

**No. 682,504.**

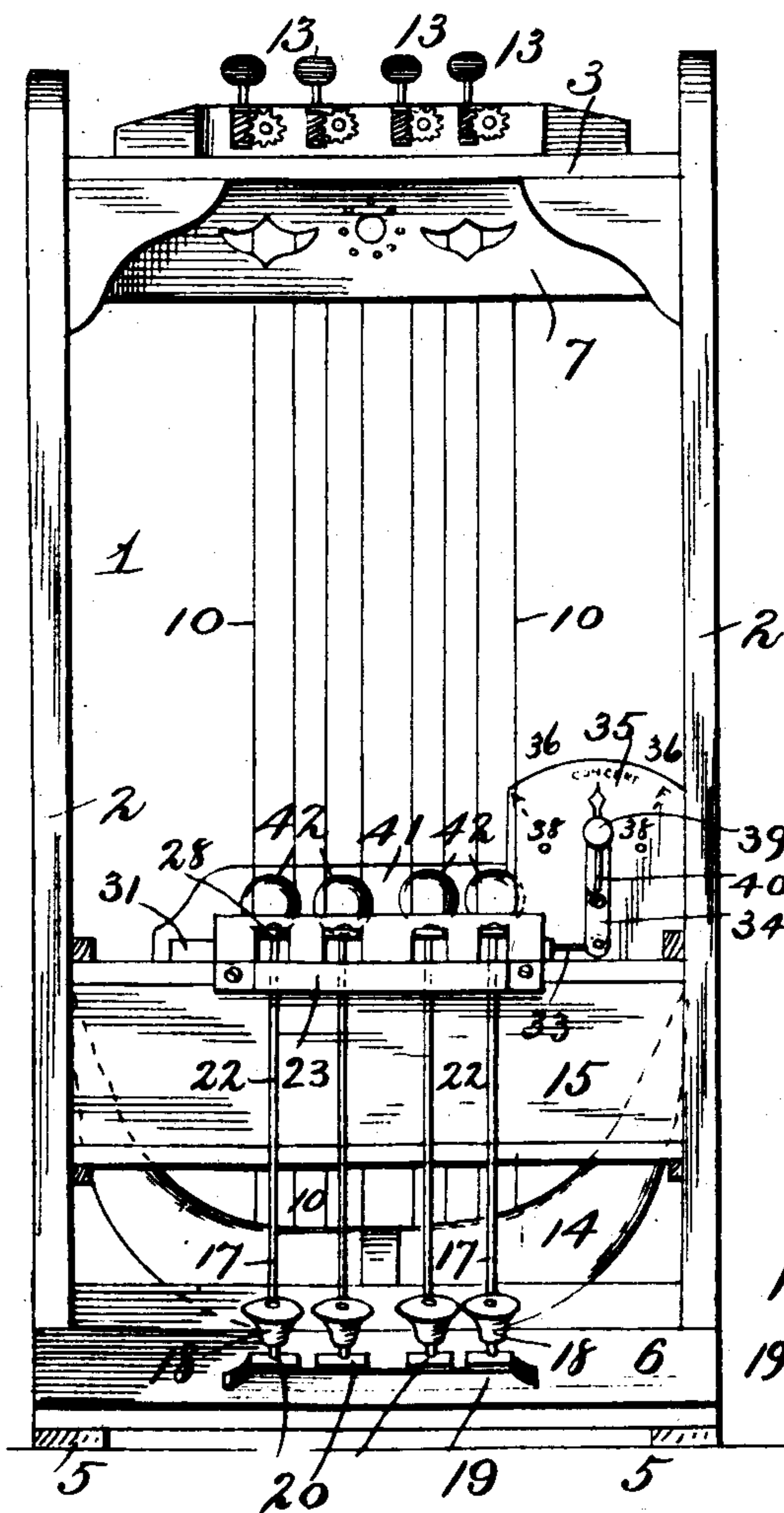
**Patented Sept. 10, 1901.**

**E. STRIEFFLER.**  
**MUSICAL INSTRUMENT.**  
(Application filed May 15, 1901.)

