

No. 695,908.

Patented Mar. 25, 1902.

J. W. CAP.
REVOLVING INDICATOR.
(Application filed May 29, 1901.)

(No Model.)

3 Sheets—Sheet 1.

FIG. 1

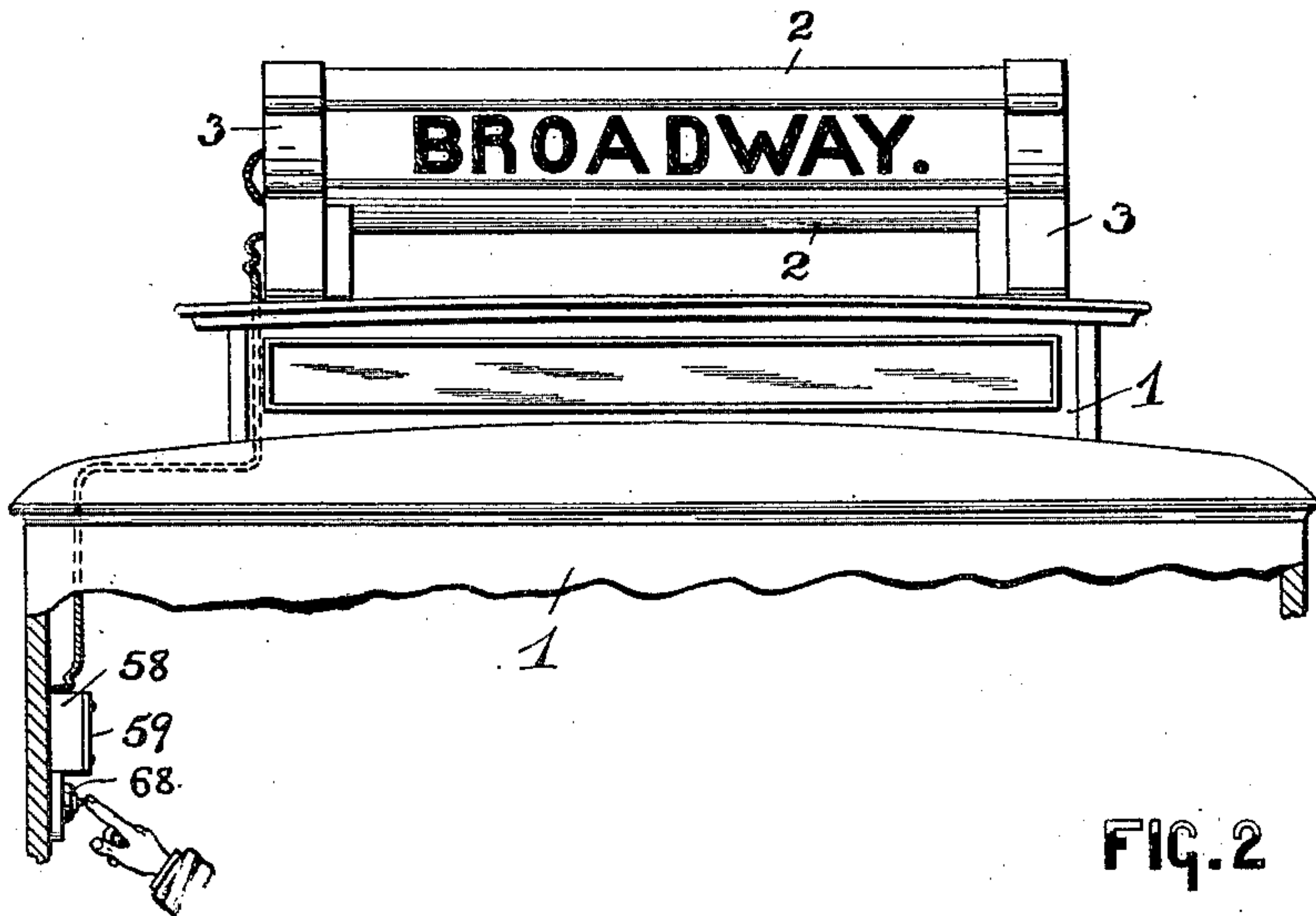


FIG. 2

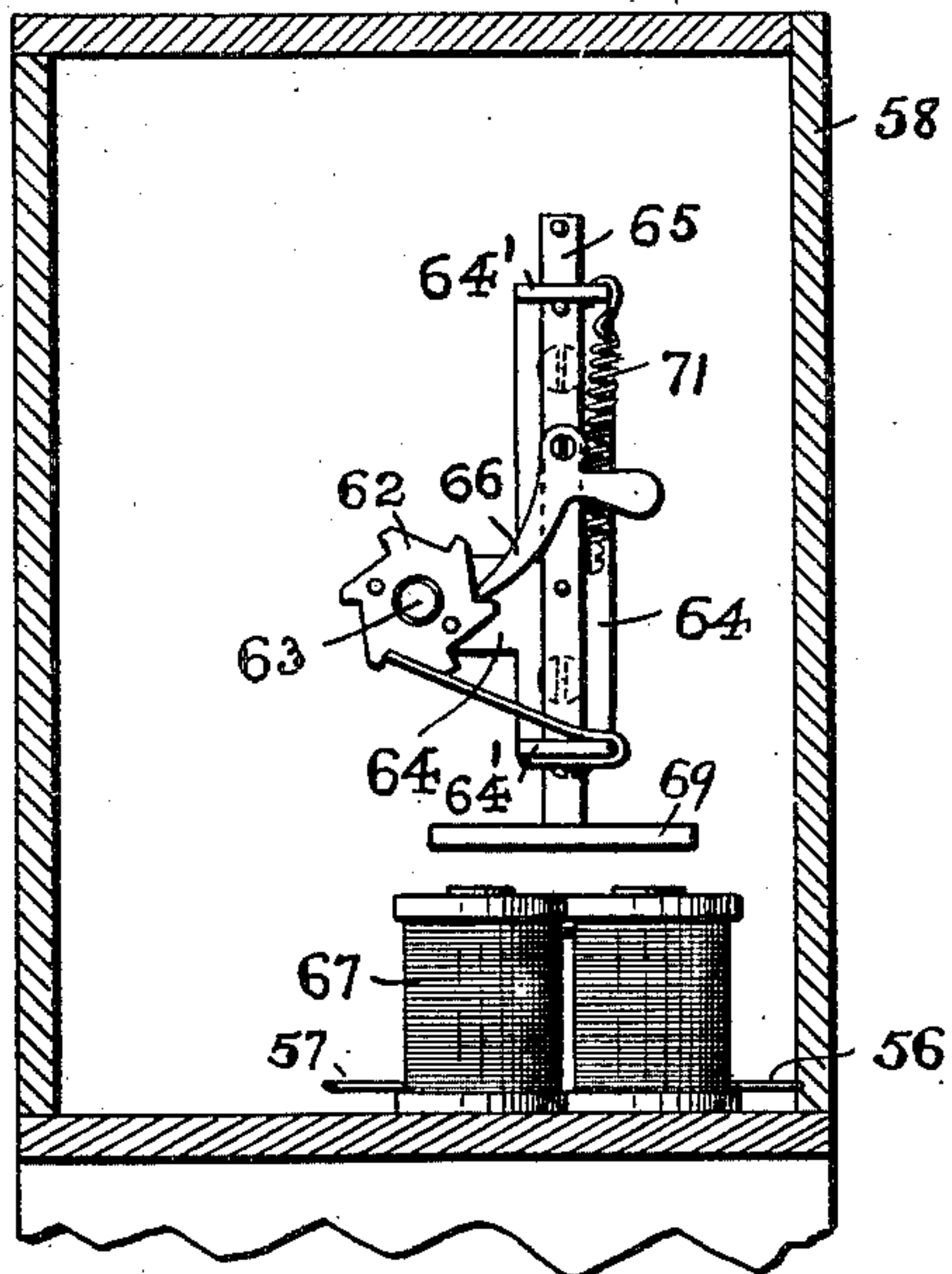
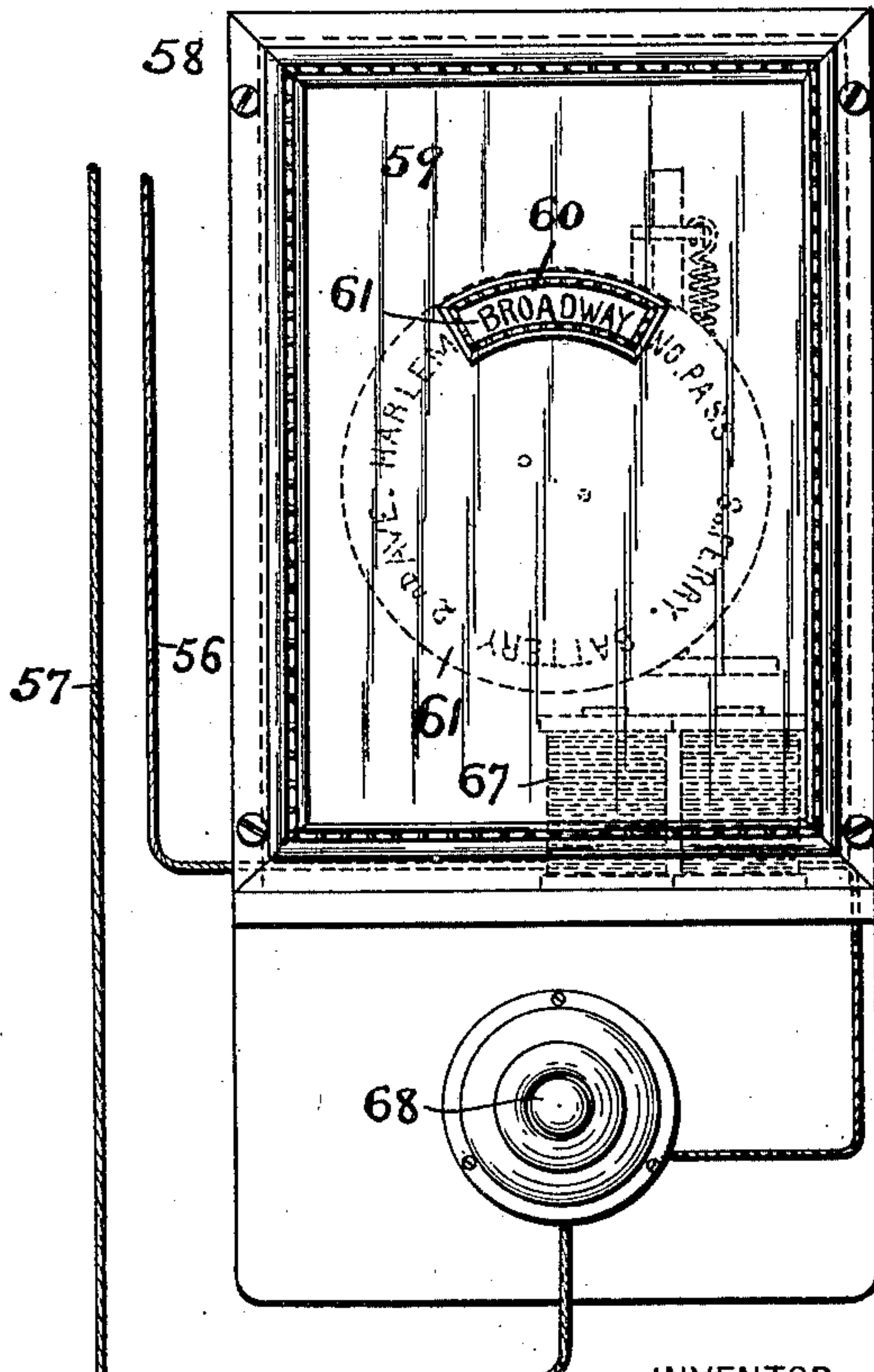


FIG. 3

WITNESSES:

