

G. REGONDI.
MUSIC LEAF TURNER.

APPLICATION FILED AUG. 25, 1908.

974,826.

Patented Nov. 8, 1910.

3 SHEETS—SHEET 1.

Fig. 1.

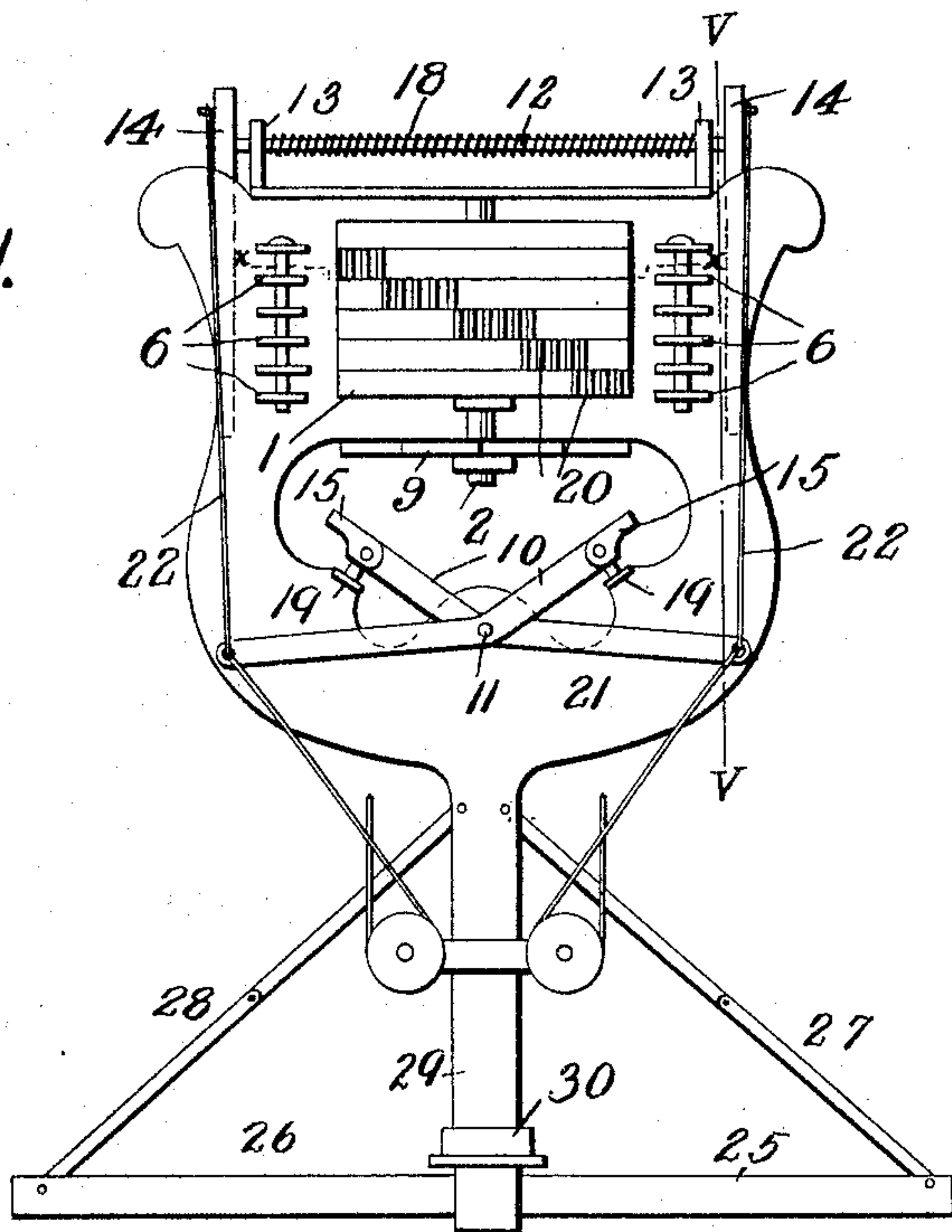


Fig. 2.

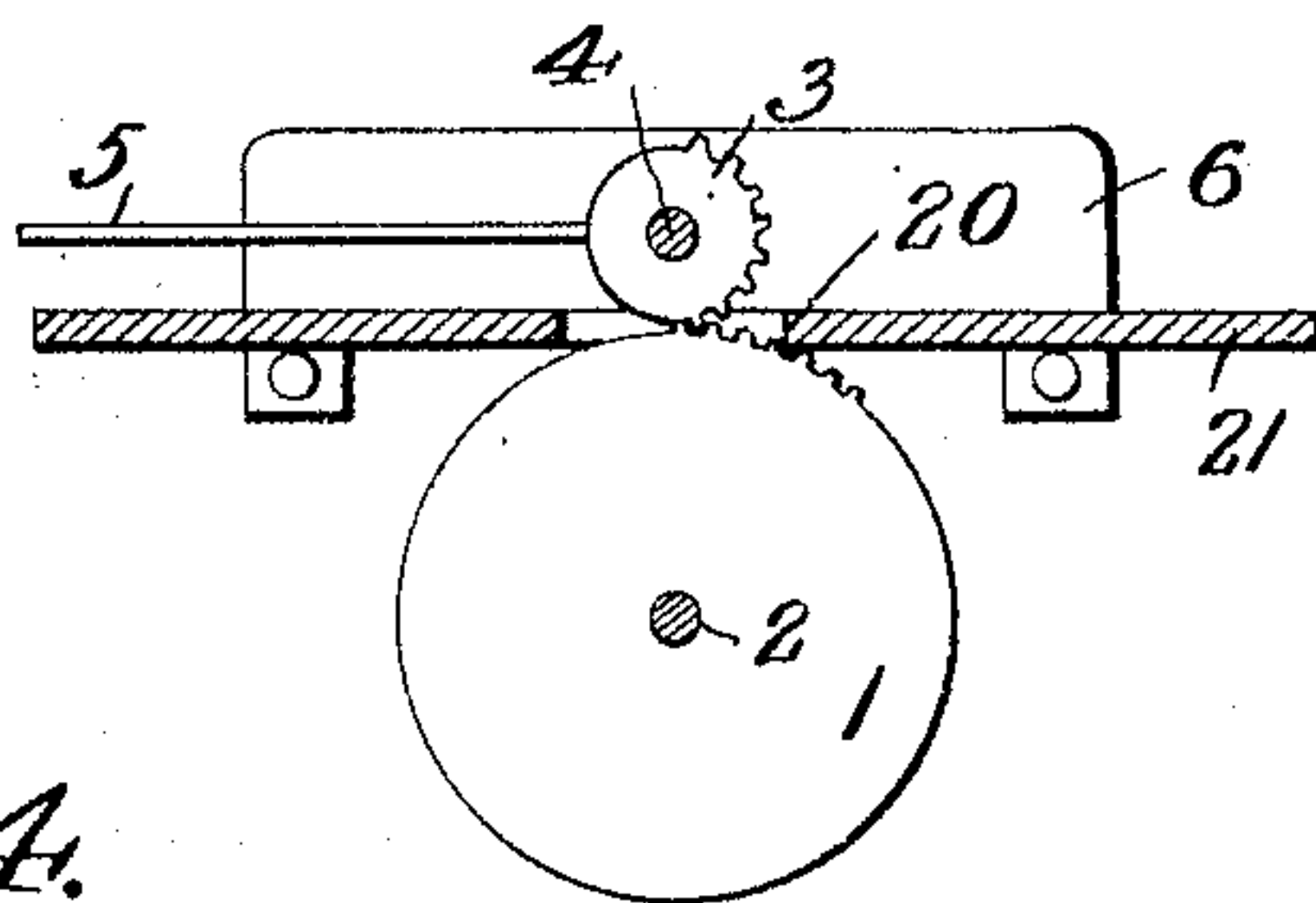


Fig. 4.