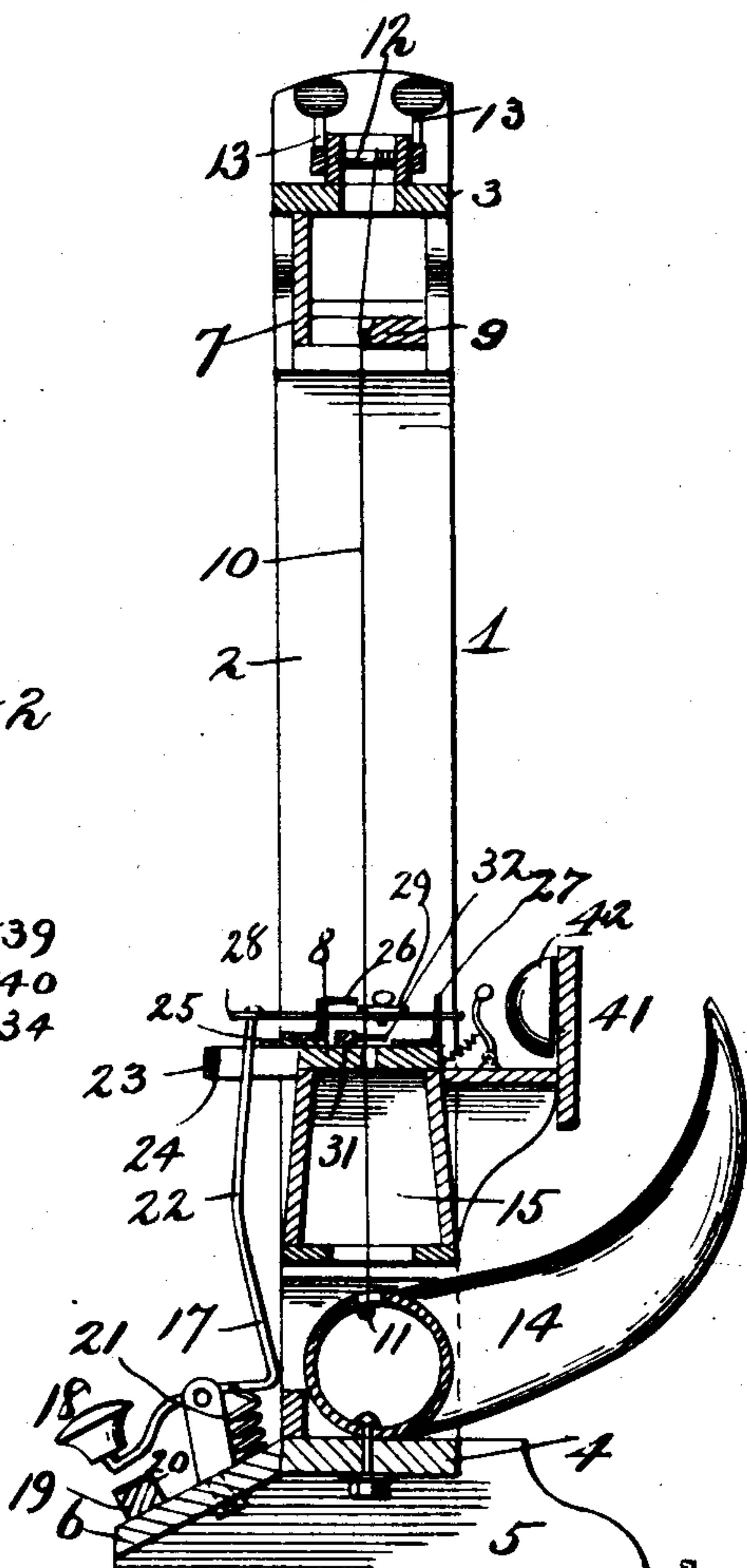
(No Model.)

**3 Sheets—Sheet 1.**

*Fig. 1.*



*Fig. 5.*



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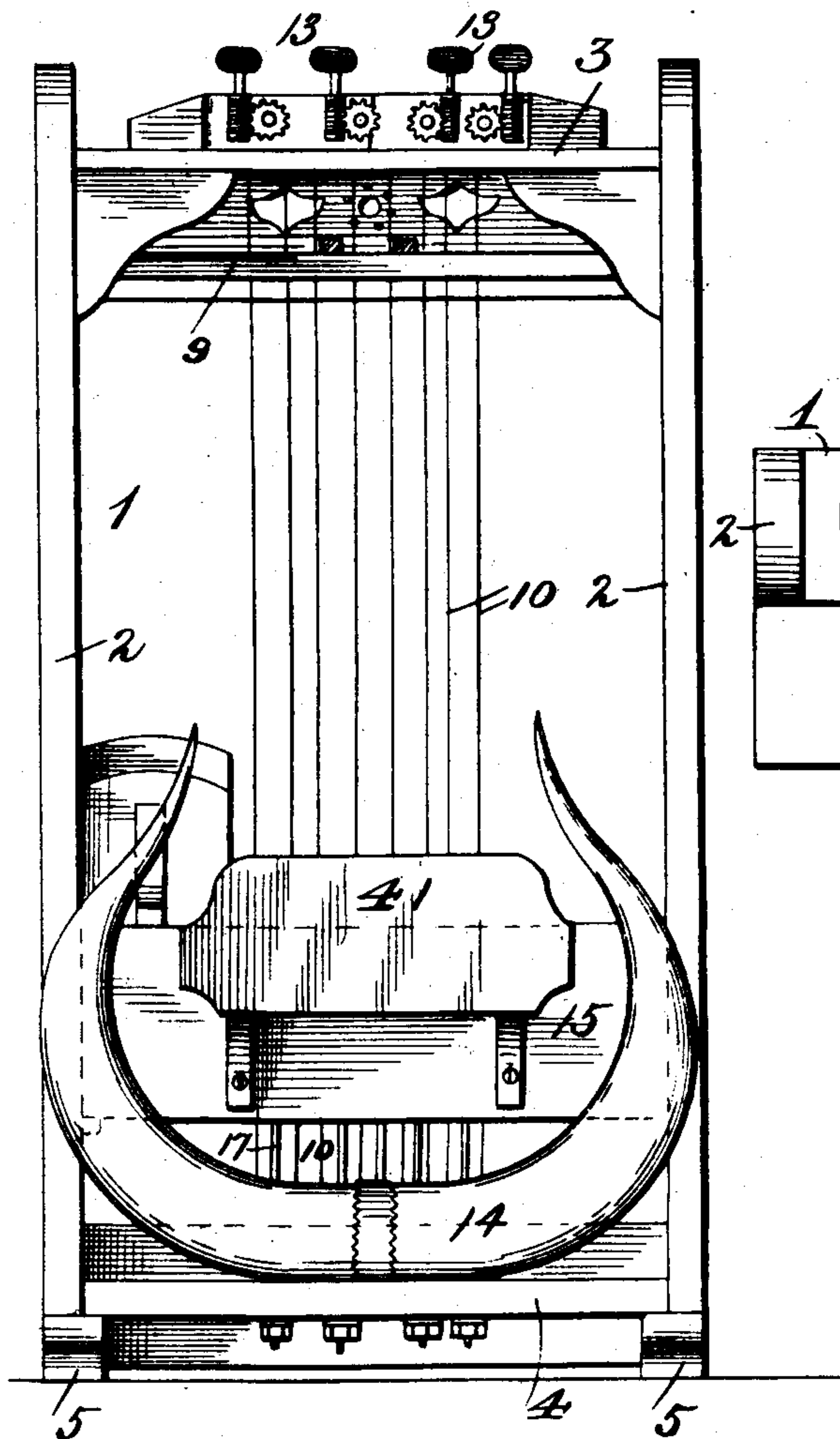


