

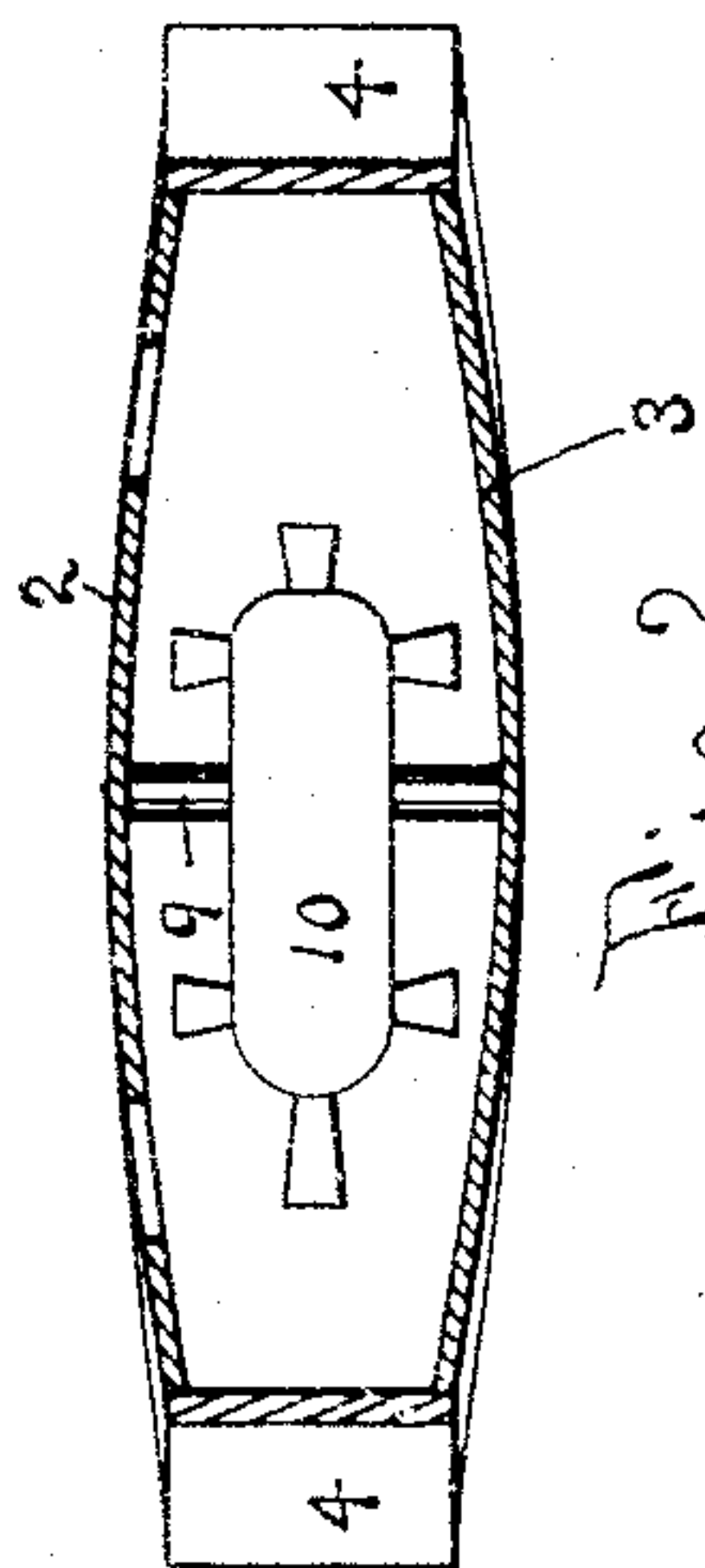
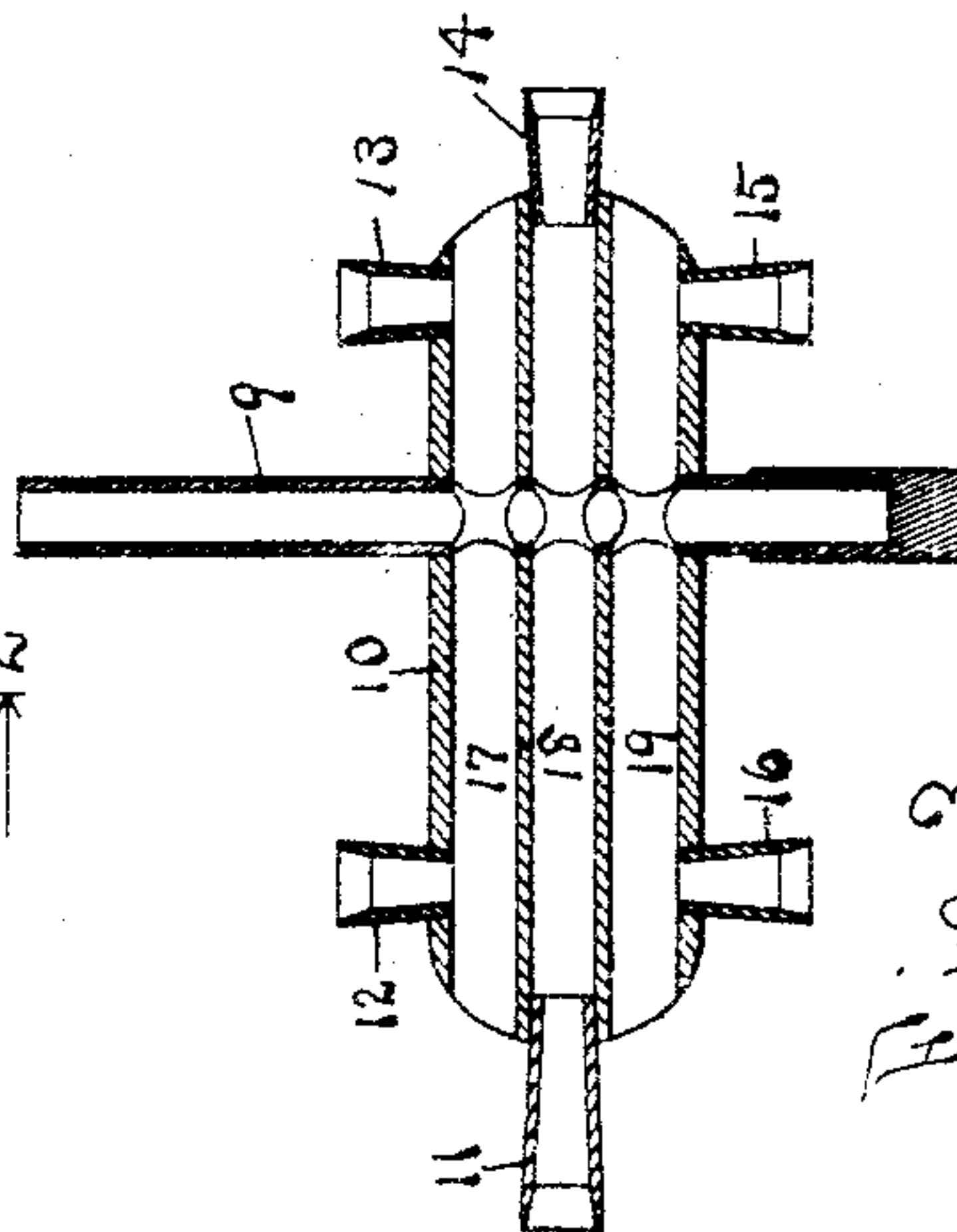
