

Dec. 3, 1935.

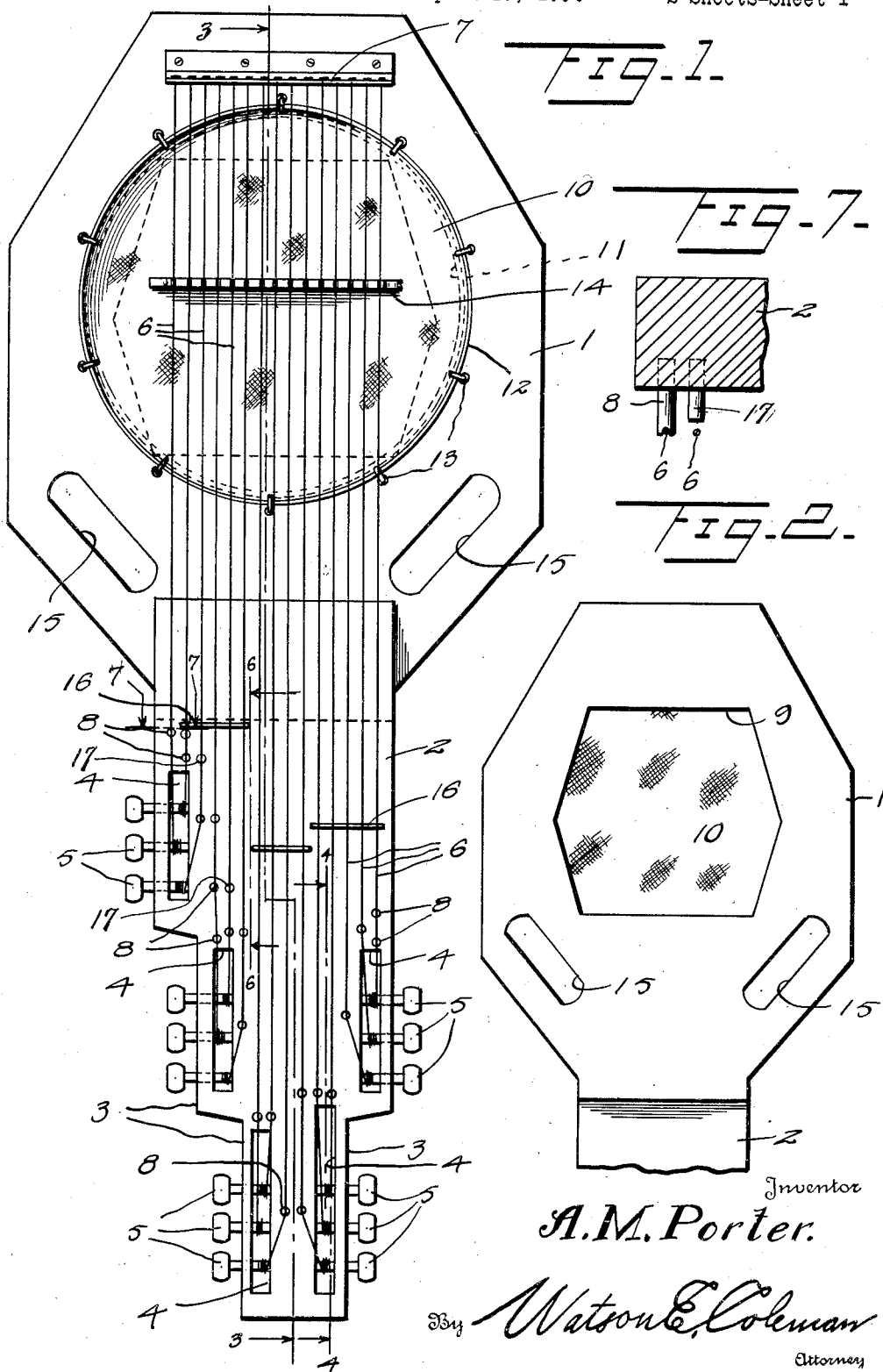
A. M. PORTER

2,023,358

MUSICAL INSTRUMENT

Filed April 19, 1934

2 Sheets-Sheet 1



Dec. 3, 1935.

