No. 817,178. PATENTED APR. 10, 1906.

J. C. LIEBHARDT.

CLUTCH MECHANISM FOR EXHIBITING MACHINES.

APPLICATION FILED NOV. 14, 1904.

5 SHEETS—SHEET 1.

Fig. 1.

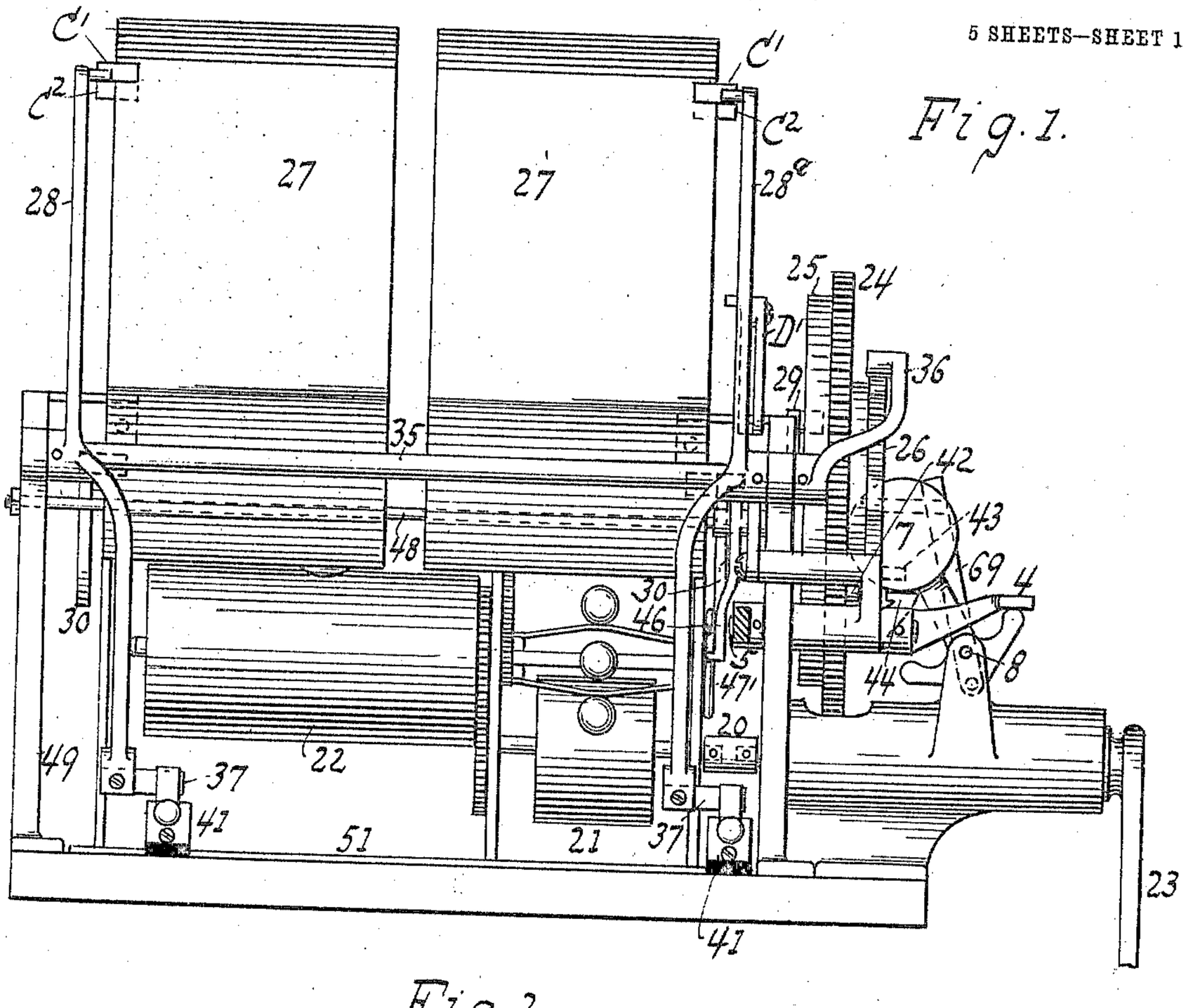


Fig. 2.

