(No Model.)

E. V. DEXTER.

AUTOHARP.

No. 575,707. Patented Jan. 26, 1897.

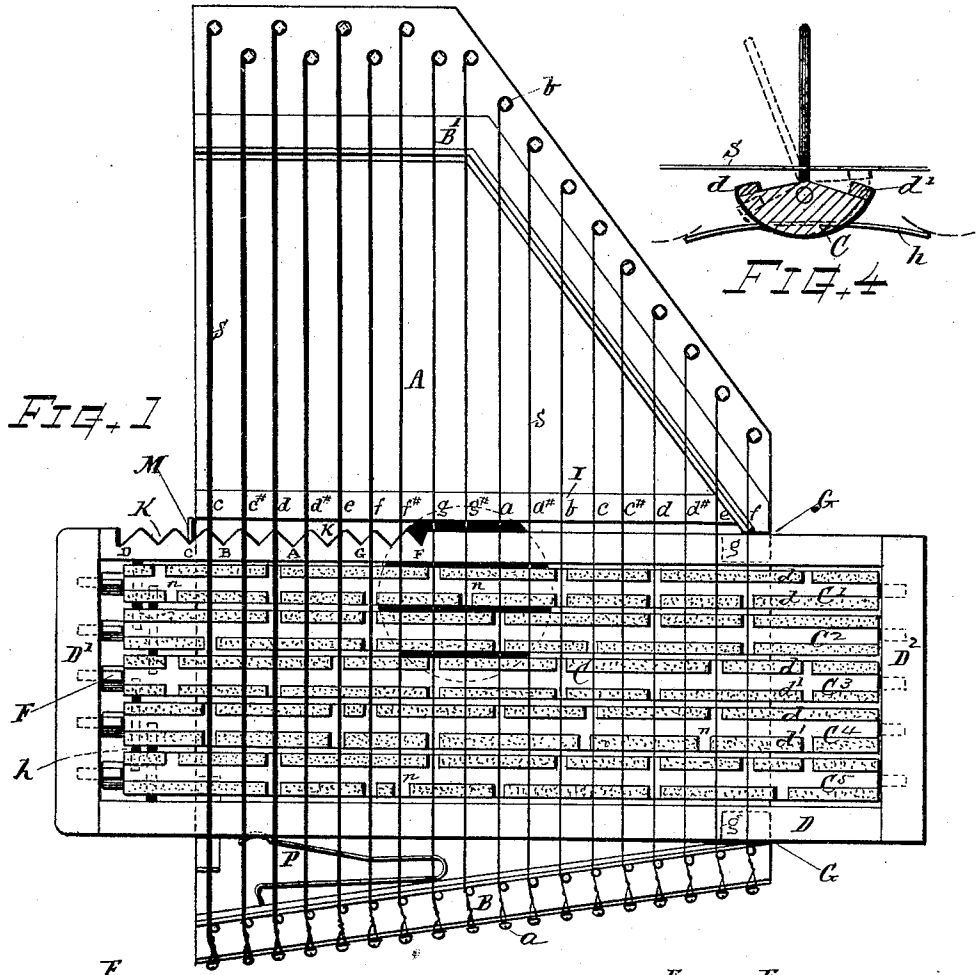

FIG. 1

FIG. 4

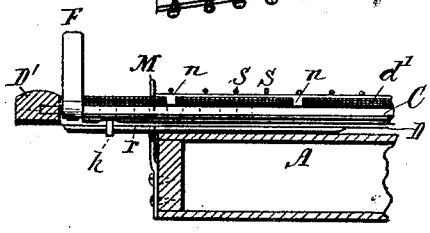

FIG. 2

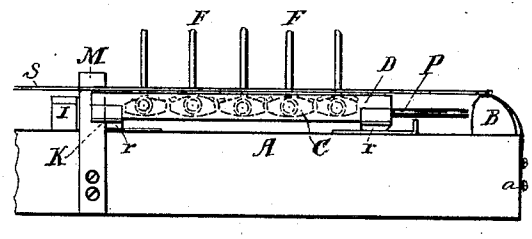

FIG. 3

Witnesses.

Chas. L. Burleigh

Frank A. Humphrey

Inventor.

Elwell V. Dexter

By Chas. H. Burleigh

Attorney

UNITED STATES PATENT OFFICE.

ELWELL V. DEXTER, OF WORCESTER, MASSACHUSETTS.

AUTOHARP.

SPECIFICATION forming part of Letters Patent No. 575,707, dated January 26, 1897.

Application filed August 10, 1896. Serial No. 602,289. (No model.)

To all whom it may concern:

Be it known that I, ELWELL V. DEXTER, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Autoharps, of which the follow ng, together with the accompanying drawings, is a specification sufficiently full, clear, and exact to enable persons skilled in the art to which this invention appertains to make and use the same.

One object of my invention is to provide an autoharp, cithern, or similar instrument with an efficient and desirable means of the specific character hereinafter set forth for facilitating the shifting of the damper-carrying frame to change the key-note while playing or otherwise.

Another object is to provide a removable damper-carrying frame adapted for adjustment between the sound-board and strings and having a series of double-acting rocking damper-bars thereon and means for effecting the operation of the dampers and adjustment of the frame, as more fully hereinafter explained.