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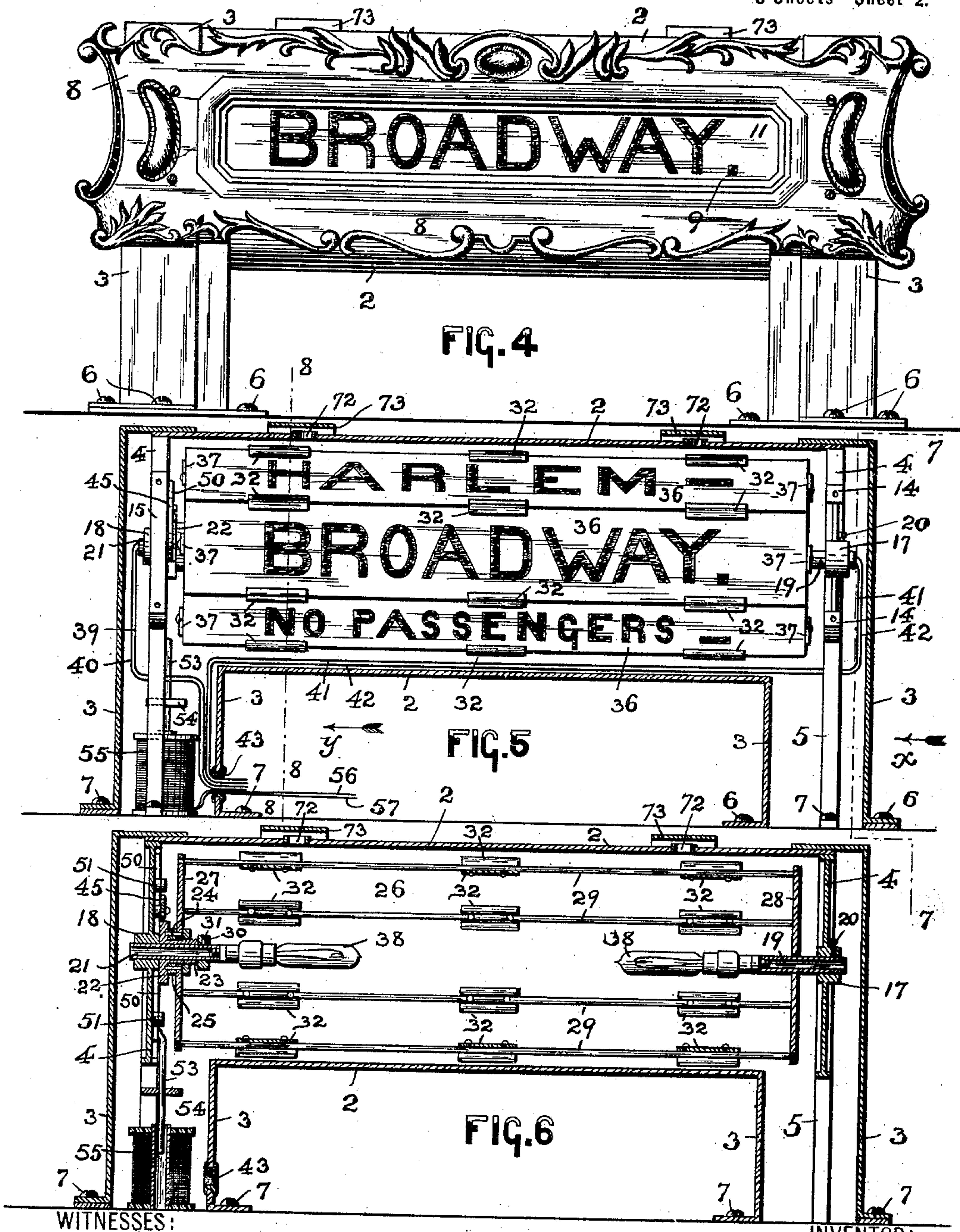
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3 Sheets—Sheet 3.