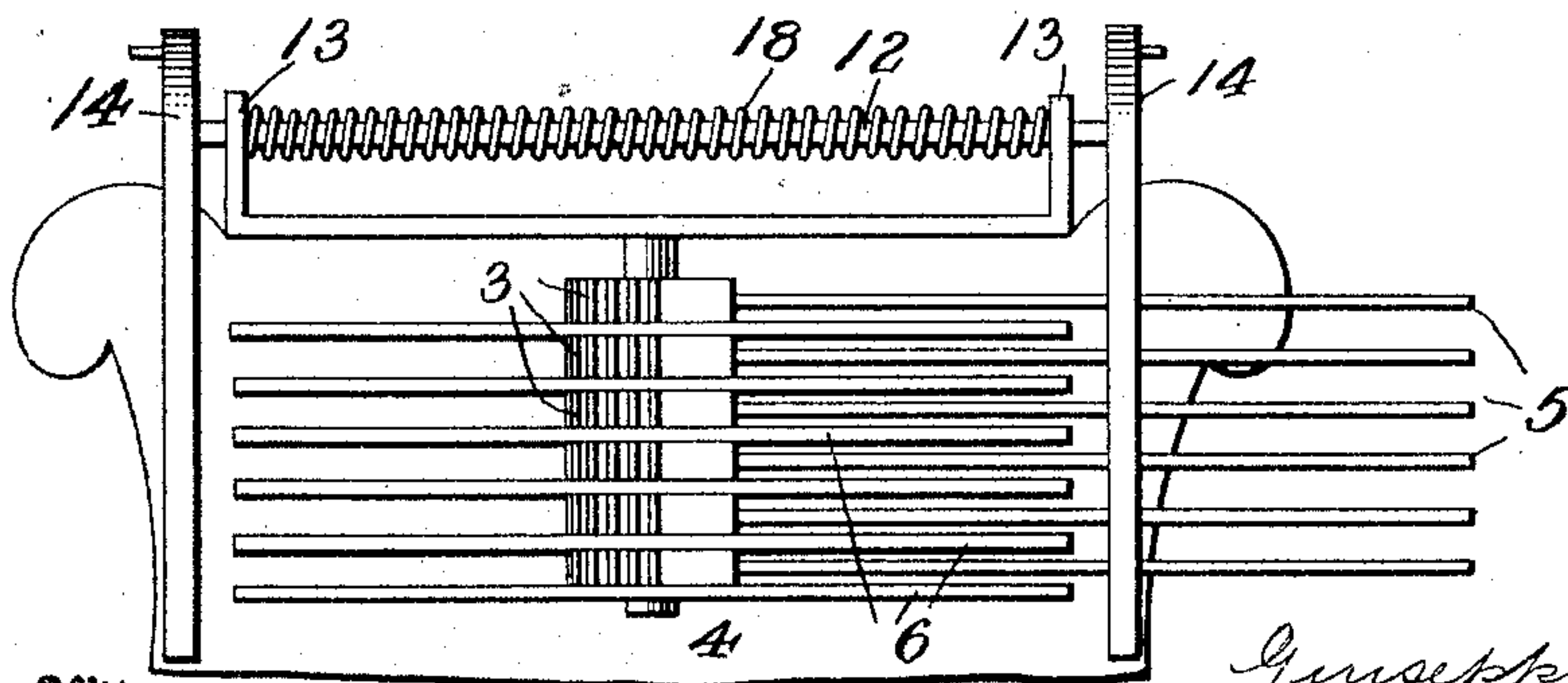


Fig. 13.

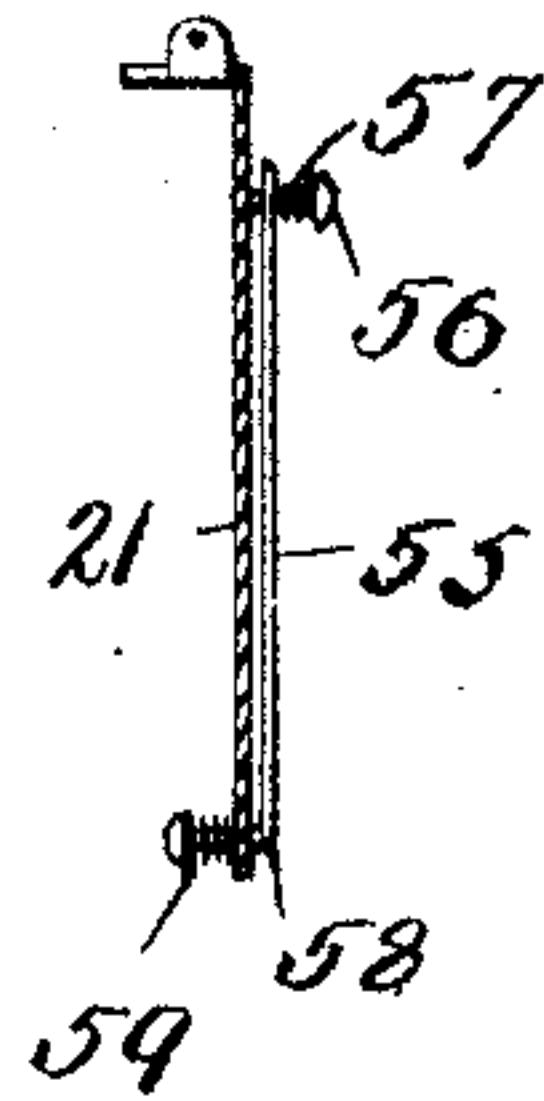
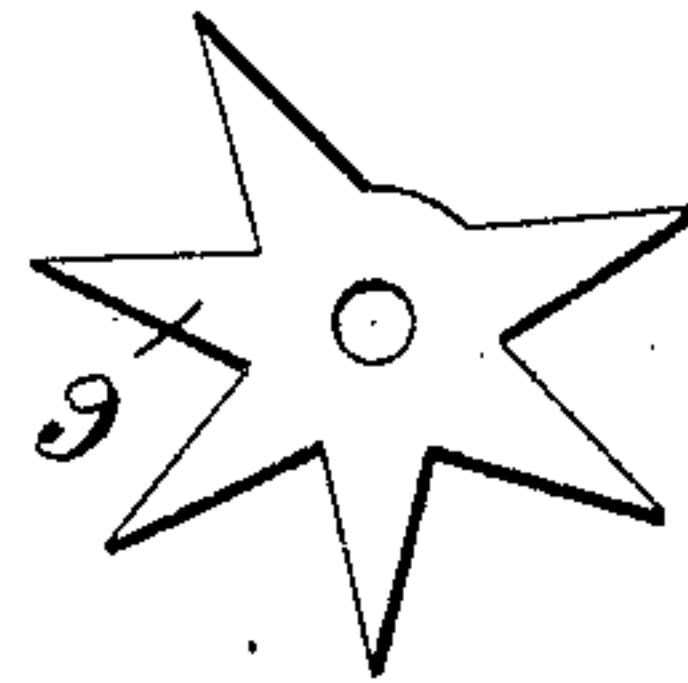


Fig. 8.



