

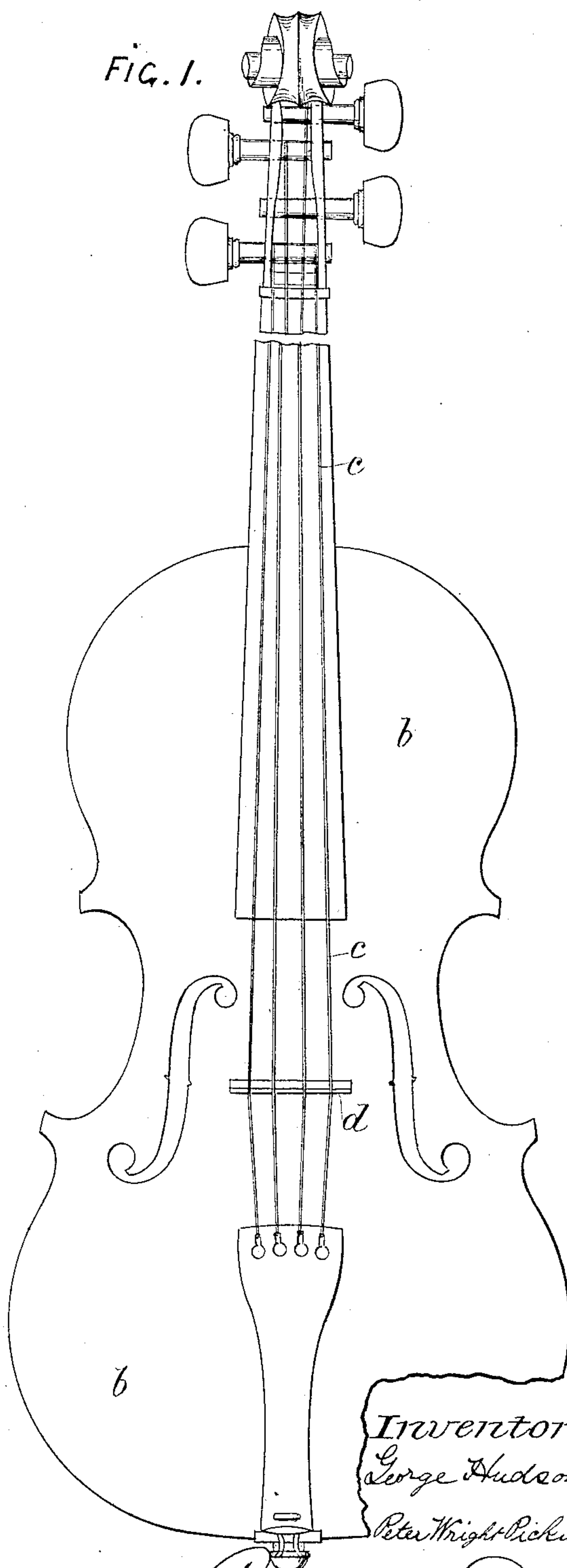
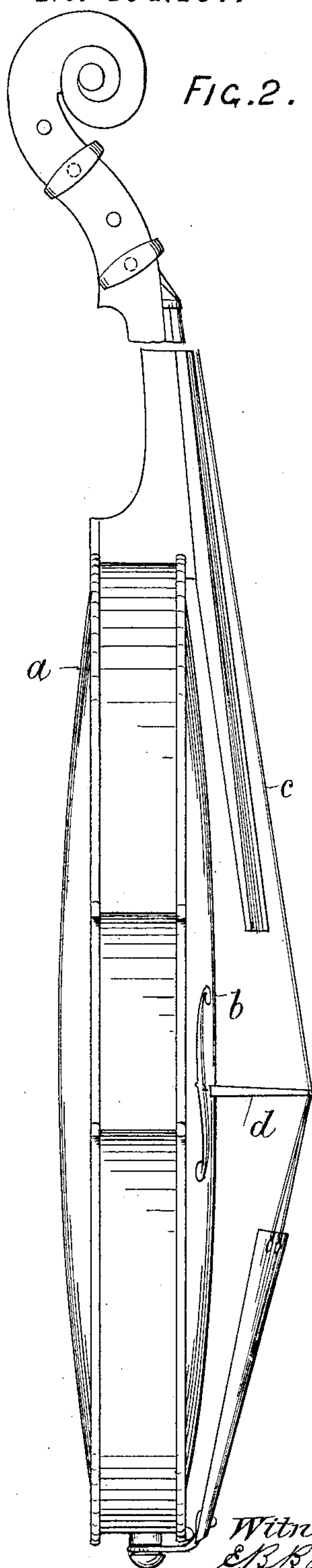
(No Model.)