Fig. 2

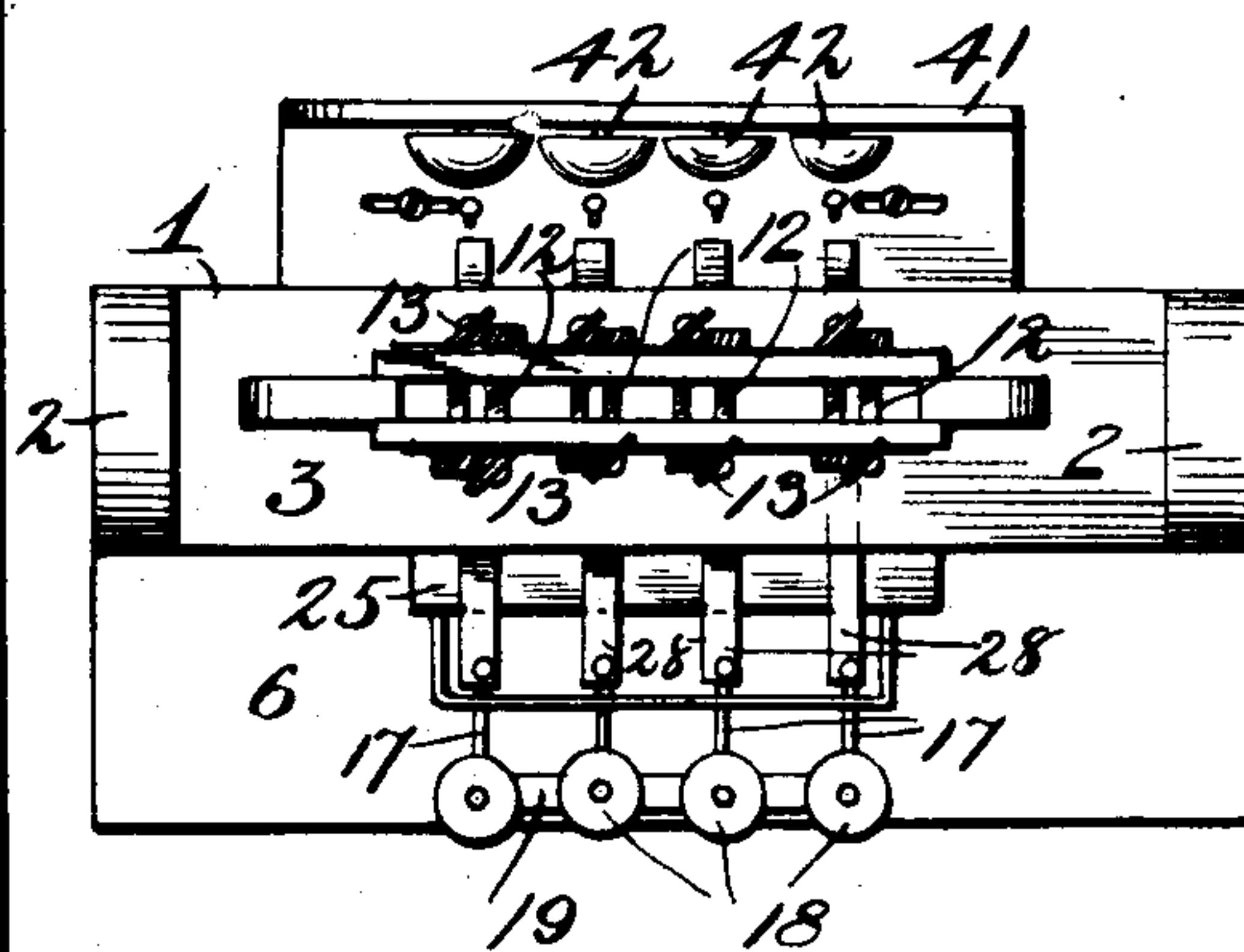


Fig. 3

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