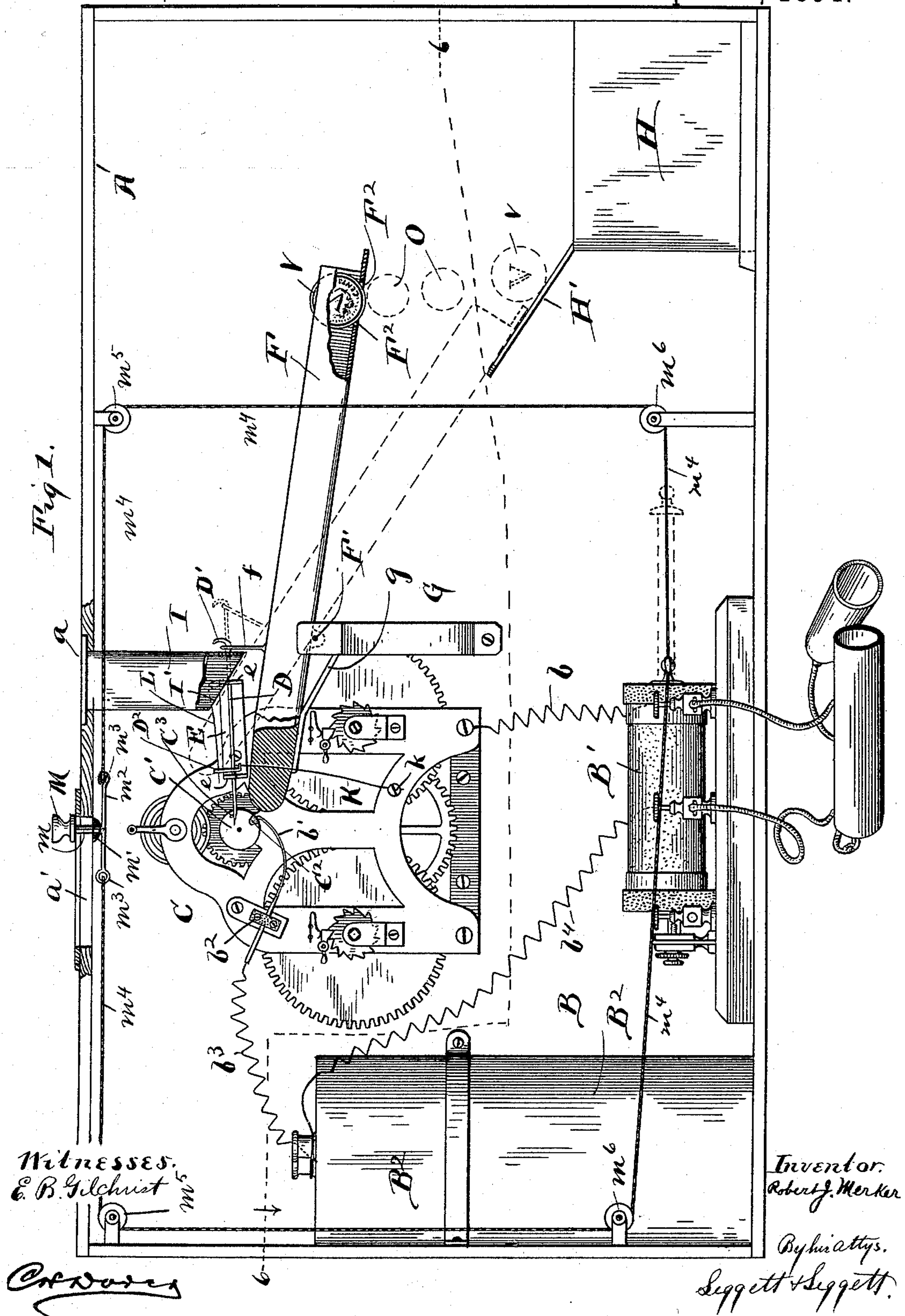


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