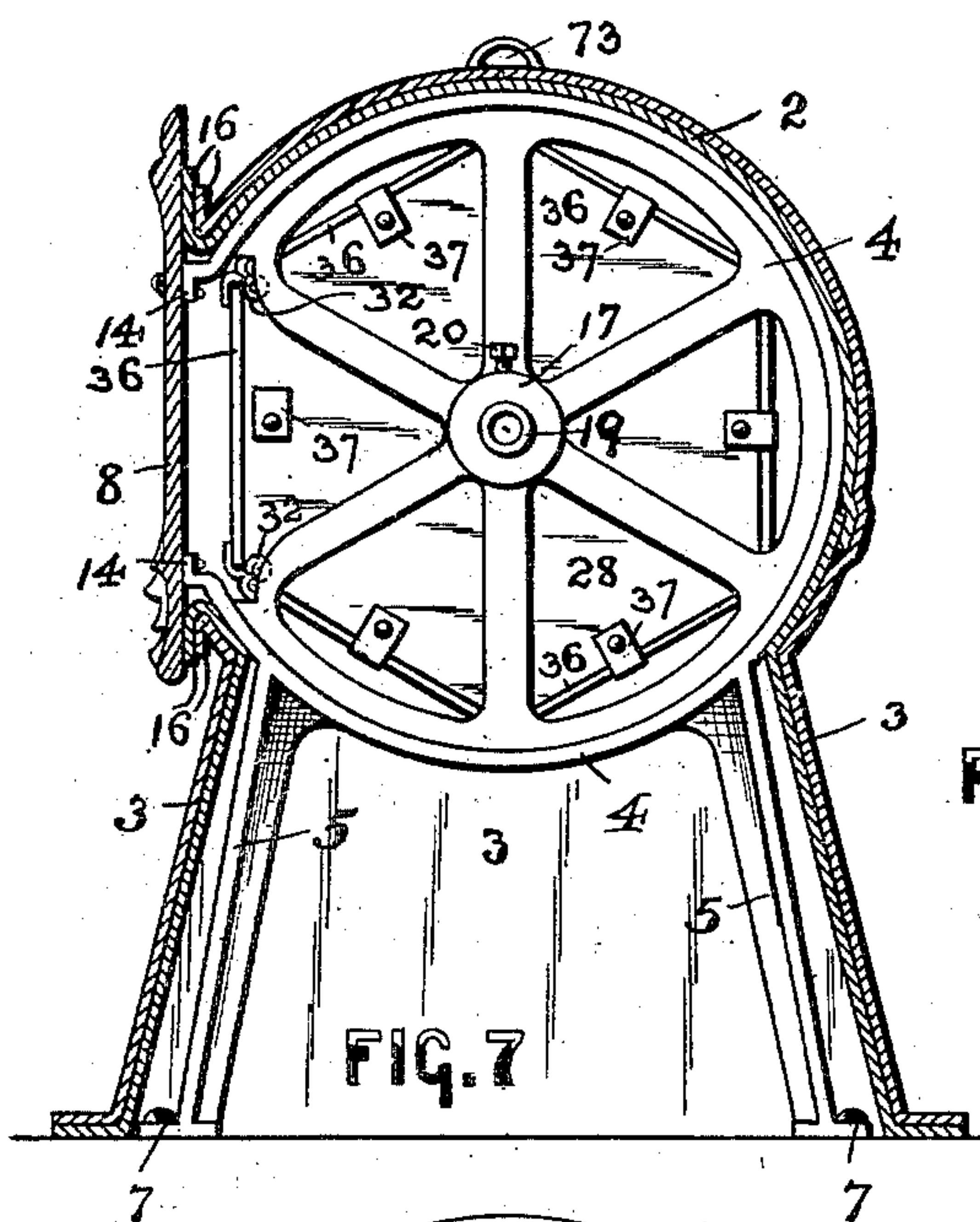


FIG. 7

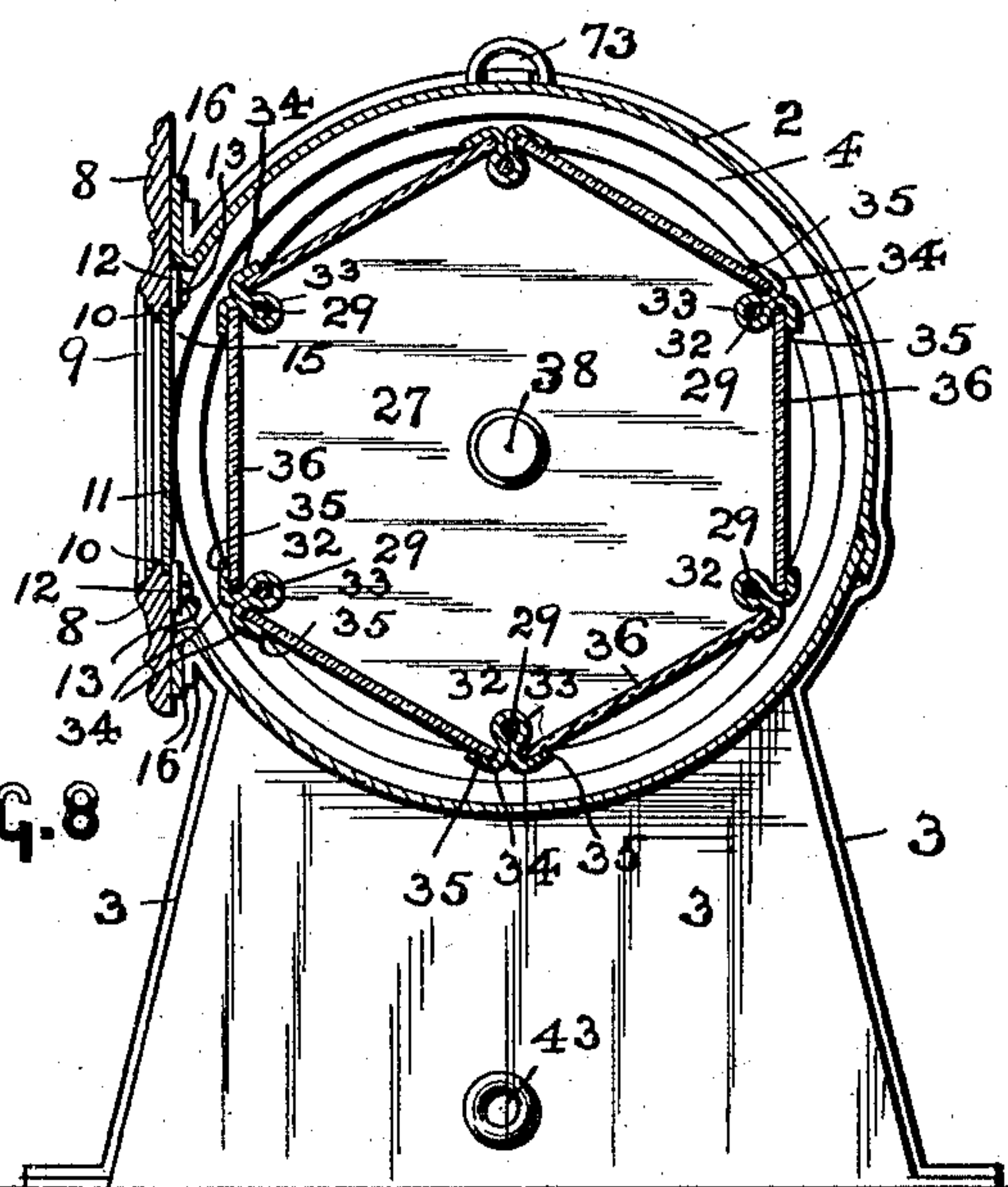


