

(No Model.)

2 Sheets—Sheet 1.

F. G. McPHERSON.
MUSICAL INSTRUMENT.

No. 591,872.

Patented Oct. 19, 1897.

Fig. 1.

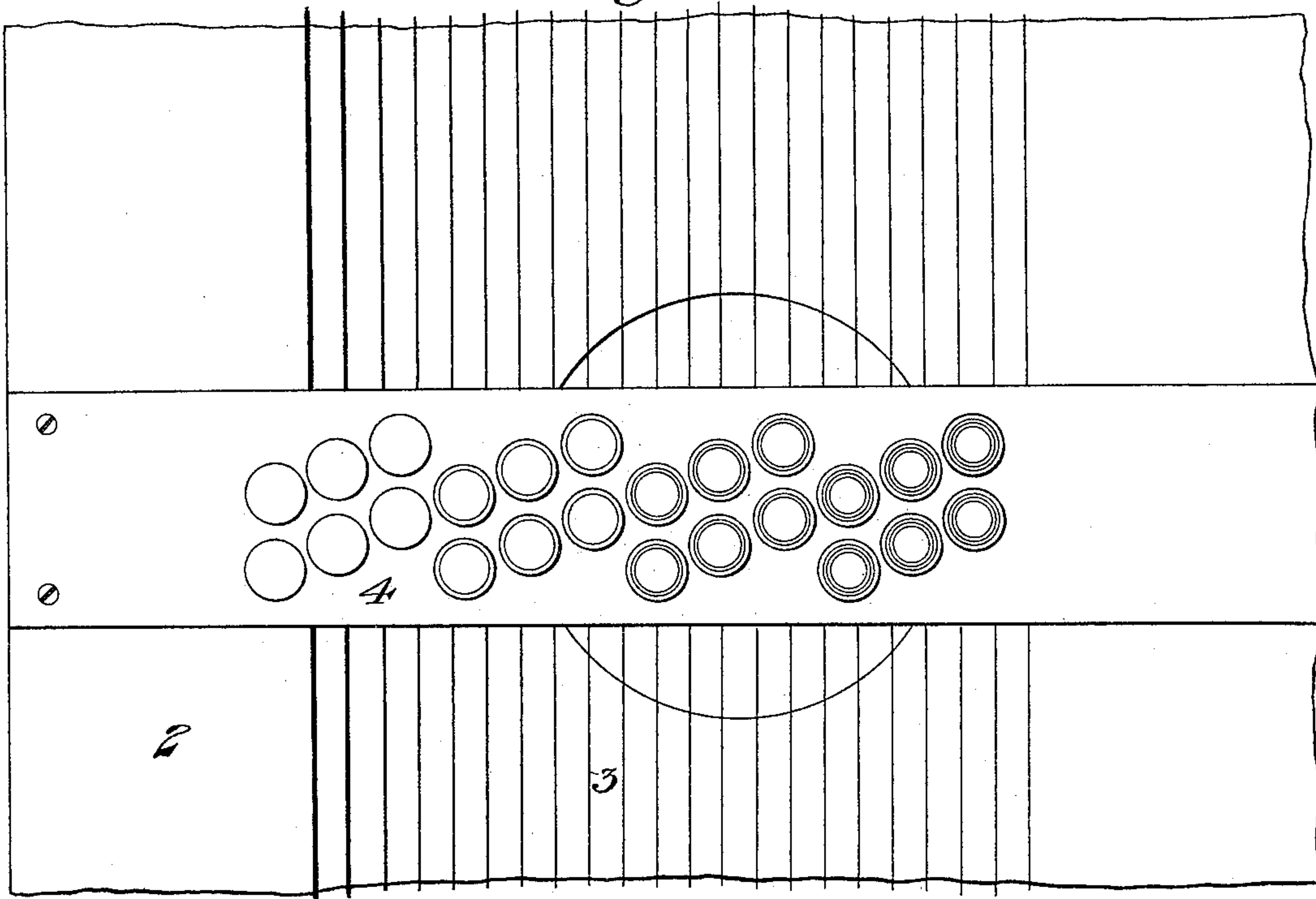
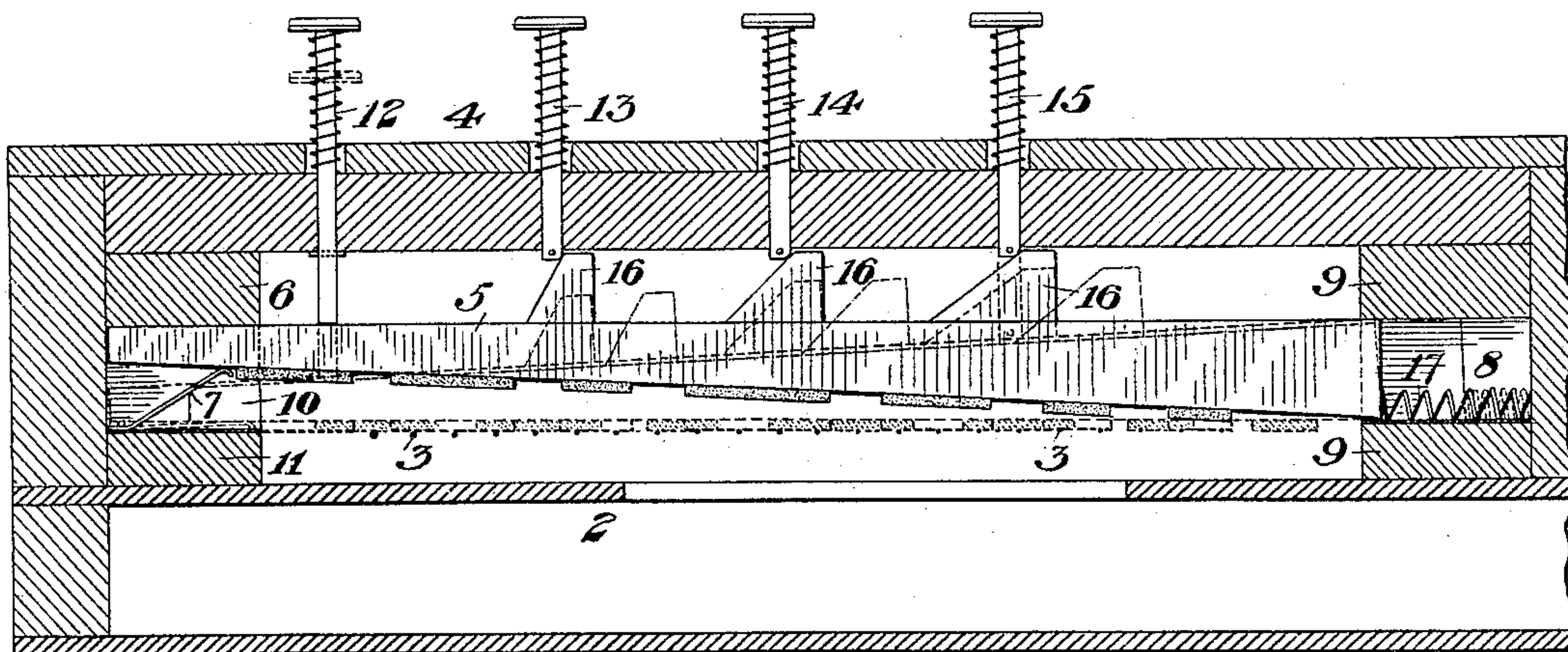