Witnesses

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3 SHEETS—SHEET 2.

Fig. 6.

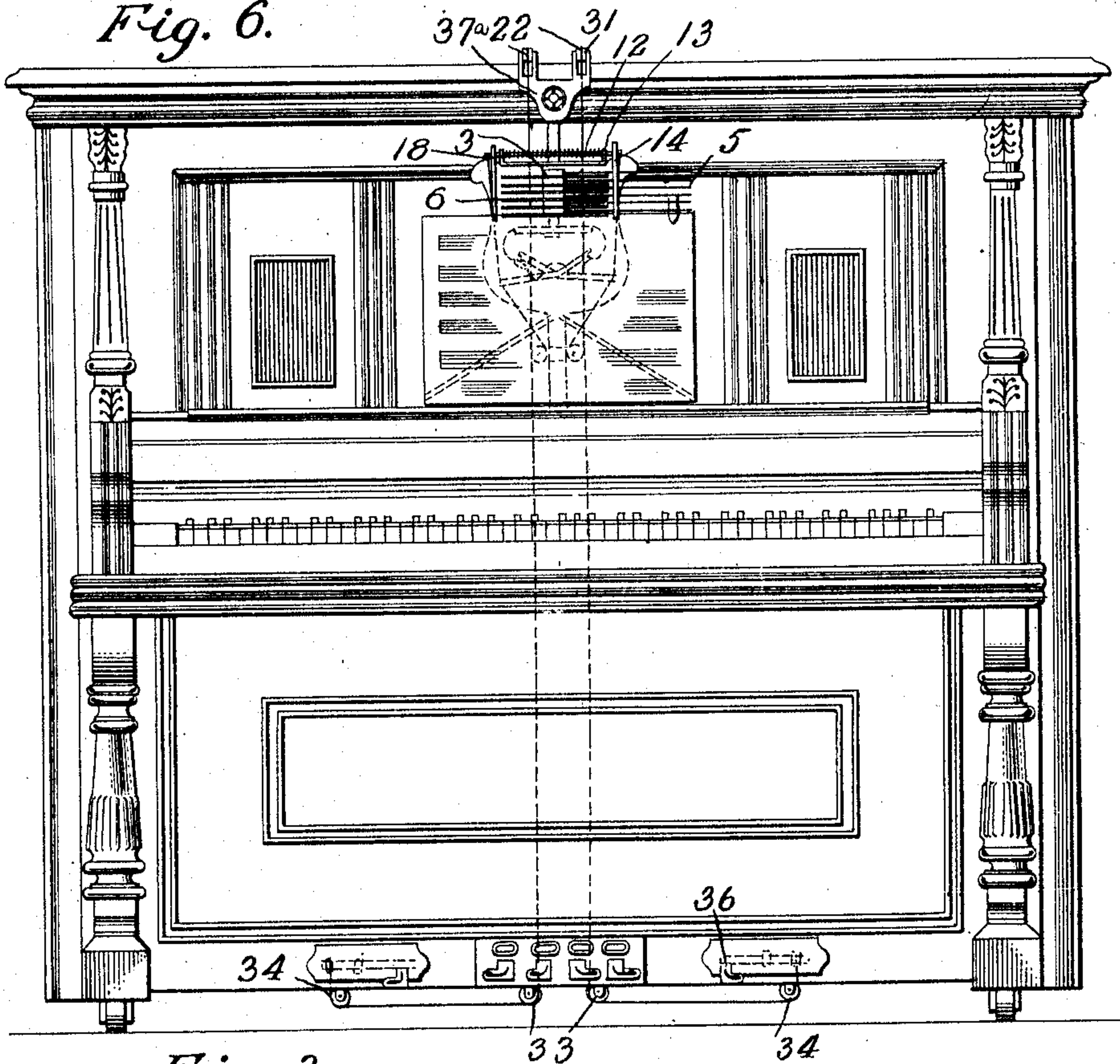


Fig. 3.