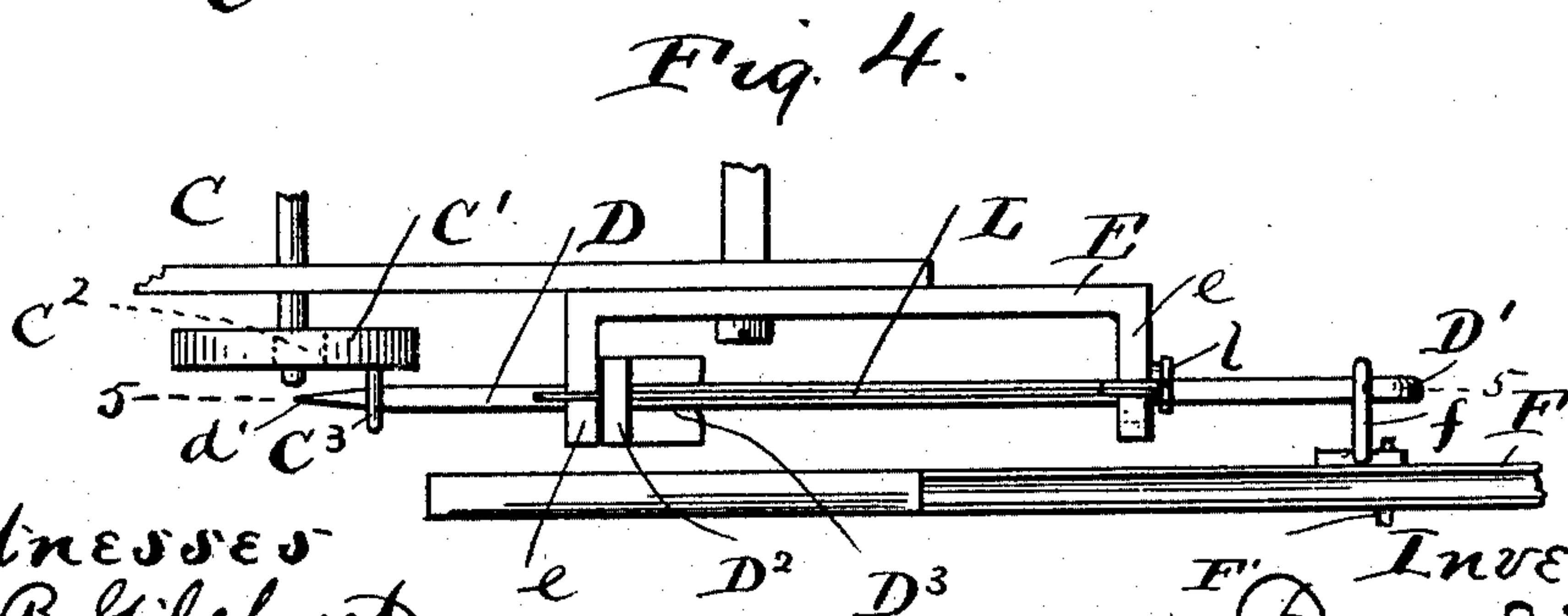