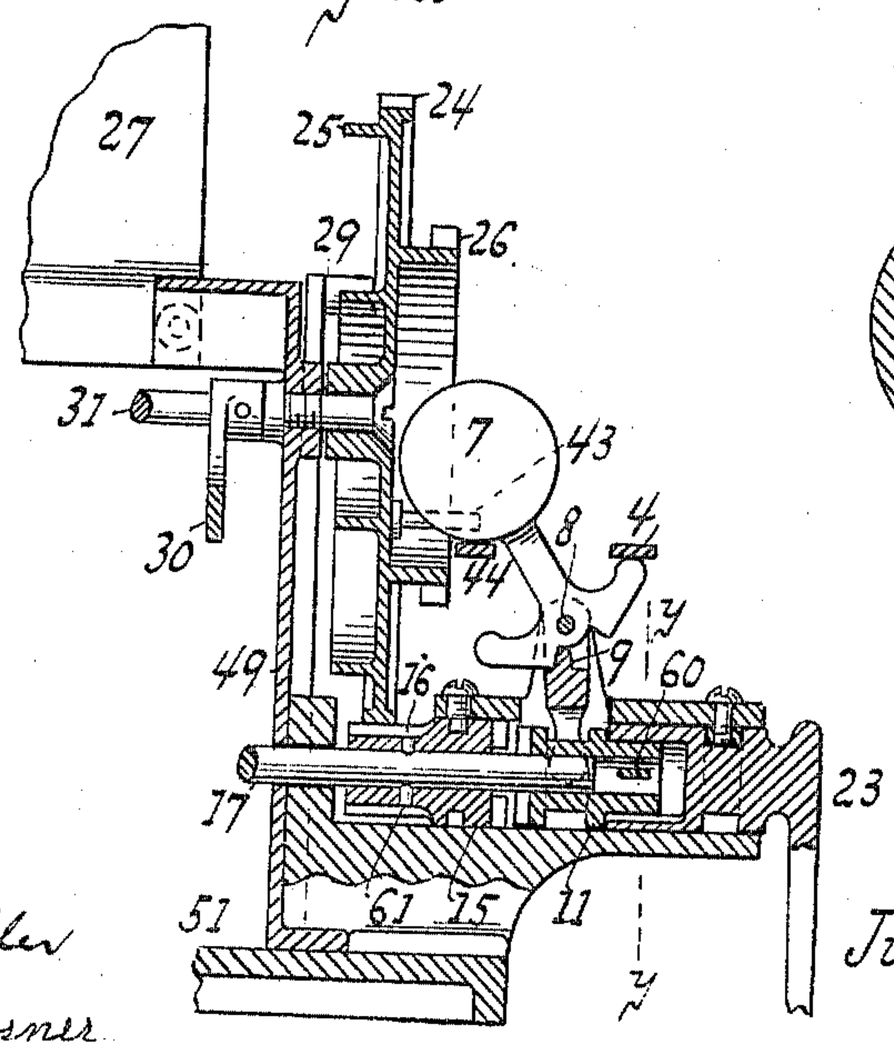
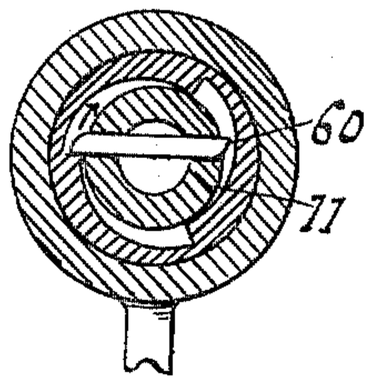


Fig. 3.



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6 SHEETS—SHEET 2.

Fig. 4.

