

M. A. CLARK.

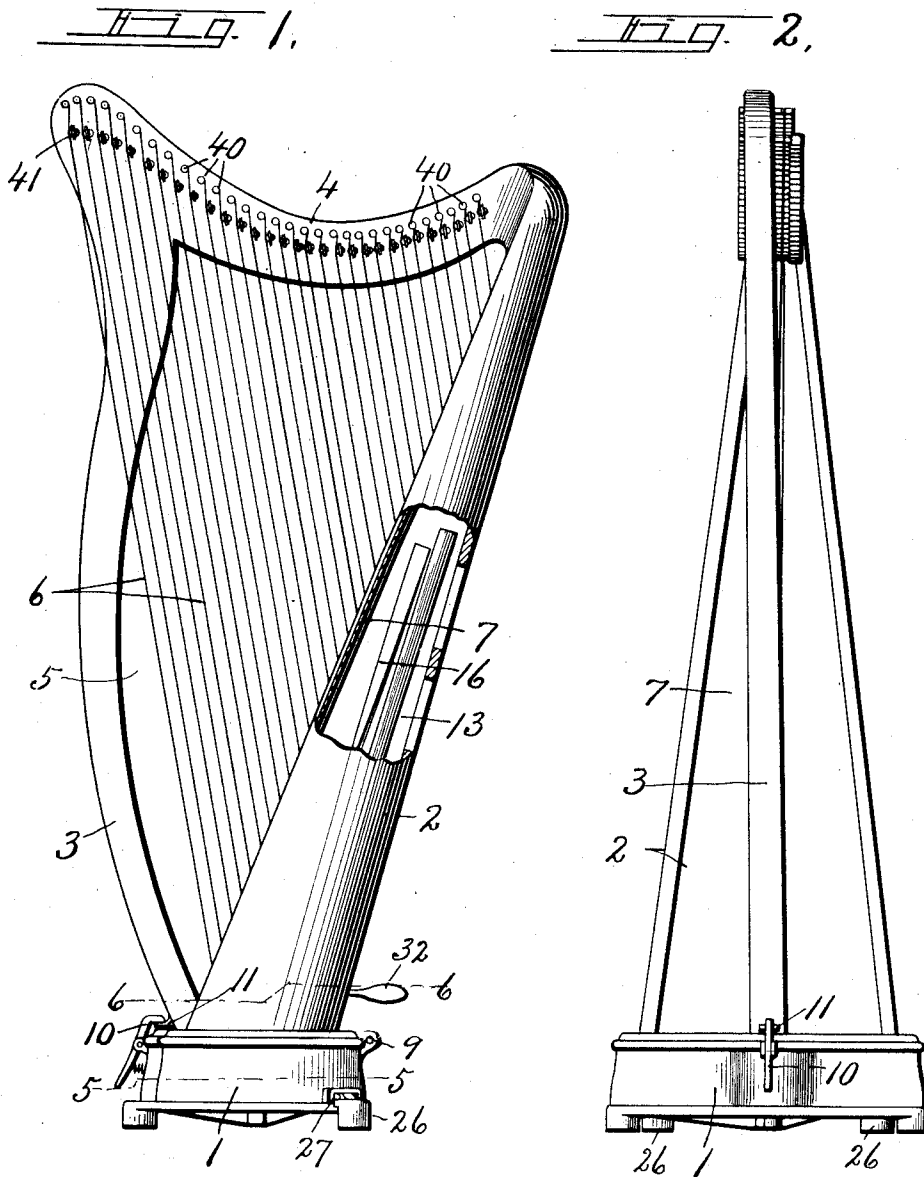
HARP.

APPLICATION FILED MAY 31, 1911.

1,010,477.

Patented Dec. 5, 1911.

2 SHEETS-SHEET 1.



WITNESSES

E. J. Stank
H. E. Chase

INVENTOR.

By M. A. Clark
Howard P. Arison

ATTORNEY.