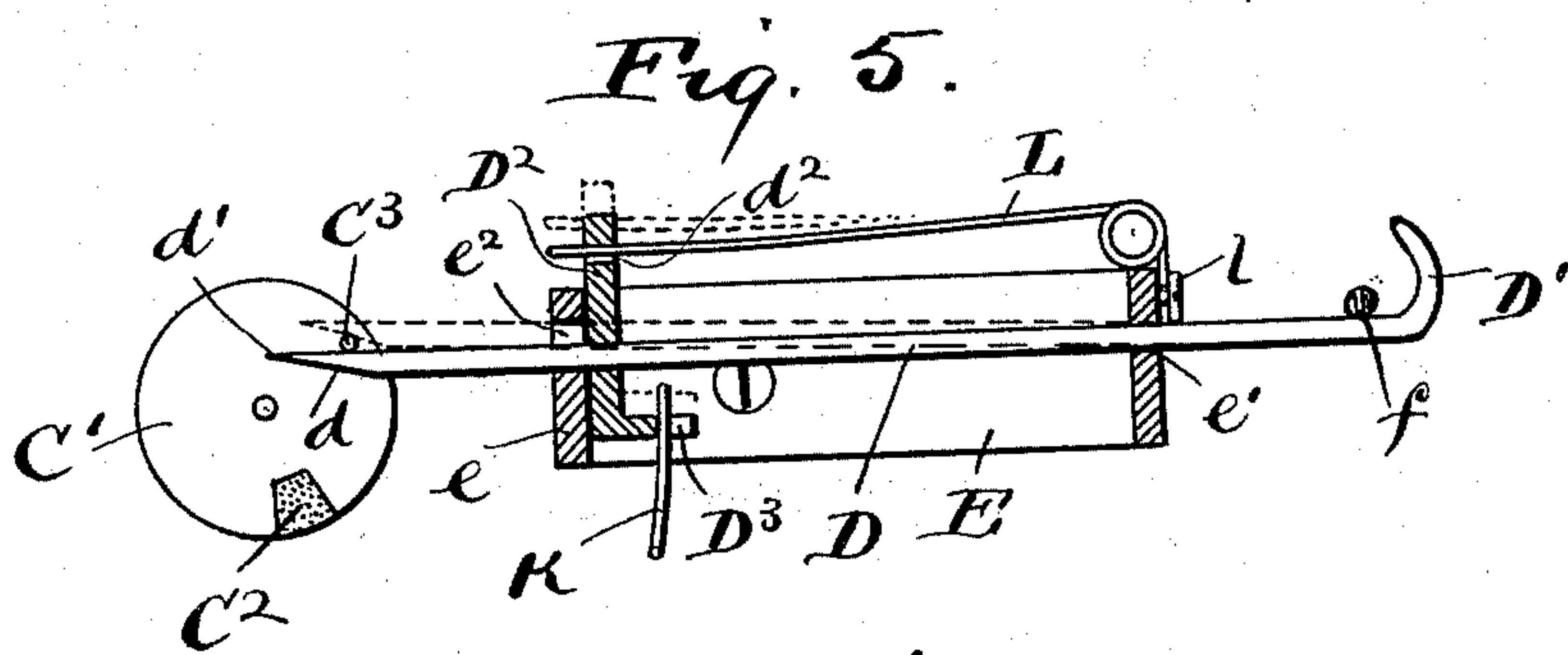
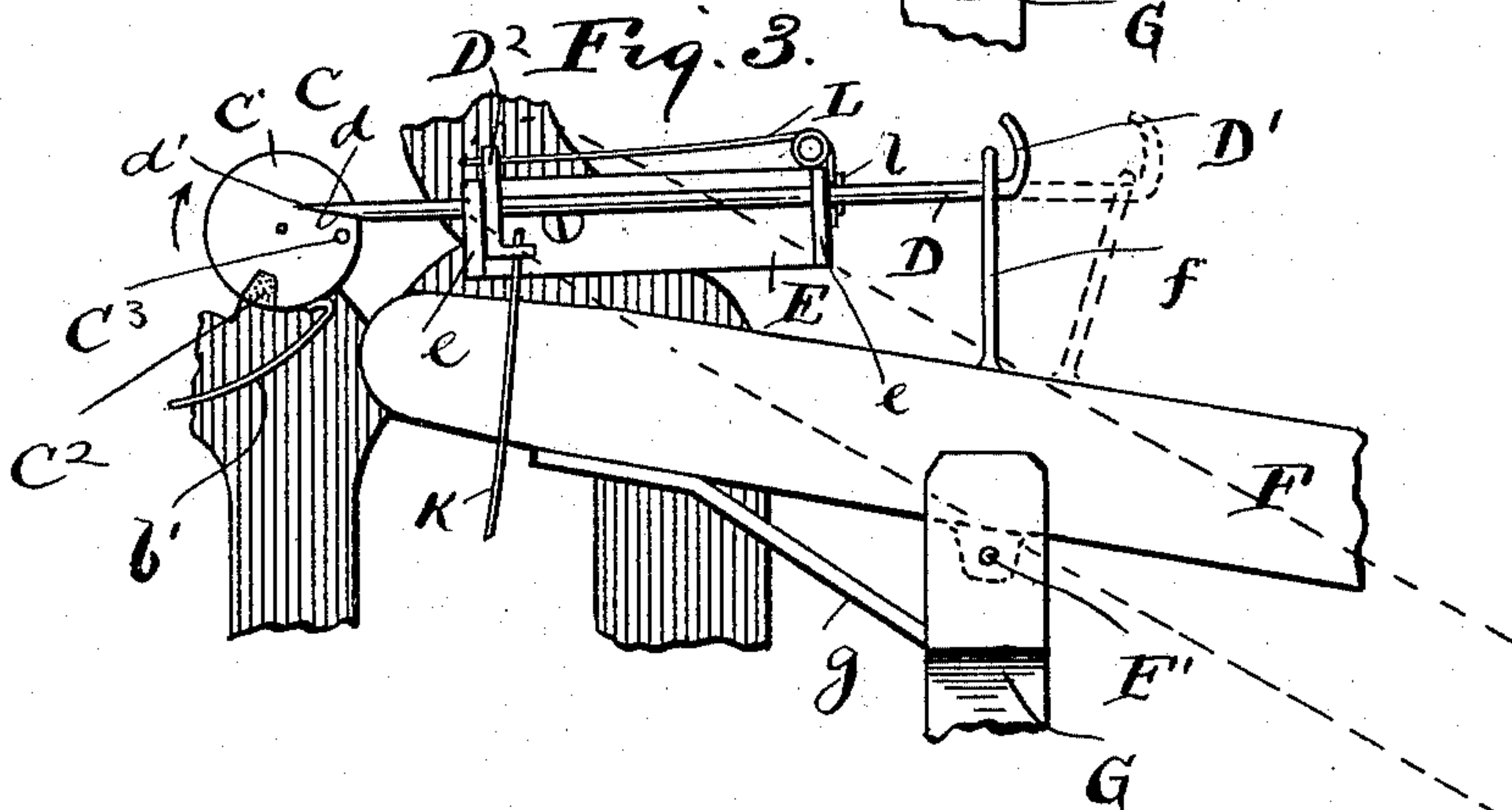