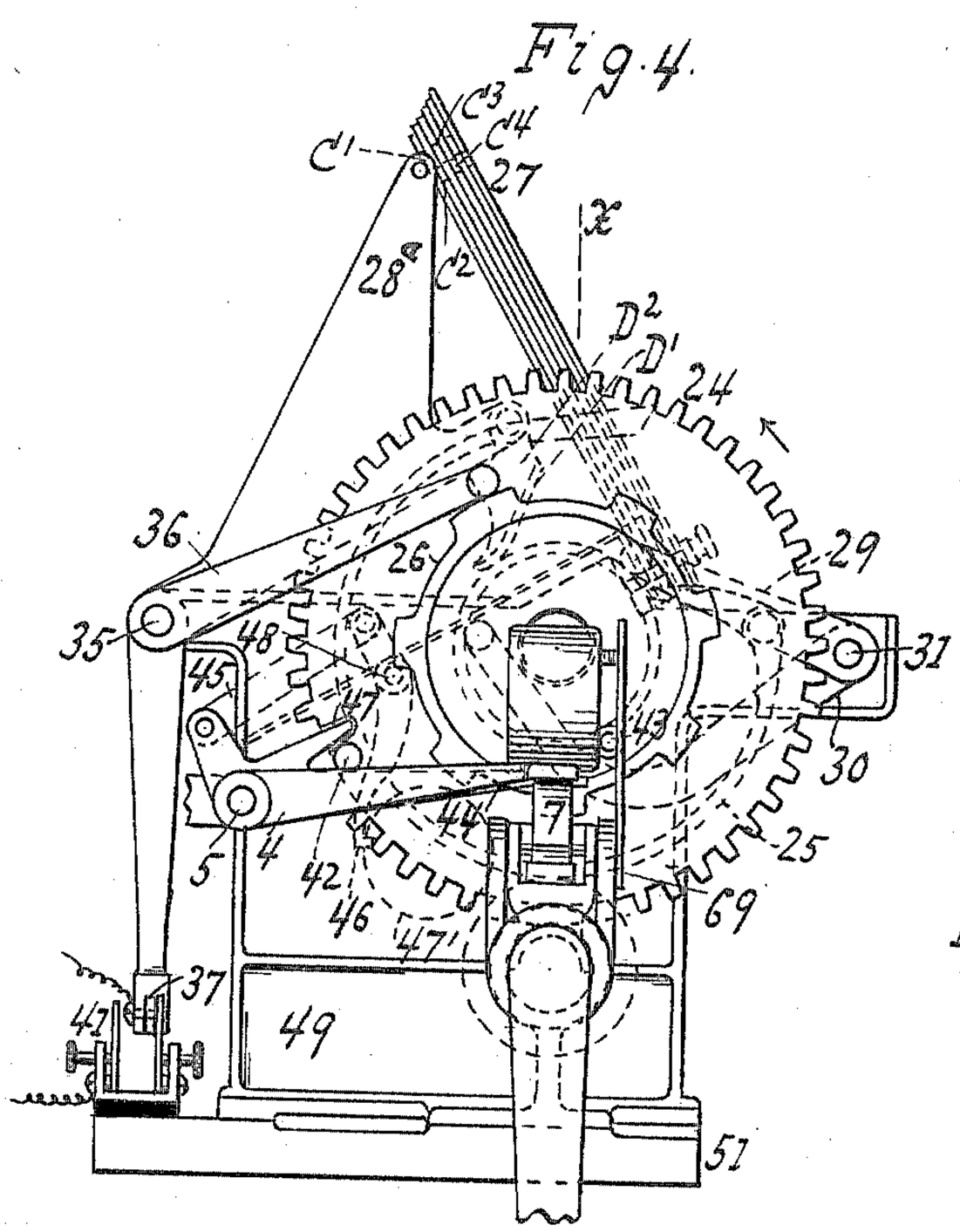
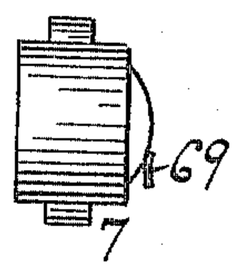
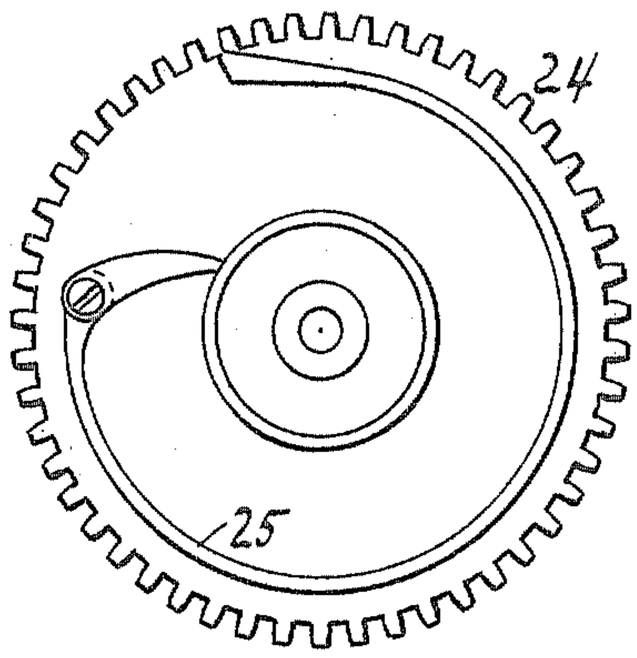


Fig. 5.

Fig. 6.