2 Sheets—Sheet 1.

G. HUDSON & P. W. PICKUP.
VIOLIN.

No. 464,157.

Patented Dec. 1, 1891.



Witnesses:
E. B. Ralton
H. Kusterer

By

Richardson
their Attorneys.

Inventors:
George Hudson
Peter Wright Pickup

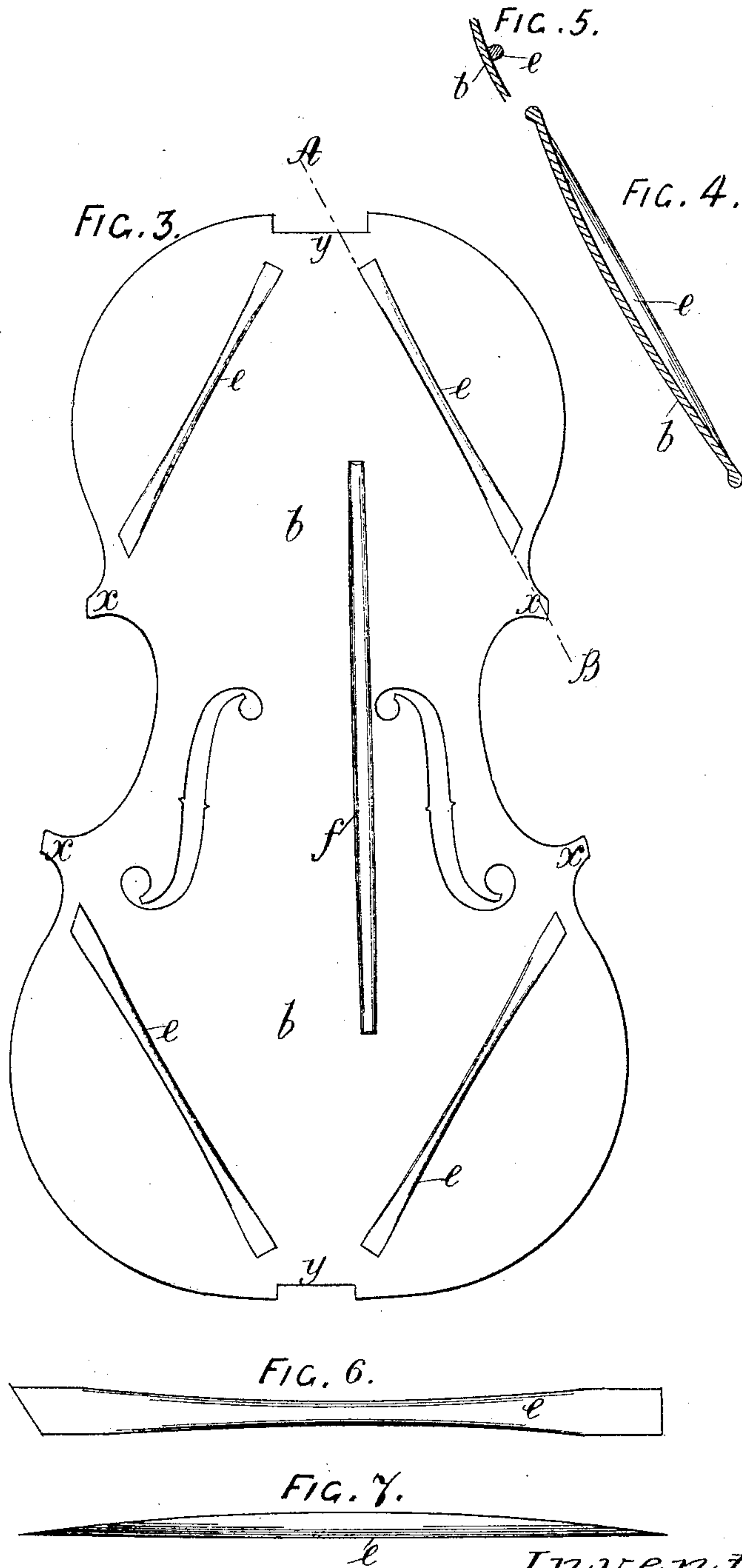
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2 Sheets—Sheet 2.

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VIOLIN.

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Witnesses:

C. R. Bolton
H. Kusterer

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UNITED STATES PATENT OFFICE.

GEORGE HUDSON, OF SKEGNESS, AND PETER WRIGHT PICKUP, OF RISHTON,
ENGLAND.

VIOLIN.