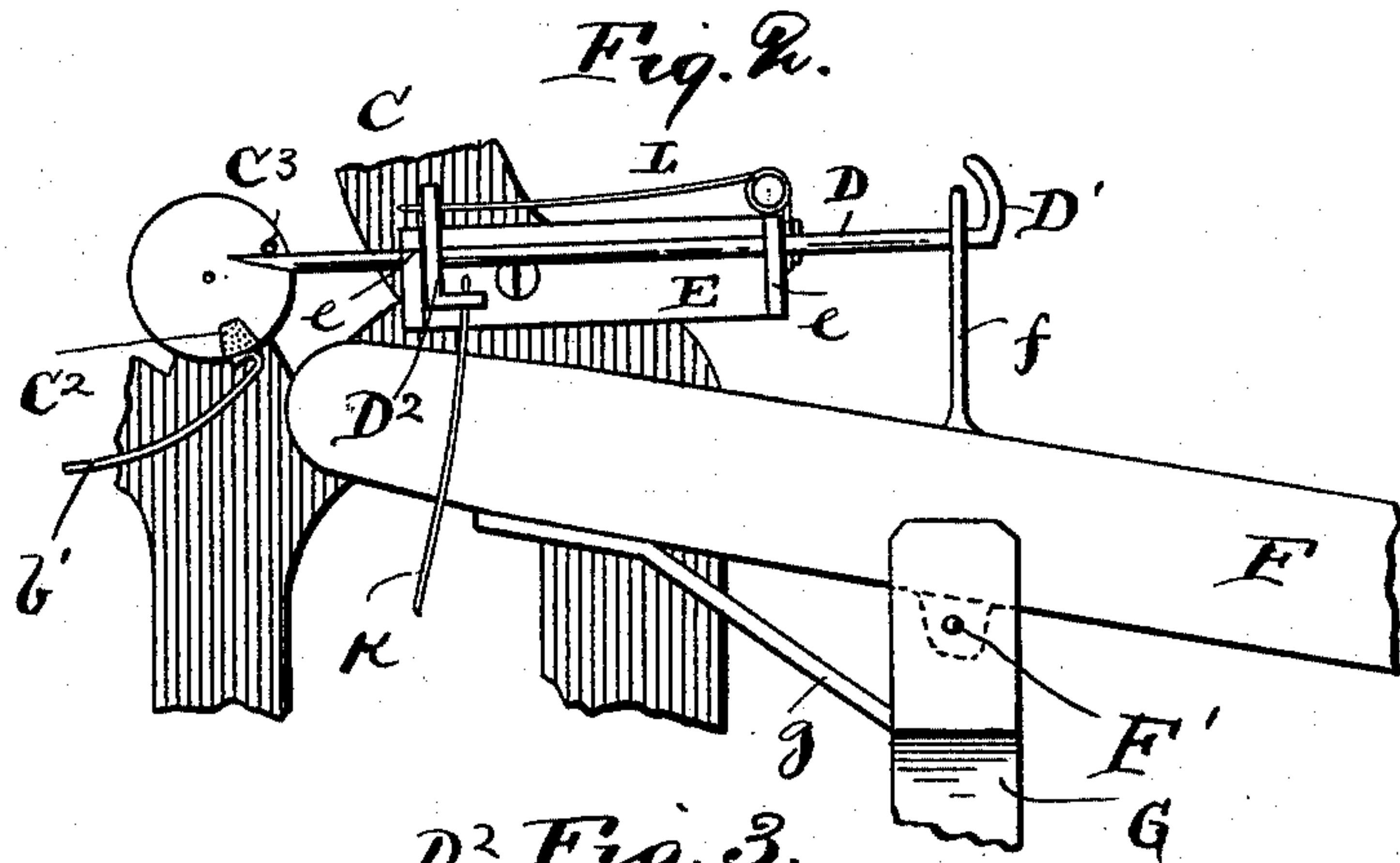
Patented Apr. 17, 1894.