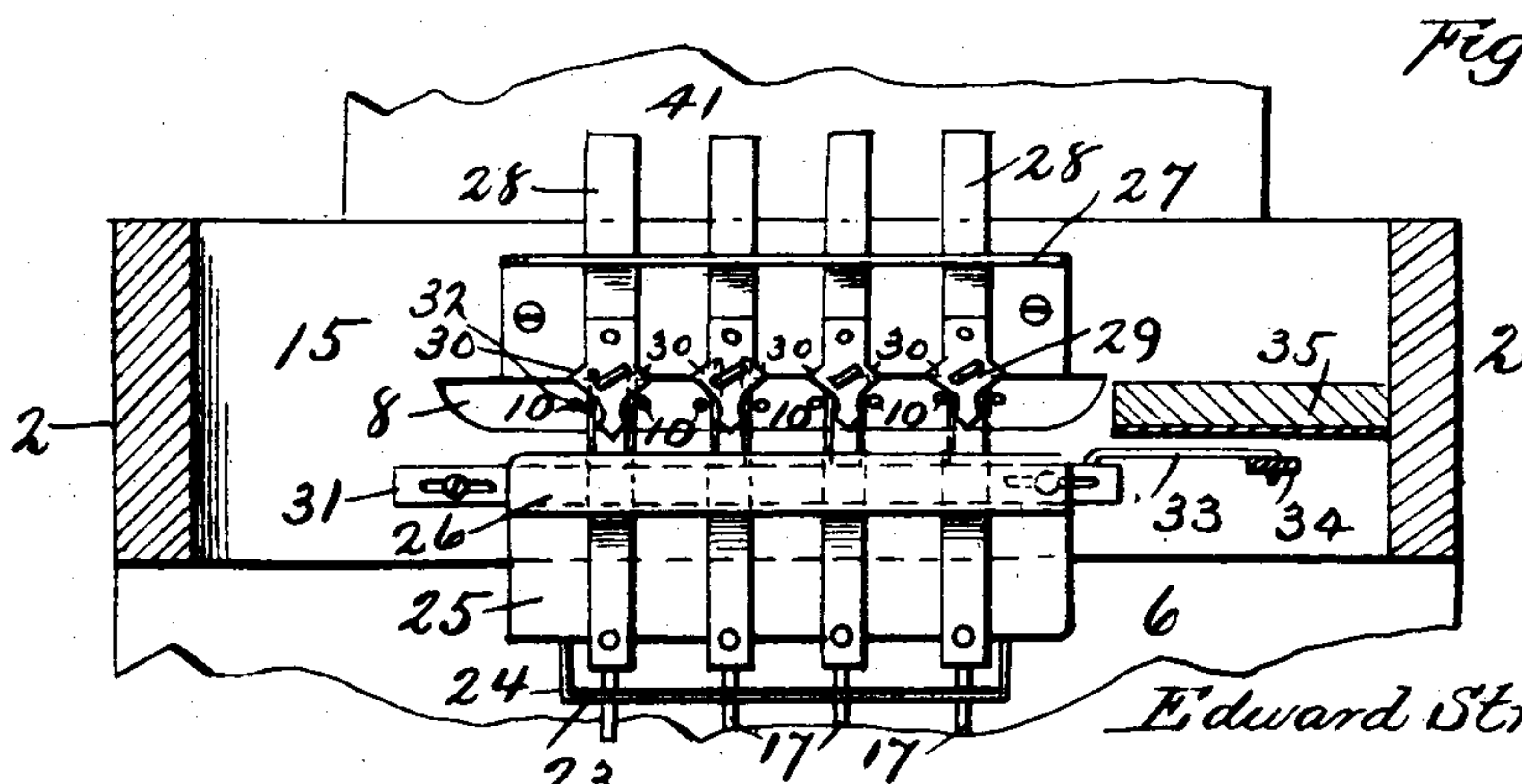
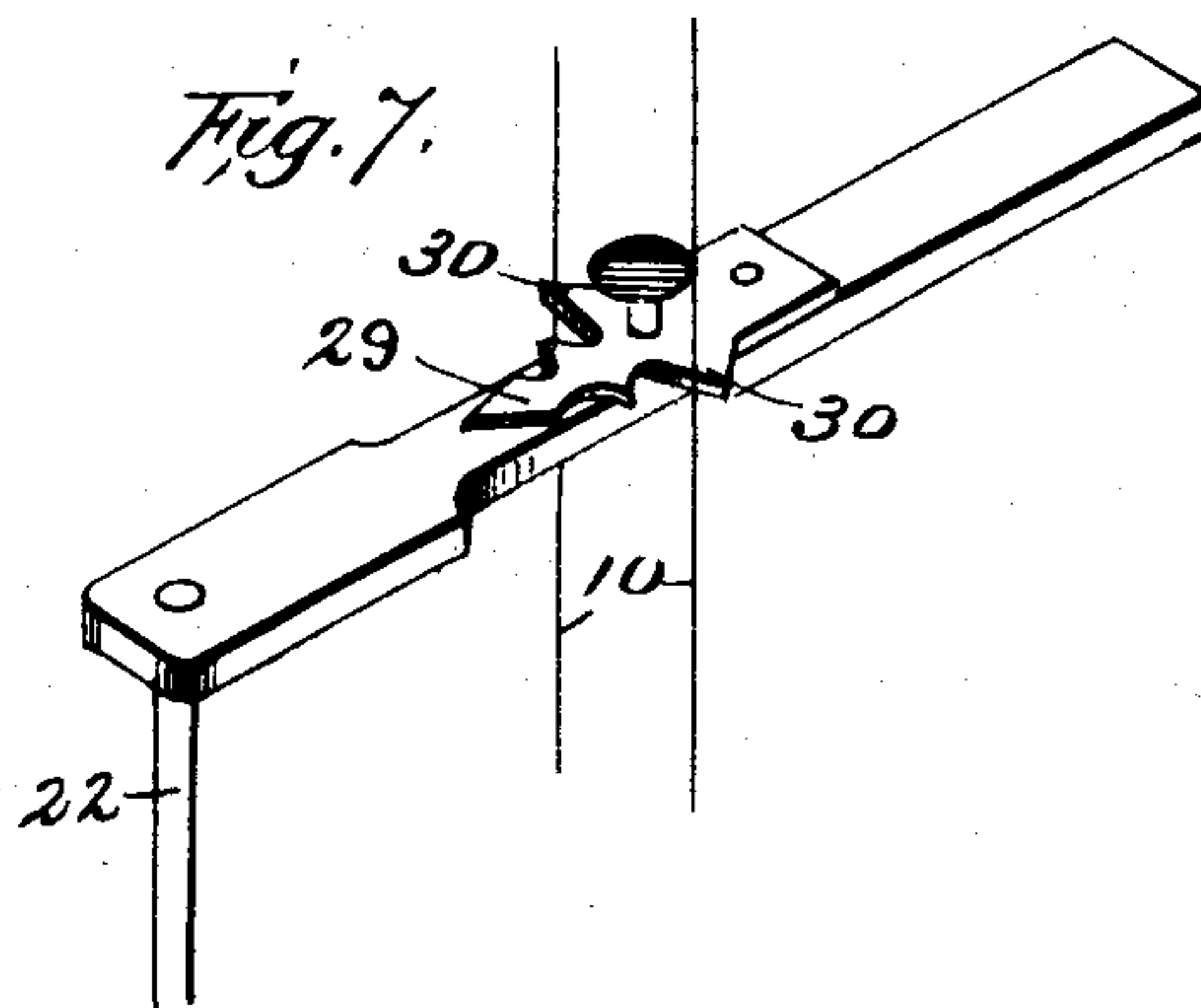
