

(No Model.)

M. W. WHITE.
VIOLIN.

No. 605,942.

Patented June 21, 1898.

Fig. 1

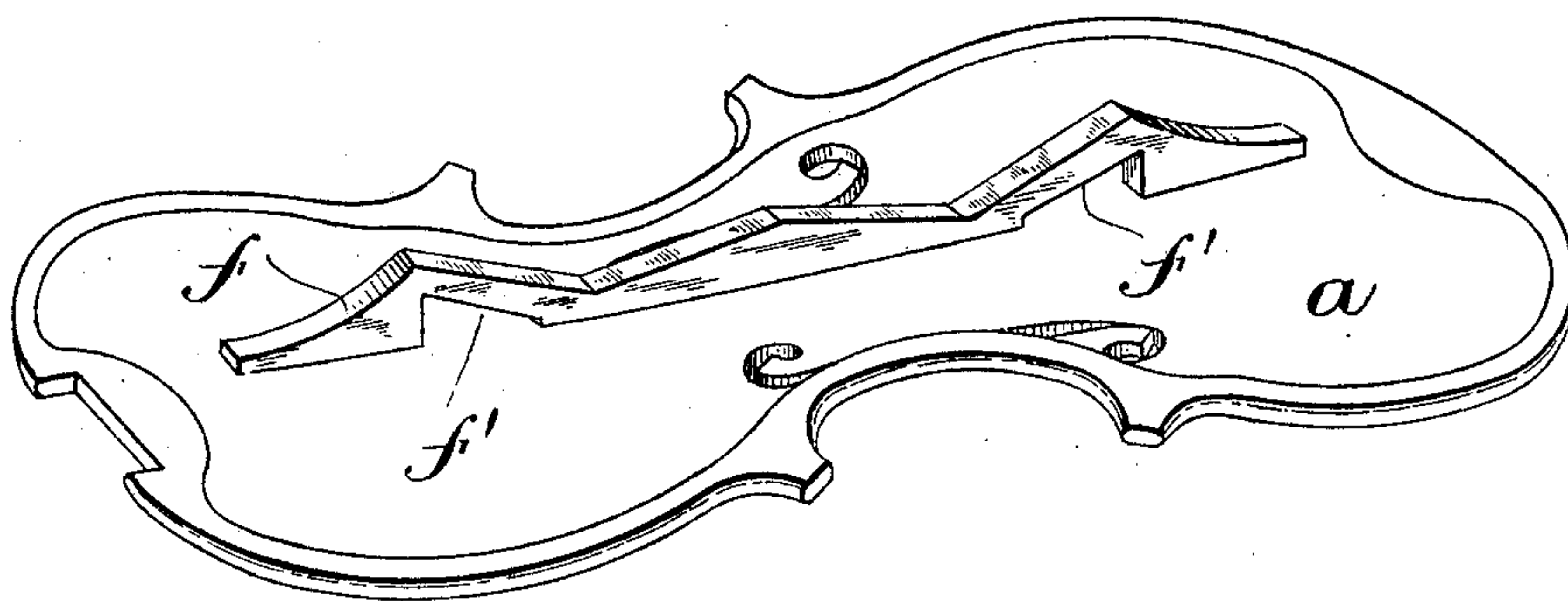


Fig. 2.

