

(No Model.)

W. W. BATCHELDER, Jr.
HARP.

No. 517,723.

Patented Apr. 3, 1894.

Fig:1.

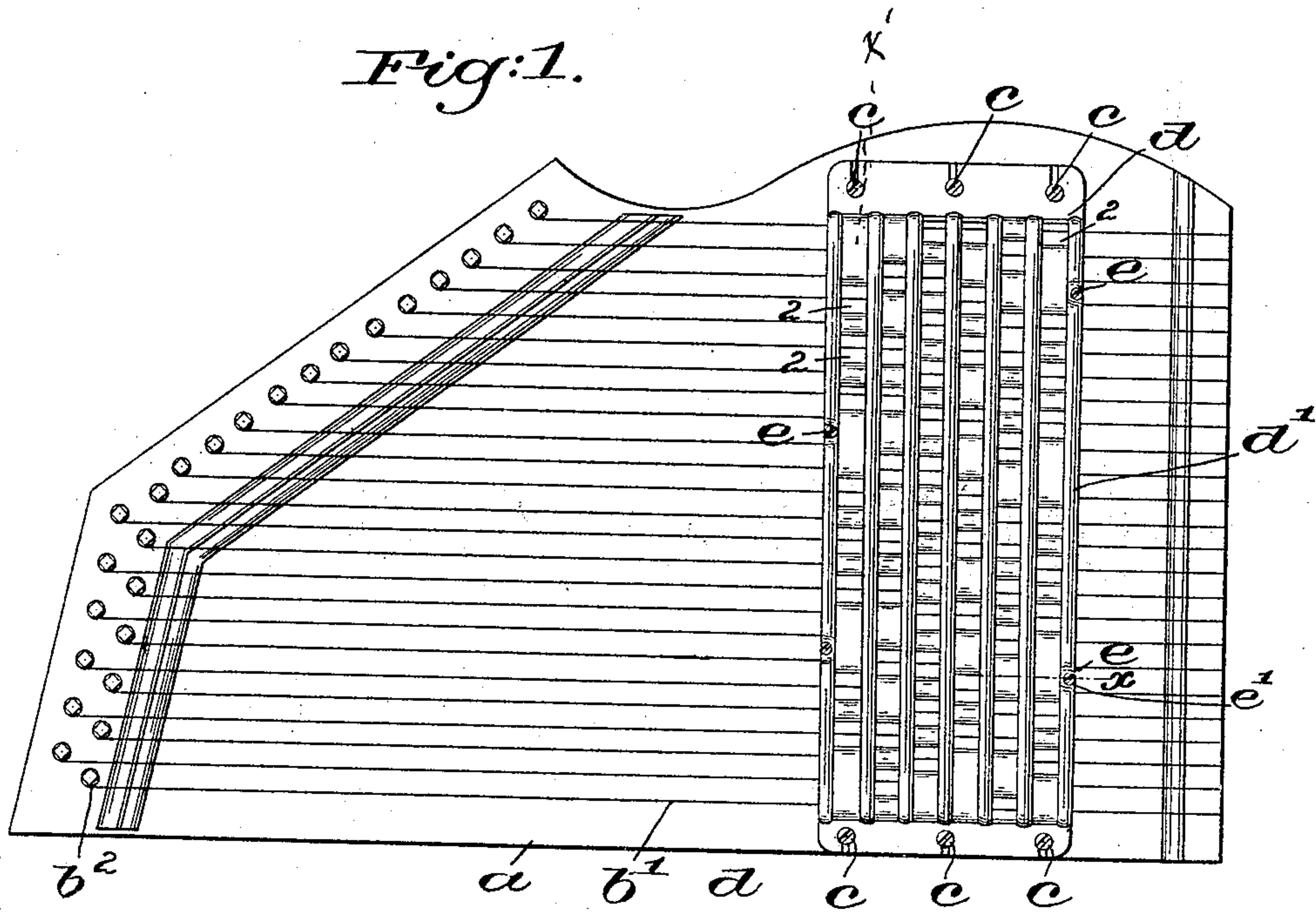


Fig:2.