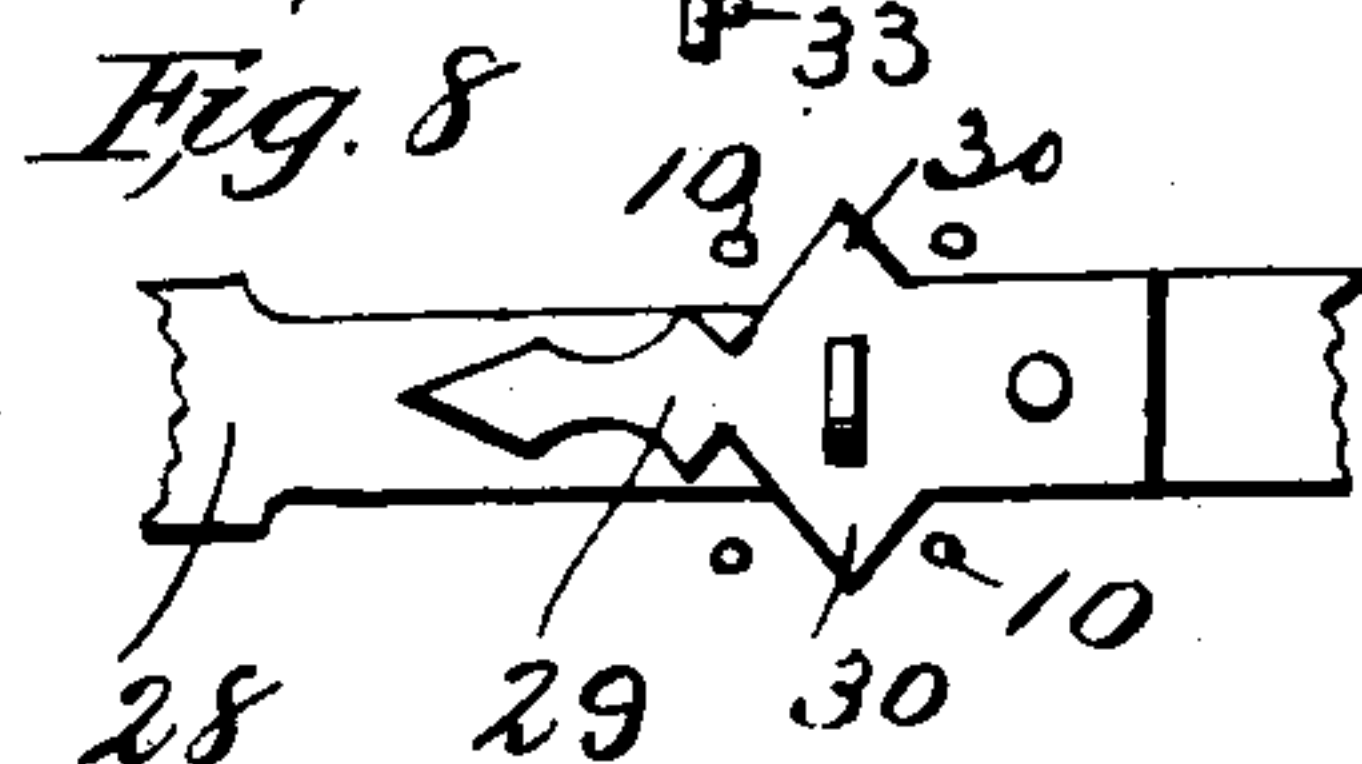
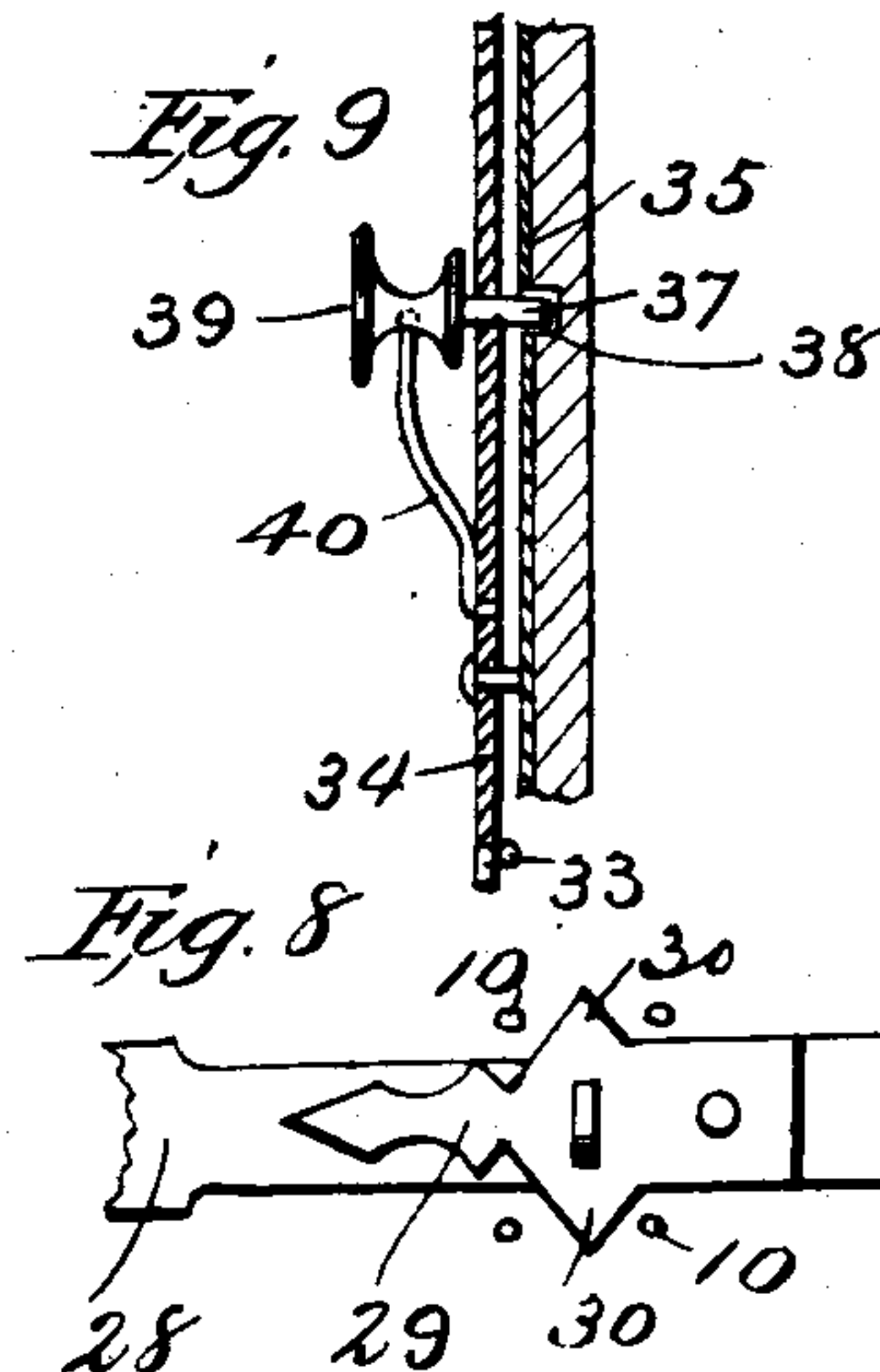