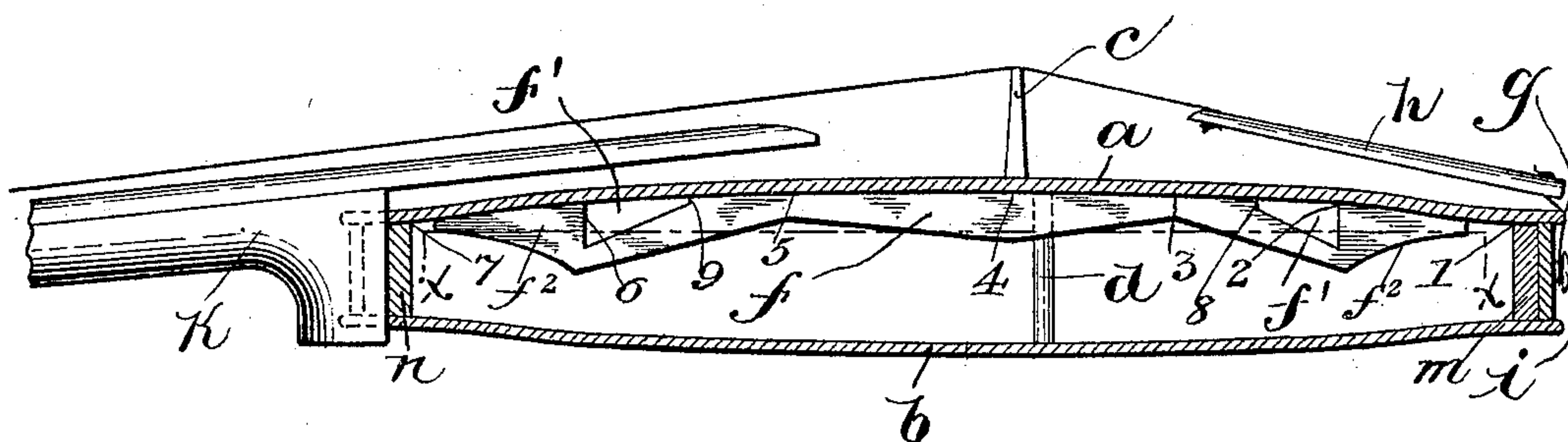
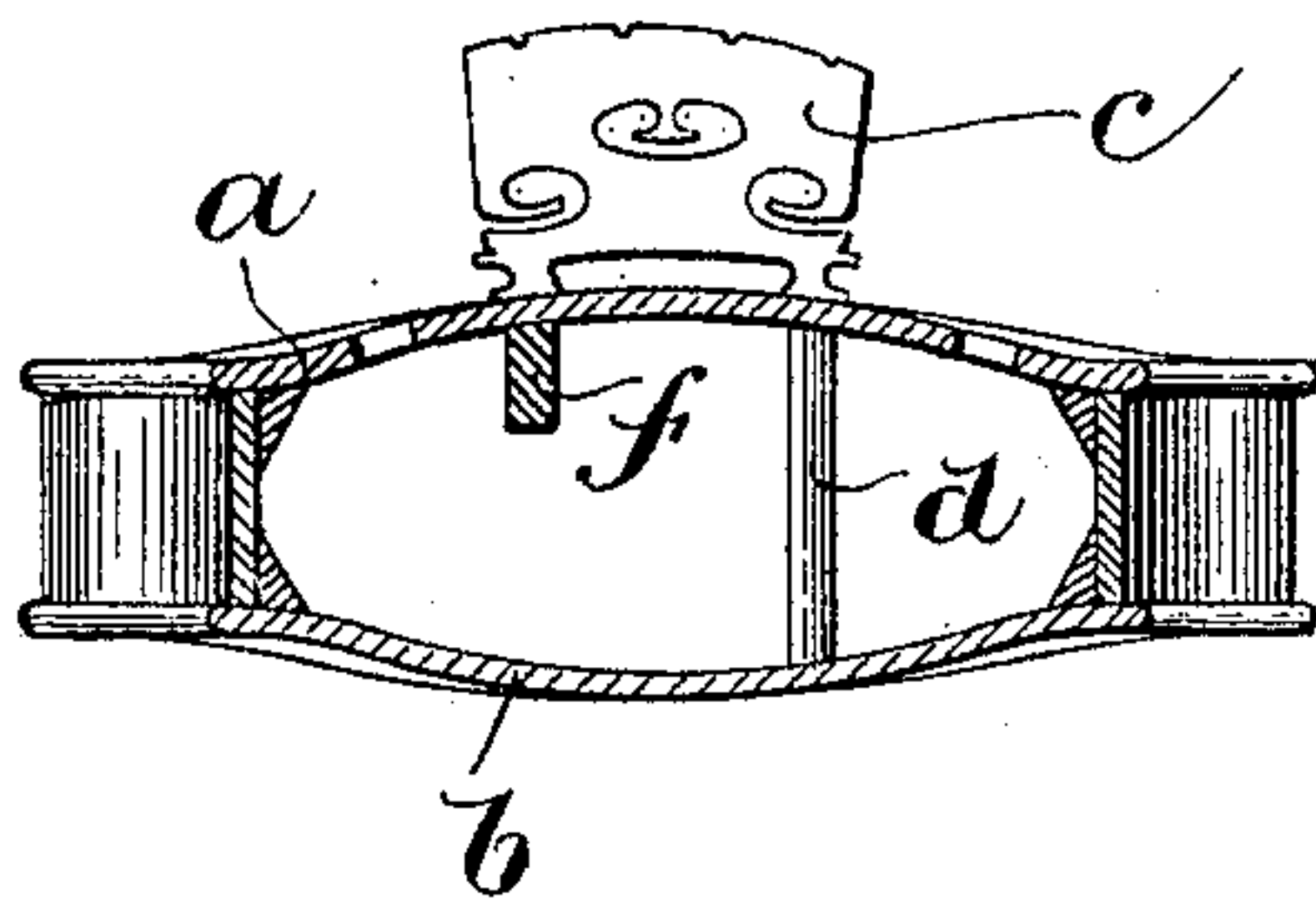


Fig. 3.



Witnesses:

A. D. Hanson
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Inventor:

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UNITED STATES PATENT OFFICE.

MAURICE W. WHITE, OF SOMERVILLE, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO FREDERICK A. SUCK, OF BOSTON, MASSACHUSETTS.

VIOLIN.

SPECIFICATION forming part of Letters Patent No. 605,942, dated June 21, 1898.

Application filed August 7, 1897. Serial No. 647,409. (No model.)

To all whom it may concern:

Be it known that I, MAURICE W. WHITE, of Somerville, in the county of Middlesex and State of Massachusetts, have invented certain
5 new and useful Improvements in Violins, of which the following is a specification.

