(No Model.)

H. E. HIBSHMAN.

MUSICAL INSTRUMENT.

No. 572,010. Patented Nov. 24, 1896.

Fig. 1.

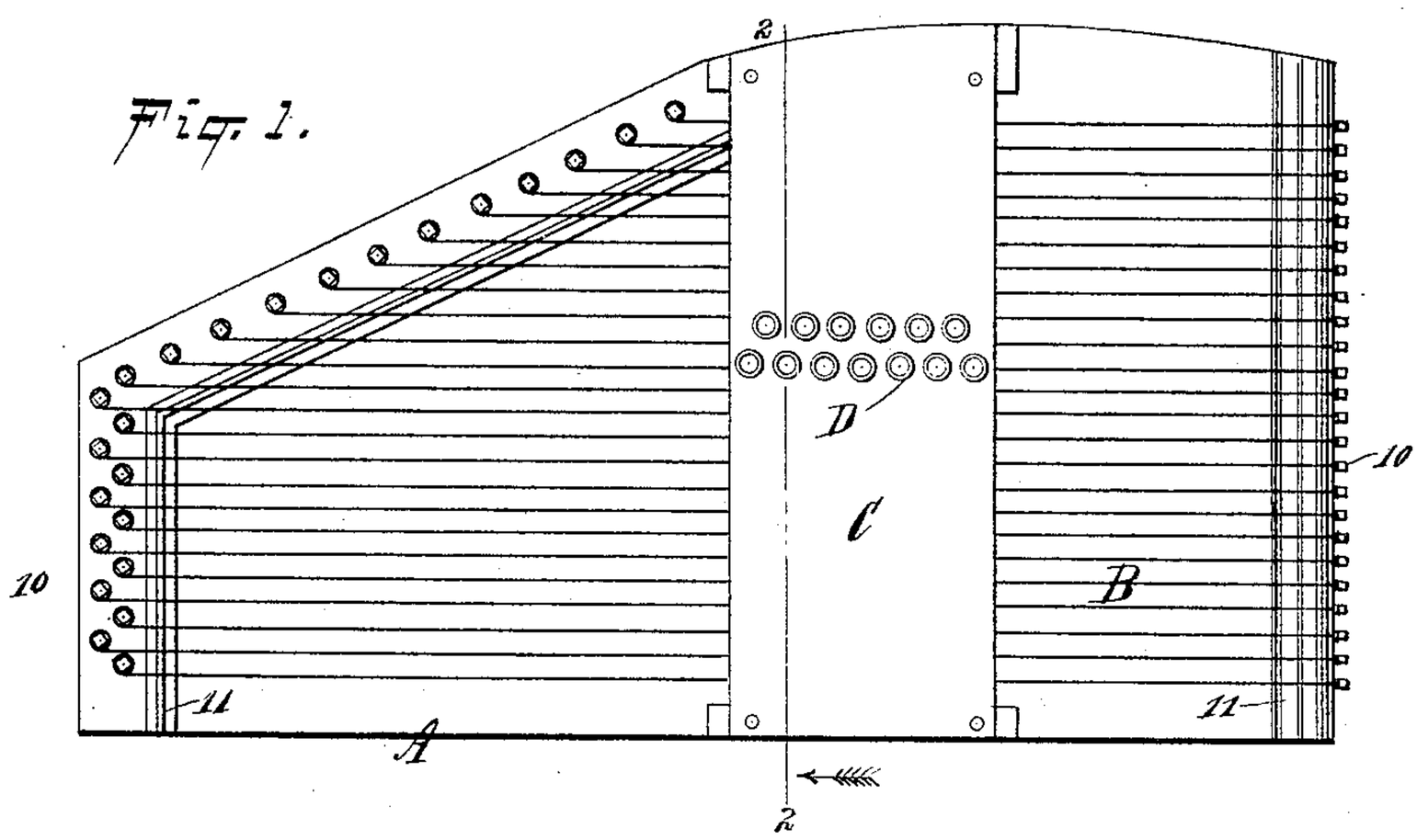

Fig. 2.

