F. C. OTT.

PIANO.

APPLICATION FILED SEPT. 17, 1908.

928,277. Patented July 20, 1909.

FIG. 1.

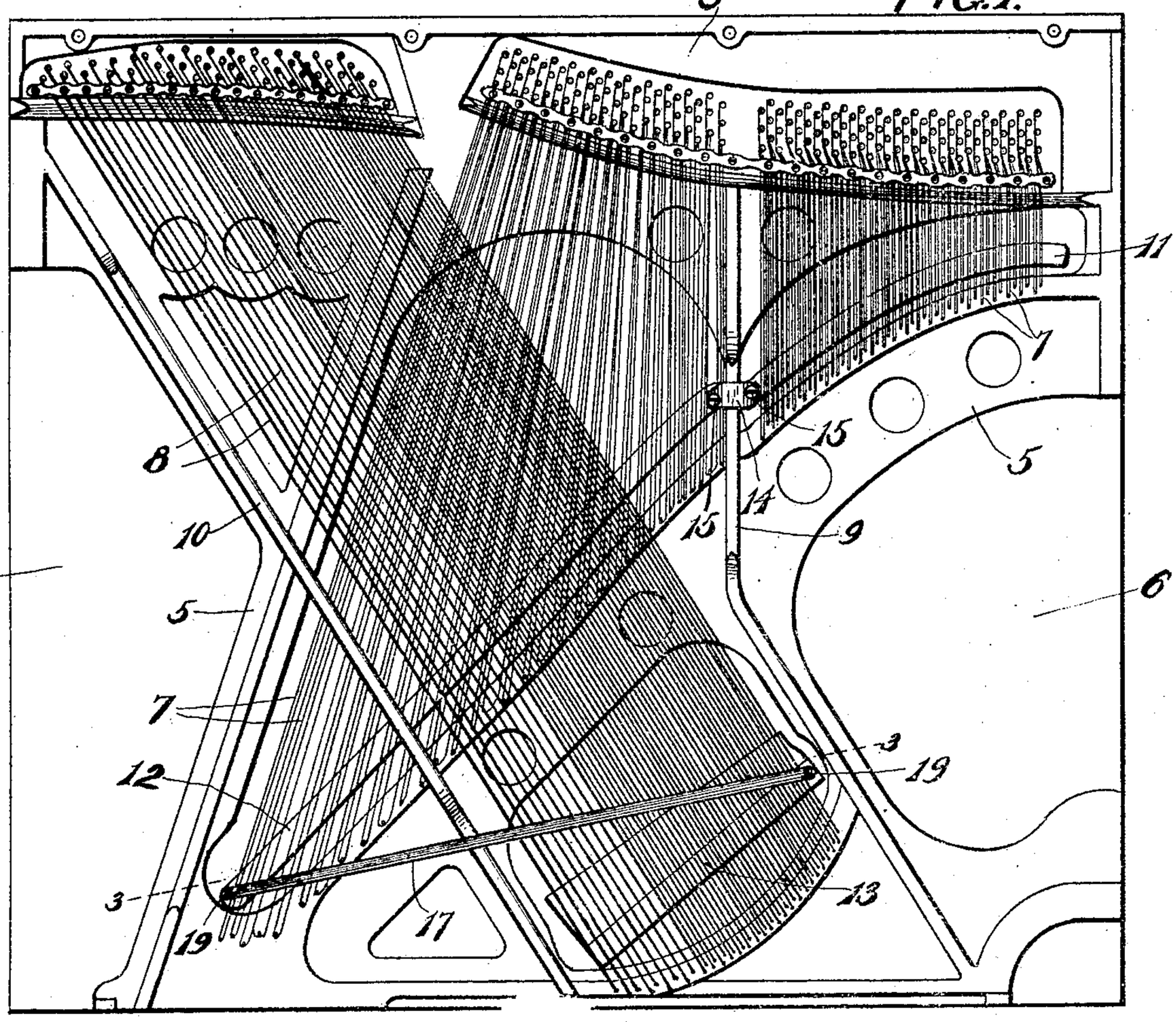


FIG. 2.

