Nov. 4, 1958 H. G. WICKHAM 2,858,723

PIANO PLATE

Filed Aug. 30, 1955

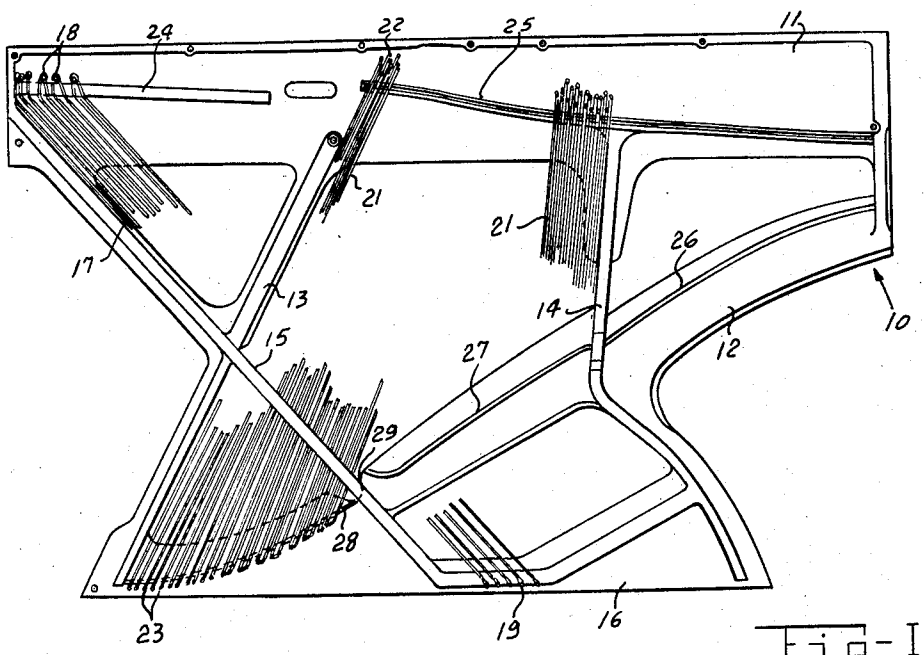



Fig-1

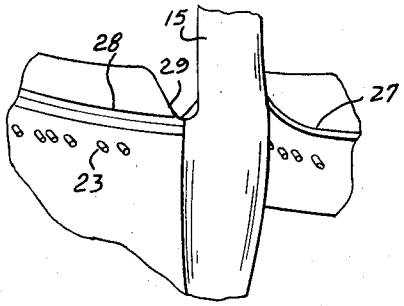



Fig-2

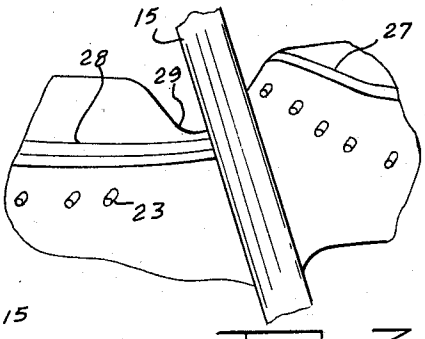



Fig-3

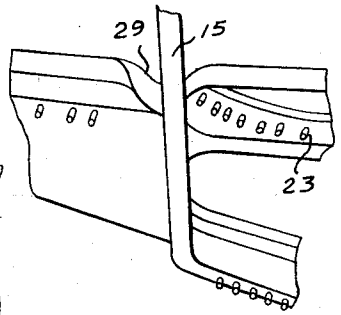



Fig-5

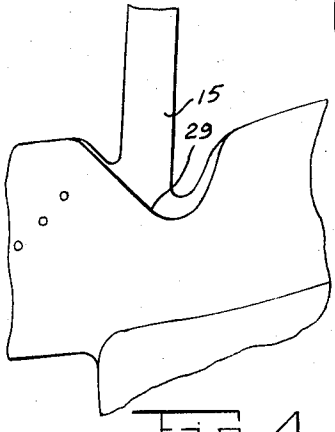



Fig 4

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United States Patent Office 2,858,723 Patented Nov. 4, 1958



2,858,723

# PIANO PLATE

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Application August 30, 1955, Serial No. 531,422

3 Claims. (Cl. 84—188)

This invention relates to piano plates, and more particularly to a generally new construction therefor, obviating the need for hidden string bearing surfaces.