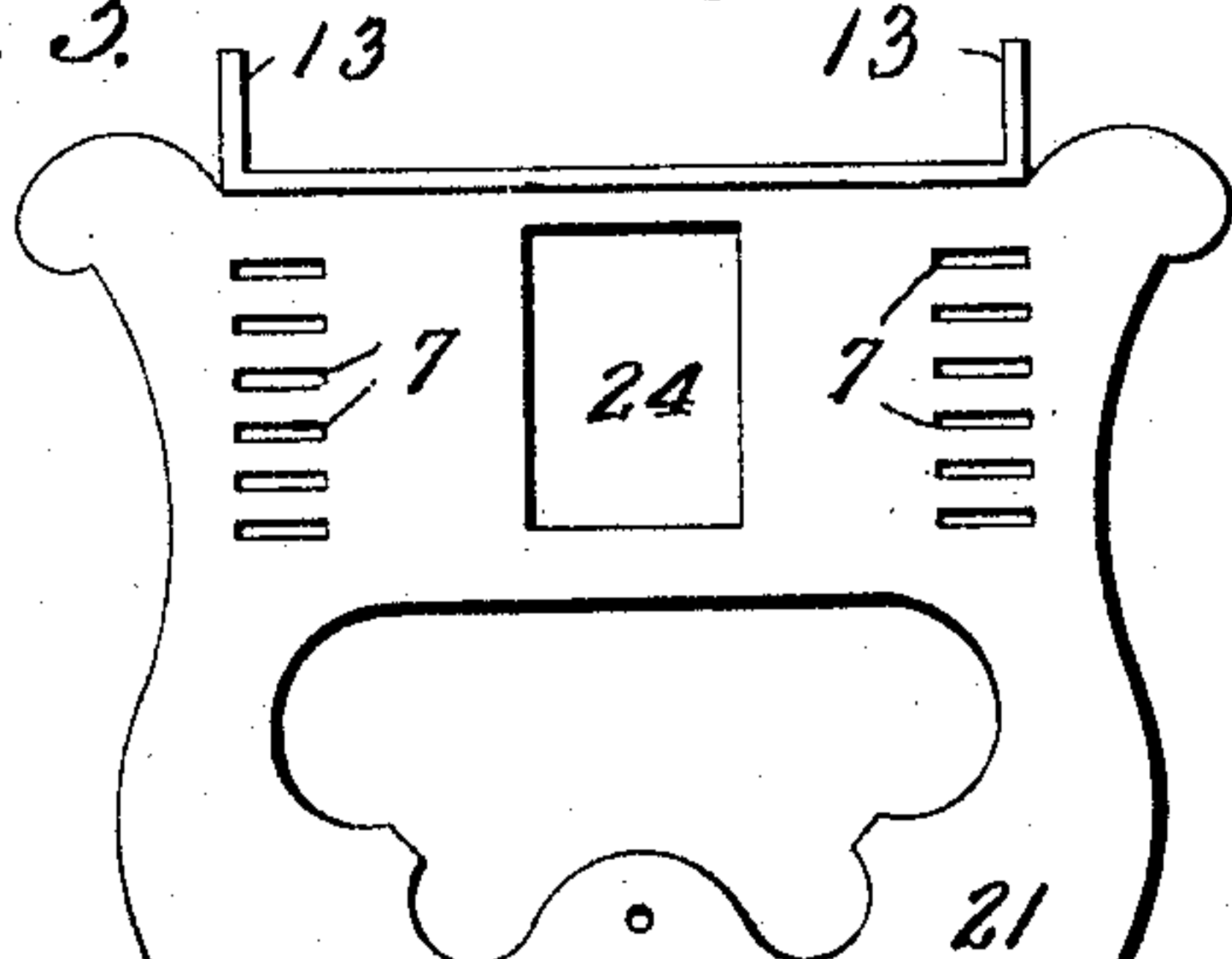


Fig. 10.

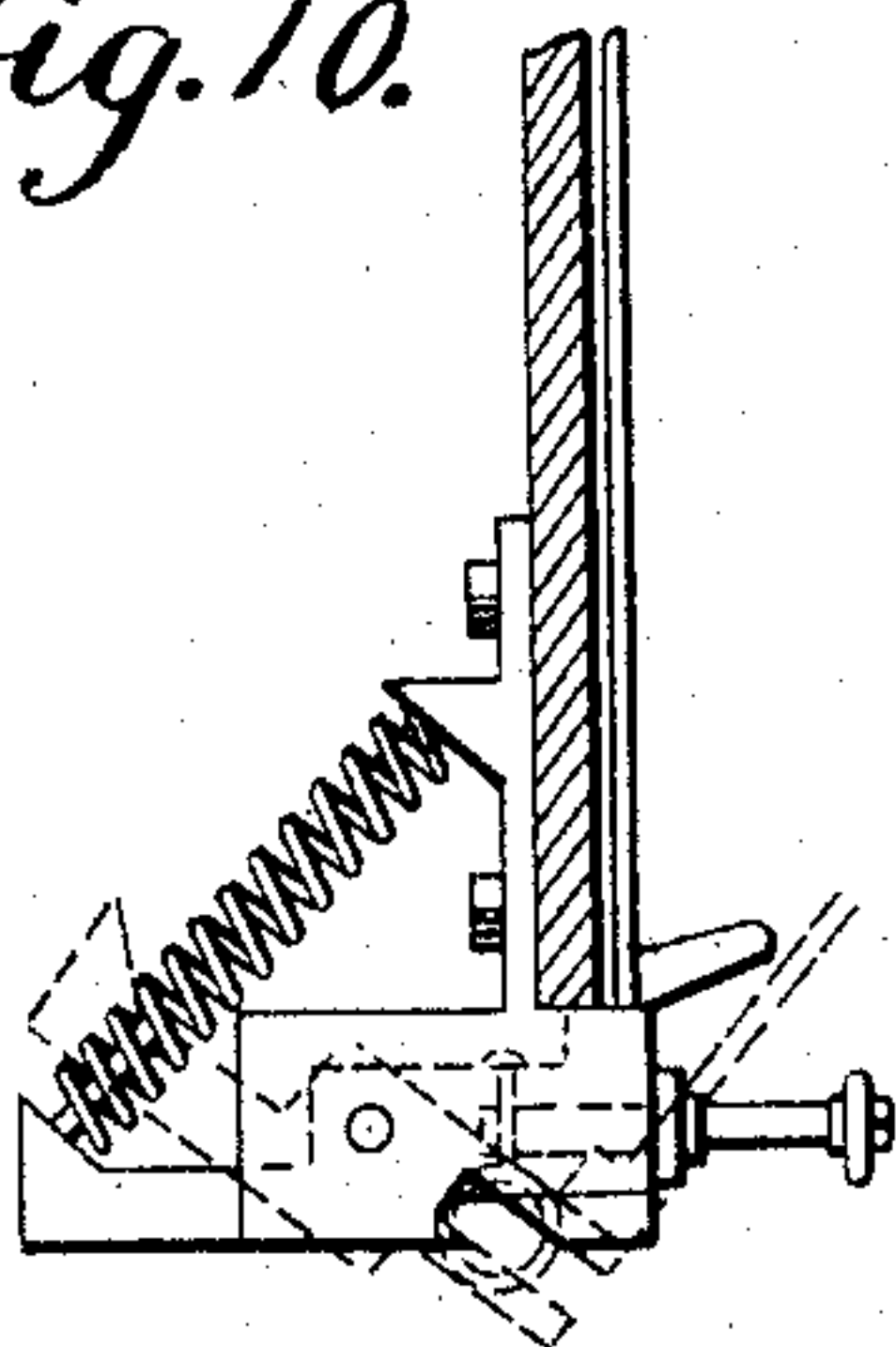