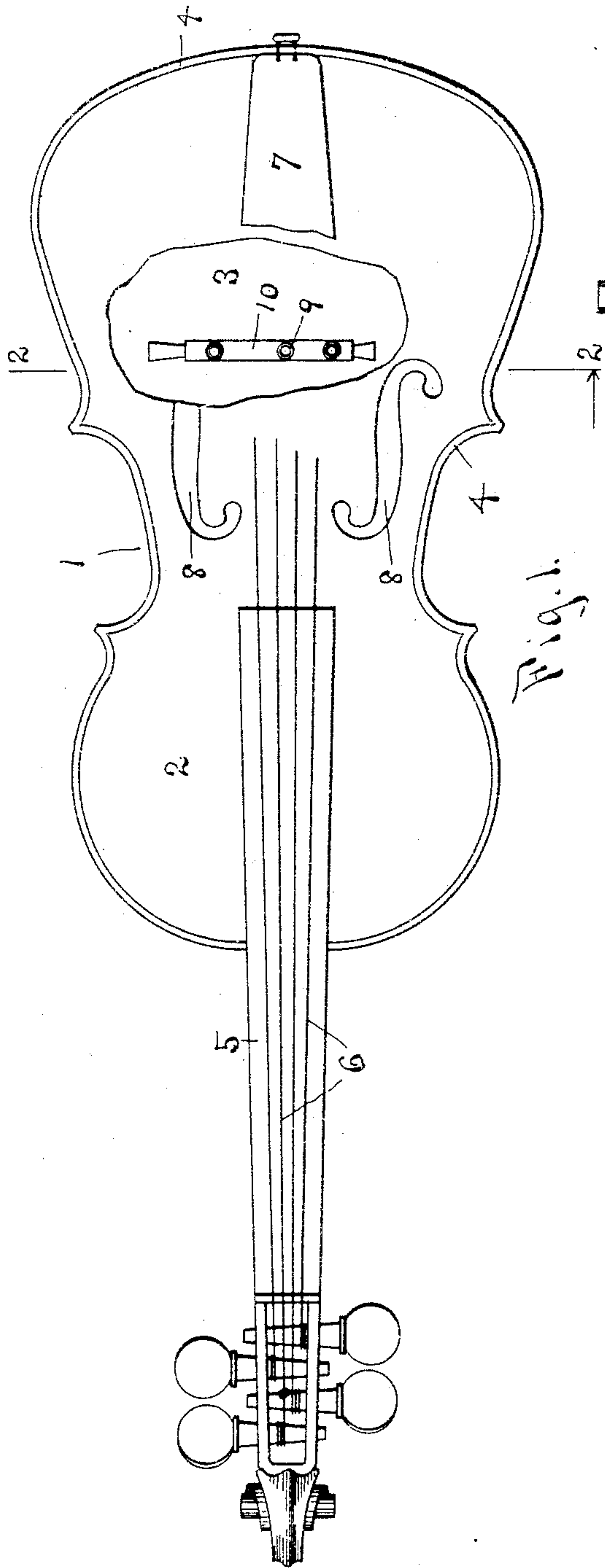
No. 790,986.