Overstrung piano plates conventionally are of cast metal construction and comprise marginal portions and intersecting cross bars angularly disposed with respect to the marginal portions. Set in the marginal portions are tuning pins and hitch pins between which extend the piano strings in different series, some in overlying or overstrung relation to others. Some of the strings of one such series pass beneath one of the intersecting cross bars. Interference is encountered between these strings and the plate in the area of the joint between said cross bar and the marginal portion of the plate. Heretofore such interference has been avoided through installation of a core in such joint at the time of making the plate. Subsequent removal of the core left a recess in the plate with spaced apart superposed surfaces between which said certain strings passed. The existence of such a hidden recess made difficult the finishing of the superposed surfaces to serve as bearings for the strings. Roughness or irregularity in such surface resulted in a detrimental effect on the tone quality, as well as preventing the proper spacing of the strings.

In accordance with the instant invention, the problem of interference between the strings and the described joint between the overlying cross arm and a marginal portion of the plate is met by incorporating in such area an indented formation which is essentially in the edge of the marginal portion at a point directly beneath the cross arm and extending beyond the side edges of such cross arm. The strings which pass through the area of the joint, accordingly extend freely therethrough without hindrance or confinement within superposed spaced metal portions of the plate. The use of hidden bearing surfaces and attendant disadvantages, as well as the use of cores in the making of the plate, are accordingly avoided.

The object of the invention is to simplify the construction of piano plates, whereby such plates may not only be economically manufactured, but will be more efficient and satisfactory in use, adaptable to a wide variety of applications, and be unlikely to get out of repair.

A further object of the invention is to simplify the making of piano plates.

Another object of the invention is to present a coreless piano plate in which all of the string bearing surfaces are exposed.

A further object of the invention is to present a piano plate construction in which the strings do not bear upon any surface of the plate beneath an overlying bar or part thereof.

A further object of the invention is to provide a piano plate possessing the advantageous structural features, the inherent meritorious characteristics and the mode of operation herein mentioned.

With the above primary and other incidental objects in view as will more fully appear in the specification, the



invention intended to be protected by Letters Patent consists of the features of construction, the parts and combinations thereof, and the mode of operation as hereinafter described or illustrated in the accompany drawings, or their equivalents.

Referring to the accompanying drawing wherein is shown one but obviously not necessarily the only form of embodiment of the invention,

Fig. 1 is a plan view of a piano plate in accordance with the illustrated embodiment of the invention, showing some of the piano strings installed thereon;

Fig. 2 is an enlarged fragmentary detail view in perspective showing that part of the piano plate having an indented formation in accordance with the instant invention;

Fig. 3 is an enlarged fragmentary view similar to Fig. 2 taken from a slightly different angle;

Fig. 4 is an enlarged fragmentary bottom plan view, in detail, of that part of the piano plate having the indented formation; and

Fig. 5 is an enlarged fragmentary view similar to Figs. 2 and 3, taken from a still different angle.

Like parts are indicated by similar characters of reference throughout the several views.

Referring to the drawings, a piano plate in accordance with the illustrated embodiment of the invention comprises a cast metal frame member **10** formed with marginal flange-like portions **11** and **12** and a series of interconnecting and intersecting cross bars including principally approximately parallel bars **13** and **14** and a bar **15** in intersecting substantially overlying relation to the bar **13**. At its one end the cross bar **15** merges with and is joined to marginal flange portion **11**. At its other end, the cross bar **15** similarly is received in the marginal flange portion **12**, extending more particularly to an offset part **16** thereof.