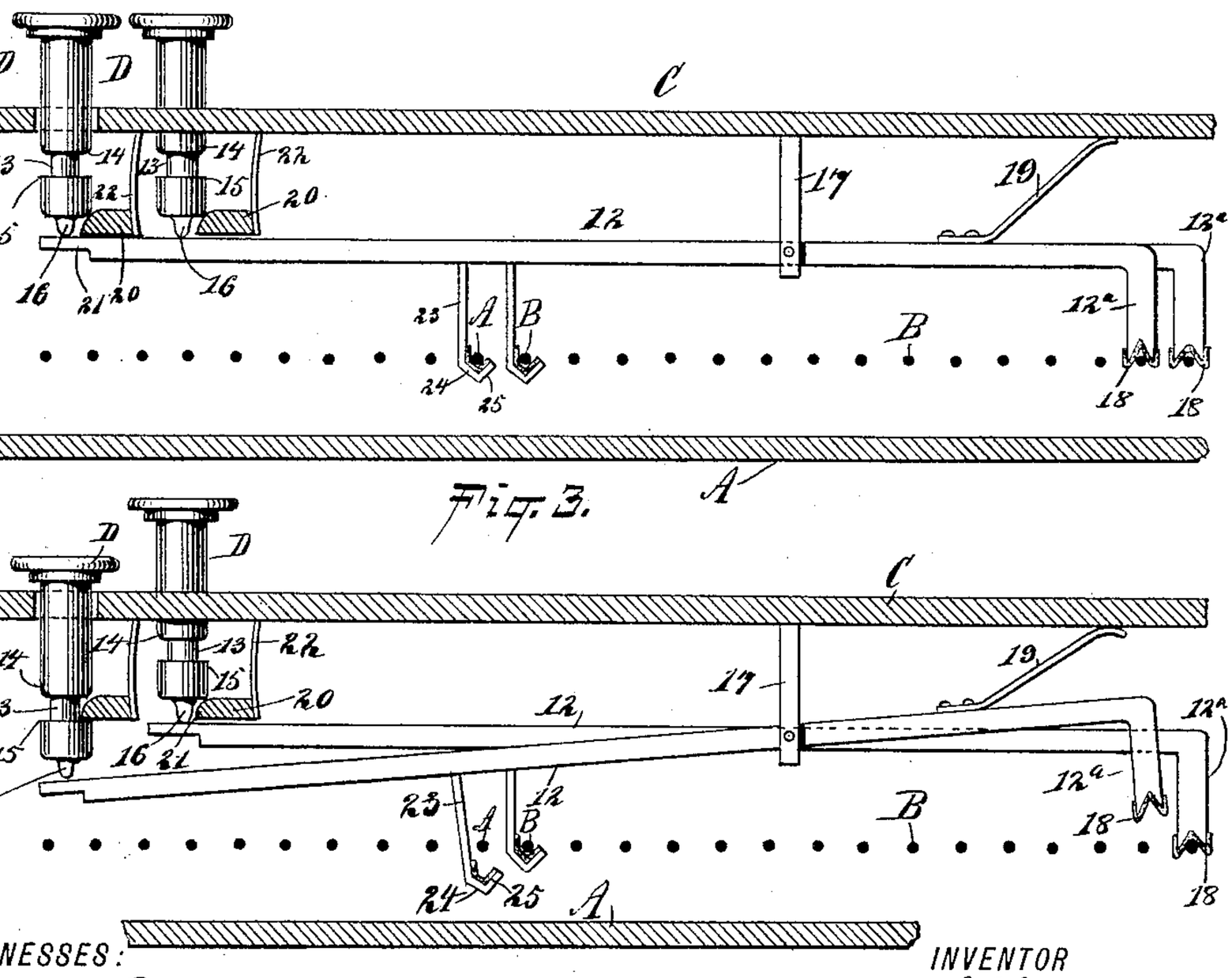

Fig. 3.

WITNESSES:

William P. Goebel.

J. Ed. Acker.

INVENTOR

H. E. Hibshman.

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

HENRY E. HIBSHMAN, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO WILLIAM H. MOORE, OF SAME PLACE.

MUSICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 572,010, dated November 24, 1896.

Application filed April 21, 1896. Serial No. 588,454. (No model.)

To all whom it may concern:

Be it known that I, HENRY E. HIBSHMAN, of New York city, in the county and State of New York, have invented a new and useful Improvement in Musical Instruments, of which the following is a full, clear, and exact description.

My invention relates to an improvement in that class of instruments known as "autoharps;" and the object of the invention is to provide a system of key-operated levers which normally act to mute the strings.

A further object of the invention is to provide a locking device for each series of rows of keys by which, when one or more keys are manipulated to raise certain levers from certain strings, the said levers acted upon will be held in their upper position by the locking device or devices in an automatic manner until other keys of the same series are pressed, whereupon the levers held raised from the strings will be automatically released and the levers last raised locked in their elevated position.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the improved instrument. Fig. 2 is a transverse section on an enlarged scale, taken substantially on the line 2 2 of Fig. 1, illustrating the key-operated levers in position to mute the strings; and Fig. 3 is a view similar to Fig. 2, one of the levers being shown raised from its string and held in such position.