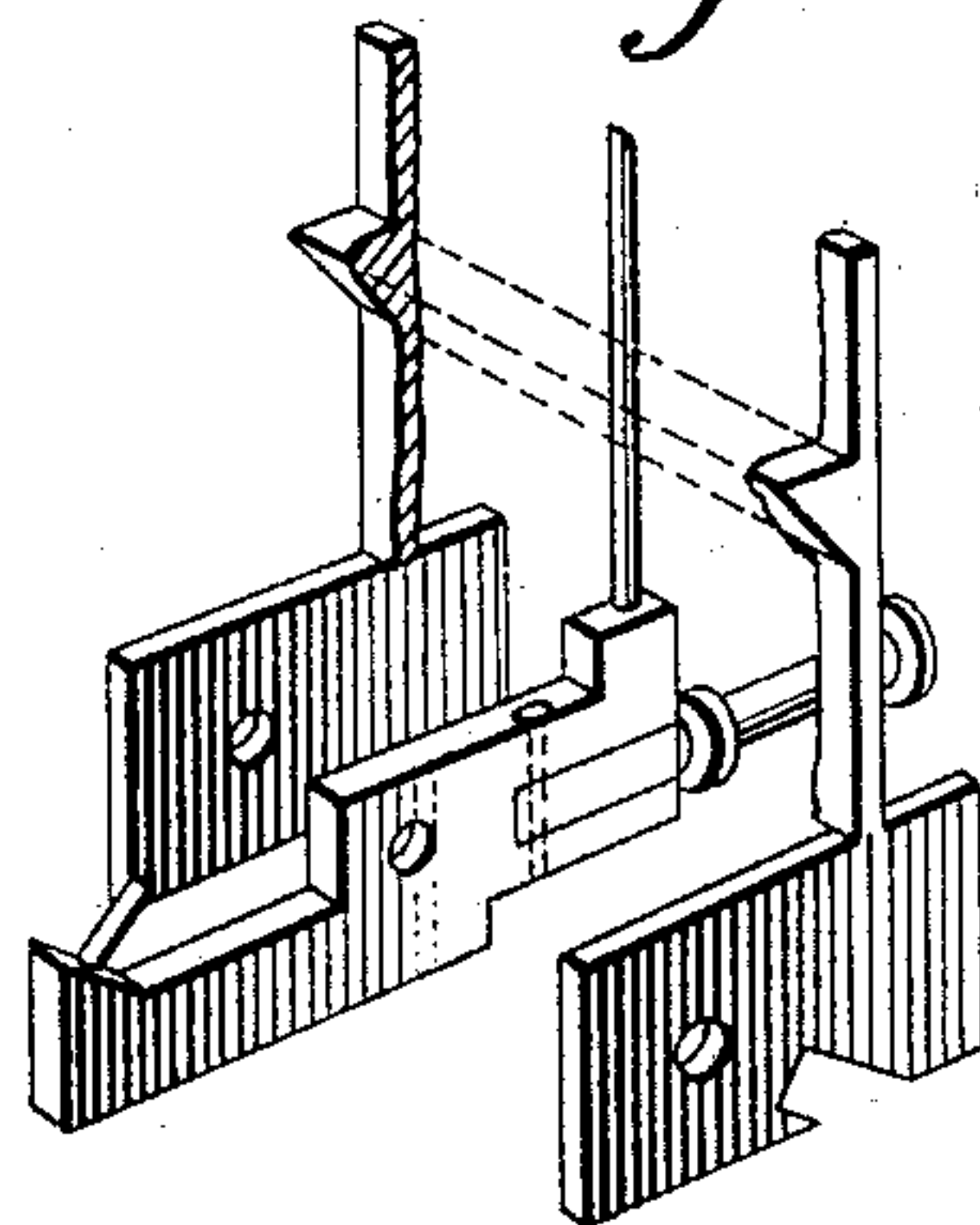
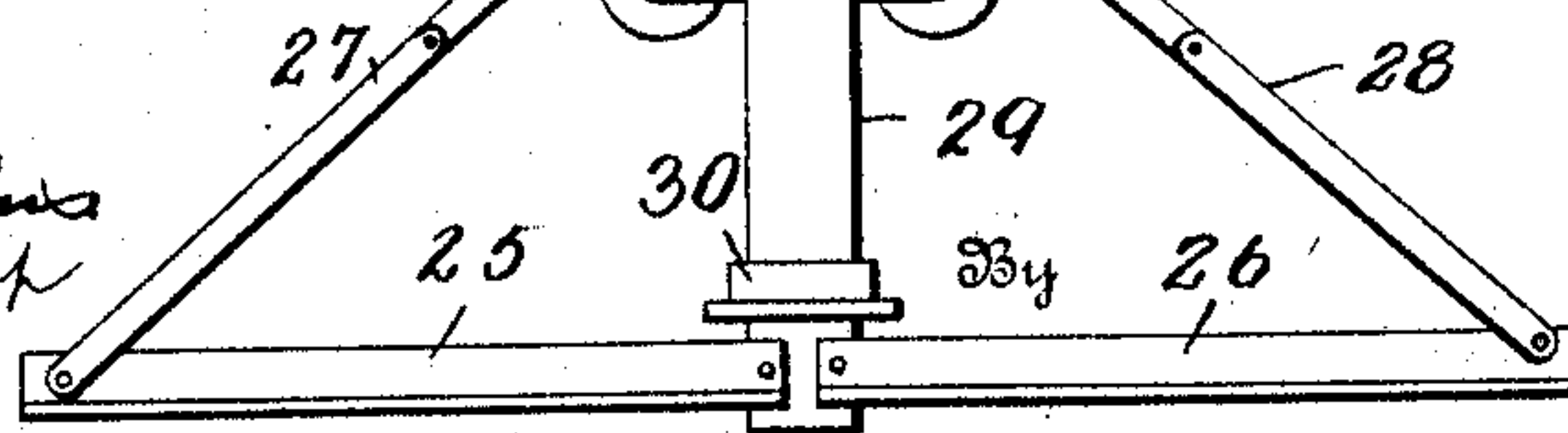