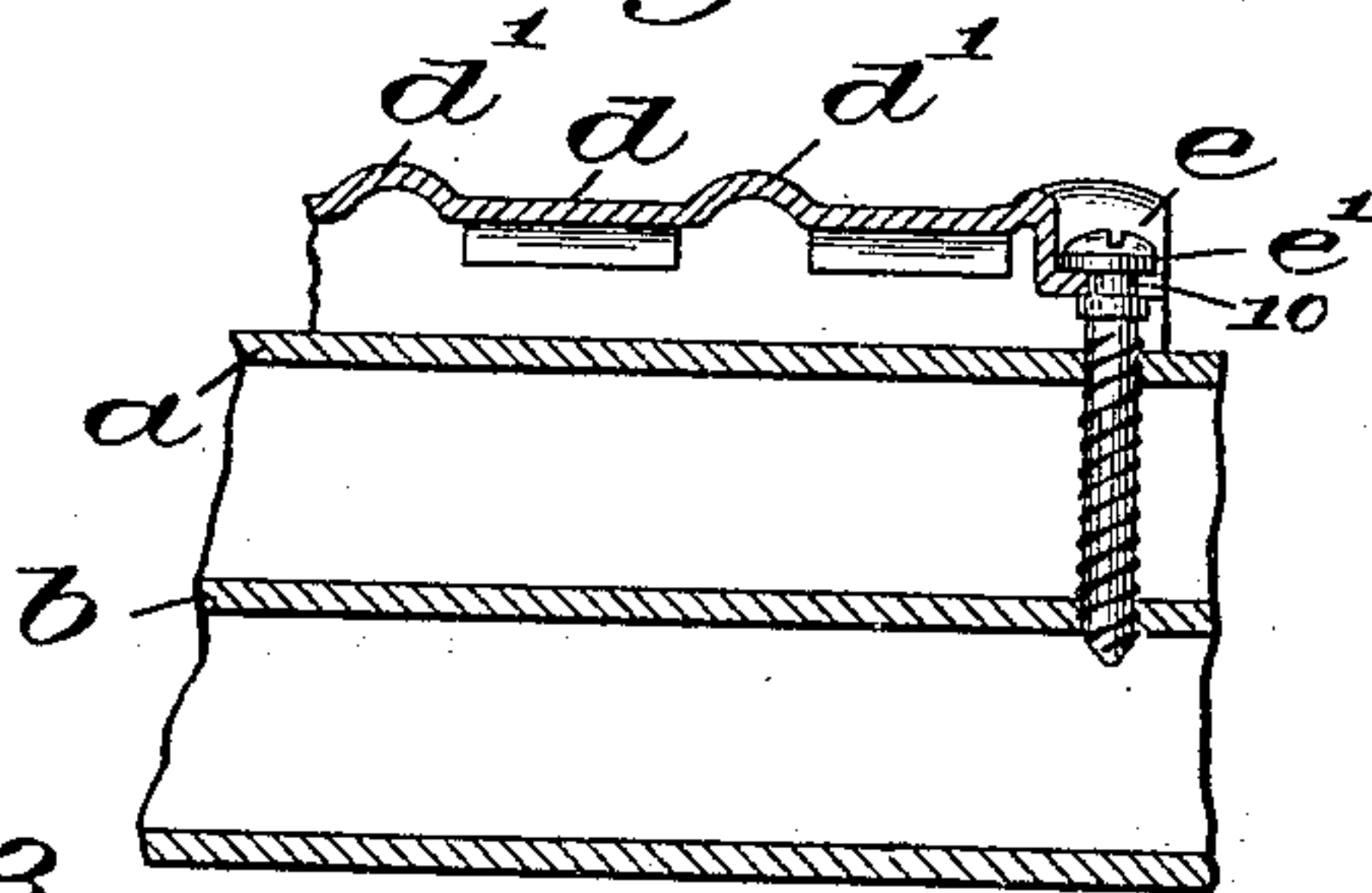
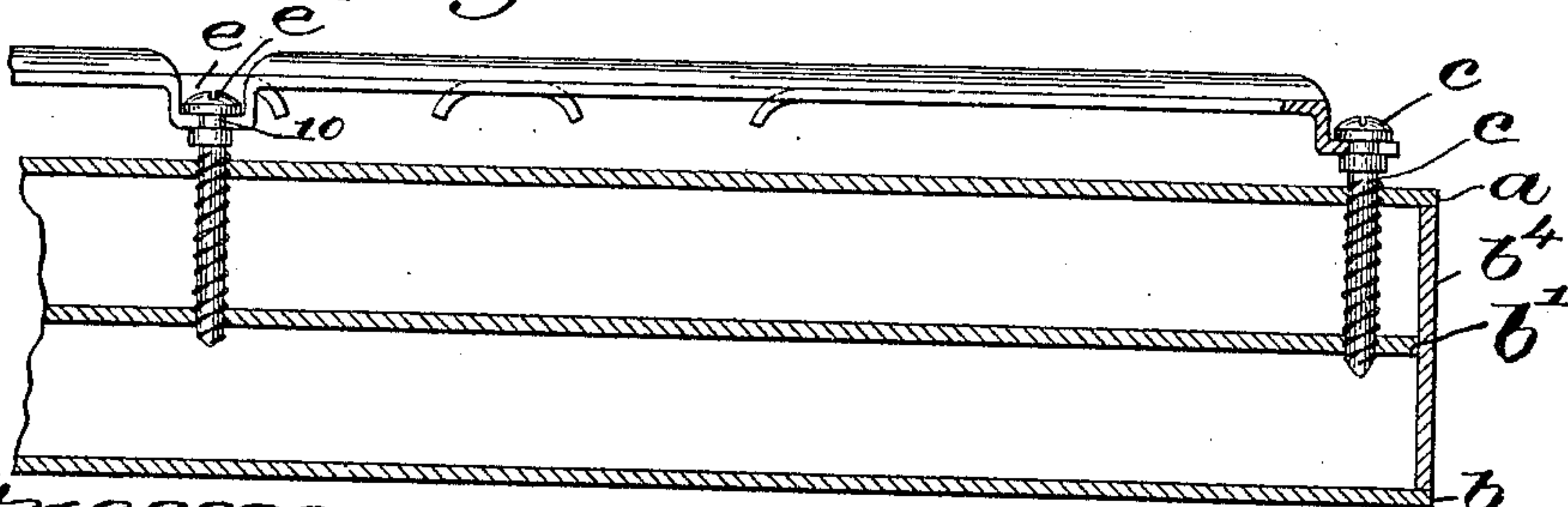


