

(No Model.)

J. A. TAYLOR & W. ESCHEMANN.
AUTOHARP.

No. 588,366.

Patented Aug. 17, 1897.

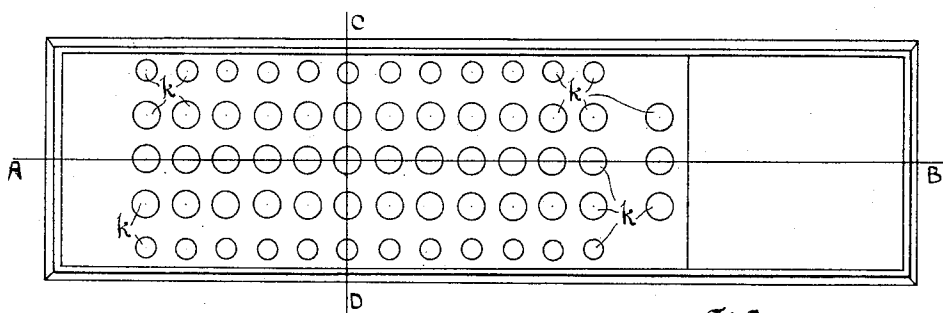


Fig. 1.

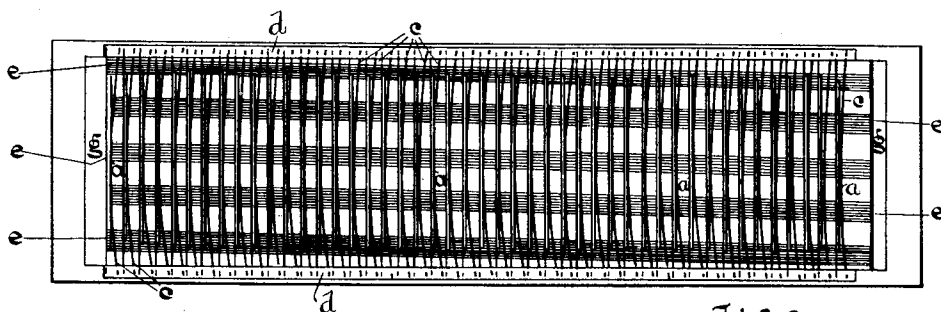


Fig. 2.

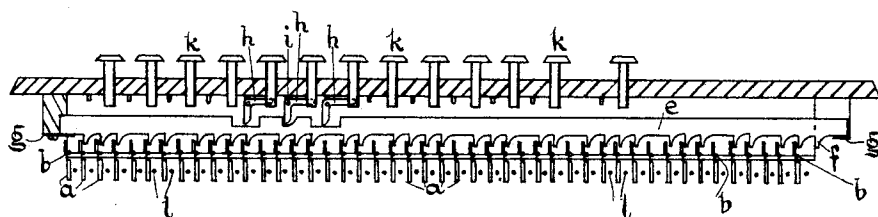


Fig. 3.

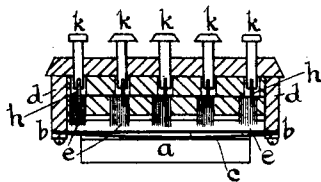


Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

JAMES A. TAYLOR AND WILLIAM ESCHMANN, OF LONDON, ENGLAND.

AUTOHARP.

SPECIFICATION forming part of Letters Patent No. 588,366, dated August 17, 1897.

Application filed September 21, 1896. Serial No. 606,583. (No model.)

To all whom it may concern:

Be it known that we, JAMES AVONDO TAYLOR, a subject of the Queen of Great Britain and Ireland, residing at 2 Weymouth Terrace, Hertford Road, Lower Edmonton, London, in the county of Middlesex, and WILLIAM ESCHMANN, a citizen of the United States of America, residing at 31^B Old Street, London, England, have invented Improvements Relating to Autoharps; and we do hereby declare that the following is a full, clear, and exact description of the invention; which will enable others skilled in the art to which it appertains to make and use the same.

The object of this invention is to make an autoharp upon which (without unduly increasing the size of the bridge) it shall be possible to form the major, minor, dominant-seventh, and diminished-seventh chords of all the keys and also, if desired, to play major and minor scales or to produce other effects that may be required.