PATENTED MAY 30, 1905.

L. C. SMITH.

SOUND POST FOR MUSICAL STRINGED INSTRUMENTS.

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Witnesses:

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# UNITED STATES PATENT OFFICE.

LEWIS C. SMITH, OF NEW YORK, N. Y.

## SOUND-POST FOR MUSICAL STRINGED INSTRUMENTS.

SPECIFICATION forming part of Letters Patent No. 790,986, dated May 30, 1905.

Application filed September 2, 1904. Serial No. 223,070.

*To all whom it may concern:*

Be it known that I, LEWIS C. SMITH, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented a new and Improved Sound-Post for Musical Stringed Instruments, of which the following is a specification.

This invention relates to improvements in stringed instruments—such as guitars, violins, and similar instruments—in which the sounds produced by the vibration of the strings are intensified by vibrations set up in a hollow resonant body that supports the strings.

This invention is an improvement over the tone-modifier shown and described in the patent granted to me May 26, 1903, Serial No. 729,230.

The objects of this invention are to provide a sound-post for stringed instruments that will cause the sounds produced by the strings to be intensified and at the same time equalize any unevenness in the same, to provide a sound-post that can be inserted in the closed body of string instruments through the small opening now usually present in the same, and to provide a sound-post that may be assembled before being passed through the openings in the closed body of the instrument. I attain these objects by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a plan of a violin provided with my sound-post, a portion of the instrument being broken away to show the post. Fig. 2 is a cross-section on the line 2 2 of Fig. 1. Fig. 3 is a longitudinal section through the sound-post and the sound-intensifying attachment.

Similar reference characters refer to like parts throughout the several views.

In the drawings, 1 is the body of an ordinary violin having the front or belly 2, back 3, sides 4, neck 5, strings 6, tailpiece 7, and sound-openings 8. The sound-post is composed of the upright post 9, upon which is mounted the sound-intensifying body portion 10 and the projecting tubular fingers 11, 12, 13, 14, 15, and 16. The post, the body portion 10, and the fingers are preferably made of a close-grained resonant wood, such as birch. The post 9 is provided with a central bore

that communicates with the longitudinal bores 17 18 19 through the body portion. Unlike the post of my former patent the bore of the post here shown terminates before reaching the end. The bores of the tubular fingers 12 55 and 13 communicate with the bore 17. The bores of the fingers 11 and 14 are extensions of the bore 18, while the bores of fingers 15 and 16 communicate with the bore 19. It will be noticed that the fingers 12 and 13 and 60 15 and 16 have exactly the same length. While finger 14 is of the same length as fingers 12, 13, 15, and 16, it is shorter than finger 11.

