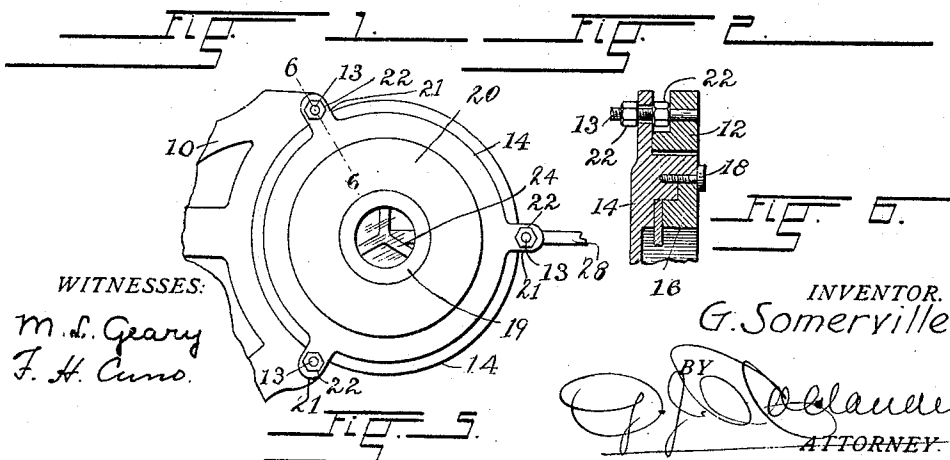
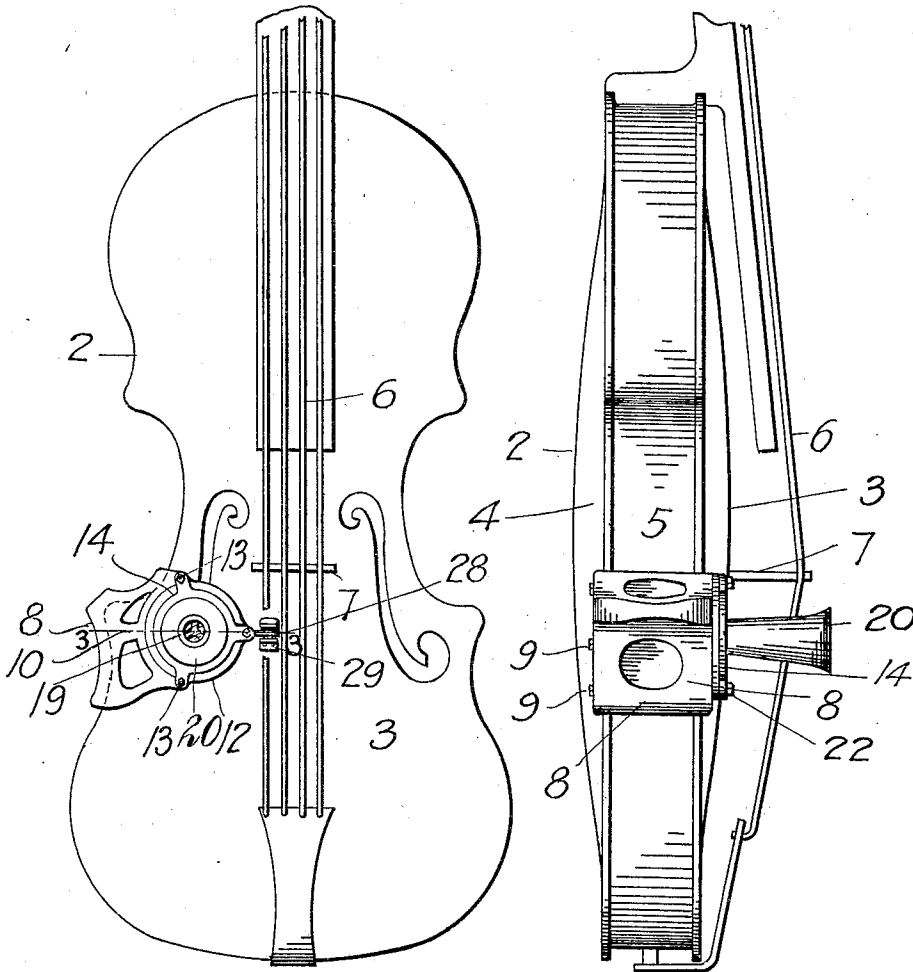


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APPLICATION FILED NOV. 9, 1909.

