curved surfaces extend from the top of the sounding board 15 around back of the wrest plank and end at the top of the casing over the wrest plank and afford efficient deflectors for the purpose above mentioned. The rear of the wrest plank also may be made of a shape similar to this curvature so as to cause the passage 16 to have somewhat gradually curving sides. The upright posts 11 are spaced apart in the usual way and the passages between them extend upwardly to permit the sound to issue from the space between the sound boards in the manner above described.

In the form shown in the first three figures, the wrest plank is provided with a number of openings 20 along the top thereof and widening toward the front and between these are portions 21 on the wrest plank extending to the top and back of the casing over the posts 11 and secured to the tops thereof. In this case the deflectors 17 are not continuous, as they are separated by the uprights or posts. Each one covers one of the spaces between the posts. The widening of the spaces toward the front may conveniently be secured in the manner shown in Fig. 3 by curving the sides of the portions 21 on the wrest plank which extend to the top of the casing.

If desired the wrest plank may be spaced from the top of the casing so as to leave a single space 22 as shown in Figs. 5, 6 and 7 which is covered by a single deflecting member 23. In this case the posts 24 are fas-

tened against the back of the wrest plank 25 and are rounded at the top.

In Fig. 8 no continuous space is left between the wrest-plank 25 and lid, and the posts 26 extend to the top of the case. Spaces are cut out at the top of the wrest-plank as in Figs. 1 and 2. In Fig. 9 the posts 27 also reach to the top of the casing and are fastened to the back of the wrest plank which is cut out to form the passage for the sound. The one piece sounding board 15 extends along the front of the posts which are curved so that it may be fastened to them. In all the forms the sound travels up back of the wrest-plank as in Figs. 1 and 2 and forwardly over it.

It will be seen that the invention involves means adjacent to the main sounding board for modifying the vibrations so as to improve the effect, and also a deflector for deflecting the sound waves forward. It also involves an additional means located at the mouth of the passage 16 for giving additional vibrations so as to produce a tremolo effect or the like. In the form shown in the drawings, this consists of a fan 28 rotatably mounted in front of the passage 16 and having means connected therewith for rotating it so as to vibrate the air. This means may be connected with pneumatic or other mechanical mechanism for operating the instrument when the device is applied to an automatic or mechanical musical instrument but when applied to one to be manually operated, it is preferably operated by a pedal 29 located near the bottom of the casing and projecting therefrom and having a stem 30 extending upwardly, which is connected by a flexible connection 31 with a drum 32. Means is provided for winding up the connection on the drum, this being shown in Fig. 4 in the form of a spring 33. The drum 32 is connected by a small train of gears 34 with another drum 35, which is connected by a belt or the like with a pulley 36 fixed to the fan 28 so as to rotate it. In order to permit the fan to rotate only while pressure is applied to the pedal and not allow it to turn the other way when this pressure is released, the gearing is shown as provided with a ratchet wheel 37 and pawl 38. It will be understood that the tremolo device may be operated in many ways and that one form is shown chiefly for the purpose of illustration.

While we have illustrated and described certain forms of the invention, we are aware that many modifications may be made therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore, we do not wish to be limited to the particular forms shown, but

What we do claim is:—

1. An upright piano comprising a casing;

a sounding board, an auxiliary sounding board within the casing, said sounding boards having a clear space between them, a wrest plank in said casing above the first-named sounding board, there being a space between the top of the casing and the wrest-plank open at the front and communicating with the space between the sounding boards, and a concave deflecting member within the casing at the rear of the last named space and extending upwardly from the top of the auxiliary sounding board to the top of the casing.

2. An upright piano comprising a casing, a sounding-board, an auxiliary sounding board in the casing, said sounding boards having a clear space between them, a wrest plank above the first-named sounding board, there being a space below the top of the casing open at the front and communicating with the space between the sounding boards, and means within the casing over said space for deflecting the sound toward the front of the casing, said means having a substantially continuous curve rearwardly from the top of the rear sounding board and forwardly to the top of the casing above the wrest plank.

3. An upright piano comprising a casing, a sounding board, an auxiliary sounding board spaced therefrom, both of said sounding boards being located within the casing, a wrest plank higher than said sounding boards and having spaces through it communicating with the space between the sounding boards, and deflecting means located entirely within the casing covering said spaces, the spaces through the wrest plank widening toward the front thereof.

4. An upright piano comprising a casing, a sounding board, an auxiliary sounding board spaced therefrom, a wrest plank spaced from the rear of the casing, a deflecting member within the casing over said space, and upright rear posts having spaces between them, said wrest plank having openings therethrough from the rear to the front located directly in front of the top of said deflecting member and registering with said spaces between the posts, whereby said deflecting member will deflect the sound toward the front.

5. The combination of an upright piano, having a vertical sounding board, and a curved sounding board spaced therefrom and located at the rear thereof, the piano having curved passages extending upwardly and forwardly at the top of the space between said sounding boards and widening toward the front, a fan located in front of the outlet of said passage, and means for rotating said fan.

6. The combination of an upright piano provided with a casing, and a sounding board having a space behind it within the

casing and an upwardly extending passage communicating with said space, said passage having an outlet above the sounding board, with a vibrator located in front of the outlet of said passage, and means for operating said vibrator to modify the effect of the sound issuing from said passage.

7. An upright piano comprising a casing, a sounding board, a wrest-plank at the top of said sounding board, an auxiliary sounding board within the casing spaced from the first named sounding board and extending up substantially to the bottom of the wrest-

plank and terminating there, and a continuous passage within the casing extending from the space between the sounding boards, up back of and over the body of the wrest-plank. 15

In testimony whereof we have hereunto set our hands, in the presence of two subscribing witnesses. 20

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