SPECIFICATION forming part of Letters Patent No. 464,157, dated December 1, 1891.

Application filed July 18, 1891. Serial No. 399,903. (No model.) Patented in England December 18, 1890, No. 20,645.

To all whom it may concern:

Be it known that we, GEORGE HUDSON, of Skegness, in the county of Lincoln, and PETER WRIGHT PICKUP, of Rishton, near Blackburn, in the county of Lancaster, England, subjects of the Queen of England, have invented certain new and useful Improvements in the Manufacture, Adjustment, and Renovation of Violins, Violas, Violoncellos, Double Basses, and other Bowed Instruments, (for which we have obtained Letters Patent in Great Britain, No. 20,645, bearing date December 18, 1890,) of which the following is a specification.

Our invention relates to improvements in the manufacture, adjustment, and renovation of violins, violas, violoncellos, double basses, and other bowed instruments of the violin and viol type; and the object of our invention is to improve the tone of old and new instruments of the ordinary construction.

We have discovered by experiment that in violins and other bowed instruments of the comparatively inexpensive class the free vibration of the principal sounding board or belly of the instrument is to a great extent checked by defects in the construction, and the resulting quality of tone is consequently impaired. In a violin or other bowed instrument there are several small blocks of wood or strengthening-pieces, generally six in number, placed between the belly and back of the instrument. These blocks are usually fitted one at each end of the instrument and two at each side not far from the bridge, and these latter are usually called "corner-blocks." We have proved that when the strings of the instrument are tightened—say to standard pitch—the lines of compression on the belly extend between the side or corner blocks and their respective nearest end block. The lines thus described form imperfect "nodes" when the strings are agitated by the bow, the result being that the instrument does not produce the fullest and purest tone that it might be made capable of. To remove this defect we propose to secure to the inside of the belly of the instrument, say, four strips of wood, preferably pine, or other suitable material, each strip being placed between one corner-block

and the end block nearest to such corner-block. Such strips by absorbing the compression and by conducting the same to the corner-blocks increase the power of the central portion of the belly to resist the downward pressure of the bridge, and at the same time give greater freedom for vibration to the upper and lower portions of the belly; and in order that our invention may be fully understood and readily carried into effect we will describe the accompanying sheet of drawings, reference being had to the letters marked thereon.

Figure 1 is a plan, and Fig. 2 a side elevation, of a violin to which our improvements have been applied. Fig. 3 is a plan of the inside of the belly. Fig. 4 is a sectional elevation taken on the plane of the line A B, Fig. 3. Fig. 5 is a transverse section of Fig. 4; and Figs. 6 and 7 are detail views, on a larger scale, of one of the strips.

In the views, *a* designates the back, *b* the belly, *c* the strings, and *d* the bridge, of the violin, which, so far as the exterior is concerned, is of the ordinary construction, as shown in Figs. 1 and 2.

We secure, by gluing or otherwise, to the inside of the belly *b*, as shown in Fig. 3, the four wooden strips *e* along the nodal lines between the usual corner-blocks and end blocks, as hereinbefore described. In Fig. 3 of the drawings the positions of the corner-blocks are indicated by the letter *x* and those of the end blocks by the letter *y*; but the blocks are not shown, as they are of the usual construction and form no part of our invention.

We prefer to shape the strips *e*, as shown best in Figs. 6 and 7—namely, flat and thin at the ends where they approach nearest to the blocks, and deeper and narrower between the ends or in the middle portion—and instead of using separate strips, as described, we might form them as ribs or projections in one piece with the belly *b*, or we might form them partly in one piece with the belly and partly by means of separate strips, as described. The proper dimensions of the strips will vary with the amount of arch or curvature on the belly and will require to be made to suit each individual instrument or type of instrument.

We prefer to make the bass-bar *f* shorter

than is usual in modern instruments, and according to the proportions shown in Fig. 3.

We have described our improvements as applied to a violin; but it will be readily understood that the improvements are equally applicable to violas, violoncellos, double basses, and other bowed instruments of the violin and viol type.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim, and desire to secure by Letters Patent of the United States, is—

1. In a violin or like instrument, the combination, with the belly, of strips *e*, secured

along the nodal lines between the corner and end blocks, substantially as set forth.

2. In a violin or like instrument, the combination, with the belly, of strips *e*, secured along the nodal lines thereof, said strips being flat and thin at their ends and deeper and narrower at their middle portion, substantially as set forth.

In witness whereof we have hereunto set our hands in presence of two witnesses.

GEORGE HUDSON.

PETER WRIGHT PICKUP.

Witnesses:

H. B. BARLOW,

S. W. GILLET.