R. J. MERKER.
COIN CONTROLLED ELECTRIC MACHINE.

No. 518,463.

Patented Apr. 17, 1894.



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(No Model.)

3 Sheets—Sheet 3.

R. J. MERKER.

COIN CONTROLLED ELECTRIC MACHINE.

No. 518,463.

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Fig. 6.

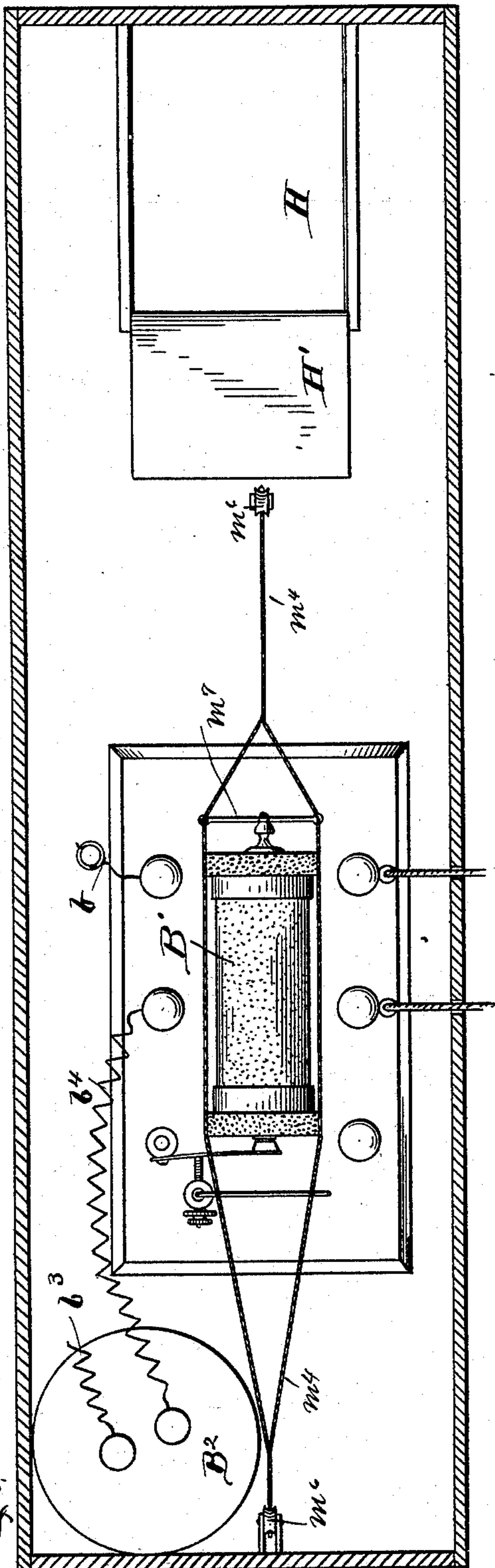
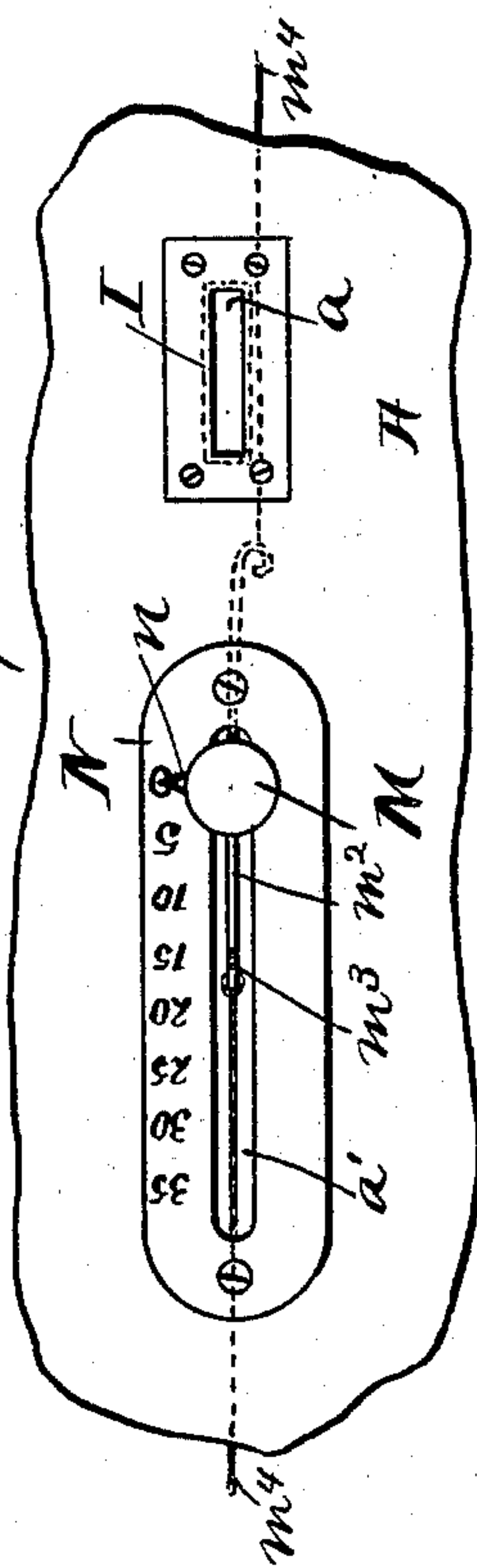