M. A. CLARK.

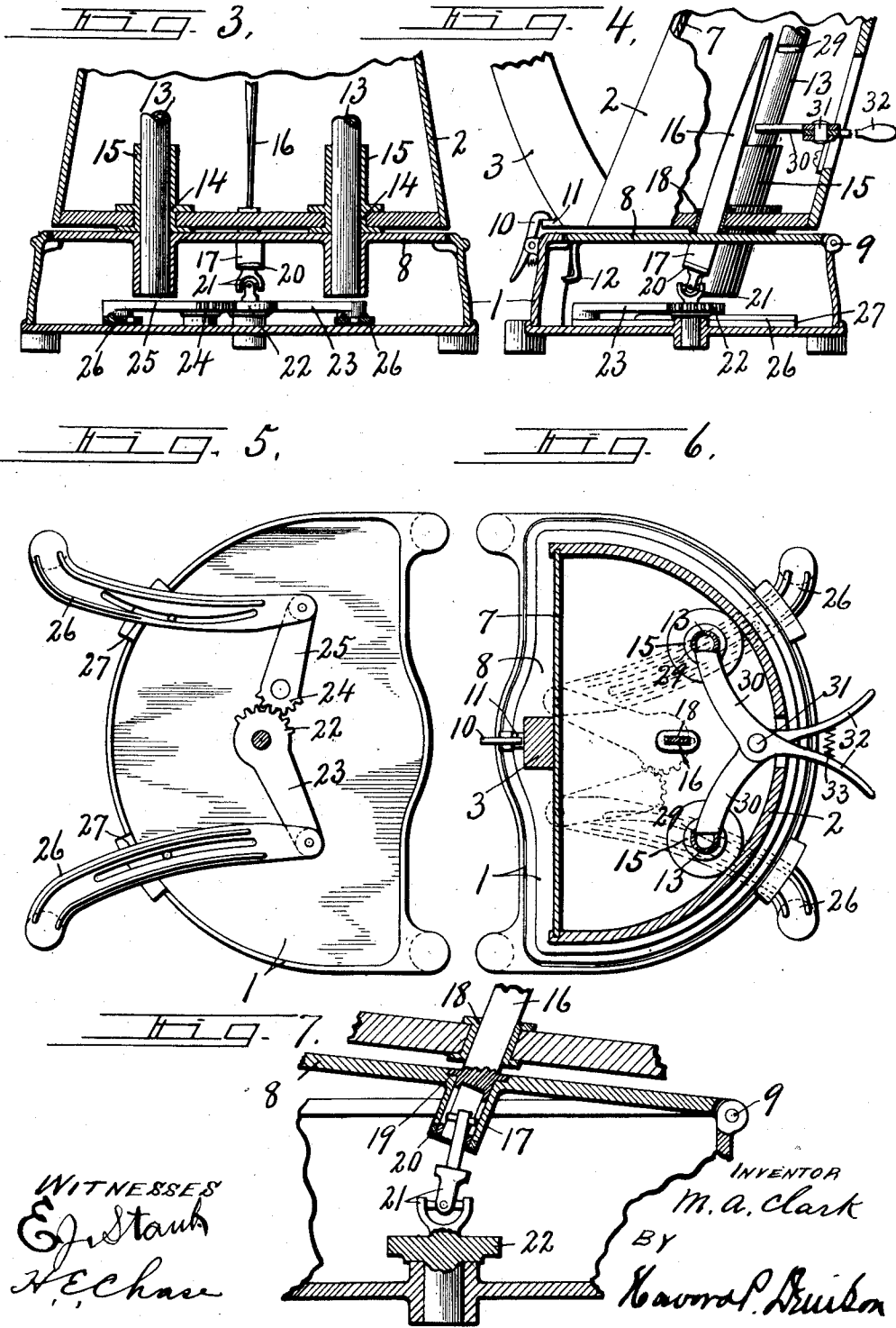
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E. J. Stark
H. E. Chav

INVENTOR

M. A. Clark

BY

Harmon P. Butler

ATTORNEY.

UNITED STATES PATENT OFFICE.

MELVILLE A. CLARK, OF SYRACUSE, NEW YORK.

HARP.

1,010,477.

Specification of Letters Patent.

Patented Dec. 5, 1911.

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To all whom it may concern:

Be it known that I, MELVILLE A. CLARK, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Harps, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to certain improvements in harps of the triangular type, commonly known as "Irish harps," involving the use of a hollow upwardly tapering body and a curved pillar converging upwardly from the base of the main body and having its upper end connected by a suitable neck to the upper end of said body, thereby forming an intervening more or less triangular space across which the strings are tensioned. In this particular style of harp, I am enabled to introduce a comparatively large number of strings of different pitch within or upon a relatively small frame by utilizing practically the entire length of the neck and allowing the strings to extend beyond the confines of the opening in the frame without in any way interfering with the free vibration of the strings from end to end, thereby increasing the range of usefulness of the same harp for parlor or auditorium recitals. Owing to this wide range of utility, it is evident that the harp may be played with equal propriety by children or adults either in a standing or sitting posture and although it is extremely light and easily portable from place to place, it is nevertheless adapted to rest upon the floor or other support, and one of the main objects of my present invention is to provide means whereby the string supporting frame may be adjusted vertically relatively to its supporting base according to the height or position of the player.

Another object is to provide simple means whereby the entire string-supporting frame may be tilted laterally to suit the convenience of the player.

A still further object is to provide means for extending the base support in the direction of shift of the center of gravity of the string-supporting frame as the latter is elevated from the base so as to keep such center of gravity within the confines of the supporting legs or feet of the base and to thereby prevent overturning of the harp in

case it should be left in its extended or elevated position.