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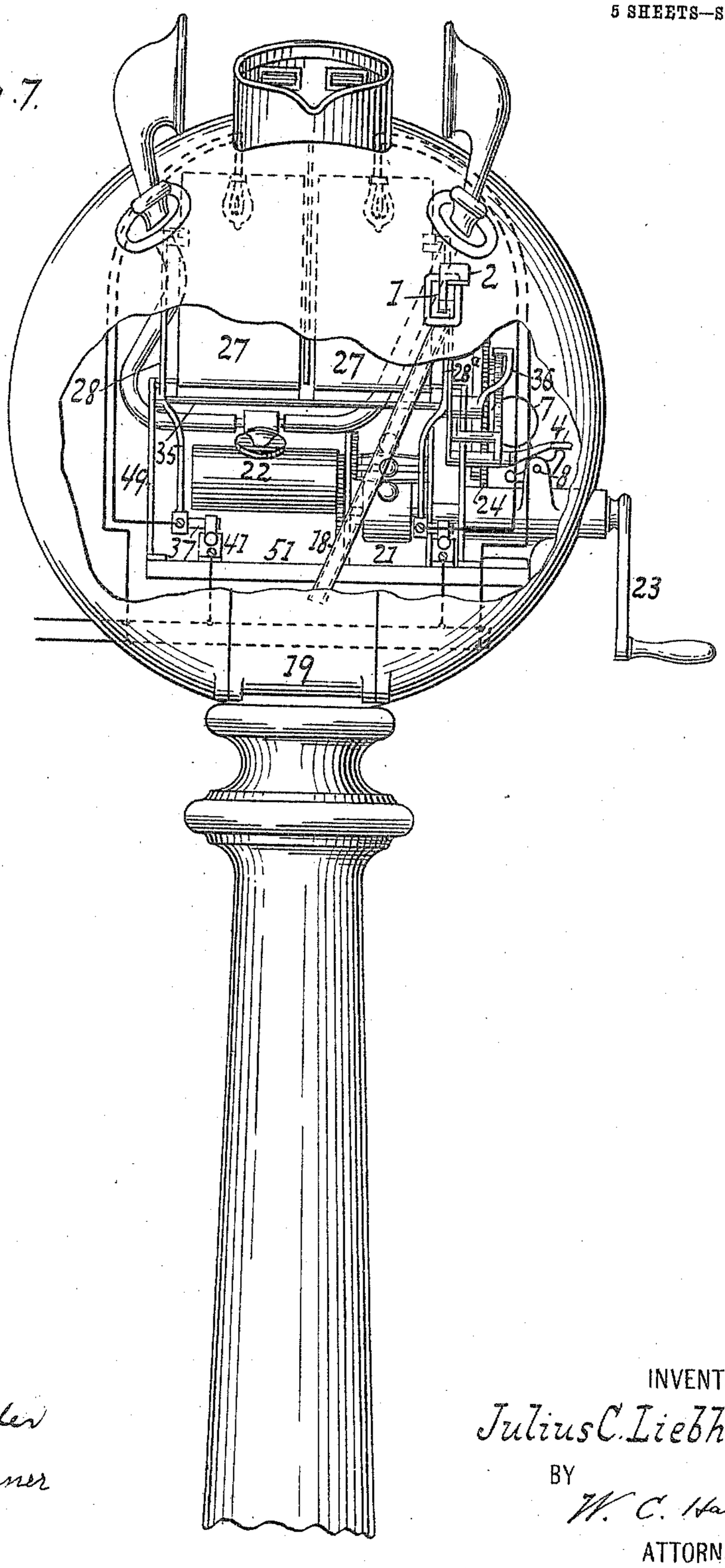
5 SHEETS—SHEET 3.

Fig. 7.



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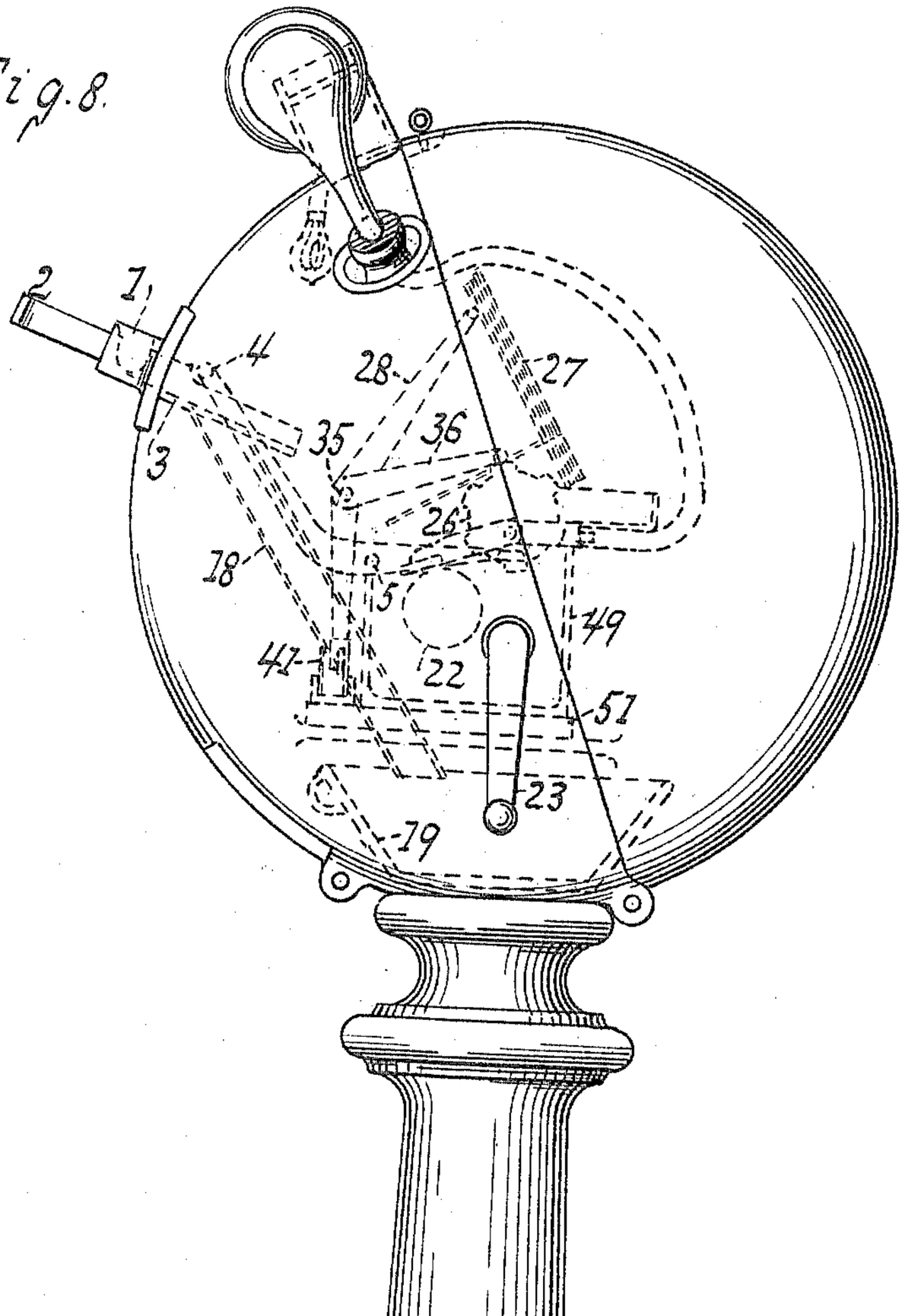
5 SHEETS—SHEET 4.

