(No Model.)

J. W. BRACKETT.

PIANO STRING PLATE.

No. 328,455. Patented Oct. 20, 1885.

Fig. 1.

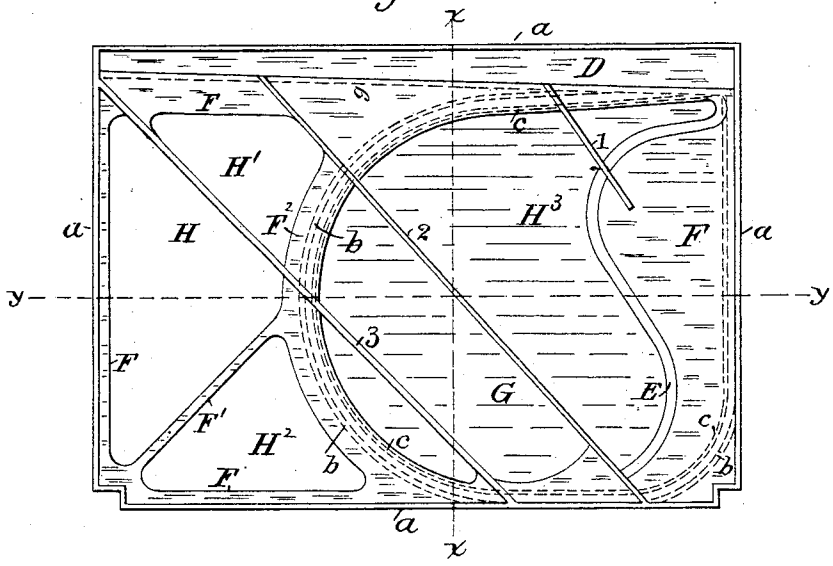


Fig. 2.

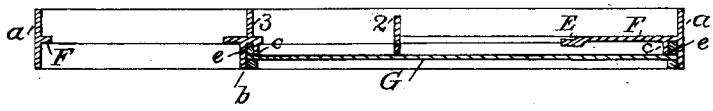
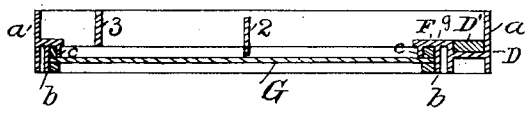


Fig. 3.



Witnesses.
Geo. Willis Pierce.
H. E. Barney.

Inventor.
John W. Brackett

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JOHN W. BRACKETT, OF BOSTON, MASSACHUSETTS.

PIANO-STRING PLATE.

SPECIFICATION forming part of Letters Patent No. 328,455, dated October 20, 1885.

Application filed January 12, 1885. Serial No. 152,591. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. BRACKETT, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Piano-Forte Plates, of which the following is a specification.

My invention relates to piano-forte-plate castings, and its object is to produce a plate of such a character as to contain a minimum amount of metal, independent of any supports, necessary to hold the pulling or strain of the strings without warping, twisting, or in any way yielding to the tension. Heretofore this has in a measure been accomplished by securing to the cast-metal plate heavy and cumbersome wooden frames, and also by making the plates heavy masses of iron, in both cases making in the total a heavy and unwieldy piano.

In pursuance of this object my invention consists in producing a plate having on its outer circumference a continuous rigid rim of cast metal, and suspending the plate or wire-straining part midway of the rim or flange, and of suitable tension-resisting braces and rims or flanges so arranged as to support and distribute all strains, and support and secure the sounding-board in a peculiar and novel manner, all being cast in one piece, and so arranged and combined as to provide for the several adjuncts and necessities of a piano-plate, and to render the result a perfect piano, light in weight and simple in construction, all of which I will now proceed to describe, and to point out specifically in the claims.

Of the accompanying drawings, Figure 1 represents a top view of a piano-plate casting embodying my invention. Fig. 2 is a section on *y y* of Fig. 1, and Fig. 3 is a section on *x x* of Fig. 1.

In the drawings, *a a a a* is a continuous rim or flange surrounding the plate proper, F, the rim being in practice about four inches in depth. The plate or web F is a flat surface equidistant from the two edges of the rim or flange *a*. In the ordinary piano-plate this web is cast in a heavy mass and supported by a wooden backing, to which it is bolted. The plate F does not entirely fill the space between the rims *a a* *a a*, as, besides the necessary sounding-board opening, H^3, other openings, H H′ H^2, are made, leaving the rib F′ and the curved rib F^2, as shown in Fig. 1.

E shows a rabbet on the surface of the plate F for centralizing the draft of the strings.

Connecting-ribs 1, 2, and 3 are placed as shown in the direction of the wire-tension.

At the upper edge of the plate, between the rim *a* and bridge-line *g*, is recess or pocket, D, for the reception of the wrest-pin block D′, (shown in position in Fig 3.)

Under the curved rib F^2 is a curved rim or flange, *b b*, extending around and joining the outer rim *a a* at each side, making a curve at the lower right corner, the upper left corner forming a right angle.

Inside of the flange *b b* is a supplemental rim or flange, *c c*, separated slightly from the rim *b b* to leave an annular space between, in which a piece of wood is secured.

The sounding-board G is secured against the flange *c c* in such a manner as will allow the swelling and shrinking of the board without splitting or cracking.

The intersecting rib F^2, with the flanges *b* and *c*, being circular in their direction and rigid in form and construction, are so placed as not only to form a symmetrical whole, but also to add greatly to the strength and stiffness of the plate, thereby enabling it to hold the continuous strain or pulling of the strings, which is through the middle or axis of the plate, instead of being on one side, as ordinarily, thereby obviating all warping, twisting, or springing of the plate, dispensing with supports or wooden frames, the plate being independent, having all its strains compensated for within itself. There is also great economy in the materials of construction, as such a disposition is made of the metal as to secure the best results with great reduction in quantity, thereby lessening the weight of the piano.

By means of the circular rib F^2, with its flanges *b* and *c*, I am enabled to obtain a symmetrical-shaped sounding-board, which is of value in obtaining perfect results of tone.

I claim—

1. In piano-forte plates, the combination of the plate proper with a cast-metal rim therefor cast in one piece with the said plate, and projecting equidistantly from each surface thereof, together with a second rim or flange

intersecting the first on one surface, being also of uniform width therewith, and following the entire outline of the sounding-board, substantially as and for the purposes specified.

2. In piano-forte plates, the plate proper or web, combined with a continuous rim therefor, the edge of the plate being at the center of the rim, which thus extends equidistantly from both surfaces of said plate, a second rim or flange intersecting the first on one side only of the web, and following the entire outline of the sounding-board, of uniform width with the first rim, and an auxiliary or supplementary rim or flange inside the second to support the sounding-board, the whole being cast in one piece of iron or other suitable metal, substantially as described.

3. The combination, in piano-forte plates, of the web or plate proper, a continuous rim therefor surrounding the said plate and extending equidistantly from each surface thereof, a second rim or flange intersecting the first on one surface and following the entire outline of the sounding-board, in width being uniform with the first rim, a supplementary continuous rim or flange inside the second, of suitable width to support the sounding-board, and a recess or pocket between the outside rim and bridge-line of sufficient depth to receive the wrest-pin block, as and for the purpose set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 29th day of May, 1884.

JOHN W. BRACKETT.

Witnesses:

GEO. WILLIS PIERCE,

H. E. BARNEY.