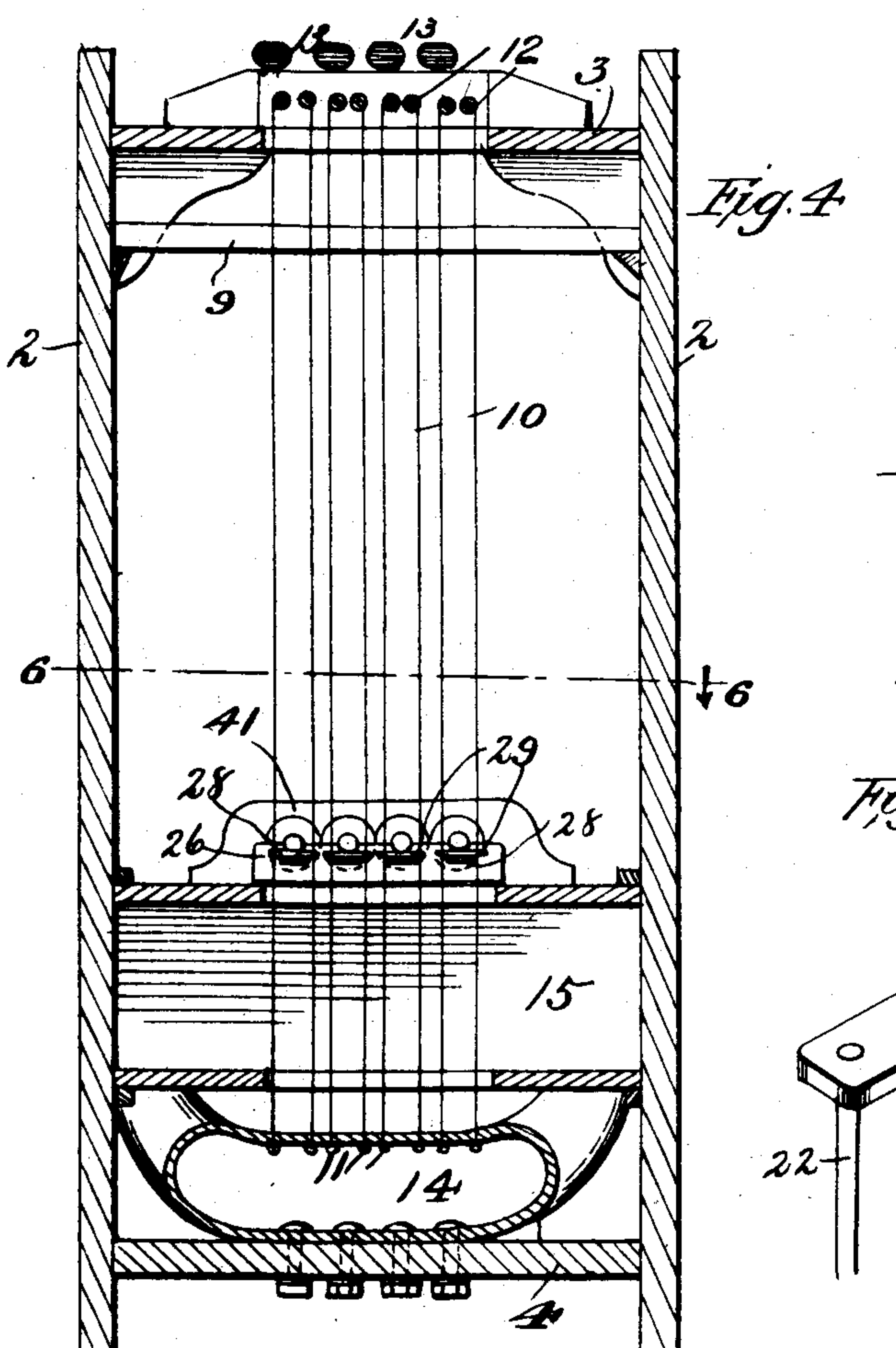
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**3 Sheets—Sheet 3.**