Fig. 8.



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5 SHEETS—SHEET 5.

Fig. 9.

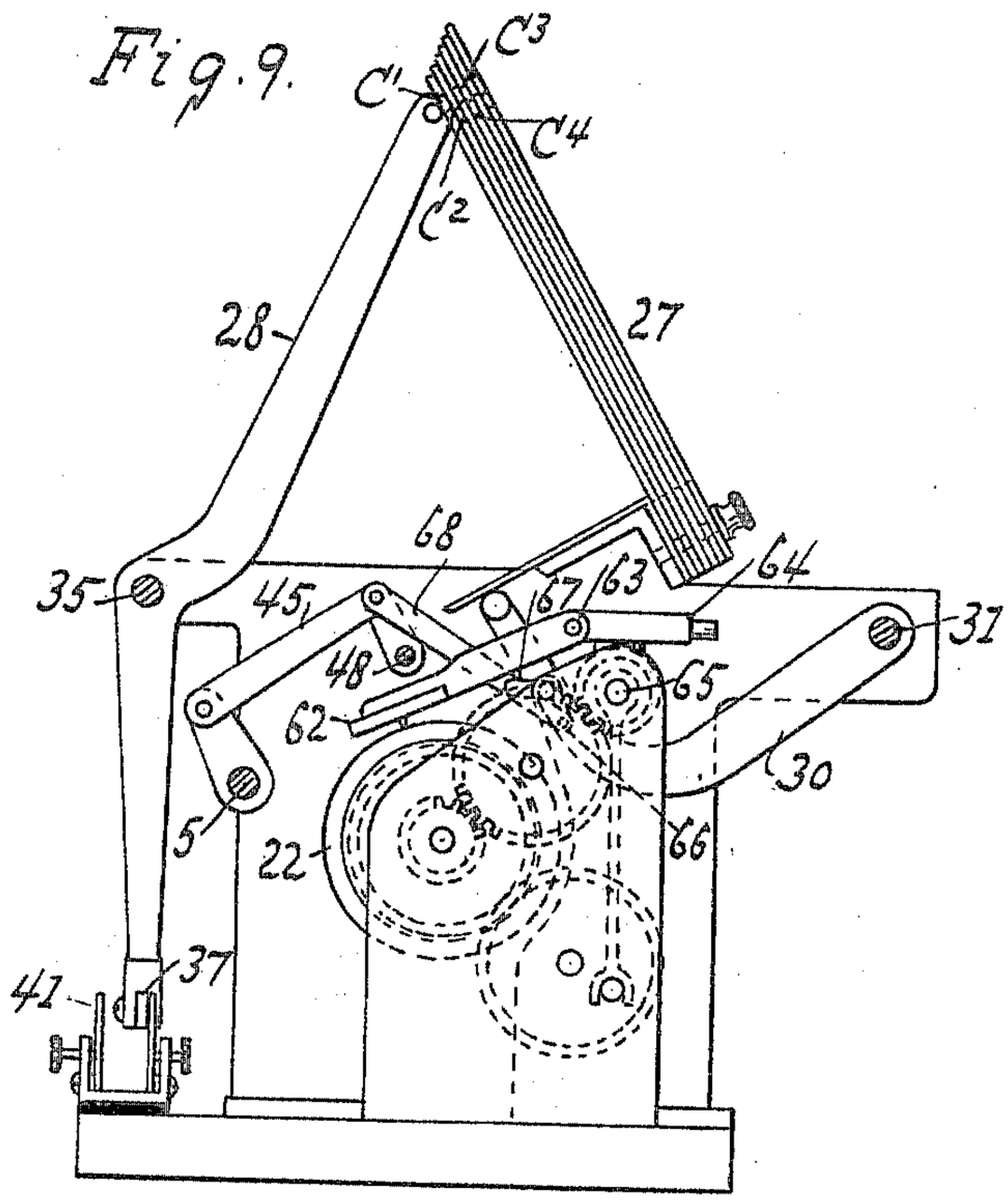
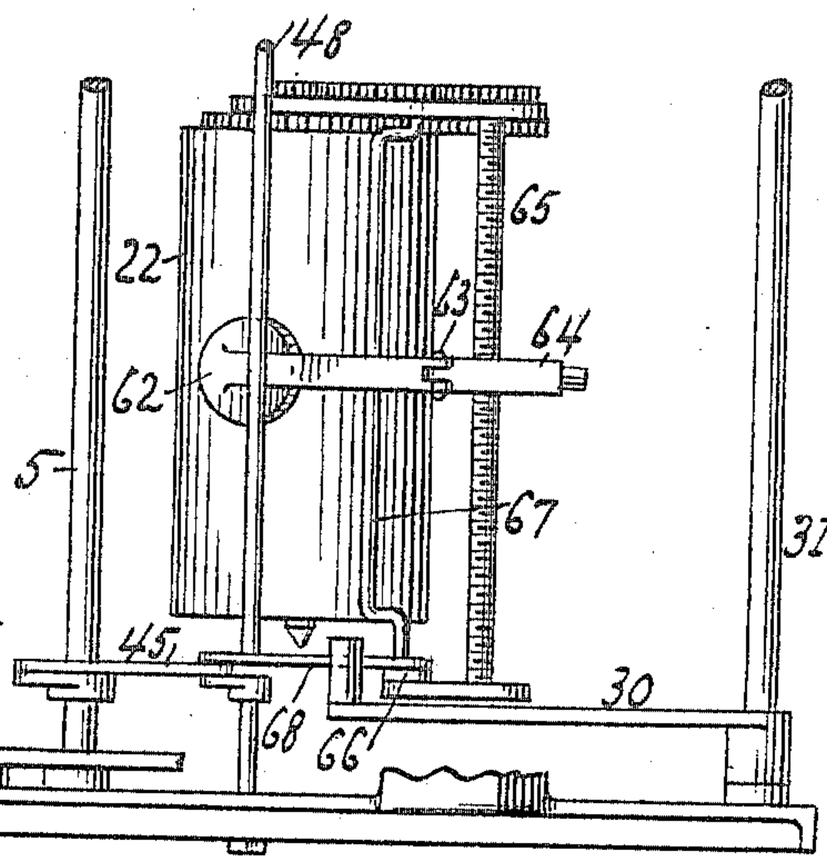