A set of strings **17** stretches in parallel relation to the cross bar **15** between tuning pins **18** (only a few of which are shown) on the marginal flange portion **11** and hitch pins **19** (only a few being shown) on the offset part **16** of the flange portion **12**. Another set of strings **21** underlies the set of strings **17** and is angularly disposed relatively thereto, extending between tuning pins **22** (only a few being shown) on the flange portion **11** and hitch pins **23** (only a few being shown) on the flange portion **12**, the angular disposition of the parts being such as to bring some of the strings **21** beneath and beyond the cross bar **15**.

On the marginal flange portion **11** is a longitudinal ridge formation **24**, and another similar ridge formation **25** located respectively in front of the tuning pins **18** and **22** and serving as bearing surfaces for the respective sets of strings **17** and **21**. On the flange portion **12** are similar string bearing surfaces **26**, **27** and **28** separated by the cross bars **14** and **15**.

The marginal flange portions **11** and **12** further may be considered as having relatively adjacent inner side edges. In such side edge of the flange portion **12**, and in underlying aligned relation to the cross bar **15** is an indented formation or cut-out **29** unitarily formed in the piano plate when it is cast. That end of the bearing surface **27** adjacent to the cross bar **15** terminates at the indented formation **29**. That end of the bearing surface **28** adjacent to the cross arm **15** also substantially merges with and terminates at the indented formation **29**. The construction and arrangement of parts, it will be understood, is to afford a free and unobstructed passage for those strings **21** which would normally pass through the joint between the cross arm **15** and the inner edge of the marginal flange portion **12**. Further, the disadvantages of a cored-out opening in the arm **15** for passage of such

certain strings is avoided. Thus, the strings do not pass through spaced apart superposed surfaces in the plate. The underside of the cross arm **15**, at all points where it is traversed by the strings **21**, is freely accessible for smoothing and finishing operations prior to the installing of the strings.

From the above description it will be apparent that there is thus provided a device of the character described possessing the particular features of advantage before enumerated as desirable, but which obviously is susceptible of modification in its form, proportions, detail construction and arrangement of parts without departing from the principle involved or sacrificing any of its advantages.

While in order to comply with the statute the invention has been described in language more or less specific as to structural features, it is to be understood that the invention is not limited to the specific features shown, but that the means and construction herein disclosed comprise but one of several modes of putting the invention into effect, and the invention is therefore claimed in any of its forms or modifications within the legitimate and valid scope of the appended claims.

Having thus described my invention, I claim:

1. An overstrung piano plate having a marginal portion defining an intermediate opening therein and at least one intersecting cross bar joined at its ends to said marginal portion at diagonally opposite positions, and string bearing surfaces extending longitudinally along said marginal portion; characterized by a cut out formation in one edge of said marginal portion adjacent said opening and beneath one end of said cross bar interrupting said bearing surface to either side of said bar and obviating the use of hidden string bearing surfaces.



2. An overstrung piano plate including, a unitary metal frame with marginal portions and cross arms interconnecting said marginal portions, and a cut out portion at the junction of one of said arms and one of said marginal portions and extending laterally in opposite directions from said one of said arms enabling relatively diagonal application of strings in overlying relation to said frame and in underlying relation to said one arm at said cut out portion with free access thereto.

3. An overstrung piano plate including connected relatively opposite marginal portions having tuning and hitch pins respectively connected thereto, a series of strings stretched between said pins and connecting said opposite marginal portions thereby, bar elements joined at their ends to said relatively opposite marginal portions, at least one of said bar elements connecting diagonally in overlying relation to said strings and intermediate said marginal portion mounting said hitch pins, and means defining a cut out portion at the junction of one of said arms and in said marginal portion mounting said hitch pins extending laterally in opposite directions from said one of said arms enabling relatively diagonal application of strings in overlying relation to said frame and in underlying relation to said one arm immediately adjacent said junction.

**References Cited** in the file of this patent

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