This invention relates to violins and kindred instruments, and more particularly to the construction of the bass-bar in such instruments.
10

The invention has for its object to improve the resonant qualities of a violin or similar instrument by increasing the amplitude of vibration of the belly of the instrument. This
15 object is accomplished by a peculiar formation of the bass-bar, which I shall now proceed to describe in detail and then point out in the claims hereto appended.

Of the accompanying drawings, forming a part of this application, Figure 1 represents a perspective view of the reverse side of a violin-belly provided with my improved bass-bar. Fig. 2 represents a longitudinal vertical section of the violin. Fig. 3 represents a
25 transverse section thereof.

The same reference characters indicate the same parts in all the figures.

Referring to the drawings, *a* designates the violin-belly; *b*, the back; *c*, the bridge, and
30 *d* the sound-post, located under or nearly under the right foot of the bridge. The bass-bar *f* is affixed to the belly under the left foot of the bridge and extends longitudinally of the violin for nearly the whole length of the
35 belly.

k designates the neck of the violin, *h* the tailpiece, *i* the tailpiece-button, and *g* the loop of gut joining the two latter, all of which parts are constructed in the usual manner.

For the sake of illustration I have represented the belly *a*, between the right end block *m* in Fig. 2 and the bridge *c*, as divided
40 off into three equal parts or spaces 1 2, 2 3, and 3 4 and the space between the bridge and the left-end block *n* as divided off in like
45 manner into three equal parts 4 5, 5 6, and 6 7.

The numeral 8 designates a point half-way between the bridge and the block *m*, and the numeral 9 designates a corresponding point
50 half-way between the bridge and the block *n*.

The bass-bar *f*, as constructed and applied in accordance with my invention, is provided with two end portions $f^2 f^2$ and a middle portion separated from the end portions along the line of attachment to the belly by two recesses $f' f'$. A bridge of wood spans each of these recesses and connects the middle portion of the bar to the end portion, thus making a continuous bar. The end portions f^2 extend from the points 2 and 6 toward and
55 nearly to the end blocks *m* and *n* and are securely affixed to the belly. The bar is separated from the belly between the points 2 and 8 and the points 6 and 9 and is again securely affixed thereto between the points 8 and 9.
60 Each of the end portions f^2 constitutes a foot or brace for the middle portion of the bar, which assists said middle portion in resisting the downward pressure exerted by the bridge *c* when the strings are tightened. The arch
65 of the belly *a* is thereby greatly strengthened and the elasticity or rebounding power of the belly is improved, with the result that there is a great increase in the volume of the tones produced when the strings are bowed.
70

The letters *x x* in Fig. 2 designate a line joining the ends of the belly *a* and forming the chord of the arch of said belly. I have found that the best results are obtained when the recesses $f' f'$ in the bass-bar extend
75 slightly below this line, as shown.

In addition to its vibrations as a whole the belly of a violin also vibrates in a series of segments each time the strings are bowed. These segmental vibrations are instrumental
80 in producing the harmonic tones which accompany any fundamental tone in the violin. Some of the vibrating segments have a greater influence upon the quality of the full tone than others, and I have ascertained that the
85 segments corresponding in position to the recesses $f' f'$ are the most important in their effect upon the tone. When these recesses are absent in a bar of the same shape and size as the one shown, the bar being attached
90 throughout its whole length to the belly, certain of the tones produced are nasal in quality; but with the recesses present the nasal quality disappears and full round tones are produced. The bar *f* is reduced in depth im-
95 100

mediately below the points 3 and 5, as I find that this is necessary in order to give the best tone effects.

5 Bass-bars constructed in the manner above described will be found to be very effectual in new violins, and also in old instruments where the original bar was intended for low pitch and has to be replaced on account of the higher pitch to which violins are now tuned.

10 My invention is also applicable to other instruments of the violin class, such as violoncellos, bass-violis, &c.

I claim—

15 1. In a violin or similar instrument, a bass-bar having end portions each consisting of a foot or brace attached to the belly of the instrument and extending from a point adjacent to the end block to a point distant therefrom one-third of the inside length of the belly between said end block and the bridge, 20 and a middle portion attached to the belly, the bar being separated from the belly between the middle portion and the end portions.

25 2. In a violin or similar instrument, a bass-bar extending for substantially the whole length of the belly of the instrument and attached thereto at all portions of its own length excepting two portions, each of which begins 30 at a point distant from the end block one-

third of the inside length of the belly between the end block and the bridge, and ending at a point nearer the bridge.

3. In a violin or similar instrument, an arched belly, in combination with a bass-bar 35 attached along its middle and end portions to the belly and having at each end a recess forming a gap in the line of attachment which extends from a point distant from the end block one-third of the inside length of the belly between the end block and bridge to a 40 point distant from said end block one-half of that length, the said recesses extending on either side of the straight line joining the ends of the belly.

4. In a violin or similar instrument, a bass-bar having reduced portions each distant 45 from the bridge one-third of the inside length of the belly between said bridge and the end block and having two recesses forming gaps 50 in the line of attachment between said reduced portions and the ends of the bar.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 4th day of 55 August, A. D. 1897.

MAURICE W. WHITE.

Witnesses:

C. F. BROWN,

A. D. HARRISON.