Other objects and uses relating to specific parts of the harp will be brought out in the following description.

In the drawings—Figures 1 and 2 are respectively a side elevation and a front elevation of a harp embodying the various features of my invention, a portion of the hollow upright body being broken away in Fig. 1 to show the upright guides along which the string-supporting frame may be raised and lowered. Figs. 3 and 4 are enlarged vertical sectional views of the lower portion of the harp showing more particularly the manner of supporting the upright guide rods and operating means for the auxiliary supports or movable feet. Figs. 5 and 6 are horizontal sectional views of the harp base taken respectively on lines 5—5 and 6—6 Fig. 1, showing particularly the auxiliary supports or movable feet and operating means therefor. Fig. 7 is a still further enlarged detail sectional view of a portion of the actuating means for the movable feet of the base.

This harp comprises a supporting base —1— and a substantially triangular string-supporting frame composed of a hollow upwardly tapering body —2—, a curved pillar —3— diverging upwardly from the lower end of the main body —2— and a curved neck —4— connecting the upper ends of the main body —2— and pillar —3—, all of the parts of the string frame being preferably formed of wood securely united at their junctions one with the other and forming an intervening substantially triangular opening —5— across which the strings as —6— are tensioned in a manner hereinafter described.

The main body —2— inclines upwardly and outwardly at an angle to the top of the base —1— and is preferably plano-convex in cross section and arranged with its plane face innermost and extending in a straight line from the top of the base —1— to the neck —4— for forming a sounding board —7—, the latter being carefully constructed to facilitate the production of tones of high quality or timbre.

The pillar —3— is disposed in a plane slightly inclined laterally from the vertical plane of the longitudinal center of the base —1— and hollow body —2— so as to throw

its upper end slightly to one side of said vertical plane, while the neck —4— which is rigidly joined to the pillar is also disposed at one side of the plane of the longitudinal center of the body —2— for the purpose of allowing the strings to be extended beyond the confines of the opening in the harp frame or throughout substantially the entire length of the neck and across the upper portion of the pillar, thereby permitting the use of a relatively large number of strings on a comparatively small frame without in any way interfering with the free vibration and tone quality of said strings.

By this construction and arrangement, I am enabled to produce in a small instrument a wide range, volume and quality of tones equal to that produced by much larger instruments now in common use with the additional advantages of lightness, durability and economy of manufacture. Furthermore the wide range and quality of tone which this instrument is capable of producing gives it an extensive use either by children or adults and in private parlors or large auditoriums, and in order that it may be adapted to the convenience of players either in a sitting or standing posture or to players of different heights, I have provided suitable telescoping connections between the base —1— and main body —2— whereby the frame may be raised and lowered to any convenient height relatively to the base and have also provided means whereby the string-supporting frame may be tilted relatively to said base to suit the convenience of the operator in the manipulation of the strings. In order to accomplish these results, I have provided the base —1— with a tiltable top —8— which, in this instance, is hinged at —9— to the rear side of said base and is adapted to be held in its normal closed position by any suitable means as a catch or detent —10— which is arranged to interlock with a shoulder —11— on the front of the string frame, said tiltable top being limited in its opening movement by a stop —12— adapted to engage the underside of an overhanging portion of the base.

The string frame and base of the harp are adjustably connected for extensible lengthwise movement one upon the other by one or more, in this instance two, guide rods —13— which are rigidly secured at their lower ends to the tiltable top —8— of the base and extend upwardly a considerable distance into the hollow body —2— through suitable guide openings —14— in the bottom of the body —2—, the latter being provided with upwardly projecting guide nipples or bosses —15— fitting with an easy sliding fit upon the rods —13— to hold the string frame against relative oscillation on said guide rods and at the same time establishing a re-

inforced connection between the guide rods and frame to allow the latter to be tilted about the axis of the pivot —9— when desired. This telescoping connection between the string frame and base allows the frame to be adjusted to any height convenient for the position of the player by simply tripping the detent —10— by hand or otherwise and at the same time permitting said frame to be tilted in any position of adjustment to suit the convenience of the operator. As the frame is adjusted vertically, it is apparent that its center of gravity shifts toward the rear of the base and in order to prevent any possibility of overturning of the harp under such conditions, I have provided means for automatically extending the area of the base rearwardly as the string frame is moved upwardly, said means comprising, in this instance, of a rotatable spirally twisted bar —16— of angular cross-section journaled at its lower end in a suitable bearing —17— and extended upwardly through a correspondingly formed guide opening —18— in the bottom of the hollow body —2—. This spiral bar —16— is preferably disposed substantially midway between and parallel with the guide rods —13— and extends approximately to the upper ends thereof so that when the string frame is elevated relatively to the base, it will impart rotary motion to the rod —16— which is held against endwise movement by annular shoulders —19— and —20— engaging respectively the top and bottom of the bearing —17—. This rotary motion is transmitted by a universal joint —21— to a toothed segment —22— which is journaled in the bottom of the base —1— and is rigidly secured to a crank arm or lever —23— as best seen in Fig. 5. The segment —22— meshes with a similar segment —24— which is also journaled in the bottom of the base —1— and is provided with a crank arm —25—. These crank arms are therefore rotatable about their respective axes and are pivotally connected to the inner ends of a pair of movable legs or feet —26— which are extended outwardly through guide openings —27— in the rear side of the base —1— and their outer ends are provided with suitable feet adapted to rest upon the floor or other support for the base —1—.