It has been found by experiment that slight 65 changes in the location of this post will affect the sounds of some instruments materially; so, also, will the proportions between the lengths of the tubular fingers and the distances between the vertical fingers and the 70 post 9. As shown in the drawings, the post 9 is secured in the usual location of the sound-post of the instrument, the body portion 10 extending across the instrument, the longer part being toward the left. It will be seen 75 that the device can readily be introduced through the openings 8.

I have found that the effectiveness of this device is measurably increased by passing a hot metal rod through the bores to burn out 80 the fine slivers that usually adhere to the insides of holes in wood. In fact, the smoother the bores can be made the better the effect. The closing of the lower end of the post 9 adds to the efficiency, for it causes the sound- 85 waves to be carried through the sound-passages in the post into all directions inside the instrument and avoids any reaction of sound-vibrations at the extreme back part inside the instrument. The walls of the post, the body, 90 and the tubular fingers should be very thin, so that each portion will be sensitive to the sounds and will intensify the same. Being placed under the bridge between the belly and back of the body of the instrument sound-vi- 95 brations or sound-waves transmitted by the bridge to the belly and to the post 9 will cause the air inside the post and body to vibrate with great energy and transmit such vibrations or waves upward, downward, and later- 100



ally through the trumpet-shaped tubular fingers. This vibration is intensified by the resonant body portion 10, which acts in conjunction with the other parts of the post. The  
 5 vibration of the columns of air in the small trumpets 11 to 16, inclusive, causes increased vibration of the air inclosed in the body of the instrument and to a large degree at right angles to the walls of this hollow body, where,  
 10 because of defective construction or material the various parts of the body act or respond unevenly the sounds produced will be unpleasant, but by means of the auxiliary sound mechanism the sound-waves set up within the  
 15 body of the instrument by these false responses will be eliminated, as they will be neutralized by the sound-waves induced in this device. In other words, the device causes all parts of the instrument to intensify sounds in  
 20 conformity with the sounds of the strings.

In an instrument where no bridge is used, and so no post is necessary, the effect of this tone-post will be less than where it replaces an ordinary tone-post, but still the effect will  
 25 be sufficient to demonstrate the value of this improvement.

Having now explained my improvement, what I claim as my invention, and desire to secure by Letters Patent, is—

30 1. As a new article of manufacture, a sound-post for stringed instruments, comprising a tubular post-like support, a resonant body member mounted upon said post and having a plurality of parallel bores communicating  
 35 with the bore of said post and auxiliary bores communicating with and extending at right angles to the bores in said resonant body member, and hollow fingers mounted in the ends of a plurality of said bores.

40 2. As a new article of manufacture, a sound-post for musical stringed instruments, comprising a post-like support having a central

bore extending partially through the same, a resonant body member mounted upon the same and having three parallel bores communicat- 45  
 ing with the bore of the post and two auxiliary bores communicating with each of the two outside bores in the body member, all said bores being in a plane with the bore of the post, and hollow members mounted in the outer 50  
 ends of the auxiliary bores and the central bore of the vibratory member.

3. As a new article of manufacture, a sound-post comprising a hollow post, a resonant body member mounted upon the same and having 55  
 a plurality of bores, all in a plane of the bore of the post, and auxiliary sound-intensifying means mounted in a plurality of the ends of the bores.

4. As a new article of manufacture, a sound- 60  
 post for musical stringed instruments, comprising a hollow post of relatively small diameter, a flat resonant member mounted upon the same having a plurality of bores opening  
 65 out on its edges, and a plurality of hollow fingers extending from the ends of said bores and being in the same plane as the post.

5. In combination with a musical stringed instrument, a tubular sound-post interposed  
 70 between the front and back of the instrument-body, a resonant body member mounted on said post and having a plurality of longitudinal bores communicating with the bore of the post and hollow fingers in the same plane  
 75 as said post extending from all edges of the resonant body member.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LEWIS C. SMITH.

In presence of—

JOHN HENRY KAHRS,  
 A. A. HAYWARD.