These objects I attain by the mechanism illustrated in the drawings, wherein—

Figure 1 is a top view of an autoharp embodying my invention. Fig. 2 is a transverse vertical section through the left-hand end of the damper-carrier frame and harp-body. Fig. 3 is a side view of a portion of the instrument and end of the damper-frame, and Fig. 4 is a cross-section of one of the double-rocking damper-bars.

Referring to parts, A indicates the body or sound-board of any suitable form, and S the strings supported above the sound-board by the bridge-bars B B′ and attached by the hitch-pins *a* and tuning-pins *b* in well-known manner. Any desired number of strings may be employed, the strings being preferably arranged and tuned on the chromatic scale, as indicated on the index-band I, arranged across the central part of the instrument.

D indicates a removable rectangular frame, having mounted therein the series of dual rocking bars C, preferably five in number, as, C′ C^2 C^3 C^4 C^5, but a greater or less number can be employed in any instance, if desired. Said bars are formed in cross-section, substantially as in Fig. 4, and are pivoted centrally at their ends *c* to the transoms D′ D^2 of the frame D, so as to have rocking action in both directions from their central or normal position. Upright thumb-plates F are provided at one end of the respective bars C to facilitate the convenient rocking of the same as desired. Upon both their front and rear edges the rocker-bars are provided with a damper-strip *d* and *d′*, made of felt or other suitable material and having notches or spaces *n* therein, said notches on the several dampers corresponding to the varied systems of chords in the musical scale, the notches permitting the strings giving chord-tones to sound, while other strings are rendered mute by the damper-strip, as heretofore practiced.

The systems of chords, in the present instance beginning at the top and then downward in order, are, on bar C′, the minor fifth and the diminished chord; on bar C^2, the minor second and the major fourth; on bar C^3, the minor third and the major fifth; on bar C^4, the minor sixth and the major prime; on bar C^5, the minor seventh and the major second. While this is a desirable system and order, I do not confine myself thereto, as the order and chords may be varied as in any instance desired. Suitable springs *h* are provided for returning the rocking bars to normal central position.

At one side of the instrument the frame D is supported somewhat closely between the bridges, as at G G, while at the other side of the instrument there is space somewhat wider to permit edgewise swinging movement of the frame. A series of lugs or notches K, corresponding in width with the spacing of the strings, is provided on the edge of the frame near the end D′, and an upright plate or detent M is fixed to the side of the body or sound-board that projects upward therefrom and engages one of said notches K. A spring P is arranged between the end of bridge B and side of the slide-frame D for normally pressing said frame toward the detent M for retaining the notch in engagement therewith.

The slide-frame is supported clear from contact with the sound-board by bearing-lugs *g* at the edge of the harp or by ribs *r*, fixed upon the frame D.

In the operation of my improved harp the

player, with his hand on the end D′ of the slide-frame, can conveniently bring the dampers into contact with the strings by pressing the upright thumb-plates F forward or backward, thereby raising the front or rear edge dampers of any bar against the strings, at the same time sounding the undamped strings with the other hand by drawing the pick or finger end across the strings. The key-note can be quickly changed while playing by drawing back the end of the slide-frame in opposition to the string P, relieving the notch K from the detent M and then shifting the frame endwise to bring any desired notch K into conjunction with the detent, then allowing the spring P to press back the frame.

The frame D is readily removable from the harp and can also be quickly adjusted for any key-note.

I am aware that rotary bars of different construction have heretofore been employed in an autoharp, and do not herein claim, broadly, such bars irrespective of the peculiar construction and operation defined.

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

1. The rocking damper-bars of segmental cross-section form, having damping-strips upon both front and rear edges, and provided with rigidly-attached upwardly-projecting thumb-plates upon their ends, said bars pivotally supported at their ends within the removable rectangular frame and adapted for operation between the strings and sound-boards, and means for retaining one end of said frame at its sides, as at G G, while permitting its endwise adjustment and the edgewise movement of its other end, and tilting operation of the damper-bars by the hand at the frame end D′, for the purpose set forth.

2. In combination with the body and strings in an autoharp, the endwise-adjustable damper-carrying frame confined edgewise between the bridges or guides at G G, and arranged to swing at its other end, said frame provided on its rear edge, near the end, with a series of lugs or notches corresponding with the various key-notes, the upright stop or detent M attached to the body of the instrument for engaging said notches, and the spring P disposed against the opposite edge of said frame and normally pressing said frame toward said detent, all substantially as and for the purpose set forth.

3. In an autoharp, cithern or similar instrument, the combination as described, of the endwise-movable frame carrying the series of rocking damper-bars having damper-strips upon the top at their front and rear edges, respectively notched to represent the series of chords as specified; said frame and dampers inserted between the strings and face of the sound-board, and adapted to have endwise adjustment and edgewise movement at its left-hand end, the upwardly-projecting thumb-plates fixed on said damper-bars, and return-springs therefor, the series of engaging notches on the rear edge of said frame corresponding to different key-notes, the upright detent on the body, and the resilient presser acting against the front edge of said frame for normally pressing it backward and retaining said notches and detents in engagement, all constructed and combined for operation substantially as shown and described.

Witness my hand this 6th day of August, 1896.

ELWELL V. DEXTER.

Witnesses:
CHAS. H. BURLEIGH,
FRANK A. HUMPHREY.