FIG. 8

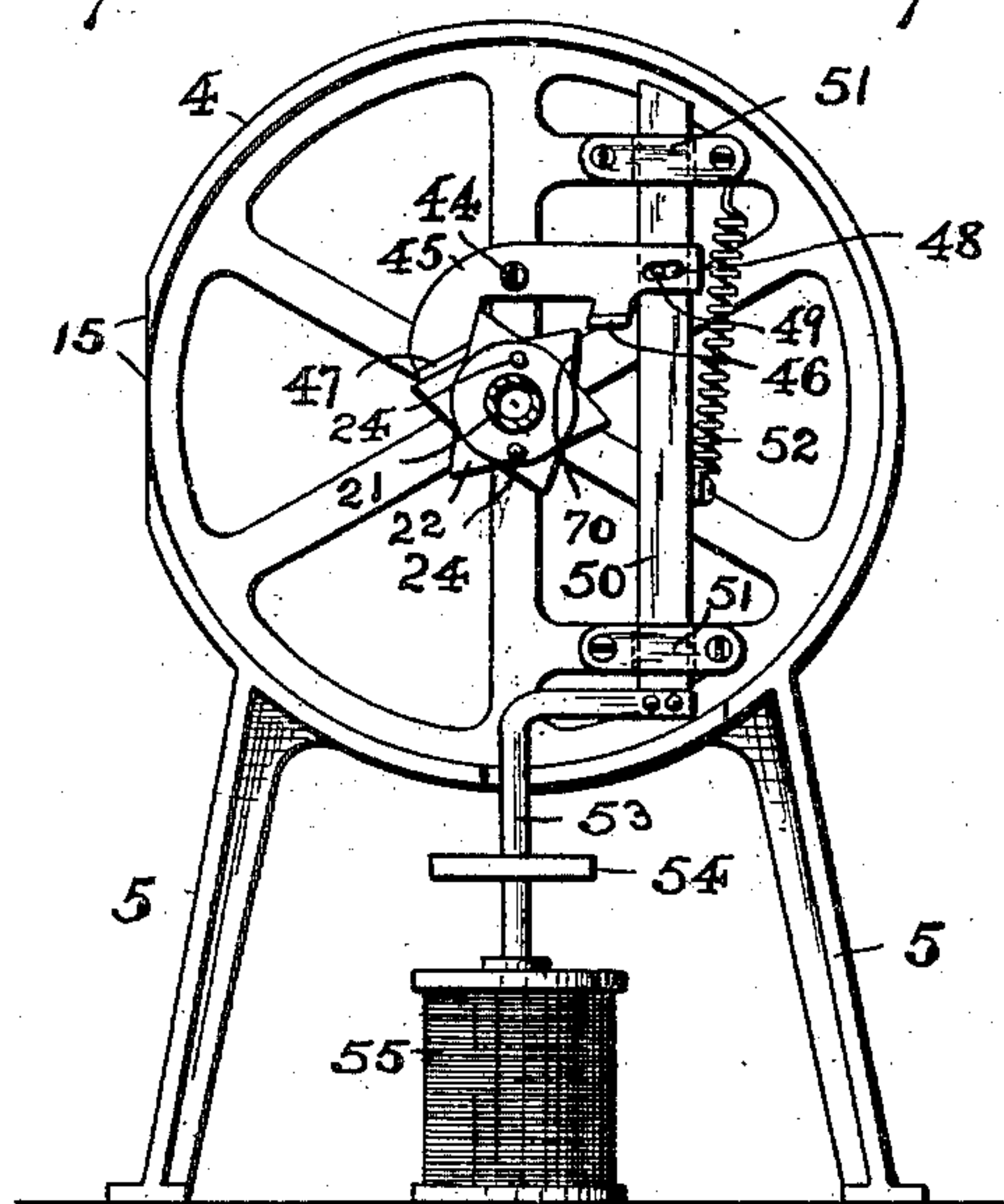


FIG. 9