Fig. 10.



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UNITED STATES PATENT OFFICE.

JULIUS C. LIEBHARDT, OF BELLEVILLE, NEW JERSEY, ASSIGNOR, BY MESNE ASSIGNMENTS, TO GLOBE EXHIBITING COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

CLUTCH MECHANISM FOR EXHIBITING-MACHINES.

No. 817,178. Specification of Letters Patent. Patented April 10, 1906.

Application filed November 14, 1904. Serial No. 232,700.

To all whom it may concern:

Be it known that I, JULIUS C. LIEBHARDT, a citizen of the United States, residing at Belleville, in the county of Essex and State of New Jersey, have invented new and useful Improvements in Clutch Mechanism for Exhibiting-Machines, of which the following is a specification.

This invention relates to a clutch mechanism which has been applied to practical use in connection with a motor for an exhibiting-machine, but which is not restricted to said use.

This invention is set forth in the following specification and claims, and illustrated in the annexed drawings, in which—

Figure 1 shows a front elevation of mechanism embodying this invention. Fig. 2 is a sectional view of parts of Fig. 1, the section being taken along *x x*, Fig. 4. Fig. 3 is a section along *y y*, Fig. 2, showing coupling or uniting means between the crank and a clutch member. Fig. 4 is a side elevation of Fig. 1. Fig. 5 shows an incline or cam for the picture-lifting lever. Fig. 6 shows means for preventing accidental shift of lever. Fig. 7 shows the machine in its case or inclosure, the latter broken to allow certain exposure. Fig. 8 is a side elevation of Fig. 7. Fig. 9 shows returning means for a phonograph-reproducer. Fig. 10 is a plan view of Fig. 9, the pictures being omitted to expose underlying parts.

In the drawings is shown a coin slot or entrance 1, Fig. 7. A coin passed thereinto and forced by plunger or pushers 2, Fig. 8, along way 3, passing under lever 4, will tilt or move the latter. From the way 3 the coin can be led along a chute 18 to a receptacle or holder 19.

The lever 4 is shown fulcrumed at 5, and when actuated this lever will tilt a second lever 7, Fig. 1, about its pivot 8. This tilting lever is weighted or has a disk, as seen, and remains in the position to which it is tilted to one side or another of its pivot until returned by suitable means. A friction or retaining spring 96, Fig. 6, sitting against a shoulder or ridge on the lever or its weight, prevents accidental shift. This lever 7 has a shoulder-and-tooth connection with a lever 9, Fig. 2, having pivot 8 in common with lever 7. This lever 9 moves a clutch member 11 back and forth to couple or uncouple the same with clutch member 15. Said two members have suitable toothed or engaging faces or portions.