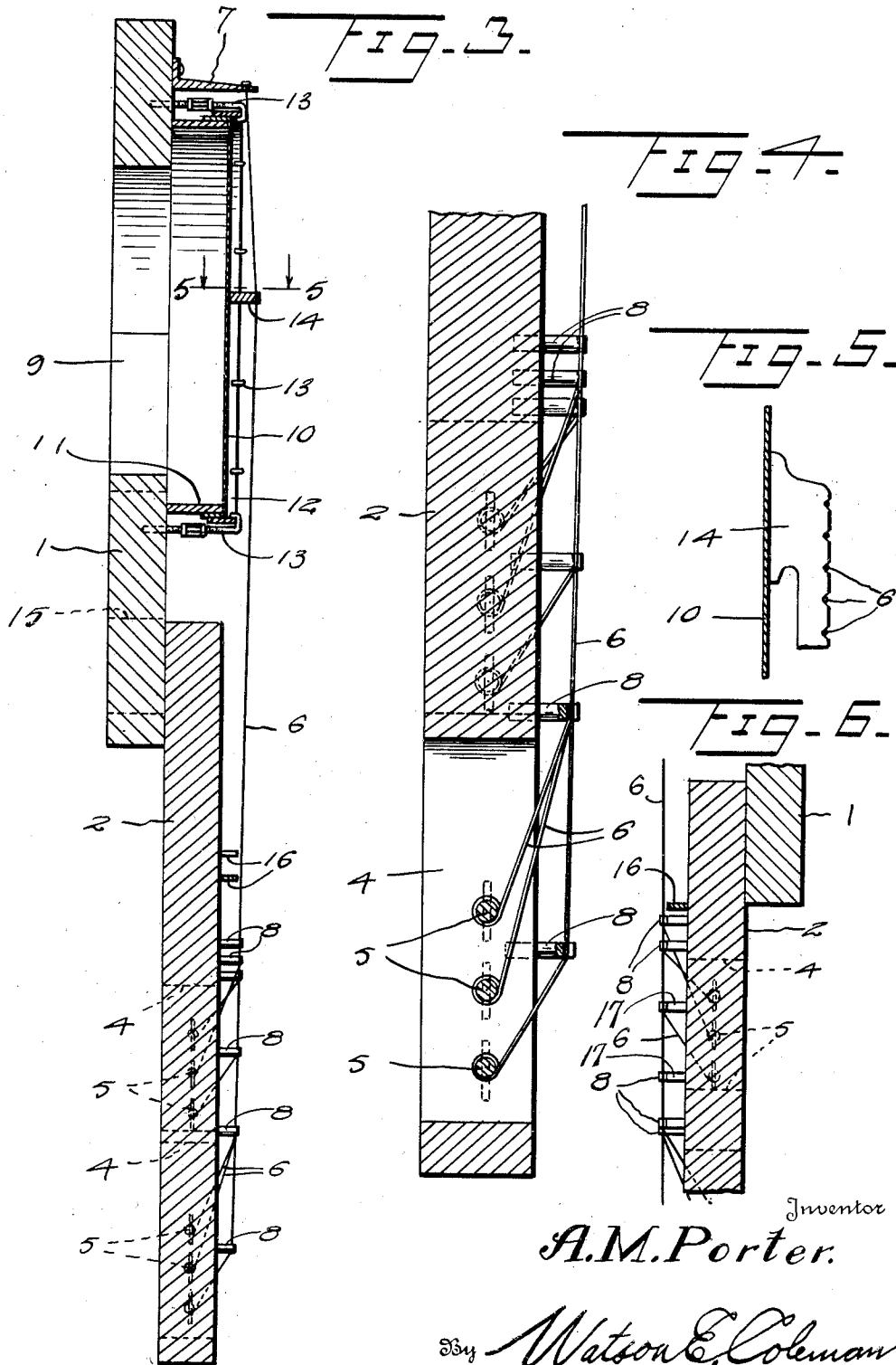
A. M. PORTER

2,023,358

MUSICAL INSTRUMENT

Filed April 19, 1934

2 Sheets-Sheet 2



Inventor
A.M. Porter.