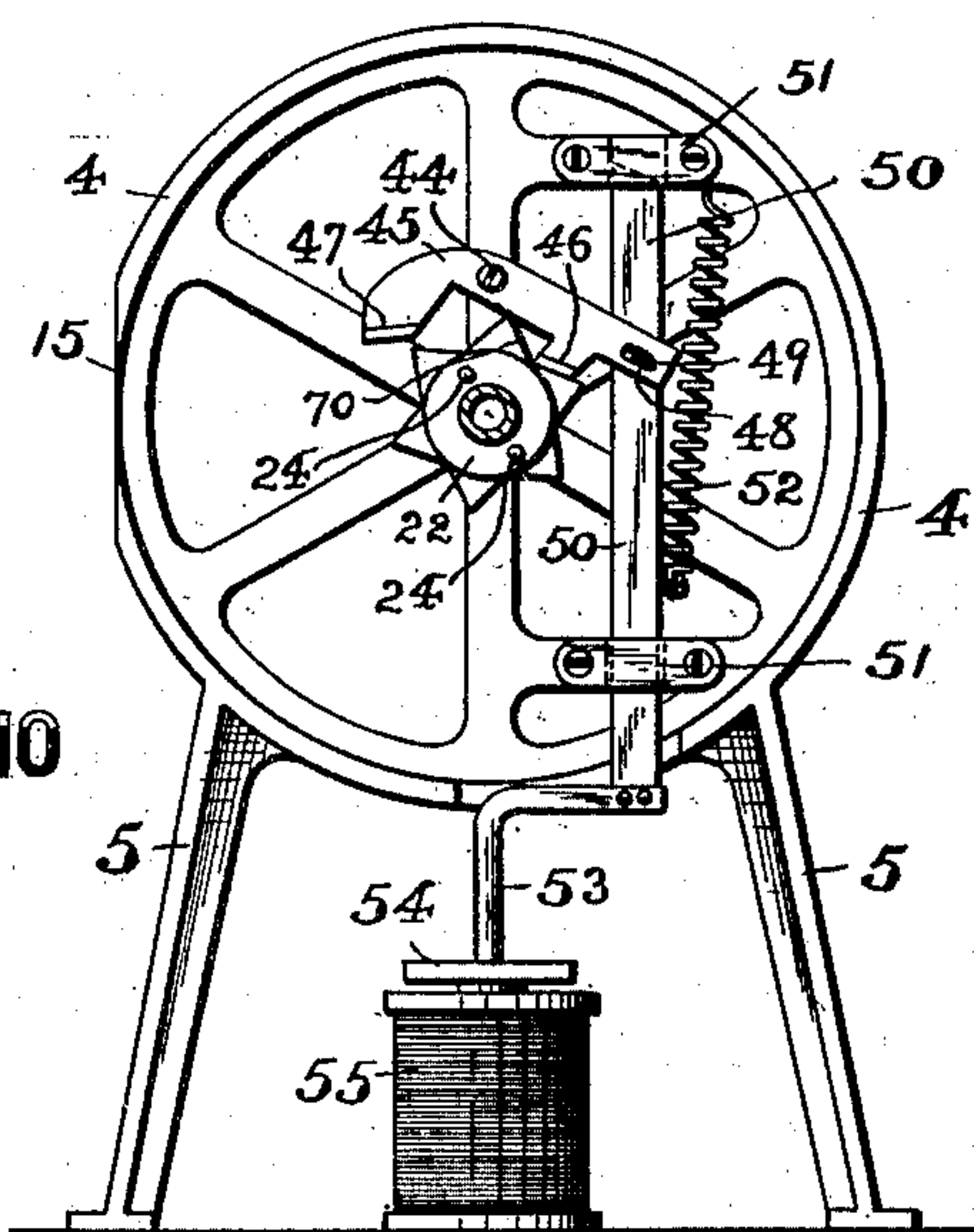
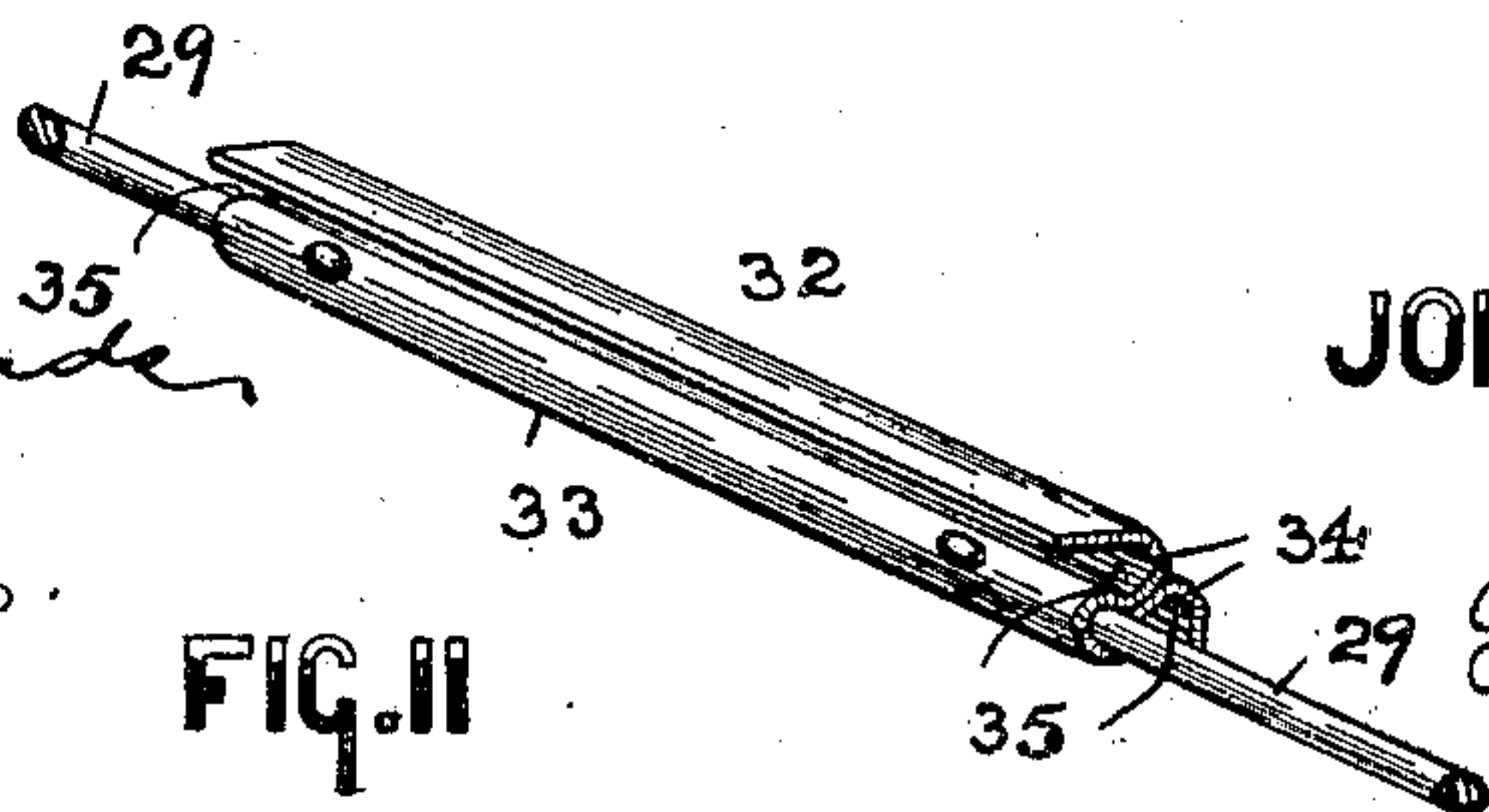