When the clutch is in engaging position, the crank 23 is coupled with shaft 17, connected or coupled at 20 with the spring-motor 21 of the phonograph 22. The clutch member 15 has gear connection 16 with gear 24 of the picture and light operating mechanism. This gear, as presently seen, serves several purposes. Connected to gear 24 are cams 25 26, Fig. 1. The cam 25 engages an arm 29, Fig. 4, extended from fulcrum-rod or rock-shaft 31, from which extend arms 30. The pictures or sets of pictures when in their lowermost position rest on a rod or cross-brace 48. When the lever-arms 30 are actuated, they raise the pictures to elevated or exposing position, so that they can be viewed or from which they drop as they are viewed. As the pictures are lifted they are held raised by arms 28 until the time for dropping has arrived. This dropping is effected by cam 26, also connected to gear 24. Cam 26 engages an end or portion of a lever-arm 36, extended from shaft or fulcrum-rod 35, carrying the levers or arms 28 28^a. Two arms 28 28^a are shown, Fig. 1, one each for the respective sets or series of pictures. From the levers 28 and 28^a or rock-shaft 35 extend elongations or arms carrying contacts 37, which in connection with switches or terminals 41 control the lighting of the two compartments by making or breaking circuits.

Gear 24 has a projection 43, Fig. 4, which serves to disengage the winding mechanism or crank after the proper number of turns has been given by handle 23. As this projection is carried about in winding and strikes onto lever 44 the latter presses on the tilting or weighted lever 7. This lever 7 thus actuated swings to disengaging position or moves lever 9 so that the latter frees the clutch member 11 or slides the same to uncoupling position. Said gear 24 also carries a stud 42, adapted to engage a nose or laterally-projecting part 47 of lever or arm 44. When the stud 43 moves the lever-arm 44 one way, it uncouples the clutch, as noted, and said lever 44 also, by link 45 and lever 46, releases the brake or stop disk 47′ of the spring-motor to leave the device free to operate. As the

gear 24 returns or moves back the stud 42 engages the projection 47 to move the lever the other way and put on the brake or stop the mechanism by the arm or lever 46 engaging the brake or stop.

The base 51, with support or frame pieces 49, carries the mechanism, and the connection or cross-bar 48, already mentioned, braces or stiffens the structure, in addition to acting as a support or stop for dropping pictures.

To operate the device, a coin is introduced and forced by plunger 2 past under lever 4, which latter being thereby tilted and acting on lever 7 throws the latter over to cause lever 9 to move clutch member 11 to engaging position with member 15. This sliding or feathering clutch member 11 is connected with the crank-lever 23 by means of a ratchet-pawl 60, Fig. 3. The hub part of the crank-lever 23 has a feather connection with the clutch member 11, so that these parts turn together; but the clutch member 11 can slide to and from the member 15 to couple and uncouple. The excentric slots are so arranged that they will always be engaged by pawl 60 when crank 23 is turned to the right and that the pawl will slip past the same on turning in the opposite direction. The clutch member 11 being thrown into coupling position and the crank turned to the right, the clutch member 11 being rotated will turn member 15, connected by pin 61, Fig. 2, with shaft 17. Said member 15, as noted, also turns gear 24 or meshes into the same. The shaft 17 by coupling 20, Fig. 1, winds the spring-drum 21. The gear 24 being rotated carries its stud or projection 43, Fig. 4, to lever 44 to move the latter and return or throw lever 7 back to its starting-point or into position to move lever 9 with clutch member 11 to disengaging position or away from member 15. The crank-lever is now again idle or disconnected from the machine and can be turned either way without affecting any part of the mechanism. The rotation of gear 24, with the cam or incline 25 secured thereto, actuates lever-arm 29 and rock-shaft 31, so that the free ends of its arms 30 swing up and raise the cards or pictures 27. Such free ends of arms 30 are bent laterally a sufficient distance to engage the cards or pictures to raise the same. The lever 28^a has connected thereto a shoe D^2, having a rim D'. The other lever 28, as shown in Fig. 9, can be left plain or without such shoe attachment. As the arms 30 rise one of them engages shoe D^2 or the rim D' thereof and raises the lever-arm 28^a and rocks the shaft 35 so as to swing the upper or free ends of these lever-arms out of the way of the lugs C' C^2 C^3 C^4 on the cards or leaves 27, so that these cards can be swung up to the required extent. When the pictures have been raised and the lever-arm 30, engaging shoe D', has passed said shoe, the lever 28^a drops against the lug C' of the first picture, and the pictures are held up for the commencement of the operation or working of the machine. As the spring-motor operates the gear 24 is rotated by clutch member 15 and teeth 16 at the same time that the phonograph performs its function. The cam 26, rotating with gear 24, actuates the arm 36 with shaft 35 and levers 28 and 28^a, so that the latter oscillate to and from the non-alined lugs C' to C^4 and allow a picture-section to drop while the others are held up. The contacts 37 being also actuated with rock-shaft 35, the lights are started or extinguished, as required.

