May 15, 1934.

T. KUMLE

1,958,920

KEYBOARD BOTTOM

Filed Oct. 8, 1932

2 Sheets-Sheet 1

Fig. 1.

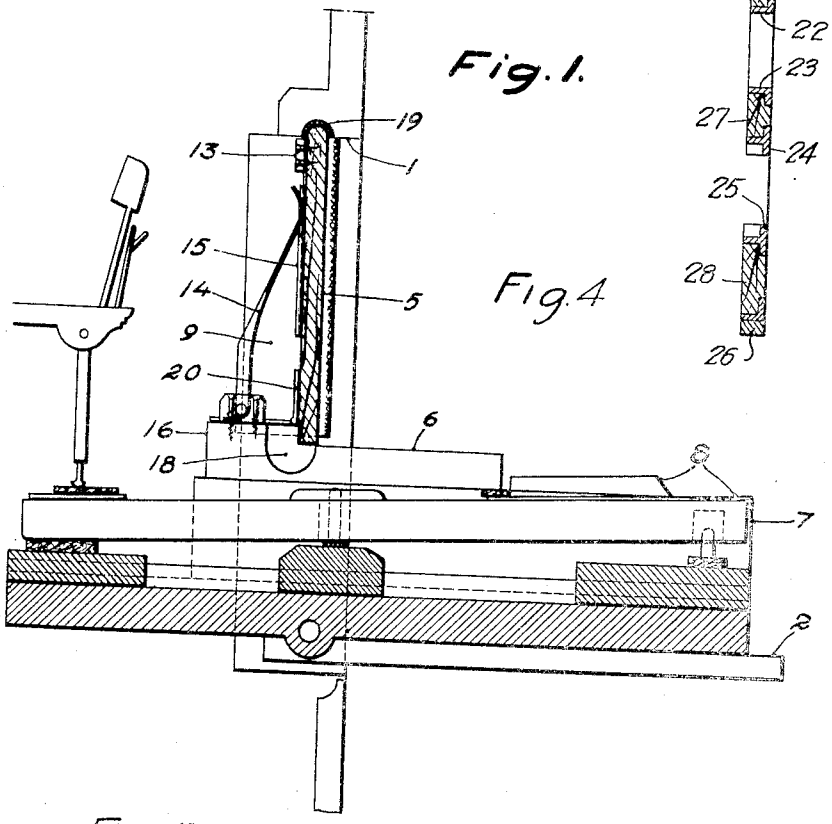
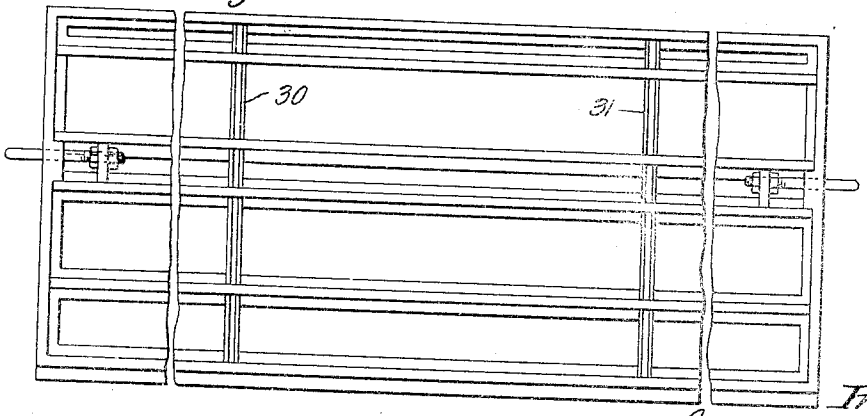