In carrying out the invention the sounding-board A may be of any suitable construction, and the strings B are secured thereon through the medium of the usual winding pegs or keys, the strings being passed over frets 11 or their equivalents. At or near the center of the sounding-board a table C is carried over its upper face, being supported by suitable uprights at its ends, and one or more rows of keys D have vertical movement in the aforesaid table, being prevented from leaving the table in any approved manner. Each key D below the table C is provided with an annular recess 13, forming an upper shoulder 14, which is rounded off at its outer edge, and a lower substantially straight shoulder 15, and, preferably, each key at its lower end terminates in a nipple or finger 16.

A series of levers 12 is located under the sounding-board, the levers corresponding in number to the number of the strings B; and when two rows or series of keys D are used certain of the levers are acted upon by one series of keys, the others being acted upon by the other series, and what may be termed the "inner" ends of these levers terminate below the keys intended to operate them.

Each lever at its outer end is provided with a downwardly-extending arm 12^a, and each of the said arms is provided with a pad 18 at its lower end, adapted for engagement with a string. Ordinarily the pads are substantially V-shaped, as shown in Figs. 2 and 3. A hanger 17 is projected downward from the table C for each lever, and each hanger is pivotally connected with the lever corresponding to it, and the padded ends of the levers are normally held in engagement with the strings through the medium of springs 19, which are attached to the levers near their padded ends and have bearing against the under face of the table, these springs being placed under tension when the levers are raised from the strings.

Opposite each row of keys D a locking-bar 20 is placed, extending transversely of the table, and the said locking-bar is provided with a rounded inner end surface 21, the said end surface 21 being presented to the keys, and spring-hangers 22 are secured to the locking-bars and to the table C. It may here be remarked that the bottom portions of the body of the keys are rounded off at their edges, as shown in Figs. 2 and 3.

When but a few levers are employed for a number of strings, each lever will be provided with an arm 23, projected down from it, having an upturned lower end 24, in which a pad 25 is placed, and the pads of these arms will engage with the under face of a string representing the octave of the string which the end pad of the same lever engages with at the top.

Therefore by pressing downward a certain key the inner end of the lever belonging to that key will be depressed and its padded end raised, and consequently all of the padded portions of the said lever will be disengaged from the strings with which they formerly contacted, rendering the said strings open.

When a key is pressed downward, the locking-bar of the series to which that key belongs will be forced outward, and after the key has been pressed down a sufficient distance to fully elevate the padded end of the lever the recessed portion 13 of the key will be opposite the locking-bar, and the said bar will spring into the said recess of the key and will hold the key in its lower position. When another key of the same series is pressed downward, the moment that the said key is moved slightly the locking-bar will again be carried outward and consequently will disengage from the key which it formerly held in its depressed position, permitting the said key to be carried up by the lever to which it belongs, the lever being returned by its spring 19 to the mute position on its string or strings, and the key last pressed will remain locked in its lower position and the lever that it controls raised from its string.

If desired, a single key may be made to operate two levers, in which event the inner ends of opposing levers will be brought together independent of one another below the key.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a musical instrument, the combination with levers normally held in contact with the strings, of vertically-sliding keys having their lower ends engaging the said levers to operate them, said keys being provided with spaced shoulders, one of which is beveled, and a spring-pressed locking-bar having its edge adjacent to the keys rounded and adapted to project into the space between the said shoulders when the keys are depressed, substantially as described.

2. In a musical instrument, the combination with spring-pressed levers normally held in contact with the strings, of vertically-sliding keys having their lower ends pointed and engaging the said levers, said keys being provided with spaced shoulders near their lower ends, a spring-hanger adjacent to the keys, and a locking-bar carried by the hanger and having its edge beveled and adapted to project into the space between the said shoulders when the keys are depressed, substantially as described.

3. In a musical instrument, the combination with levers, each having a downwardly-extending arm at one end and a hook-shaped arm projecting downwardly at a point between its ends, of vertically-sliding keys having their lower ends pointed and provided with an annular recess forming shoulders, spring-hangers, and a locking-bar having a beveled or rounded edge and secured to the said hangers, substantially as herein shown and described.

HENRY E. HIBSHMAN.

Witnesses:
J. FRED. ACKER,
A. A. HOPKINS.