992,454.

Patented May 16, 1911.

2 SHEETS—SHEET 1.

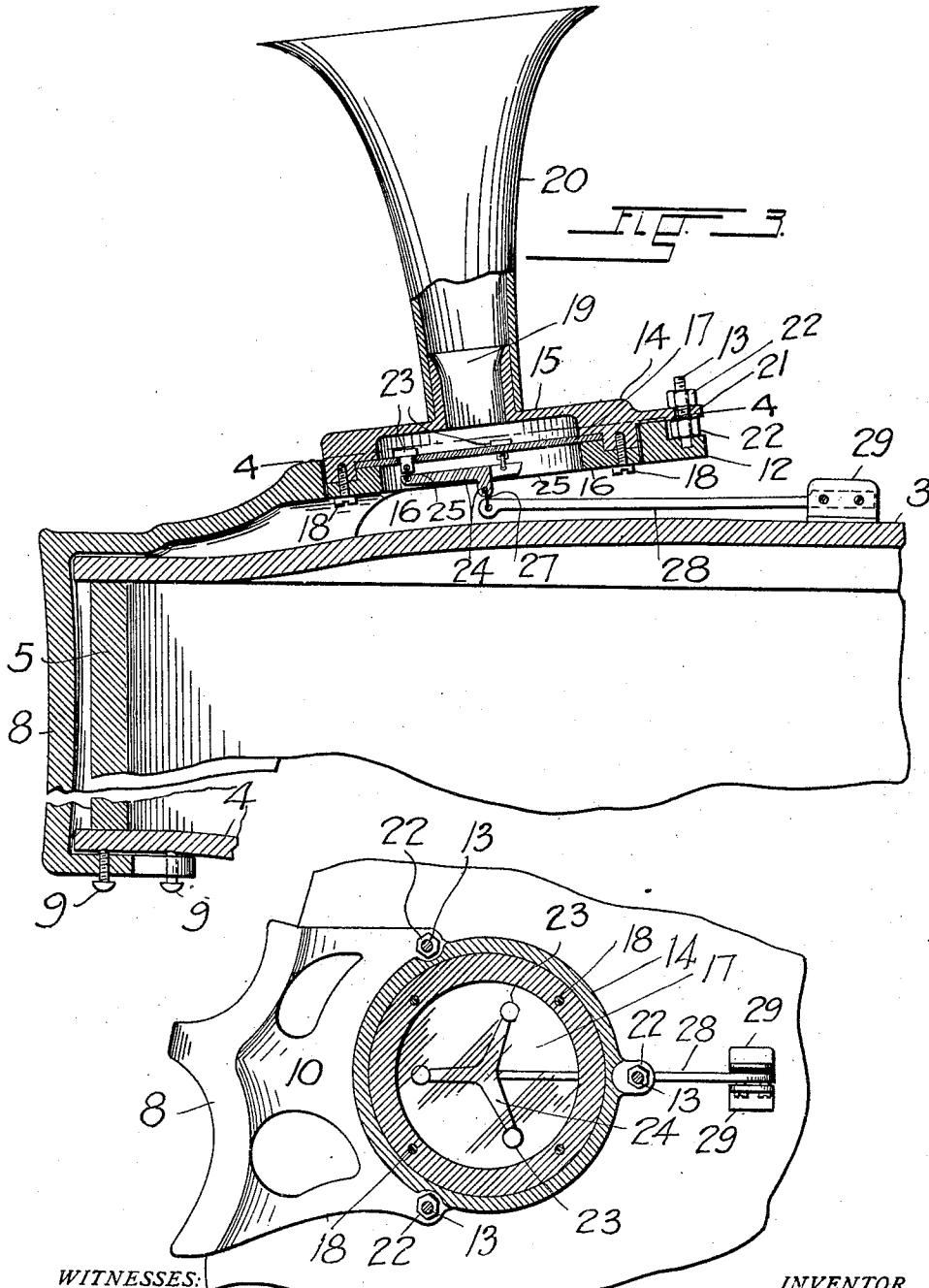


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WITNESSES:
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INVENTOR.
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BY *[Signature]*
ATTORNEY.

UNITED STATES PATENT OFFICE.

GEORGE SOMERVILLE, OF DENVER, COLORADO.

ATTACHMENT FOR VIOLINS AND LIKE INSTRUMENTS.

992,454.

Specification of Letters Patent.

Patented May 16, 1911.

Application filed November 9, 1909. Serial No. 527,055.

To all whom it may concern:

Be it known that I, GEORGE SOMERVILLE, a citizen of the United States of America, residing at Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in Attachments for Violins and the Like, of which the following is a specification.

This invention relates to an attachment for musical instruments of the class of which the viol is the typical representative and which includes the violin, violoncello, bass-viol, et cetera.

The object of the invention is to increase the clearness of the tone of an instrument and intensify the sound produced thereby by the provision of a simple contrivance which may readily be attached to its resonance box and which includes a vibrating diaphragm and a member by which the vibratory action of a sound-conveying element of the instrument is transmitted thereto.

The connection between the transmitting member and the diaphragm is preferably established at a plurality of separated points and my invention is, in this respect, based upon the principle set forth in the application for patent Serial Number 527054, filed synchronously with the present one.

An embodiment of the invention is illustrated in the accompanying drawings in the various views of which like parts are similarly designated and in which—