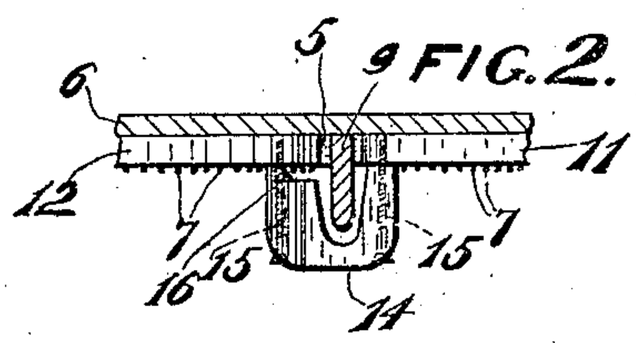


FIG. 3.

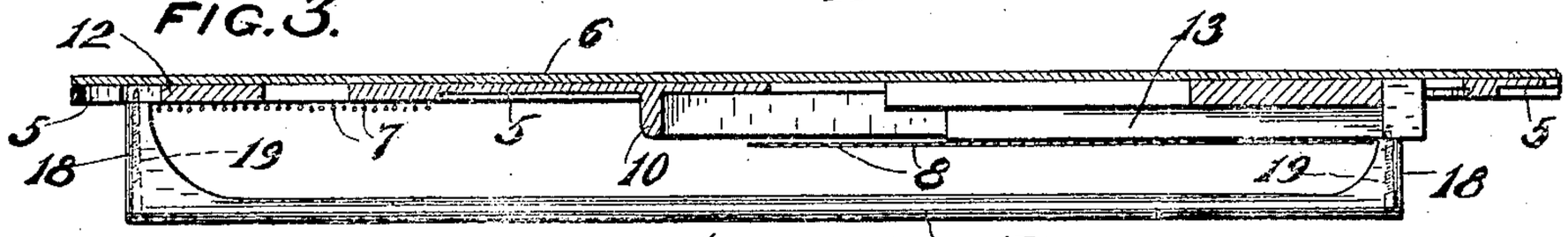
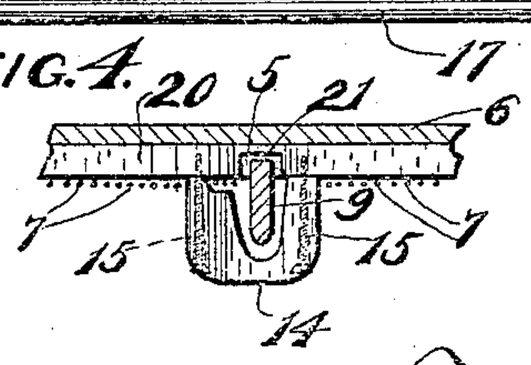


FIG. 4.



WITNESSES.

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PIANO.

No. 928,277. Specification of Letters Patent. Patented July 20, 1909.

Application filed September 17, 1908. Serial No. 453,377.

To all whom it may concern:

Be it known that I, FREDERICK C. OTT, residing in Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Pianos, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

My invention has relation to improvements in pianos.

The object of the invention is to provide improved attachments which can be readily applied to a piano already constructed, and which when applied will strengthen the tone of the instrument, and render said tone clear and practically uniform or even throughout.

With the above primary object, and other incidental objects in view, the invention consists of the devices and parts, or their equivalents, as hereinafter set forth.

In the accompanying drawing, Figure 1 is a front elevation showing the back plate, the sounding board, and the usual strings or wires ordinarily employed in upright pianos, my improved attachments being shown as properly applied; Fig. 2 is a section through a fragment of Fig. 1, taken on a plane just above the arch-shaped block which connects the two sections of the treble bridge, and looking downwardly; Fig. 3 is a cross section on the line 3—3 of Fig. 1; and Fig. 4 is a section on the same plane as Fig. 2, of a modified form of construction.