By *Watson E. Coleman*
Attorney

UNITED STATES PATENT OFFICE

2,023,358

MUSICAL INSTRUMENT

Albert M. Porter, Paola, Kans.

Application April 19, 1934, Serial No. 721,370

3 Claims. (Cl. 84-269)

This invention relates to the class of musical instruments and pertains particularly to improvements in the type of stringed instruments known as fretted instruments.

The primary object of the present invention is to provide a novel type of stringed instrument which is so designed as to permit the user singing against the strings or against the vibrating sounding material over which the strings pass so that the vibration set up by the singer's voice will create corresponding vibrations in the strings of the instrument and the voice and string vibrations will harmonize.

Another object of the invention is to provide a stringed instrument of a character which may be played with the fingers in the usual manner but having an open back through which access may be had to the rear of the sounding surface over which the strings of the instrument pass so that the singer may direct his voice from the back of the instrument against the sounding material to create a harmonizing of the tones with the tones set up by the vibrations induced in the instrument strings.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawings forming part of this specification, with the understanding, however, that the invention is not confined to any strict conformity with the showing of the drawings but may be changed or modified so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawings:—

Figure 1 is a view in top plan of an instrument of the banjo type showing the same constructed in accordance with the present invention.

Figure 2 is a view in rear elevation of the body portion of the instrument.

Figure 3 is a view in longitudinal section taken on the line 3—3 of Figure 1.

Figure 4 is a sectional view taken upon the line 4—4 of Figure 1 through the end of the instrument neck.

Figure 5 is a sectional view taken on the line 5—5 of Figure 3.

Figure 6 is a sectional view taken on the line 6—6 of Figure 1.

Figure 7 is a sectional view taken on the line 7—7 of Figure 1.

Referring to the drawings wherein like numerals of reference designate corresponding parts throughout the several views, the numeral 1 in-

dicates the head portion of an instrument constructed in accordance with the present invention, which head is here illustrated as being of octagonal outline although it is to be understood that any other desired configuration may be employed. Secured to and extending from the head 1 is a neckpiece 2 which, adjacent its free end, has a series of inset areas 3 which cause the neck to taper off to a smaller width at its outer or free end and adjacent each of these inset areas and also adjacent the outer sides of the neck inwardly of such areas, are formed the slots or openings 4 which pass through the neck from the top to the bottom sides thereof.

Mounted in the edges of the neck 2 adjacent each of the slots 4 are key members 5 which extend through the adjacent slots and are designed to have wound thereon the ends of strings 6, the opposite ends of the strings being secured to the tailpiece 7 which is mounted on the top face of the head 1 at the side remote from the neckpiece, in the manner illustrated.

Each of the strings passes over the end of a supporting peg 8 adjacent the slot 4 into which it passes for attachment to a key 5, these pegs 8 being set in the top surface of the neck 2 in the manner illustrated in Figure 4.

The head 2 has cut centrally therethrough the opening 9 and overlying this opening beneath the strings 6 is a sounding body which in the present instance is illustrated as a sheepskin head 10 mounted upon a carrying annulus 11 which surrounds the opening 9, the sheepskin head or body being drawn taut by the ring 12 and the adjustable hooks or pins 13, the latter being mounted as illustrated in Figure 3, in the head of the instrument 1. Upon the sheepskin body 10 is mounted the bridge 14 over which the strings 6 pass from the tailpiece 7 to the keys at the free end of the neck.

The body 1 is provided at opposite sides adjacent the point of connection of the neck 2 therewith hand openings 15 which facilitate the holding of the instrument in the proper position for use.

The numeral 16 indicates the usual frets which are disposed beneath the strings 6. These frets are employed in tuning the instrument as will be hereinafter described.

As will be seen upon reference to Figure 1, one fret 16 is disposed beneath five strings starting with the second string of the group of six which is adjacent thereto. The first or outside string of this group is tuned, in tuning the instrument to C and the remaining five strings are tuned

accordingly through the corresponding keys. Disposed behind the first fret 16 beneath each of the five strings passing thereover are tuning posts 17, which are mounted in the neck of the instrument and are normally spaced from the overlying keys. Each of these posts lies in the same plane transversely of the neck of the instrument with the supporting post 8 for the preceding string.