FIG. 10

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FIG. 11



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UNITED STATES PATENT OFFICE.

JOHN W. CAP, OF NEWARK, NEW JERSEY.

REVOLVING INDICATOR.

SPECIFICATION forming part of Letters Patent No. 695,908, dated March 25, 1902.

Application filed May 29, 1901. Serial No. 62,312. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. CAP, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Revolving Indicators; and I do hereby 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, reference being had to the accompanying drawings, and to numerals of reference marked thereon, which form a part of this specification.

The present invention relates generally to a novel construction of revolving and transparent indicator to be employed for various purposes—such as street-indicators for railway-cars, station-indicators for use in railway-stations, and also for advertising purposes of the various kinds—the principal object of this invention being to provide an apparatus of such construction that the signs or advertisements can be announced or presented intermittently by means of suitable and convenient electric devices for controlling the revolving actions of the display-frames of the apparatus or by any other mechanism for actuating and revolving said display-frames.

A further object of this invention is to provide in addition to the novel construction of revolving and transparent indicator, hereinafter more fully described, an electrically-operating controlling device located at any suitable point away from the indicator, but electrically connected with the controlling mechanism of the indicator, which is provided with a revolving dial bearing signs or names which correspond with the signs or names of the revolving and transparent indicator and when operated causes the indicator mechanism to be actuated and corresponding signs or names to be simultaneously presented both upon the controller and upon the revolving and transparent indicator, the controller at the same time announcing to the operator, such as a conductor upon a car or a station-master in a railway-station, that the proper sign is presented to view in the said revolving and transparent indicator.

With these several objects in view the in-

vention consists in the several novel arrangements of parts and certain features of construction, all of which will be hereinafter more fully described and finally pointed out in the clauses of the claim.

The invention is clearly illustrated in the accompanying drawings, in which—

Figure 1 is an end view of the top portion of a street-car provided with a revolving and transparent indicator embodying the principles of this invention and illustrating in connection therewith an electrically-connected controller for actuating the revolving mechanism of the indicator. Fig. 2 is a face view of the said controller, and Fig. 3 is a longitudinal vertical section of said controller, illustrating the dial-actuating mechanism of the same. Fig. 4 is a face view, on an enlarged scale, of the revolving and transparent indicator made according to the principles of my invention. Fig. 5 is a longitudinal vertical section of the outer casing and an elevation of the revolving mechanism of the indicator, and Fig. 6 is a longitudinal vertical section of both the said cover and said revolving mechanism. Fig. 7 is a vertical cross-section of the apparatus, said section being taken on line 7 7 in Fig. 5 of the drawings looking in the direction of the arrow X, said view representing the framework in which the revolving mechanism is supported in end elevation; and Fig. 8 is a similar section taken on line 8 8 in said Fig. 5 looking in the direction of the arrow Y. Fig. 9 is a face view of one of the standards and an electrically-controlled operating mechanism for actuating the revolving mechanism of the indicator, said view representing the several parts in their initial and inoperative position; and Fig. 10 is a similar view of the various parts represented in said Fig. 9, illustrating the members of the operating mechanism in the operated positions. Fig. 11 is a perspective view of a portion of one of the stay-rods of the revolving mechanism and a guide-piece secured on said stay-rod with which the edge of a sign or name-plate can be brought in sliding arrangement.

Similar numerals of reference are employed in all of the said above-described views to indicate corresponding parts.