Figure 1, represents a plan view and Fig. 2, a side view of the resonance box of a violin, provided with my attachment, Fig. 3, a section taken along the line 3—3 Fig. 1, drawn to an exaggerated scale, and Fig. 4, a section taken along the line 4—4 Fig. 3. Fig. 5, a plan view of the diaphragm box and surrounding portion of the clamp, and Fig. 6, a section taken along the line 6—6, Fig. 5.

Referring to the drawings by numerals, let 2 designate the resonance box of the violin or analogous instrument including the belly 3, the back 4 and the connecting rim 5, and 6 the strings supported upon the bridge 7.

My attachment comprises a substantially U-shaped clamp 8 adapted to embrace the side of the instrument and provided with set-screws 9, which by engagement with the back 4, secure the attachment in its adjusted position. The upper member 10 of the clamp which extends over the belly of the instrument, terminates in a ring 12 provided

with a plurality of upwardly projecting stud-bolts 13. The latter serve for the attachment and adjustment of the diaphragm-box 14 including two annular members 15 and 16 between which the diaphragm 17 is clamped by means of screws 18. The upper member 15 of the diaphragm box 14 has a central opening surrounded by a rim 19 for the attachment of a horn 20 through which the sound transmitted through the vibrating action of the diaphragm, is conveyed into the atmosphere, and ears 21 projecting outwardly from the said member, are formed with apertures through which the before-mentioned stud-bolts 13 project. Nuts 22 secured upon the latter above and below the ears 21, serve to adjust the position of the diaphragm box relative to the annular extremity 12 of the clamp-member 10, and to firmly secure it in its adjusted position.