Fig. 11.



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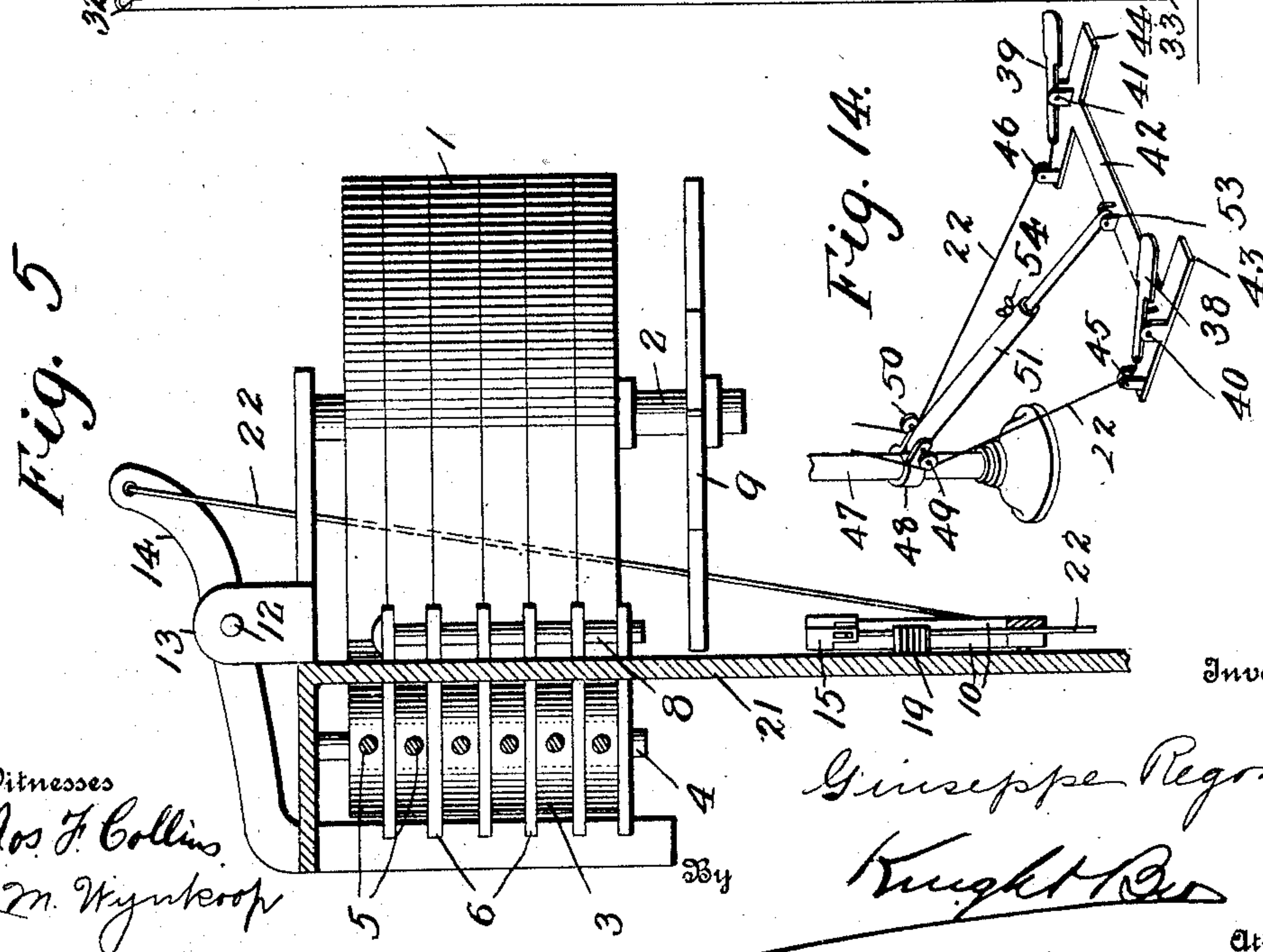
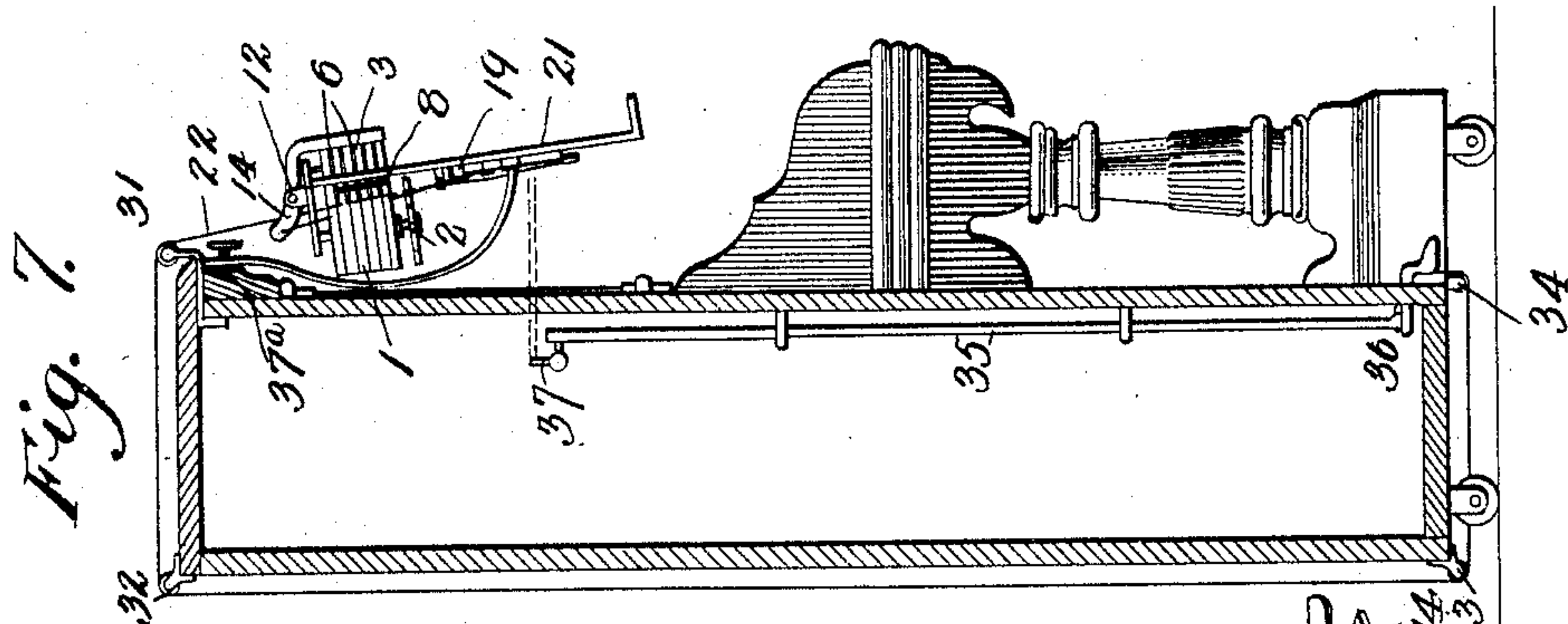
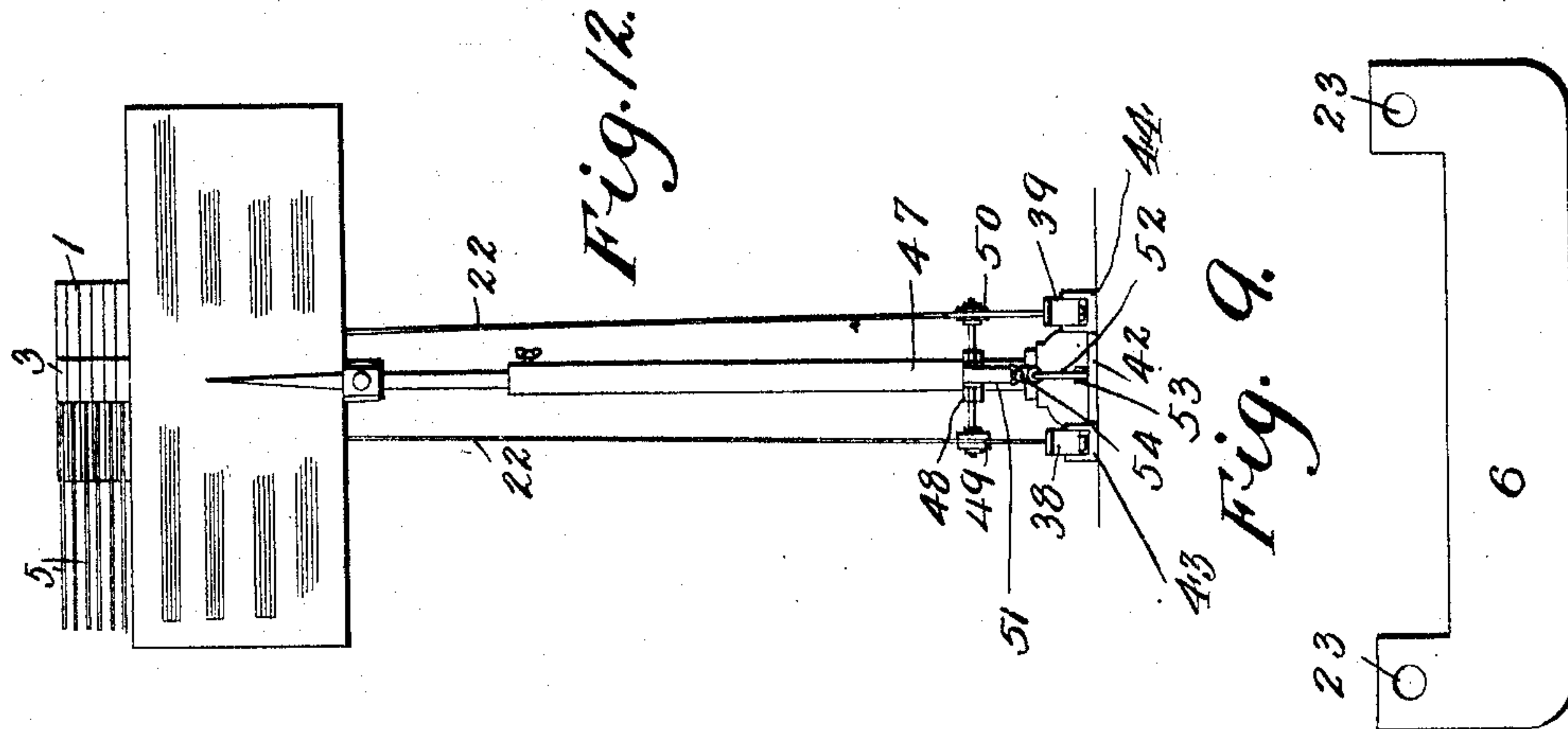
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3 SHEETS—SHEET 3.