Fig:3.



Witnesses.

Fred S. Grunke.
Edward F. Allen.

Inventor:

William W. Batchelder, Jr.
by Crosby & Gregory attys.

UNITED STATES PATENT OFFICE.

WILLIAM W. BATCHELDER, JR., OF BOSTON, MASSACHUSETTS, ASSIGNOR TO
THE PHONOHARP COMPANY, OF BERWICK, MAINE.

HARP.

SPECIFICATION forming part of Letters Patent No. 517,723, dated April 3, 1894.

Application filed May 9, 1893. Serial No. 473,519. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. BATCHELDER, Jr., of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Phonoharps, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to musical instruments of the zither or harp class and which are provided with a bridge crossing the strings, said bridge having openings to support the "pick," or device, or fingers, for picking the strings, instruments of this class being commonly designated by the name "phonoharp." In instruments of this class it frequently happens that the bridge settles under pressure or becomes bent out of straight line by blows, or by the wood of the harp springing, and the under side of the bridge becomes at times too close or too far from the strings. In my experiments to overcome this trouble of displacement of the bridge, I have combined with the body and bridge, bridge-leveling devices whereby the bridge may be brought to the desired level at any point.

Figure 1 shows a harp embodying my invention; Fig. 2, a much enlarged section in the line x , to show a leveling device; and Fig. 3, a partial section in the line x' , the end of the bridge being broken out.

The body of the harp composed of top and bottom boards a , b , and middle board b' , all joined in usual manner to side walls b^4 of the desired shape, and the strings b' and posts b^2 to stretch them, are and may be all as usual. The bridge d is composed preferably of sheet metal, and, as herein shown, it is provided with a series of parallel longitudinally-extended ribs d' , between which the metal or body of the bridge is cut out at intervals to leave spaces 2, 2, to thus expose certain of the strings or wires, the openings in the bridges between the ribs being in such positions or made in such order as to uncover different desired strings, in order that they may be reached by the usual "pick" or the fingers. In order

that this bridge may be adjusted vertically if for any reason the bridge and wire come too close together, I have provided means by which to support and adjust vertically such parts of the bridge as may be desired or necessary, I employing for such purpose what I shall denominate leveling devices, designated as e' and c , said devices in the form in which I have herein embodied my invention, being shown as stud screws having annular grooves 10 below their heads, portions of the bridge entering said grooves, the bridge shown being provided along its edges above the strings with open-sided pockets e , shaped to receive and protect the heads of the leveling devices, the edges of the bridge entering the groove in the leveling devices, the rotation of the leveling devices raising or lowering the particular part of the bridge at and about the position of the leveling device. The leveling devices c are located at the ends of the bridge, the said ends being slotted.

In the construction herein employed to illustrate my invention the entire bridge or any part thereof may be adjusted vertically, but if desired, the leveling devices may be located only along the edges of the bridge crossing the strings, the ends of the bridge being rigidly attached to the sounding-board in the usual manner.

I desire it to be understood that this invention consists broadly in providing the bridge at desired points with leveling devices to vary its position and distance above or from the strings.

This invention is not limited to the particular form of the leveling devices shown, nor to the application of the same at the particular points shown.

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

1. The combination with a harp, its strings, and a bridge crossing said strings, of one or more leveling devices for said bridge by which the vertical distance of said bridge from said strings may be adjusted or varied, substantially as described.

2. The combination with a harp, its strings,
and a bridge crossing said strings and sup-
ported at its ends; of one or more adjustable
leveling devices by which to adjust and con-
5 trol the distance vertically of the bridge be-
tween its end-supports, from the strings, sub-
stantially as described.

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

WILLIAM W. BATCHELDER, JR.

Witnesses:

JOSEPH B. GREEN,

FREDERICK L. EMERY.