Referring to the drawing, the numeral 5 indicates the ordinary back plate, and 6 the sounding board secured to and arranged back of said plate, as in the ordinary form of upright piano. The treble strings or wires are indicated by the numerals 7 and the bass strings or wires by the numeral 8. These strings or wires are arranged and disposed in the ordinary and usual manner, and hence require no specific description. It is usual to strengthen and brace the back plate 5 by means of strengthening ribs, two of said ribs being ordinarily employed. These ribs are shown in the accompanying drawing, and indicated, respectively by the numerals 9 and 10.

As is well known to those skilled in the art, pianos are provided with a treble bridge and with a bass bridge. The treble bridge, is usually provided with a recess, to form a space for the accommodation of the rib 9, or in other words, to form a space through which said rib may run. In the construction shown in Figs. 1 to 3 of the drawing, I form the treble bridge of two separate sections with their adjacent ends spaced a slight distance apart to form a space for the accommodation of the rib 9, instead of recessing said treble bridge as is the usual practice. These two sections of the treble bridge are indicated, respectively, by the numerals 11 and 12, and the bass bridge is also shown and indicated by the numeral 13. By reason of the formation of the treble bridge in two sections with the intervening space between the adjacent ends of the sections, or by reason of forming said treble bridge with a recess as is the usual practice, and also by reason of the space between the lower section 12 of the treble bridge and the nearest end of the bass bridge, breaks are necessarily formed which if no means were provided to guard against it would seriously affect the tone, and cause different qualities or shades of tone; that is to say, the tone would be uneven and indistinct. In other words, there are two breaks formed, viz., the upper break between the adjacent ends of the two sections of the treble bridge and the lower break between the lower end of the lower section of the treble bridge and one end of the bass bridge. The upper break thus formed creates a light quality of tone and the lower break creates a heavy quality of tone.

My invention is designed to overcome the above pointed out disadvantages, and in order to connect the adjacent ends of the separate sections of the treble bridge, I employ a member or block 14 preferably of arch-shaped form, and also preferably of aluminum. This block straddles the rib 9, and the legs thereof bear against the respective sections 11 and 12 of the treble bridge, being secured thereto by means of screws 15, 15, or equivalent securing devices, said screws extending through the legs of the arched shaped member and entering the sections of the treble bridge. It will be noticed that the strings or wires on the right hand side of the rib 9 terminate a short distance from said rib so as to leave a space for the right hand leg of the block. The strings or wires on the left hand side of the rib 9 are also forced apart slightly for the accommodation of the left hand leg of the arched shaped member, said left hand leg being preferably beveled slightly on one edge, as indicated by

the numeral 16, so as to insure against contact of the said leg with the adjacent strings or wires. From this construction, it will be seen that the block is entirely free from contact with the rib or arm 9, and is also free from contact with the strings on either side of said rib or arm.

The member for connecting the lower end of the lower section 12 of the treble bridge to the bass bridge is in the form of a long rod or bar 17, preferably of aluminum, and provided at opposite ends with inwardly extending legs 18, 18. One of these legs extends to and contacts with the lower end of the lower section 12 of the treble bridge, and the other leg extends to and contacts with the end of the bass bridge which is farthest away from the lower end of the section 12 of the treble bridge. The respective legs 18 are secured to the said end of the bridge section and the said end of the bass bridge by means of screws 19, or equivalent securing means.

Some pianos, such as the old makes of square and grand upright, have two or more breaks in the treble bridge formed by a plurality of recesses. In such cases, of course, a plurality of the blocks 14 would be provided for connecting the adjacent ends of the sections of the bridge at the different points of breakage.

From the foregoing description of the construction of my invention, it will be seen that I provide attachments which can be readily applied to any existing pianoforte without any material change whatever in the structure, and when applied will remedy the disadvantages heretofore existing, by producing an even, clear and sonorous tone throughout.

