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HARP-ACTION.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, LEWIS WOLF, a citizen of the United States, and a resident of the city of McNabb, county of Putnam, and State of Illinois, have invented certain new and useful Improvements in Harp-Actions, of which the following is a specification.

To produce a pure tone in any stringed instrument, the ends of the string must be held rigidly, as any yielding or looseness will detract from the quality of the tone. In a harp, a condition arises where the tension of the strings is taken care of by the end binding posts and the sharpening fingers engage the strings between the binding posts, thus there is no appreciable pull that will tend to make the sharpening fingers more rigid. On the contrary, any looseness in the mounting of the sharpening finger spindle, either axially or radially, will cause the string to rattle and thereby destroy the tone.

It is the object of the invention to produce a construction that will at all times rigidly secure the sharpening fingers under all conditions, and yet allow for free rotation in the bearings and the necessary adjustment.

With these objects in view, my invention consists in the combinations and arrangements of parts hereinafter described and claimed.

My invention will be best understood by reference to the accompanying drawings forming a part of this specification, and in which—

Figure 1 is a sectional view on line $x-x$ of Fig. 2, in which the spindle is substantially shown in full and the remaining parts in section, Fig. 2 is an end view of the sharpening device, and Fig. 3 is a view on line $y-y$ of Fig. 1.

The preferred form of construction, as shown in the accompanying drawings, comprises a spindle 1 which is rotatably mounted in the oppositely arranged action plates 2 and 3 of the instrument. The ends of the spindle pass through inwardly tapering conical apertures in the action plates, and conical bearings 4 and 5 are arranged at the opposite ends of the spindle to fit into said apertures in the action plates.

The disk 6 is fixedly secured to the stem of the spindle, preferably in the manner shown in Fig. 1, and provides a bearing cone 4 which extends into the adjacent aper-

ture. A disk 7 is mounted upon the external face of disk 6. Arcuate slots 8 and 9 are formed in the disk 7 and set screws 10 pass through the arcuate slots 8 and 9 and are threaded into the fixed disk 6, substantially as shown in Fig. 2, so that the disk 7 may be adjusted on disk 6 to effect greater or less tension in the harp string engaged by the sharpening fingers 11, which are mounted on disk 7.

The opposite end of the spindle is provided with a hexagonal stem 12 and a threaded portion 13 at the end thereof. The conical bearing 5 is fitted over the hexagonal stem 12 and is slidable thereon. A cap nut 15 is secured to the threaded portion 13 and is formed to contain a spring 16 which presses the bearing 5 inwardly. In this construction, the action plates are resiliently embraced between the sloping surfaces of the conical bearings, and the pressure on the slidable bearing is adjusted by turning the cap nut 15. This will admit of the spindle being mounted rigidly enough so that it will not yield to the vibration of the string while the sharpening fingers engage said string. At the same time the spindle will rotate freely without undue friction. The wear of the bearings will be provided for by further adjustment of the cap nut. This type of bearing will also prevent the spindles from sticking, because the rotation backward and forward of the spindles will tend to loosen instead of tighten the bearings in the seats.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the exact details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

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

1. A harp action comprising action plates; a spindle rotatably mounted therein; inwardly sloping conical journals arranged at the ends of said spindle; and means for adjusting the distance between said conical journals, substantially as described.

2. A harp action comprising action plates; a spindle rotatably mounted therein;

an inwardly sloping conical journal fixed at one end of said spindle; an inwardly sloping conical journal slidably mounted on the opposite end of the spindle; and means 5 for axially adjusting the slidably mounted journal, substantially as described.

3. A harp action comprising action plates; a spindle rotatably mounted therein; an inwardly sloping conical journal fixed at one 10 end of said spindle; an inwardly sloping conical journal slidably mounted on the opposite end of the spindle; a cap nut threaded to the external end of the spindle; and a resilient member arranged in said cap nut 15 adapted to press said slidably secured journal inwardly, substantially as described.

4. A harp action comprising action plates; a spindle rotatably mounted therein; a disk externally secured to one end of said 20 spindle; a conical journal extending inwardly from said fixed disk; a movable

disk arranged on the face of said fixed disk; fingers secured to said movable disk; arcuate slots in said movable disk to accommodate rotary adjustment of said movable 25 disk on said first disk; set screws, adapted to secure said movable disk, passed through said arcuate slots and threaded into said fixed disk; an inwardly sloping conical journal slidably mounted on the opposite 30 end of the spindle; a cap nut threaded to the external end of the spindle; and a resilient member arranged in said cap nut adapted to press said slidably secured journal inwardly, substantially as described. 35

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

LEWIS WOLF.

Witnesses:

MARY SEIBERT,
JOHN M. McNABB.

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