Witnesses

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UNITED STATES PATENT OFFICE.

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MUSIC-LEAF TURNER.

974,826.

Specification of Letters Patent.

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Application filed August 25, 1908. Serial No. 450,177.

To all whom it may concern:

Be it known that I, GIUSEPPE REGONDI, a subject of the King of Italy, residing at New Brighton, in the county of Richmond, State of New York, have invented certain new and useful Improvements in Music-Leaf Turners, of which the following is a specification.

This invention relates to music-leaf turners; and has for its main object, to provide an improved mechanism for intermittently rotating a drum similar to that embodied in Letters Patent No. 845,895 granted to me March 5, 1907.

Other and more particular objects will appear from the following description and be pointed out in the claims forming a part of this specification.

In the drawings, Figure 1 is a rear elevation of the leaf-turning mechanism. Fig. 2 is a section on the line X—X, Fig. 1; Fig. 3 is a front elevation of a frame upon which the mechanism shown in Figs. 1 and 2 may be mounted; Fig. 4 is a detail view on an enlarged scale of the leaf turning fingers and part of their operating mechanism. Fig. 5 is a section on an enlarged scale on the line V—V, Fig. 1; Fig. 6 is a front elevation of a piano having my leaf-turning device attached thereto; Fig. 7 is a sectional view of the same piano (having its interior mechanism removed) showing two methods of connecting my leaf-turning device with pedals adapted to be operated by the feet; Fig. 8 is a detail plan view of the star wheel which is mounted upon the arbor 2 as shown in Fig. 1; Fig. 9 is a detail plan view of one of the arm-supports 6 shown in position in Fig. 2; Fig. 10 is a partial sectional elevation of the sheet-music holder; Fig. 11 is a perspective view of the sheet-music holder detached; Fig. 12 is a front elevation of a music stand showing my leaf-turning device adapted thereto; and Fig. 13 is a side elevation of my automatically adjustable music holder. Fig. 14 is a detail view of the pedal mechanism.

Referring more particularly to the drawings, Fig. 1 shows in elevation, the mechanism for turning the leaves of the music, which may be attached to the rear face of the front board of a piano or mounted upon

the skeleton frame shown in Fig. 3. Upon a vertical arbor 2, is rigidly secured a drum 1 provided with the segmental racks 20 arranged in stepped relation thereon as best shown in Fig. 1. Below the drum 1 and spaced therefrom, a star-wheel 9 is fastened rigidly upon the arbor 2 so that the drum and star-wheel rotate together. Beneath the star-wheel 9, and pivoted at 11 in such a way as to be capable of oscillation in a plane tangent to the path of the pointed ends thereof, the bent levers 10 are provided at or near the ends of their shorter arms, with dogs pivoted thereon in such manner as to adapt each of them to rotate the star-wheel when moving in one direction and to pass without moving the star-wheel when moving in the opposite direction. The cords 22 attached to the ends of the long arms of bent levers 10 are connected up with pedals in a manner to be hereinafter referred to.

In brackets 13 which form an integral part of the frame 21 is mounted a horizontal arbor 12 provided with suitable means, preferably a helical spring 18 for resisting a rotation thereof in one direction. Upon the ends of said arbor 12 are rigidly secured stop-arms 14 (see Fig. 5) whose upper ends are connected with said bent levers 10 by means of extensions to the cords 22 so that when one of the bent levers is operated, the corresponding stop-arm 14 is caused to oscillate at the same time for a purpose now to be referred to.

Referring to Figs. 1, 2, 3, 4 and 5, a plurality of pinions 3 corresponding in number to the segmental racks 20 upon drum 1, are mounted upon the arbor 4 so as to be rotatable thereon independently of each other. Each of said pinions is provided throughout 180° of its periphery with teeth adapted to intermesh with the segmental racks above referred to. Projecting from each of said pinions is a leaf-turning finger or arm 5. When the stop-arms 14 are held in normal position by the action of spring 18 said fingers or arms 5 are held against being turned as under the action of drafts of air. Interposed between each of the pinions 3 and the one adjacent thereto, is a support arm 6 made of sheet metal or other suitable

material in the form shown in Fig. 6. The projecting ears on either end of each of these arms are provided with perforations 23. Said ears are adapted to fit into a plurality
 5 of slits 7 (see Fig. 3) when the supports are detachably secured to the skeleton frame 21 by pins 8 which pass through the aligned perforations 23 and thus lock said supports in position.

10 By reference to Fig. 3, the frame 21 will be seen to have been provided with a rectangular opening 24 in order to permit the pinions 3 to intermesh with the segmental racks 20. The frame 21 has furthermore
 15 been provided with the integral projections 19 adapted to serve as stops for the bent-levers 10, said stops being adapted to return the dogs 15 to their extended position after each return to normal position.

20 In order to make my improvement a more readily portable one, I provide the frame 21 shown in Fig. 3 with two pivoted horizontal music racks 25, 26 supported at their outer ends by means of the folding tie-ribs 27, 28
 25 whereby the rack is adapted to fold inwardly against the stem 29. To provide for short books and sheets, a slide 30 is mounted upon the central rod or stem which may be adjusted vertically to meet the requirements
 30 of any size.

Means for operatively connecting the leaf-turning device to suitable pedals in the lower front portion of the piano, is shown in Figs. 6 and 7, in which the cords 22 extend up-
 35 wardly to the guide pulleys 31 mounted upon the upper front edge of the pulley; around said pulleys; thence rearwardly to the guide pulleys 32 from which they descend behind the piano to pass about the
 40 guide pulleys 33; under the piano; and finally about the guide pulleys 33 and 34 and secured to their respective pedals. The connections thus effected between the leaf-
 45 turner mechanism and the pedals for operating the same are thus made virtually invisible. In Fig. 7, a modification is shown in which a movement of the pedals is trans-
 50 mitted to the leaf-turning device by means of vertical rods 35 pivotally connected with the pedals 36. Said rods 35 engage at their upper ends with bell crank levers 37 with
 55 which the cords 22 as shown in Fig. 1, may be connected. Upon the upper front corner of the piano in Figs. 6 and 7 is shown a clamp-bracket 37^a adapted to be attached to the front board of the piano and provided
 60 with means for supporting the skeleton-frame 21 shown in Fig. 3. This bracket also mounts the guide-pulleys 31. By this device, my improvement can be made to constitute an attachment pure and simple for any ordinary piano.