As heretofore stated ordinarily the treble bridge is recessed at the point where the plate-rib, or arm, such as 9, passes, instead of making the treble bridge of two entirely separate and distinct sections. Under this arrangement, the recess accommodates the rib 9, and the bottom of the recess forms a thin membrane or connecting member between the portions of the treble bridge on opposite sides of the rib or arm. This construction in practice, however, has not been found satisfactory, inasmuch as the thin membrane or connecting member forming the bottom of the recess is not sufficient to produce an even, clear and sonorous sound. When, however, my improved connecting block 14 is used in connection therewith, entirely satisfactory results are secured. I, therefore, in Fig. 4 show a form wherein the treble bridge is recessed instead of being divided into separate sections, and in connection with this recessed bridge is employed one of the blocks 14. Referring to this figure, the treble bridge is indicated by the numeral 20 and the recess thereof by the numeral 21. It will be seen that the recess accommodates the rib 9, and the block 14 straddles the said rib and the inwardly extending legs of the block contact with and are secured to the portions of the treble bridge on opposites sides of the rib by means of the screws 15, or equivalent devices.

While I herein describe my improved attachments as particularly adaptable for pianos, yet I do not wish to be understood as thereby specifically restricting myself to that use, but intend to cover the invention for use in connection with any form of stringed instrument for which it may be found adapted.

What I claim as my invention is:

1. A musical instrument, comprising a sounding board provided with a divided treble bridge and a bass bridge, a string plate positioned adjacent to said sounding board and provided with strengthening ribs extending at an angle to the bridges and one of said ribs extending in a line intersecting the treble bridge, said treble bridge being cut away and out of contact with said rib at the point of intersection, strings constructed to produce sound vibrations in graduated ascending scale connected to said string plate and in contact with said bridges, a block extending over the rib at the point of intersection of the bridge and the rib and connected to the end portions of the treble bridge on opposite sides of said intersecting rib, and a bar connected to the end of the treble bridge with which the lowest toned string is in contact and extending over the other rib and connected only to the end of the bass bridge with which the highest toned string is in contact.

2. A musical instrument, comprising a sounding board provided with a treble bridge and with a bass bridge, a string plate positioned adjacent to said sounding board and provided with strengthening ribs extending at an angle to the bridges and one of said ribs extending in a line intersecting the treble bridge, said treble bridge being cut away and out of contact with said rib at the point of intersection, strings constructed to produce sound vibrations in a graduated ascending scale connected to said string plate and in contact with said bridges, a block extending over the rib at the point of intersection of the bridge and the rib and connected to the treble bridge on opposite sides of said intersecting rib, and a bar connected only to the end of the treble bridge with which the lowest toned string is in contact and extending over the other rib and connected only to the end of the bass bridge with which the highest toned string is in contact, said block and bar being connected to the bridges to form substantially a bridge extending in a continuous single line from the string which produces the lowest tone vibra-

tions to the string which produces the highest tone vibrations.

3. A musical instrument, comprising a sounding board provided with a divided treble bridge and with a bass bridge, a string plate positioned adjacent to said sounding board and provided with strengthening ribs extending at an angle to the bridges and one of said ribs extending in a line intersecting the treble bridge, said rib passing between the ends of the divided portions of the treble bridge but not in contact therewith, strings constructed to produce sound vibrations in a graduated ascending scale connected to said string plate and in contact with said bridges, a block extending over the rib at the point of intersection of the bridge and the rib and connected to the end portions of the treble bridge on opposite sides of said intersecting rib, and a bar connected only to the end of the treble bridge with which the lowest toned string is in contact and extending over the other rib and connected only to the end of the bass bridge with which the highest toned string is in contact, said block and bar being connected to the bridges to form substantially a bridge extending in a continuous single line from the string which produces the lowest tone vibrations to the string which produces the highest tone vibrations.

In testimony whereof, I affix my signature, in presence of two witnesses.

FREDERICK C. OTT.

Witnesses:

A. L. MORSELL,

ANNA F. SCHMIDBAUER.