Fig. 2.



WITNESSES

J. A. Corum
J. M. Corum

INVENTOR

Frank G. McPherson
by Baxendell & Baxendell
his Attorneys.

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2 Sheets—Sheet 2.

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Fig. 3.

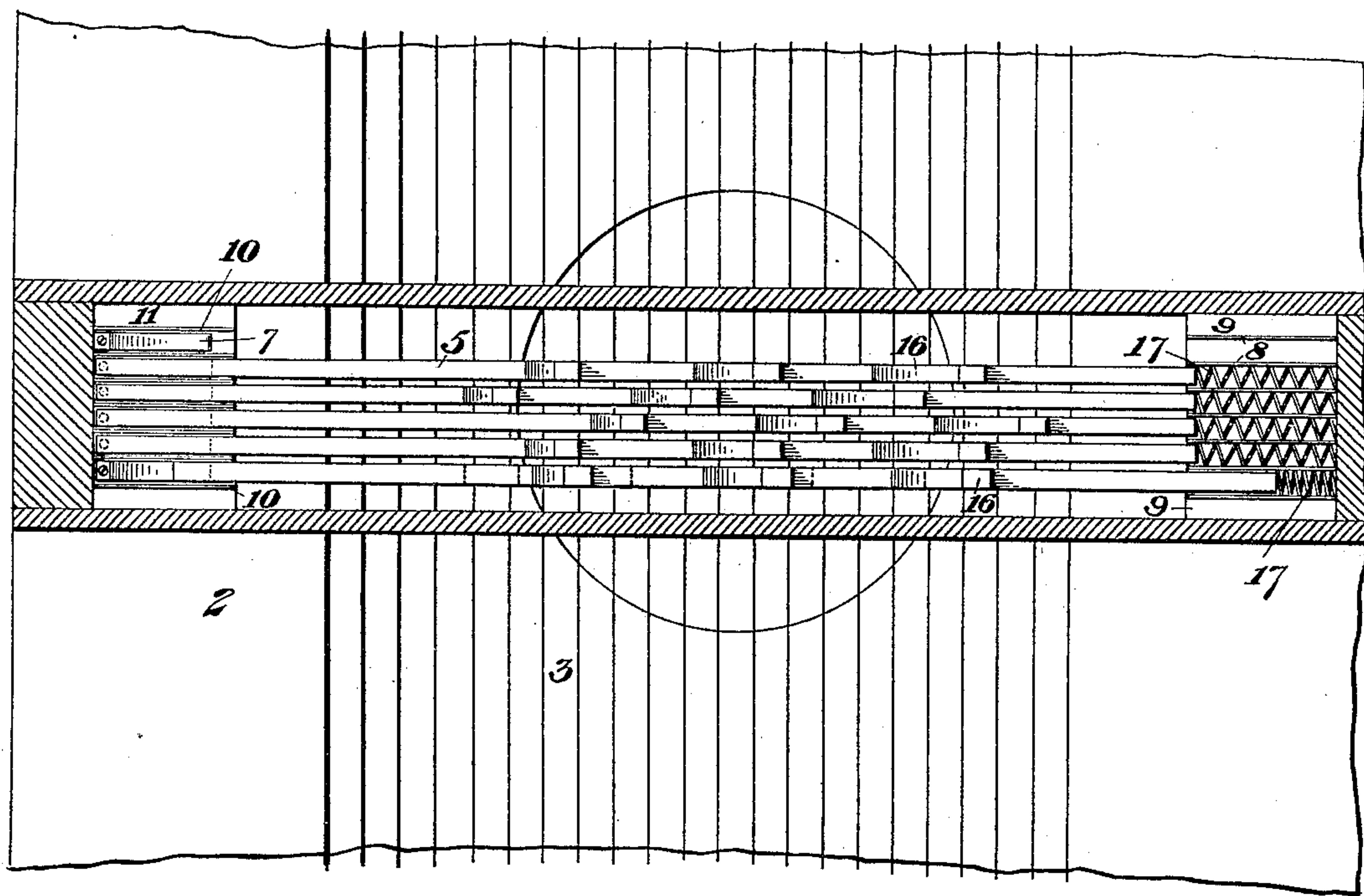
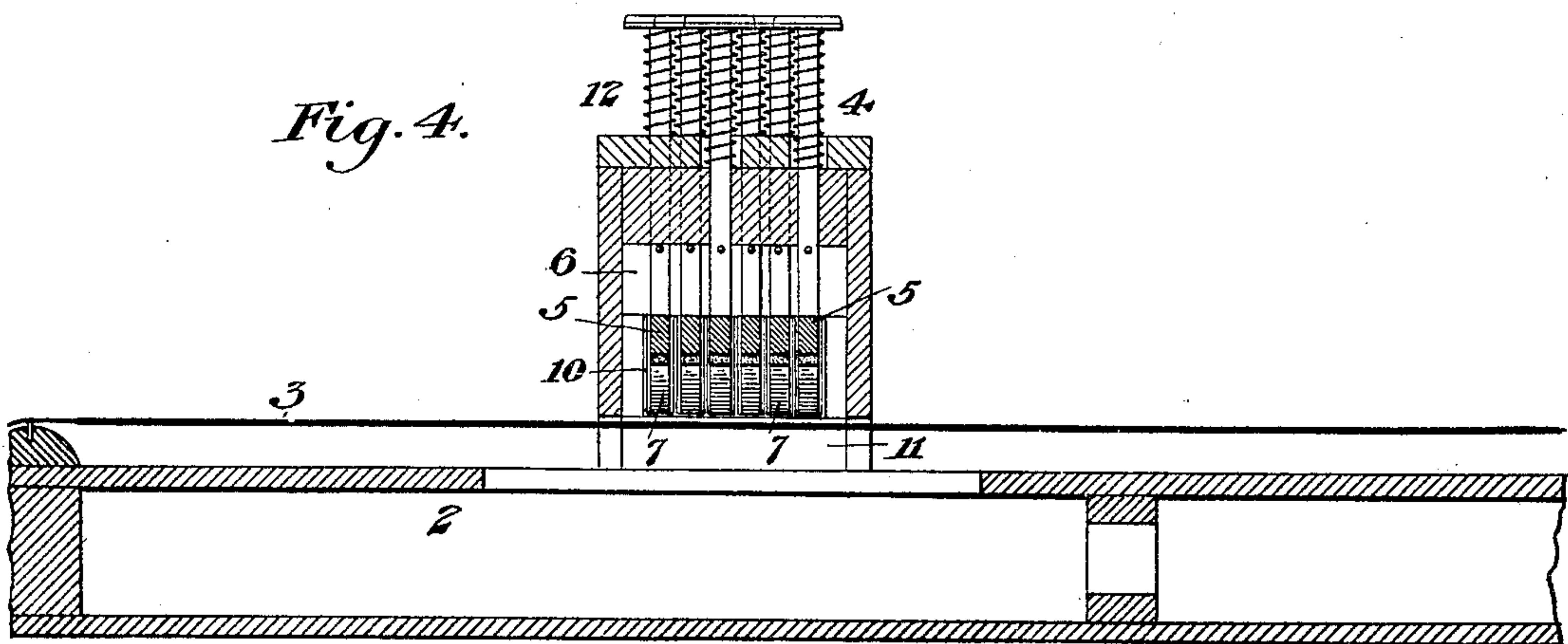