The lugs C' at opposite sides, as also levers 28 and 28^a, could be placed in alinement, in which case the respective picture-sections drop simultaneously. If either of these lugs is placed out of alinement or the lever-arms 28 and 28^a are out of alinement with one another, the drop of one picture-section will not be simultaneous with that of the other. What has been said with respect to placing the lugs C' out of alinement with one another of course applies likewise to all succeeding lugs or picture-sections. It is also to be noted that if the arms or contacts 37 and terminals 41 at opposite sides of the machine are placed in alinement with one another the lights will be simultaneously lighted and extinguished. If, however, contacts 37 or terminals 41 are not in alinement with one another, the lights at the opposite sides are not lighted or extinguished simultaneously. The contacts 37 can be in the form of flexible blades to spring or yield as required.

The phonograph-reproducer is shown at 62, Fig. 9, pivoted at 63 to the carriage 64, driven by a screw 65. At the end of a performance or exhibition the reproducer is cleared or lifted off the record and returned to the starting-point. A lifter or automatic arrangement for taking the reproducer out of contact can be provided and is constructed as follows: From the stopping device or brake 47 or its link 45 can extend a connection or wire 68 to an arm or lever 66 on the lifter or bent wire 67. As the link 47 moves its brake to stopping position the connection 68 moves lever 66 to bring the high part of the wire or lifter under the reproducer. The latter is then raised or swung about its pivot away from the record. As the motor is wound up the carriage-propelling screw is rotated in backward or return direction and draws back the reproducer, the latter sliding along the high part of the lifter. When the device is started, or, in other words, when the brake is freed, the connection 68 is released or moved to allow the high part of the lifter to drop or swing from under the reproducer. As the reproducer drops to contact with the record and the motor starts and carries the screw to move the reproducer forward the phonograph operates.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination with a lever, of a weighted shouldered lever engaged by the first-named lever, a coupling-lever extended into the path of the shoulders of the weighted lever, a clutch member actuated by the coupling-lever, and a winding mechanism adapted to be engaged and actuated by the clutch member.

2. The combination with a pair of levers, of a clutch-actuating lever actuated by one of said levers, a clutch, a gear, and a returning-lever actuated by the gear to uncouple the clutch.

3. A clutch and clutch-actuating lever combined with a tilting lever to set the clutch-actuating lever, oppositely-located levers for moving the tilting lever, and a gear actuated by the clutch for moving one of the oppositely-located levers.

4. A clutch and clutch-actuating lever combined with a tilting lever to set the clutch-actuating lever, and a spring or friction finger to prevent accidental movement of the tilting lever.

5. A pair of levers extended from a common fulcrum-point, a clutch actuated by one of the levers, a shaft actuated by the clutch, a motor wound by the shaft, a gear rotated by the shaft, and a lever actuated by the gear and made to engage one of the levers on the common fulcrum-point to move the latter in one direction, and means for throwing said last-named lever in the opposite direction.

6. The combination with a crank having a tubular axle portion with shoulders therein, of a movable clutch portion extended into the tubular axle portion, and a double-ended ratchet-pawl engaging the shoulders for connecting the crank-axle with the clutch portion.

7. A clutch mechanism comprising a crank with shoulders or projections, a movable clutch member in this crank, a double-ended ratchet-pawl to engage the shoulders for connecting the crank with the movable clutch member, a shaft on which the clutch member is mounted, and a second or stationary clutch member to coact with the movable clutch member.

8. A clutch mechanism comprising a crank having shoulder portions in its hub or axle, a sliding clutch portion extended into the crank, a double-ended ratchet-pawl for connecting the crank and movable clutch portion so as to rotate together while leaving the clutch member free to slide in the crank, a shaft having a clutch member to coact with the movable clutch portion, and levers having a common axis or fulcrum and made to engage or set the movable clutch into or out of action.

9. A clutch mechanism comprising a weighted lever adapted to drop to one side or another of a fulcrum-point, a second lever having a common fulcrum with the first-named lever and extended in the opposite direction from and actuated by the same as such first lever drops to one side or another, a clutch member actuated by said second lever, and a transmission-shaft adapted to be engaged and actuated by the clutch.

10. A clutch mechanism comprising an upwardly-extended weighted lever having laterally-extended arms, means for engaging the arms to tilt the lever back and forth, a clutch and clutch-actuating lever actuated by the tilting lever, a winding-shaft engaged by the clutch, and a motor put into action by the winding-shaft, one of the tilting means being actuated by said motor.

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

JULIUS C. LIEBHARDT.

Witnesses:

GEORGE HULSBERG,

EDWARD WIESNER.