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# UNITED STATES PATENT OFFICE.

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## MUSICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 682,504, dated September 10, 1901.

Application filed May 15, 1901. Serial No. 60,338. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD STRIEFFLER, a citizen of the United States, residing at Bisbee, in the county of Cochise and Territory of Arizona, have invented certain new and useful Improvements in Musical Instruments; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in stringed musical instruments of that type wherein the strings are vibrated by mechanically-operated pickers.

The objects of the invention are, first, to provide improved pickers and means for operating the same; second, to provide means whereby certain strings may be thrown into and out of action at will; third, to provide bells which may be operated simultaneously with the strings and also thrown into and out of action, and, finally, to generally simplify and improve the construction and increase the practical efficiency of musical instruments of this character.

With these and other objects in view, which will appear as the nature of the improvements is better understood, the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter more fully described, and particularly set forth in the appended claims.

In the accompanying drawings, Figure 1 is a front elevation of a musical instrument embodying my invention. Fig. 2 is a rear elevation of the same. Fig. 3 is a top plan view. Fig. 4 is a vertical longitudinal section. Fig. 5 is a vertical transverse section. Fig. 6 is a horizontal section on line 6-6 of Fig. 4. Fig. 7 is a detail view of one of the picker-bars and picker. Fig. 8 is a detail view showing a modified arrangement of strings; and Fig. 9 is a detail sectional view through the indicator-plate, showing the pointer locked by the detent.

Referring now more particularly to the drawings, the numeral 1 represents the open frame of the instrument, comprising a spaced pair of standards or side pieces 2, connected by the top and bottom pieces 3 and 4 and

resting upon supporting-feet 5, to the front portions of which is attached the footboard 6.

7 represents the face-board at the top of the instrument, 8 and 9 bridge-pieces, and 10 are the strings of any desired number arranged in pairs or multiples thereof and secured at their lower ends to bolts or other suitable fastening devices 11, passed through the bottom piece 4, and at their upper ends to shafts 12, journaled in a suitable support upon the upper surface of the top piece or headboard 3 and adapted to be adjusted by the turning-keys 13 to regulate the tension of said strings. The lower ends of the strings preferably pass up through horns or other ornamental devices or figures 14, secured to the base-board 4.

Arranged between the side pieces 2 of the frame is a rest box or support 15, formed with slots or openings in its bottom and top for the passage of the strings 10. One of the side walls of the slot in the top of the rest-box is suitably notched or constructed to form the bridge-piece 8.

Pivotaly mounted upon the footboard 6 are a series of operating-levers 17, which carry at their outer and lower ends keys 18, which are adapted to be depressed to operate the levers. These keys are located above a cleat or rail 19, carrying a strip 20, of rubber or other suitable material, against which the levers are adapted to strike when the keys are depressed to their fullest extent, such strip serving to deaden the noise of contact. The levers are normally retracted and held in position, with the keys 18 elevated, ready for operation by coil-springs 21, secured thereto and to the footboard 6, and are provided with right-angularly arranged upwardly-projecting portions 22, which extend upwardly through and work within a loop-shaped keeper-strip 23, secured to the front surface of the rest-box 15, which keeper-strip limits the outward movement of the said portions 22 of the levers when the keys are depressed and is provided with a layer of sound-deadening material 24 to deaden the noise of contact of said levers with said strip. A plate 25 is secured to the upper surface of the rest-box 15 and is formed in its outer edge with notches to receive the portions 22 of the le-



vers and serves as a guide for maintaining the levers in line and preventing them from moving to an undue extent inwardly under the action of the springs 21. Working in slots formed in guide plates or members 26 and 27 upon the upper surface of the rest-box are reciprocating picker-bars 28, equal in number to the levers and to the sets or pairs of strings employed. These bars slide over the slot in the top of the rest-box and are formed with seats or openings in their front ends for the reception of the upper extremities of the portions 22 of the operating-levers 17, whereby upon depressing said levers the picker-bars will be moved forwardly, and when the levers are released the springs 21, acting on the levers, will force the bars backward to their normal position. Each picker-bar is reduced intermediately of its length to form a narrow supporting portion for the reception of a spear-shaped picker 29, secured thereto in any approved manner. This picker is so arranged as to move between the cooperating pairs of strings 10 when the picker-bar is reciprocated and has outwardly oppositely projecting points 30, which are adapted to strike and vibrate said strings in an obvious manner. The keys 18 may be operated by the hands or feet of the player or through the instrumentality of suitable mechanism, as desired. As shown in Fig. 8, the strings 10 may be increased in number, if desired, and in said figure I have shown the use of four strings in connection with each picker, said strings being arranged in pairs on opposite sides of the path of movement of the picker, so that each point of the picker will strike and vibrate two strings, one of each pair. The picker strikes the two front strings upon a forward movement from its normal position and the two rear strings upon a rearward movement from its normal position, the two movements being produced by a downward depression and upward-lifting movement of the coacting key 18. Where this modified arrangement of strings is employed, the levers 17 may be somewhat differently constructed or arranged to allow them to have the requisite movement to slide the pickers rearwardly to strike the rear pairs of strings. This may be accomplished in a manner readily understood and therefore need not be herein shown.