Fig. 4.



WITNESSES

J. A. Connor
H. M. Connor

INVENTOR

Frank G. McPherson
by Bonedell & Bonedell
his Attorneys

UNITED STATES PATENT OFFICE.

FRANK G. MCPHERSON, OF BEAVER FALLS, PENNSYLVANIA, ASSIGNOR TO
THE C. F. ZIMMERMANN COMPANY, OF DOLGEVILLE, NEW YORK.

MUSICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 591,872, dated October 19, 1897.

Application filed November 25, 1896. Serial No. 613,427. (No model.)

To all whom it may concern:

Be it known that I, FRANK G. MCPHERSON, of Beaver Falls, in the county of Beaver and State of Pennsylvania, have invented a new and useful Improvement in Musical Instruments, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top plan view of a portion of a musical instrument provided with my improved presser bars or mutes. Fig. 2 is a transverse section of the instrument, showing in dotted lines one of the mutes depressed and shifted by the key. Fig. 3 is a partial horizontal section with one of the mutes omitted to show the mechanism beneath, and Fig. 4 is a partial longitudinal section.

My invention relates to musical instruments of the autoharp variety, wherein the transverse bars extending across the strings are provided with pads arranged to bear upon certain of the strings when the bar is depressed; and it consists in a new and improved arrangement of these bars and their attachments, whereby a single bar may be depressed in such a way as to produce different chords by means of several keys having actuating connections with said bar.

It also consists in the construction and arrangement of the parts as hereinafter more fully described, and set forth in the claims.