Fig. 4

Fig. 3



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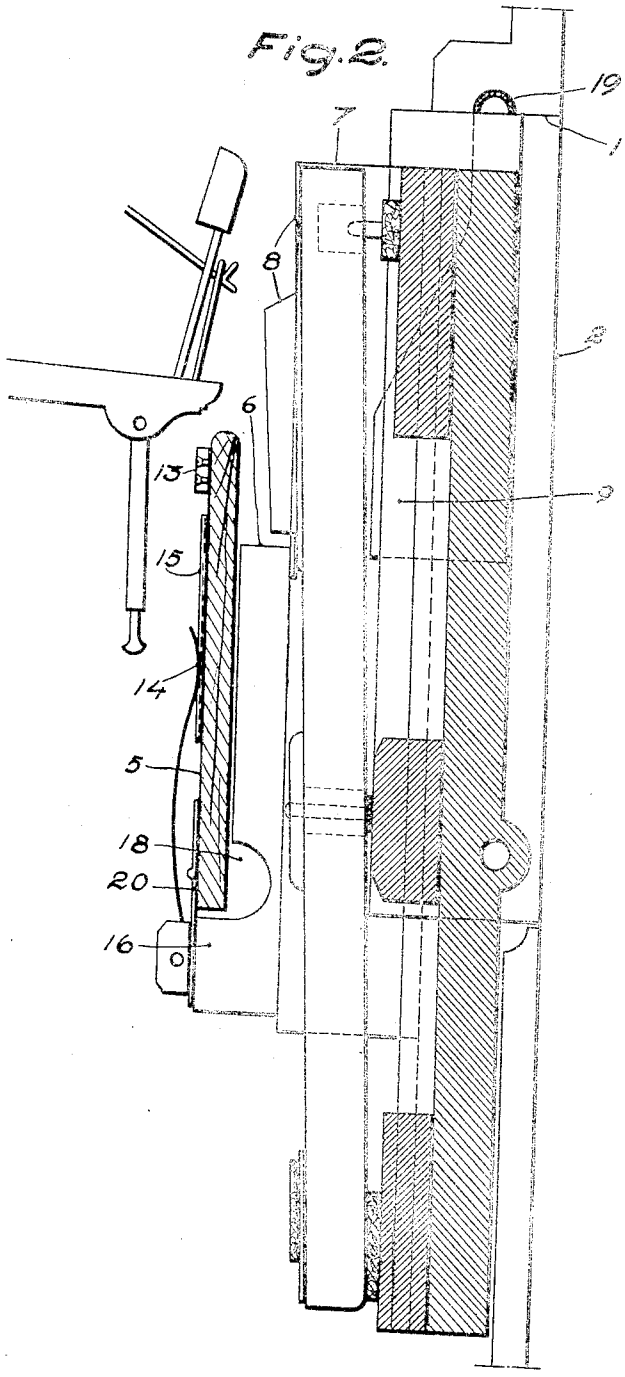
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Fig. 2.



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KEYBOARD BOTTOM

Theodor Kumle, Stockholm, Sweden

Application October 8, 1932, Serial No. 636,928
In Sweden October 12, 1931

6 Claims. (Cl. 84—431)

The present invention relates to keyboard bottoms which cannot warp, or change their form under the influence of moisture, heat or cold as those of the prior art.

The earliest keyboard bottoms for upright pianos and grand pianos consisted of thick boards glued together. Later, manufacturers of piano instruments have gone over to a frame construction of boards having a thickness of 5 cm. with two fillings. But this construction sometimes changes its form due to moisture, cold or heat, and thus the keyboard, which is secured to a thin wooden frame lying on the keyboard bottom, warps, and the touch becomes uneven.

In order to eliminate this drawback I have provided a new construction which is shown in the accompanying drawings in which:—

Figure 1 shows a cross section of a swingable keyboard, in an outwardly swung position,

Figure 2 shows the same in an upward folded position,

Figure 3 is a plan view of my keyboard bottom showing the construction of the same, and

Figure 4 is a cross-sectional view of the keyboard bottom shown in Figure 3.

My bottom keyboard bottom construction, as best indicated in Figure 4, at 21, 22, 23, 24 and 25, is made as a bar system with upright edges, as shown in the drawings. This construction, in spite of the low weight, is very resistant to torsional stresses and has the advantage of being unaffected by moisture, heat and cold. The spaces between each two of the longitudinal bars are utilized to take up wooden sections 27 and 28 which I find to be desirable to support the key system. In order to prevent stresses in the transverse direction two U-shaped cross bars 30 and 31 (Fig. 3) are located on about two thirds of the length of the board, in addition to the L-profile of the ends. The construction is made of cast or welded iron, or metal, and is intended for upright pianos having a stationary or swingable keyboard, and for grand pianos.