In Figs. 10 and 11, is illustrated a sheet music holder described in the above men-

tioned Letters Patent, and which is adapted 65 to be used with the leaf-turning device disclosed in the present specification.

Referring now to Figs. 12 and 14, in which is shown a music stand having a leaf-
 70 turner embodied therein, the cords 22 connect the leaf-turning mechanism with the pedals 38, 39. Said pedals are pivoted at their middle points 40 and 41 upon a base-support 42 which is adapted to rest on the
 75 floor wherever placed. Upon one end of each of the transverse feet 43 and 44 of the base-support are mounted pulleys 45 and 46. Slidably mounted upon the upright standard
 47, is a clamp 48 provided with pulleys 49 and 50. Pivotaly carried by the clamp 48
 80 in such manner as to swing about the axis of the pulleys 49 and 50 is a tubular arm 51 within which slides telescopically a rod 52 pivotally attached at its outer end 53 with
 the base support. A set-screw 54 enables
 85 the slide rod 52 to be clamped in the tube 51. By means of this arrangement, the base-support 42 may be set at any desired distance from the music stand so that the per-
 90 former can operate the leaf-turning mechanism while standing at any distance consistent with the size and shape of the instrument he is playing upon.

Fig. 13 shows an automatically-adjustable music-holder adapted to be connected
 95 on to the skeleton-frame 21. This in the preferred form as shown embodied in Fig. 13, consists of a rod 55 adapted at one end to slide on a pin 56 rigidly fastened to the
 100 frame 21 and on the other end provided with a pin 58 integral therewith, said pin being provided with a sliding bearing in the frame 21. To provide a resilient mounting for the
 rod 55, springs 57 and 59 are retained upon
 105 pins 56 and 58 by heads on their outer ends. Thus by means of the spring 57 interposed between the upper end of rod 55 and the
 head of pin 56, and the spring 59 interposed
 110 between the head of the pin 58 and the frame, said rod 55 is made automatically adjustable to the thickness of the folio to be held to the rack.

Having thus described my invention, what I claim as new therein, and desire to secure
 115 by Letters Patent, is:

1. In a music-leaf turner, the combination with arms for turning the leaves and a rotatable drum causing the movement of said arms, of a star-wheel rotating with said drum; a lever capable of oscillation in a
 120 plane tangent to the path of the points of said star-wheel; and a dog pivotally mounted upon said lever and adapted to engage said star-wheel.

2. In a music-leaf turner, the combination 125 with arms for turning the leaves and a rotatable drum causing the lateral displacement of said arms, of a star-wheel rotating with

said drum; and a lever capable of oscillation in a plane tangent to the paths of the points of the star-wheel, said lever being provided with means adapting it to move the star-wheel when moving in one direction, and to leave it unmoved when moving in an opposite direction.

3. In a music-leaf turner, the combination with the leaf-turning arms and a rotating drum for operating said arms; of a star-wheel rigid with said drum; and a lever capable of oscillating in a vertical plane, said lever being adapted to engage the points of the star-wheel.

4. In a music-leaf turner, the combination with the leaf-turning arms and a star-wheel adapted to operate said arms; and a pair of levers capable of oscillation in vertical planes, one of said levers being adapted to impart an angular movement in one direction to said star-wheel and the other of said levers being adapted to impart an angular movement in the opposite direction to said star-wheel.

5. The combination with the driving drum and the leaf-turning arms driven thereby; of a star-wheel whereby the drum is rotated; and a pair of levers oscillating in vertical planes intersecting the circular path of the points of said star-wheel, each of said levers being provided with means adapting it to rotate the star-wheel in one direction only, the rotation caused by one of said levers being opposite to that caused by the other.

6. In a device of the character described the combination with the leaf-turning arms and the drum for driving the same, of a star-wheel having two of its points spaced at a wider interval than that between other adjacent points, bent levers adapted to engage the star-wheel to drive the drum intermittently in either direction and means driven by foot-power for imparting movement to said bent-levers.

7. In a device of the nature described, the combination with the leaf-turning arms and a drum adapted to turn each of said arms successively, of a star-wheel mounted coaxially with the drum and rigidly secured thereto; levers adapted to drive said star-wheel intermittently in either direction; stop-arms adapted to hold the leaf-turning arms against turning when the star-wheel is not in motion; and means for actuating said levers and stop-arms simultaneously.

8. In a music-leaf turner, the combination with a skeleton frame provided with a rectangular opening in the upper central portion thereof, and a plurality of slits on either side of said opening; of a drum provided with a plurality of segmental racks arranged in staggered succession around the circumference of the drum, said drum being mounted on one face of the frame adjacent

to the rectangular opening therein; a plurality of pinions mounted upon the other face of said frame and also adjacent to the rectangular opening in such manner as to adapt said drum to engage each of said pinions successively leaf-turning arms mounted radially in said pinions; support-arms therefor secured to the skeleton frame by means of said slits therein; a star-wheel coaxially and rigidly connected with the drum; levers for actuating said star-wheel; and stops on said skeleton frame whereby the movements of said levers are limited.

9. In a music leaf-turner, the combination with the leaf-turning arms; of an arbor mounted above said arms substantially parallel therewith; a spring mounted upon said arbor in such manner as to yieldingly resist the rotation of the arbor; stop arms keyed to the arbor and adapted by the spring to hold said leaf-turning arms against turning; and means for causing said stop-arms to release the leaf-turning arms at the same time as said leaf-turning arms are caused to turn.

10. In a music leaf-turner, the combination with the leaf turning arms and a support therefor; of stop-arms pivoted to the support above the same, said stop-arms being adapted to be rotated into and out of engagement with the leaf-turning arms; means for turning the leaf-turning arms; and means connecting said stop-arms with the leaf-turning arms in such manner as to cause said stop-arms to be oscillated out of the paths of said leaf-turning arms when the latter are turned.

11. In a music leaf-turner, the combination with the frame provided with a support; said frame having oscillating leaf engaging arms secured thereto, of a pedal support, pedals carried thereby, and means for adjustably connecting the pedal support to the frame support, comprising a tubular arm pivotally connected with the frame support, and a rod pivotally connected with the pedal support and slidably engaging in said tubular arm, and means for operating said oscillating arms connected to said pedal support.

12. In a music leaf turner, the combination with a frame having oscillating leaf engaging arms mounted thereon, an upright standard to carry said frame, a pedal support, and a sliding telescopic connection between said standard and pedal support, stop arms normally holding the leaf engaging arms against movement, levers, and means connected to the pedal support, stop arms, and levers, constructed and arranged to control and operate the leaf engaging arms.

13. In a music-leaf turner, the combination with a frame having turning arms, of

a pedestal therefor, an arm pivotally connected to said pedestal, a pedal support, pedals carried thereby, a rod pivotally connected to said support, and adjustably secured to the above named arm, and flexible means connected to said pedal for operating the turning arms.

The foregoing specification signed at New Brighton New York this second day of June, 1908.

GIUSEPPE REGONDI.

In presence of—

ADOLPH GLUCKMAN,
LUCIEN A. CONTERNO.