In the drawings, 2 represents the body and 3 the strings of an instrument of an autoharp character, and 4 represents a keyboard secured at the sides of the instrument and above the strings. Below this keyboard are placed side by side a series of mutes 5 5, each mute having an inclined lower face, as shown, which face is provided with the usual series of felt pads arranged to press upon the strings. At one end these bars are held against a suitable stop 6 by curved leaf-springs 7 bearing upon their under edges, while the other and larger ends rest loosely within cells or pockets formed by separating-partitions 8 and the upper and lower longitudinal bars 9 9. The smaller ends are also held and guided in the same way by separating-partitions 10 10, extending between the upper stop 6 and the

lower stop or bar 11. Each bar is provided with a series of depressing-keys 12, 13, 14, and 15, of which I have shown four, although more or less than this number may be used if desired. The key 12 bears directly upon the mute, while the remaining keys bear upon the inclined or wedge-shaped faces of blocks 16, secured to the upper edge of the mute or presser-bar. These blocks are arranged with different lengths of incline, so that as each key is depressed its lower end will press upon the inclined face of one of the blocks and move the mute lengthwise a sufficient distance to bring its pads into a different relation to the strings, so as to give a different chord. The keys move within suitable guiding-holes in the keyboard, and are provided with spiral springs arranged to normally hold them in elevated position. The mutes or presser-bars are normally held in the position shown in Fig. 2 by springs 17, which bear against the larger ends of these bars and press them toward the left, the keys bearing upon the inclined face of the blocks, driving the bar to the right in opposition to the action of the spring.

I have shown six mutes or presser-bars, with four keys to each bar, arranged as shown in Fig. 1, but it is evident that the number of mutes or presser-bars, as well as the number of keys to each bar, may be varied as desired.

The advantages of my invention will be apparent to those skilled in the art, since by providing a series of keys to each mute several chords may be formed with a single mute, and that with as little trouble as in making one chord in the ordinary instrument. As the mutes are pressed by keys bearing thereon or connected therewith, they may be placed much closer together and made narrower than was formerly possible where the operator pressed directly upon the mute itself.

The keys may be placed in any convenient arrangement or position—such, for instance, as that shown in Fig. 1—since the mute may be acted upon at any point along its length instead of being necessarily pressed upon its central portion, as formerly. The connection between the keys and the presser-bar for

moving such bar lengthwise as well as downwardly may be changed. Instead of using a swinging mute, I may use a mute which merely moves lengthwise, being held normally in
 5 central position by springs at each end, the mute being moved longitudinally by inclined blocks upon its upper edge, similar to those shown in the drawings, and having pads with
 10 a velvet or tufted face to rub over and contact with the springs. The presser-bar may be straight, and the strings arranged on an incline, or tapered felt pads may be used with
 15 a straight bar and strings in a horizontal plane, and many other variations in the form and arrangement of the parts will be suggested
 to the skilled mechanic without departing from my invention.

What I claim is—

1. In a musical instrument, a vertically-
 20 movable mute or presser-bar, having pads on its lower face, a key arranged to move said mute downwardly, and another key arranged to move the bar downwardly and lengthwise
 so as to bring the pads into a different relation to the strings.
 25

2. In a musical instrument, a vertically and longitudinally movable mute, springs arranged to press the bar endwise and upwardly,
 and a vertically-reciprocating key having con-
 30 nections arranged to move the bar down-

wardly and lengthwise in opposition to the springs.

3. In a musical instrument, a series of vertically and longitudinally movable mutes located side by side, springs arranged to press
 35 the same endwise and upwardly, a keyboard above the mutes, and keys extending through the keyboard, certain of these keys moving the mutes downwardly, and others arranged
 to move the mutes downwardly and length-
 40 wise so as to bring them into a different relation to the strings.

4. In a musical instrument of the autoharp variety, a series of transverse mutes having
 45 inclined lower faces provided with pads, loose swinging connections at one end of the mutes, springs arranged to hold the other ends in elevated position, said mutes having blocks
 thereon provided with inclined faces, keys
 50 arranged to bear upon the mutes and press them downwardly, and other keys arranged to bear upon the inclined faces of the blocks and move the mutes downwardly and endwise.

In testimony whereof I have hereunto set my hand.

FRANK G. McPIERSON.

Witnesses:

G. I. HOLDSHIP,
 H. M. CORWIN.