In the present drawings my invention is

represented as a street-indicator for street-cars, the numeral 1 designating the top portion of a car, on which is erected in any suitable manner a casing 2, which is provided with leg portions 3, inclosing suitably-constructed end frames 4 and secured, by means of screws 6, to car-body. The said end frames 4 are provided with suitably-arranged and suitably-constructed supports or legs 5, which can be secured, by means of screws 7 or in any other well-known manner, upon the car-body 1 in the position desired. The said casing 2 is provided in the front with an ornamental face-plate 8, provided with an opening 9 and a recessed marginal edge 10, surrounding said opening on the back of said plate 8. Into this opening 10 is fitted a glass 11, which is held in position by means of the pieces 12 and the screws 13, as clearly indicated in Fig. 8 of the drawings.

The end frames 4, which form standards between which the sign-carrier revolves, are preferably made as indicated in Figs. 7, 9, and 10, being of a circular configuration, except one portion of each standard, as illustrated. Thus the standard at the one side of the apparatus is provided with a pair of perforated lugs 14, to which the face-plate is secured, (see the right-hand end of Fig. 5 and also Fig. 7,) while the standard at the other side of the apparatus is formed with a straight portion 15, having perforations for securing thereto the opposite end portions of the face-plate. (See the left-hand end of Fig. 5 and Figs. 9 and 10.) Any suitable fastening devices, such as screws or rivets, (not shown in the drawings,) may be employed for securing these several parts together. The main body of the casing 2 is fitted upon the circular parts of said standards 4 and are provided with bent portions 16, fitted against the back of the face-plate 8, as shown, any suitable fastening means being employed. The said end frames or standards are respectively provided with centrally-arranged hubs 17 and 18. Within the tubular portion of the hub 17 is a short tube 19, suitably held in its fixed and non-rotative position in said hub by a set-screw 20, while in the other hub 18 I have arranged a similar tube 21. Loosely arranged upon this tube 21, against the inner face of the hub 18, is a star-shaped flanged collar or sleeve 22, provided with a screw portion 23, substantially as illustrated in Fig. 6. Extending in an inwardly direction from the flanged part of said collar or sleeve 22 are pins 24, (see Fig. 6,) which extend through a collar or nut 25 and are fastened or secured in the end plate 27 of the sign-carrier 26. This sign-carrier 26 consists, essentially, of this end plate 27 and a second end plate 28, which is rotatably arranged upon the tube 19, secured in the hub 17. Tie rods or bars 29 are suitably secured at their respective ends to said end plates 27 and 28, whereby a complete carrier 26 is provided, the same being rotatively mounted upon the two tubes 19 and 21,

as hereinabove fully described. To prevent any movement or slip longitudinally upon the said tubes 19 and 21, a collar or nut 30 is arranged upon the tube 21 in the manner illustrated in Fig. 6, said collar or nut being held or secured in place by means of a screw 31. Upon the said tie rods or bars 29 I have arranged and secured at desirable intervals certain plate or sign holders or devices 32, each device being made of sheet metal pressed with a curved and tube-like part 33 for fitting the device upon the tie rod or bar 29 and having a pair of oppositely-curved edge portions 34 bent to form two guides 35 in each device or holder 32, as clearly illustrated in Figs. 5, 6, 7, 8, and 11. Between the said guides 35, as shown more particularly in Figs. 7 and 8, are arranged the plates 36, which are provided with the signs or advertisements, the said plates being made of glass, metal, or any other suitable material. To remove a plate 36 from the carrier and replace it by another plate bearing a different sign, word, or words, the plate 36 is slipped in a longitudinal direction from the guides 35 through the open space in the cylindrical part of the end frame or standard 4 (see Fig. 7 of the drawings) and slipped through a proper opening in the end of the casing 2, which incloses the said end frames or standard. The said plate 36 just removed can be replaced by slipping another plate into place between the guides 35, as will be clearly understood. In this manner six plates or signs can be arranged in the carrier 26, the said plates being retained in place by turn-buttons 37, pivoted at or near the edges of the end plates 27 and 28 of the carrier, as clearly shown.

As shown, the device may be illuminated by electric lamps 38, which are arranged in the free ends of the tubes 19 and 21 and are connected by means of the circuit-wires 39 and 40 and 41 and 42, the said wires passing through an opening 43 in one of the legs 3 of the casing 2 (see Fig. 5) and leading to a main supply of electrical energy.

To revolve the sign-carrier 26 intermittently, and thereby present the sign-plates successively one after the other as desired, one of the end frames or standards 4 has pivotally secured against its inner face upon a pin 44 a dog or pawl 45, which is provided with two downwardly-extending shoes 46 and 47, as clearly shown in Figs. 9 and 10. The said dog or pawl is also provided with a slot 48, into which extends a pin 49 on a slide or bar 50, which is movably arranged between a pair of guides 51 and is spring-actuated by having a spring 52 attached at one end to said slide or bar 50 and having its other end attached to the said support or standard 4, as shown. To the lower end of said slide or bar is secured in any suitable manner a rod 53, which is provided with an armature-piece 54, adapted to be attracted in the usual manner by the hollow or tubular core of a suitable electromagnet 55, arranged in the cir-

cuit formed by the wires 56 and 57. The wires are also connected with the source of electrical energy and have arranged in their circuit a controller 58 of the construction indicated in Figs. 2 and 3 of the drawings. The said controller consists, essentially, of a suitable box provided with a cover 59, in which there is an opening 60, behind which is rotatably or movably arranged a disk 61, bearing the same names or words as those found on the respective sign or name plates of the carrier 26. This disk 61 is secured upon a ratchet 62, rotatably arranged upon a post or rod 63, secured upon a bearing 64 in the box of the controller. This bearing is also provided with guides 64' and a slide 65, having a pawl or dog 66 pivotally arranged thereon for engagement with the teeth of the ratchet 62. An electromagnet 67 in said box is energized when the circuit is completed by means of a suitable switch or push-button 68, whereby the armature 69, connected with slide 65, is drawn down and the dog or pawl operates the ratchet and disk to bring the desired sign or word directly back of the opening 60 in the cover 59. At the same time the electromagnet 55 is energized and the dog 45 is raised from its holding or locked engagement with the star-shaped flange of the sleeve or collar 22, causing the shoe 46 to slide against the edge 70 to produce a partial movement of the mechanism and corresponding rotary motion of the sign-carrier 26. Thus the controller while it regulates or controls the movements of the carrier 26 also serves as an indicator to the operator that the correspondingly-worded sign is exposed to view back of the window in the ornamental face-plate 8 of the casing 2. When the circuit is interrupted or broken by the release of the push-button or switch 68, a spring 71 causes the return to their inoperative positions of the parts represented in Figs. 2 and 3, while the spring 52 of the device represented in said Figs. 9 and 10 causes the return of the said parts to their normally inoperative positions. The said casing 2, if desired, may be provided with suitable openings 72 for ventilation, which are covered with hoods 73 of any known construction.