Any suitable means may be provided for holding the frame section of the harp in its elevated position and for this purpose I have shown the guide rods —13— as provided with a series of teeth or recesses —29— adapted to be engaged by suitable locking levers —30— which, in this instance, are pivoted to each other at —31— and to a suitable bracket upon the adjacent side of the hollow body —2— and are provided with finger pieces —32— extending outwardly through an opening in the back of said body where they are adapted to be en-

gaged by hand and operated against the action of a retracting spring —33— for disengaging the locking levers from the guide rods —13—.

5 When the instrument is not in use, in transportation or storage, the string frame is lowered to rest on the top of the base and is locked in this position by the catch —10—, thus permitting the entire instrument to be
10 easily carried from place to place or stored within a minimum space. The instrument may be played in this position of adjustment or may be tilted or adjusted vertically to suit the convenience of the operator by
15 simply releasing the catch —10—.

Another important feature of this harp is the manner of mounting the strings which consists in arranging a series of keys or wrest pins —40— in close proximity side by
20 side throughout substantially the length of the neck and in close proximity to the upper edge thereof so as to extend beyond the vertical plane of the pillar —3—, thereby permitting the use of a comparatively large
25 number of relatively long strings extending beyond the confines of the opening in the frame so as to give to the instrument a volume and quality of tone equal to similar instruments of much larger size.

30 Although I have shown and described a particular form of string frame and base as adjustable relatively to each other in combination with suitable legs or feet which are extended and withdrawn automatically as
35 the frame is raised and lowered from the base, I do not wish to limit myself to the precise construction and arrangement shown and described.

What I claim is:

40 1. A harp comprising a string-frame and a supporting base therefor having telescoping connections therewith whereby the frame may be adjusted toward and from the base.

2. A harp comprising a string-frame and
45 a supporting base therefor, said frame being adjustable vertically relatively to the base, and means for holding it in its adjusted position.

3. A harp comprising a base and a string-
50 frame tiltably mounted thereon.

4. A harp comprising a base and a string-frame tiltably mounted thereon, and means for locking the frame against tilting movement.

55 5. A harp comprising a base and a string-frame tiltably mounted thereon, and means for limiting the tilting movement of the frame.

60 6. A harp comprising a base and a string-frame tiltably mounted thereon, means for

locking the frame against tilting movement, and additional means for limiting such tilting movement.

7. A harp comprising a base having a tilt-
able top and a string-frame mounted on said 65 top.

8. A harp comprising a base having a tilt-
able top, and a string-frame mounted on
said tiltable top and adjustable vertically
relatively thereto. 70

9. A harp comprising a base having an
upwardly projected extension, and a string-
frame adjustable vertically along said ex-
tension.

10. A harp comprising a base having an 75
upwardly projecting extension rigid with
the top thereof, and a string-frame adjust-
able lengthwise of said extension, and means
for holding the frame in its adjusted posi-
tion. 80

11. A harp comprising a base having an
upwardly and rearwardly inclined exten-
sion, and a string-frame adjustable along
said extension.

12. A harp comprising a base having an 85
upwardly projecting tiltable extension, and
a string-frame adjustable along said exten-
sion and tiltable therewith.

13. A harp having a base provided with
a movable extension for increasing its area 90
of support, a string-frame movable verti-
cally relatively to said base, and means ac-
tuated by the relative movement of the
frame for shifting said extension.

14. A harp having a base provided with 95
movable supporting feet, a string-frame ad-
justable vertically relatively to said base,
and connections between said frame and feet
for moving the latter outwardly and in-
wardly as the frame is raised and lowered. 100

15. A harp comprising a base having a
movable supporting member, a string-frame
mounted upon and movable relatively to the
base, and means actuated by the relative
movement of the frame for shifting the 105
movable supporting member.

16. A harp comprising a base having mov-
able feet and an upwardly and rearwardly
inclined extension rising from the top there-
of, a string-frame movable along said exten- 110
sion, and connections between said movable
frame and feet for shifting the latter out-
wardly and inwardly as the frame is raised
and lowered.

In witness whereof I have hereunto set 115
my hand on this 19th day of May 1911.

MELVILLE A. CLARK.

Witnesses:

H. E. CHASE,

E. F. SPEARING.