10 In the instrument at present illustrated, 15 strings have been shown but it will be obvious that this number may be made more or less as desired. The tuning of these strings for the C or open scale is as follows: The first string is tuned to C. This string being the one at the left of the instrument when the outer end is directed toward the player. The adjacent five strings are then held down upon the tuning fret and are tensioned until each sounds the same note as the first string whereupon on being released they will sound successively from the outside or C strings, the notes B, A, G, F and E. The remaining strings are tuned in the same manner, being held down on their respective frets during the tuning process so that when they are released they will sound, in proceeding across the group of strings from the E mentioned, D, C, D, E, F, G, A, B, C. The instrument will then be tuned to the scale of C and the user must, of course, sing in this scale in order to obtain the proper results. If another scale is to be sung, the same procedure is followed and the strings will be pitched to the sharps and flats or half tones of that scale.

While in the present illustration of the invention, the same has been shown as in association with a banjo type of instrument, it is to be understood that the invention is not to be limited to such an instrument type but may be applied to instruments of the character of mandolins, guitars, etc.

In the use of the present instrument, the same is held upright by means of the hand holes 15 so that the player may dispose the opening 9 of the head 1 before his face. The instrument is then used by singing into the opening against the head 10 so that the tones of the voice will set up sympathetic vibrations in the strings to harmonize with the voice.

The body 2 of the instrument is, as illustrated, relatively heavy, therefore, in using the instrument in the manner described, the vibrations created by the voice will not be picked up to any extent by the body of the instrument but will cause the different strings to respond and transmit their vibrations to the head 10 which will set up audible vibrations in the air which will be in harmony with the tones created by the voice. In lighter instruments of the character at present in use such, for example, as a banjo, the head membrane will not transmit the voice tones to any great extent to the strings for the reason that the body of the instrument is so light that it will absorb the vibrations which the voice sets up.

While, as above stated, the instrument illustrated has been shown as having a banjo type of head or tympanic membrane, it is to be understood that any other suitable substance may be employed which will give the desired vibrations in sympathy with the string vibrations, such, for example, as mica or the like.

What is claimed is:—

1. In an instrument of the character described, a flat body having a neck portion extending therefrom, said body and neck portion being solid throughout and of heavy material whereby sound vibrations will not readily be picked up thereby and said body having an opening formed therethrough, a plurality of groups of keys carried by said neck portion and distributed in spaced relation longitudinally of the neck, an annular drum-like member mounted directly upon one side of the body and encircling said opening, a vibrating head extending across said member, a bridge 20 upon said head, a tailpiece carried by the body upon the side of the member opposite the neck, strings connected with said tailpiece and extending across said bridge to and secured by said keys, a supporting pin carried by the neck piece beneath each string, over which the adjacent string is drawn, and a plurality of frets disposed upon said neck piece beneath the strings and positioned in different planes transversely of the neck piece.

2. In a musical instrument of the character 30 described, a body having an elongated neck extending therefrom, the body having an opening formed therethrough, a diaphragm secured over said opening, a bridge-piece mounted upon the diaphragm, a tail-piece secured to the body, a plurality of keys carried by said neck, a plurality of strings each attached at one end to the tail-piece and extending across the bridge to and attached at its other end to a key, a supporting post carried by the neck beneath each string 40 and supporting the same, and means facilitating the tuning of the strings comprising a bar secured to the neck and extending transversely of all but one of the strings.

3. In a musical instrument of the character 45 described, a body having an elongated neck extending therefrom, the body having an opening formed therethrough, a diaphragm secured over said opening, a bridge-piece mounted upon the diaphragm, a tail-piece secured to the body, a plurality of keys carried by said neck, a plurality of strings each attached at one end to the tail-piece and extending across the bridge and attached at its other end to a key, a supporting post carried by the neck beneath each string and supporting the same, and means for tuning the strings comprising a plurality of posts each mounted in said neck beneath a string and normally free from contact therewith, each of said last posts being in a line transversely of the neck 60 with a post supporting an adjacent string.

ALBERT M. PORTER.