From the hereinabove description of my invention it will be clearly evident that I have provided an effective and operative device which is adapted for the many uses specified in said description, and it may be stated that the electrically-actuated mechanism for operating the sign-carrier may be omitted, if desired, the slide or bar 50 for operating the dog or pawl 45 in that case being operated by hand or any other known mechanical contrivances.

I am fully aware that many changes may be made in the different arrangements and combinations of the several devices comprising my invention and in the details of the construction of the parts thereof without departing from the scope of this invention.

Hence I do not limit my invention to the exact arrangements and combinations of the devices as described in the specification and as illustrated in the accompanying drawings; nor do I confine myself to the exact details of the construction of the various parts thereof.

Having thus described my invention, what I claim is—

1. In a revolving indicator, the combination, with a fixed casing having an opening through which names or words are exposed to view, of a pair of standards inclosed by said casing, each standard having a circular portion provided with a broken or open part, a sign-carrier rotatively mounted between said standards, and a face-plate having a window secured to said standards in front of the open parts of said circular portions, substantially as and for the purposes set forth.

2. In a revolving indicator, the combination, with a fixed casing having an opening through which names or words are exposed to view, of a pair of standards inclosed by said casing, each standard having a circular portion provided with a broken or open part, a sign-carrier rotatively mounted between said standards consisting, essentially, of a pair of end plates and tie-rods, and plate-holders on said rods, each plate-holder having a pair of oppositely-placed guides 32, and signs slidably arranged in said guides, substantially as and for the purposes set forth.

3. In a revolving indicator, the combination, with a fixed casing having an opening through which names or words are exposed to view, of a pair of standards inclosed by said casing, each standard having a circular portion provided with a broken or open part, a sign-carrier rotatively mounted between said standards, and means on one of said standards for causing an intermittent rotary motion of said sign-carrier, consisting, of a collar having a star-shaped flange, a pivoted pawl, a spring-actuated slide connected with said pawl, and means for operating said slide, and a face-plate having a window secured to said standards in front of the open parts of said circular portions, substantially as and for the purposes set forth.

4. In a revolving indicator, the combination, with a fixed casing having an opening through which names or words are exposed to view, of a pair of standards inclosed by said casing, each standard having a circular portion provided with a broken or open part, a sign-carrier rotatively mounted between said standards, consisting, essentially, of a pair of end plates and tie-rods, plate-holders on said rods bearing a sign or word, and means on one of said standards for causing an intermittent rotary motion of said sign-carrier, comprising a collar having a star-shaped flange, and means for operatively connecting said flange to one of said end plates, a pivoted pawl, a spring-actuated slide connected with said pawl, and means for operating said slide, substantially as and for the purposes set forth.

5. In a revolving indicator, the combination, with a fixed casing having an opening through which names or words are exposed to view, of a pair of standards inclosed by said casing, each standard having a circular portion provided with a broken or open part, a sign-carrier rotatively mounted between said standards, consisting, essentially, of a pair of end plates and tie-rods, plate-holders on said rods, each plate-holder having a pair of oppositely-placed guides, and signs slidably arranged in said guides, and means on one of said standards for causing an intermittent rotary motion of said sign-carrier, comprising, a collar having a star-shaped flange, and means for operatively connecting said flange to one of said end plates, a pivoted pawl, a spring-actuated slide connected with said pawl, and means for operating said slide, substantially as and for the purposes set forth.

6. In a revolving indicator, a revolving sign-carrier, an actuating mechanism for revolving said sign-carrier, an electromagnet for operating said actuating mechanism, an electric circuit in which said electromagnet is placed, and a controller in the same circuit, provided with a dial bearing signs or words on both said controller and the sign-carrier to be displayed simultaneously, consisting, essentially, of a ratchet device and pawl, an electromagnet in said electric circuit, and means in said circuit for completing the electric circuit through the said electromagnets, substantially as and for the purposes set forth.

7. In a revolving indicator, the herein-described sign-carrier, consisting, essentially, of a pair of end plates, connecting tie-rods, and plate-holders on each rod, said plate-holders consisting, essentially, of a tube-like part 33 fitted upon the tie-rod, and having a pair of oppositely-curved edge portions 34, bent to form guides 35, and sign-plates slidably arranged between said guides, substantially as and for the purposes set forth.

8. In a revolving indicator, the combination, with a pair of standards having perforated hubs, of tubes fixed in said hubs, a flanged collar on one of said tubes, and a sign-carrier, comprising a pair of end plates, one end plate being rotatably arranged on one of said tubes and the other end plate being connected with said flanged collar, and means for causing an

intermittent rotary motion of said collar and the sign-carrier, connecting tie-rods between the said plates, and plate-holders upon said rods, each plate-holder consisting, essentially, of a tube-like part 33 fitted upon the tie-rod, and having a pair of oppositely-curved edge portions 34, bent to form guides 35, and sign-plates slidably arranged between said guides, substantially as and for the purposes set forth.

9. In a revolving indicator, the combination, with a pair of standards having perforated hubs, of tubes fixed in said hubs, a flanged collar on one of said tubes, and a sign-carrier, comprising a pair of end plates, one end plate being rotatably arranged on one of said tubes and the other end plate being connected with said flanged collar, and means for causing an intermittent rotary motion of said collar and the sign-carrier, consisting, essentially, of star-shaped projections on the flange of said collar, a pawl pivotally arranged on one of said standards, provided with a downwardly-extending shoe adapted to engage said star-shaped projections, a spring-actuated slide connected with said pawl, and means for operating said slide, substantially as and for the purposes set forth.

10. In a revolving indicator, the combination, with a pair of standards having perforated hubs, of tubes fixed in said hubs, a flanged collar on one of said tubes, and a sign-carrier, comprising a pair of end plates, one end plate being rotatably arranged on one of said tubes and the other end plate being connected with said flanged collar, and means for causing an intermittent rotary motion of said collar and the sign-carrier, consisting, essentially, of star-shaped projections on the flange of said collar, a pawl pivotally arranged on one of said standards, provided with a downwardly-extending shoe adapted to engage said star-shaped projections, a spring-actuated slide connected with said pawl, and an electromagnet for operating said slide, substantially as and for the purposes set forth.

In testimony that I claim the invention set forth above I have hereunto set my hand this 27th day of May, 1901.

JOHN W. CAP.

Witnesses:

FREDK. C. FRAENTZEL,
GEO. D. RICHARDS.