In order to prevent the mechanism of the instrument from lying uncovered when the keyboard lid is swung down a cover board is desirable. Said board is according to the invention adapted to cover the mechanism of the instrument when the keyboard lid has been swung down. According to the invention a special guide hereinafter described is provided to guide the cover board during the opening and closing of the keyboard.

When the keyboard lid 2 is being swung down the cover board 5, which is connected to the keyboard lid by means of hinges 20, accompanies two guide members, which are fixed to the ends of the instrument, up and down in a horizontal felt-covered groove 19 provided in the upper joint 1 of the instrument in which the cover board fits exactly and remains without vibrations as long as the keyboard lid is in the swung-down position.

On the inside of the two outer edges of the cover board there are located wooden members 13 sliding along the guide members 9 at the ends of the instrument.

In order to prevent vibrations in the cover board when opening and closing the keyboard lid, and when playing there is provided a spring system comprising long slender springs 14 running in spring grooves 15 on the back of the board. The springs, which are secured to the shoulder 16 of the keyboard board, operate permanently against the cover board 5.

Moreover provision is made that the hinges of the cover board are located on the back of the board, and connected to the shoulder 16 of the keyboard board. In order that the cover board shall be able to fill the whole opening in the front side of the instrument, the cover board is extended below the axis of the hinge, and in order to make the motion possible a groove 18 is made in the keyboard board 6.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A piano having an opening in its front, a swingable keyboard therein and a cover board hinged to the keyboard, the sides of said opening being provided with stationary guide members cooperating with the end edges of the front side of the cover board in order to guide the cover board, springs on the keyboard behind the cover board, the said cover board being permanently under the pressure of the springs.

2. A piano having an opening at its front, a swingable keyboard therein and a cover board for the opening hinged to the keyboard, the sides of said opening being provided with guide members cooperating with the end edges of the front side of the cover board in order to guide the cover board, springs on the keyboard, the said cover board being permanently under the pressure of the springs, the hinges of the cover board lying on the back of the keyboard at a higher level than the upper side of the keyboard.

3. A piano having an opening, a swingable key board therein and a cover board hinged to keyboard, the interior sides of the opening be-

ing provided with guide members cooperating with the end edges of the front side of the cover board in order to guide the cover board, springs on the keyboard in rear of the cover board, the said cover board being permanently under the pressure of springs, the hinges of the cover board lying on the back of the keyboard at a higher level than the upper side of the keyboard, the cover board being extended below the axis of the hinge in order to fill the whole opening in the front side of the instrument.

4. A piano having an opening, a swingable keyboard therein and a cover board hinged to the keyboard, the interior sides of the opening being provided with stationary guide members cooperating with the end edges of the front side of the cover board in order to guide the cover board, springs on the keyboard in rear of the cover board, the said cover board being permanently under the pressure of the springs, the hinges of the cover board lying on the back of the keyboard at a higher level than the upper side of the keyboard, the cover board being extended below the axis of the hinges in order to fill the whole opening in the front side of the instrument, the keyboard carrying the cover board being provided with a recess in order to make the turning of the cover board possible.

5. A piano having an opening, a swingable keyboard therein and a cover board hinged to the keyboard, the interior sides of the opening being provided with stationary guide members cooperating with the end edges of the front side of the cover board in order to guide the cover board, springs on the keyboard in rear of the cover board, the said cover board being permanently under the pressure of the springs, the hinges of the cover board lying on the back of the keyboard at a higher level than the upper side of the keyboard, the cover board being extended below the axis of the hinge in order to be able to fill the whole opening in the front side of the instrument, the keyboard carrying the cover board being provided with a recess in order to make the turning of the cover board possible, the upper side of said opening having a horizontal groove in order to hold the end portion of the cover board in position.

6. A device as claimed in claim 1, in which the keyboard bottom consists of a metal frame having longitudinal bars with upright edges, the spaces between said bars having fillings for supporting the key system.

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