Secured in a plurality of apertures in the diaphragm 17, are buttons 23 made of metal or other suitable material, the lower protruding extremities of which are connected with the subjacent extremities of a spider 24 by means of flexible connections 25 preferably composed of silk thread. The spider 24 being thus suspended from the diaphragm, has at the point of intersection of its legs, a dependent lug 26 which by means of a connection 27 similar to that between its extremities and the buttons 23, is attached to the subjacent end of an arm 28 which, at its opposite extremity, is rigidly supported in a bearing 29 which is secured upon the belly 3 of the instrument in proximity to the center thereof, by means of a suitable adhesive or other means.

While the diaphragm 17 may be made of laminated metal or other suitable material, I preferably employ mica which, is transparent as shown in the drawings.

Having thus described the mechanical construction of the attachment, its operation and the advantages derived therefrom will be readily understood. The vibrations produced by the sounding of the strings 6 having been transmitted by means of the bridge 7, to the belly 3 of the instrument, are conveyed through the instrumentality of the relatively stationary arm 28 and the therewith connected spider 24 to the diaphragm 17 and thence through the horn 20 to the atmosphere. To regulate the tone communicated by the diaphragm, the position of the latter relative to the extremity of the arm

28 may be adjusted by means of the nuts 22 on the stud-bolts 13.

Having thus described my invention what I claim and desire to secure by Letters Patent is:—

1. The combination with an instrument of the viol class, of a vibrating diaphragm supported thereon, and a bar connected at one of its ends with said diaphragm and at its opposite end with the belly of the instrument.
2. The combination with an instrument of the viol class, of a vibrating diaphragm supported thereon, a spider including a plurality of radial arms whose extremities are separately connected with said diaphragm and a bar connected at one of its ends to said spider and at its opposite end to the belly of the instrument.
3. The combination with an instrument of the viol class, of a vibrating diaphragm supported thereon, a spider including a plurality of radial arms, below said diaphragm, flexible connections by which the extremities of said arms are separately suspended from the diaphragm, and a bar movably connected at one of its ends to said spider and secured at its opposite end to the belly of the instrument.
4. The combination with an instrument of the viol class, of a vibrating diaphragm supported thereon, a spider including a plurality of radial arms, below said diaphragm, flexible connections by which the extremities of said arms are separately suspended from the diaphragm, a bar secured at one of its ends to the belly of the instrument, and a flexible connection by which its opposite end is suspended from said spider.
5. The combination with an instrument of the viol class, of a diaphragm box adapted to be detachably secured thereto, a vibrating diaphragm in the latter, a horn on said box adapted to convey sounds transmitted by the diaphragm, and a bar con-

nected at its ends with said diaphragm and with the belly of the instrument.

6. The combination with an instrument of the viol class, of a clamping element adapted to embrace the edge of the resonance box of said instrument and to be detachably secured thereto, a diaphragm box secured on said element, a vibrating diaphragm in said box, and a bar connected at its ends with said diaphragm and with the belly of said resonance box.

7. The combination with an instrument of the viol class, of a clamp adapted to be secured thereto, a diaphragm box movably connected with said clamp, a vibrating diaphragm in said box, a bar movably suspended from said diaphragm at one of its ends and connected with the belly of the instrument at its opposite end, and means for adjusting the position of the diaphragm box on said clamp whereby the connection between the diaphragm and the said bar may be tensioned.

8. The combination with an instrument of the viol class, of a clamp adapted to secure thereto, a diaphragm box movably connected with said clamp, a vibrating diaphragm in said box, a spider including a plurality of radial arms, below said diaphragm, a bar secured at one of its ends to the belly of the instrument, its opposite end extending below said spider, flexible connections between the arms of the spider and said diaphragm and between the spider and the subjacent end of said bar, and means for adjusting the position of said box on said clamp whereby the connections between the diaphragm and the spider and between the spider and the bar may be tensioned.

In testimony whereof I have affixed my signature in presence of two witnesses.

GEORGE SOMERVILLE.

Witnesses:

G. J. ROLLANDET,
M. L. GEARY.