31 represents a slide mounted upon the top of the rest-box 15 in rear of the front guide-plate 26 and provided with a series of fingers 32, which project between the pairs of strings 10 and by means of which either string of each pair may be at will moved out of the path of the cooperating point 30 of the picker, so that it will not be operated by the picker upon the retraction of the picker-bar. This slide is connected at one end by a link 33 with the lower short arm of a pivoted lever 34, which lever is mounted upon an indicator-plate 35, secured upon the rest-box 15, and serves as a hand or pointer cooperating with three indice-marks 36 on said indicator-plate

to indicate the extent of movement of the said slide 31. When the pointer 34 occupies a vertical position and registers with the central mark 36, the slide 31 is moved to a position to bring its fingers 32 between the strings of each pair of strings 10, so that all the strings will lie in the path of movement of the pickers to be vibrated thereby when the picker-bars are operated. When, however, the pointer 34 is moved to register with the mark 36 on the right of the central mark, the slide 31 will be forced outwardly or to the left, and the finger 32 will carry the left-hand string of each pair with it and move it out of the path of movement of the picker 30, whereupon one string only of each pair will be vibrated by the picker on its movement. When, on the other hand, the pointer 34 is moved in the reverse direction to register with the mark 36 to the left of the central mark, the slide 31 will be moved to bring the fingers 32 into position to force the right-hand string of each pair of strings out of the path of movement of the pickers 30, so that only the left-hand string of each pair of strings will be vibrated by said pickers upon the reciprocation of the picker-bars. To hold the pointer 34 fixed in adjusted position, a sliding plunger stem or detent 37 is fitted to move in an opening therein and is adapted to engage either one of three keeper seats or openings 38, formed in the indicator-plate 35. This stem or detent has connected therewith a knob or finger 39, whereby the pointer may be operated and said detent retracted, and to normally hold the detent in locking position a spring 40 is secured at one end to the pointer and at its other end to the said knob and exerts its energy to normally force the detent inwardly or rearwardly against the indicator-plate 35.

41 represents a bell bracket or support suitably secured upon the rear of the rest-box 15, so as to slide transversely of the frame. This bracket or support carries a series of bells 42, equal in number to the reciprocating picker-bars 28 and adapted to be sounded by said bars as the latter are retracted after striking the strings when the bells are arranged in line with said bars. The bells may be thrown into and out of alinement with the bars, so as to be operated or not at will by simply sliding the bracket or support 41 transversely of the frame of the rest-box 15.

From the foregoing description, taken in connection with the accompanying drawings, the construction, mode of operation, and advantages of the invention will be readily understood, and it will be seen that my invention provides a stringed musical instrument embodying certain desirable advantages due to its peculiarities of construction alone. Changes in the form, proportion, and minor details of construction may be made within the scope of the invention without departing from the spirit or sacrificing any of the advantages thereof.

Having thus fully described my invention,



what I claim as new, and desire to secure by Letters Patent, is—

1. In a stringed musical instrument, the combination of strings arranged in pairs, and pickers arranged to move between the strings of the instrument and each provided with oppositely-projecting points to strike and vibrate the strings of the coöperating pair, substantially as described.

2. In a stringed musical instrument, the combination of strings arranged in pairs, picker-bars arranged to reciprocate between the strings of each pair, pickers carried by said bars and provided with oppositely-projecting points to strike the strings, and means for reciprocating said bars, substantially as described.

3. In a stringed musical instrument, the combination of strings arranged in pairs, sliding picker-bars arranged to reciprocate between the strings of each pair, pickers carried by said bars and provided each with oppositely-projecting points to strike the strings, pivoted operating-levers for reciprocating the bars, and springs for retracting the levers and bars, substantially as described.

4. In a stringed musical instrument, the combination of strings arranged in pairs, reciprocating picker-bars, pickers carried by said bars to strike and vibrate the strings, each of said pickers being provided with oppositely-projecting points to strike and vibrate the strings of the coöperating pair, bells adapted to be struck by the bars and to be moved into and out of the path of movement thereof, and means for reciprocating the bars, substantially as described.

5. In a stringed musical instrument, the combination of strings arranged in pairs, pickers adapted to move between the strings of each pair and to simultaneously strike the same, and means for moving either one of the strings of each pair out of the path of movement of the picker, substantially as described.

6. In a stringed musical instrument, the combination of strings arranged in pairs, pickers movable between the strings of each pair and adapted to simultaneously strike the

same, a slide provided with fingers projecting between the strings and adapted to be moved in either direction to move either string of each pair out of the path of movement of the picker, substantially as described.

7. In a stringed musical instrument, the combination of strings arranged in pairs, pickers movable between the strings of each pair and adapted to simultaneously strike the same, a slide, fingers carried by the slide and projecting between the strings of each pair, and means for moving and indicating the extent of movement of said slide, substantially as described.

8. In a stringed musical instrument, the combination of strings arranged in pairs, pickers movable between the strings of each pair and adapted to simultaneously strike the same, a slide, fingers carried by the slide and projecting into the spaces between the strings of each pair, an indicator, a pointer for operating the slide and coöperating with the indicator, and means for holding the pointer in adjusted position, substantially as described.

9. In a musical instrument of the character described, the combination of strings arranged in pairs, picker-bars arranged to reciprocate between the strings of each pair, pickers carried by said bars and adapted to simultaneously strike the same, means for operating the bars, a slide, fingers projecting from the slide and into the spaces between the strings of each pair, an indicator-plate provided with indicator-marks and seats, a pointer pivoted to said plate and connected with the slide and adapted to coöperate with said marks to indicate the extent of movement of the slide in either direction, and a spring-actuated detent carried by said pointer to engage the seats in the plate and hold the pointer in adjusted position, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

EDW. STRIEFFLER.

Witnesses:

M. J. BROWN,  
GEO. B. WILCOX.