

(No Model.)

J. J. JOYCE.  
AUTOHARP.

No. 593,102.

Patented Nov. 2, 1897.

Fig. 1.

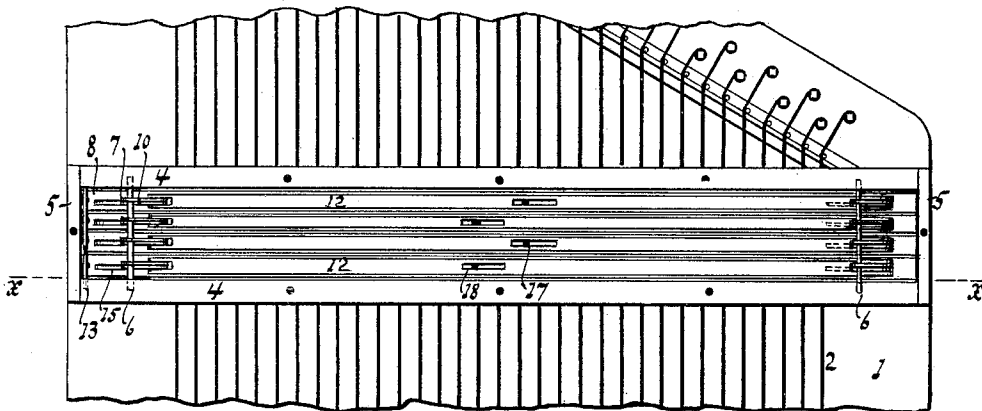


Fig. 2.

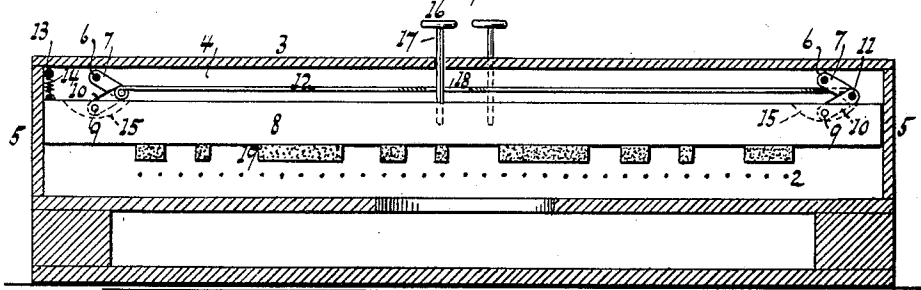


Fig. 3.

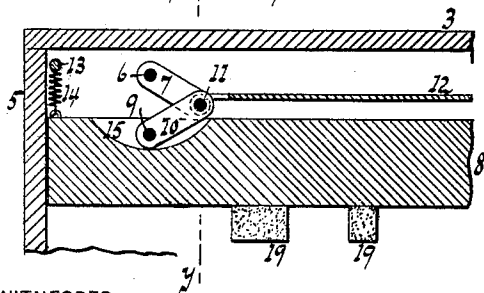
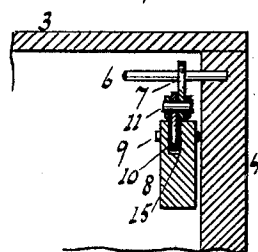


Fig. 4.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JOHN J. JOYCE, OF DOLGEVILLE, NEW YORK, ASSIGNOR TO THE C. F. ZIMMERMANN COMPANY, OF SAME PLACE.

## AUTOHARP.

SPECIFICATION forming part of Letters Patent No. 593,102, dated November 2, 1897.

Application filed April 15, 1897. Serial No. 632,275. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN J. JOYCE, a citizen of the United States, residing at Dolgeville, in the county of Herkimer and State of New York, have invented new and useful Improvements in Autoharps, of which the following is a specification.

The object of this invention is to obtain a musical instrument, such as an autoharp or the like, with suspended bar or manual capable of rectilinear motion; and the invention resides in the novel features of construction set forth in the following specification and claims and illustrated in the annexed drawings, in which—

Figure 1 is a plan view of an autoharp or musical instrument. Fig. 2 is a section along *xx*, Fig. 1. Fig. 3 is a detail sectional view of part of a bar or manual. Fig. 4 is a section along *yy*, Fig. 3.

The instrument is shown with a sounding-board 1 and strings 2. A plate or support 3 is shown with side pieces 4 and end pieces 5. The side pieces 4 support cross-pieces or rods 6, on which swing links 7. Jointed to bar or manual 8 at 9 are links 10. The links 7 and 10, jointed together at 11, form toggle-joints. To the link-connecting joint 11 is also jointed a rod or connection 12. The cross-bar or support 13 serves for supporting spring 14, which normally holds or makes manual 8 rest out of contact with the strings.

When the manual moves toward the strings, its motion is rectilinear, the ends 5 serving to guide the manual in a straight line. The connection 12, compelling the toggle-joints or links 7 10 to swing in unison, secures parallel action.

The links 10 are shown set into slots or semicircular recesses 15 in manual 8.

A handle or button 16 for actuating a manual has its stem 17 connected to the latter. The stem 17, passing through slot 18 in connection 12, allows the latter to move longitudinally or with joints 11. By this arrangement the bar or manual moves vertically, the ends of the manual having parallel motion.

The manual has dampers or contractors 19, as shown.

Of course the invention is not confined to the exact details shown, as these can be varied without departing from the invention, the object of which is to secure parallel motion for the opposite end portions of the bar or manual. One or more bars or manuals 8 can of course be applied.

What I claim as new, and desire to secure by Letters Patent, is—

1. A stringed musical instrument provided with a bar or manual (one or more) and a toggle-joint support for said manual substantially as described.

2. A stringed musical instrument provided with a bar or manual (one or more), toggle-joint supports for the manual, and a connecting-link for the joints substantially as described.

3. A stringed musical instrument provided with a support, links jointed to the support, a bar or manual (one or more) and links jointed to the manual, said links being jointed together and having a rod or connection for the link-connecting joints substantially as described.

4. A stringed musical instrument provided with a bar or manual (one or more), toggle-joint supports for the manual, a connecting-link for the joints, and a guide for securing rectilinear motion of the manual substantially as described.

5. A stringed musical instrument provided with a bar or manual (one or more), toggle-joint supports for the manual, a connection for the joints, and an actuating-handle for the manual, said connection being slotted to allow the passage of the handle and to allow longitudinal motion of the connection substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHN J. JOYCE.

Witnesses:

WILLIAM DOLGE,  
EDWARD DEDICKE.