According to this invention we arrange the strings of the harp in a chromatic scale and have a stationary bridge extending from side to side of the instrument, but instead of having damper-bars extending along the length of the bridge, as is usual with autoharps, we have a series of damper-flaps pivoted on the bridge, such flaps extending in the same direction as the strings, one flap for each string, and actuated so as to damp the strings not required to form any series of chords it may be desired to play.

The drawings accompanying this specification illustrate how our invention may be carried out. We pivot the before-mentioned flaps between the sides of the bridge, and we have extending along the bridge above the said flaps sets of thin steel strips with teeth cut at certain intervals along their lower edges. These strips are actuated by levers connected to buttons, or by other suitable mechanism, and in such a way that when a button is depressed the corresponding strip has a longitudinal movement imparted to it. This causes the teeth of the strip to press against the tops of certain of the damper-flaps, causing these latter to turn somewhat upon their pivots and making the lower portions of them press against certain of the

strings which it is desired to damp. The teeth on the strips are formed at such distances that by this means the major, minor, dominant-seventh, and diminished-seventh chords of all the keys may be formed at will, and, further, if desired, they may be so arranged that major and minor scales can be played or other effects produced—such as compound chords—when a very perfect instrument is required. We provide suitable springs for bringing the flaps and metal strips back to their normal positions when the buttons are released.

In the drawings, Figure 1 shows a plan of top side of bridge; Fig. 2, a plan of under side of bridge; Fig. 3, section on line A B, Fig. 1; and Fig. 4, section on line C D, Fig. 1.

The same letters of reference are employed to denote the same parts in all the views.

a shows the damper-flaps pivoted at *b*, each provided with a spring *c*. The flaps *a* and springs *c* are carried by the strips of wood *d*. (See Figs. 2 and 4.)

e are thin strips of metal with teeth *f* cut in their lower edges. The strips *e* are supported at their ends by pieces of metal *g*, as shown at Fig. 3.

h are cranked levers pivoted at *i* and actuated by means of buttons *k*. The lower end of each lever *h* engages with a strip *e*, the upper edge of which is suitably shaped to receive it, and the edges of adjacent strips are cut away, so that the said lever *h* may have full play and at the same time only actuate one strip. Each series of strips is slightly inclined to the line of the corresponding series of buttons, so as to bring each button directly over the strip it should actuate.

The strings of the instrument are shown at *l*, Fig. 3.

The action is as follows: On depressing one of the buttons *k* motion is imparted to its corresponding lever *h*, and the corresponding strip *e* consequently travels longitudinally, causing the teeth *f* to engage with the tops of some of the flaps *a*, which are thus turned about their pivots *b*, so that the lower portions of the said flaps move forward and damp the strings *l*.

The strip *e* (shown at Fig. 3) would produce the chord of A major, and it will easily be

seen that by suitably cutting the teeth in the other strips any required chord may be produced.

By the form of our flaps, which extend some distance along the strings, instead of damping them for only a very short space we are able to prevent the harmonic vibrations so objectionable in ordinary autoharps.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In an autoharp, the combination with a stationary bridge, of a plurality of dampers extending transversely across the said bridge and between the strings of the instrument, a spring provided for each damper, a plurality of strips extending longitudinally across the said bridge, and having teeth cut in their lower edges adapted to engage said dampers and recesses cut in their upper edges, the said strips adapted to move longitudinally of said bridge, a plurality of cranked levers mounted above the said strips, one arm of each lever adapted to engage one of said strips in the aforesaid recesses, and a plurality of buttons engaging the other ends of said levers whereby when one or more of said buttons are de-

pressed, the said strips may be moved horizontally and damp the strings of said instrument, substantially as described.

2. In an autoharp, the combination with a stationary bridge, of a plurality of dampers *a* extending transversely across the bridge and between the strings of the instrument, a spring *c* provided for each damper; strips *e* mounted above said dampers, extending longitudinally across said bridge and capable of longitudinal motion, and having teeth cut in their lower edges adapted to engage said dampers and recesses in their upper edges, cranked levers *h* mounted above said strips with one arm adapted to engage the said strips in the said recesses and the buttons *k* pivoted to the other arm of said crank-levers whereby when any of the said buttons are depressed, one of the said strips may be moved horizontally and thereby damp one of the strings of the said instrument, substantially as described.

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Witnesses:

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