Fig. 7.



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UNITED STATES PATENT OFFICE.

ROBERT J. MERKER, OF CLEVELAND, OHIO.

COIN-CONTROLLED ELECTRIC MACHINE.

SPECIFICATION forming part of Letters Patent No. 518,463, dated April 17, 1894.

Application filed October 10, 1892. Serial No. 448,412. (No model.)

To all whom it may concern:

Be it known that I, ROBERT J. MERKER, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Coin-Controlled Electric Machines; 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 pertains to make and use the same.

My invention relates to an electric "slot machine;" and it consists in certain features of construction and in combination of parts hereinafter described and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a machine embodying my invention, the one side of the inclosing box or casing being removed, and portions of the casing, and mechanism within, being broken away and in section, to more clearly show the construction. Figs. 2 and 3 are enlarged side elevations of the mechanism for starting and arresting or stopping the operation of the clock-work, showing also the circuit-breaker, Fig. 2 exhibiting the normal position of parts, with the clock-work inactive and the circuit broken, and in solid lines Fig. 3 showing the position of parts soon after the operation of the clock-work has commenced. Fig. 4 is a top plan of a portion of Fig. 2, showing the parts, however, somewhat enlarged as compared with the corresponding parts in Fig. 2, and Fig. 5 is a side elevation, partly in section on line 5—5, Fig. 4, showing, in dotted lines, the position of rod or bar D, relative to pin or member C³ upon starting the operation of the clock-work. Fig. 6 is a top plan, showing the inclosing casing in section on line 6—6, Fig. 1, and exhibiting the attachment, to the core, or to the hollow copper or brass cylinder surrounding the core of the induction-coil of the electro-medical apparatus, of the means employed for sliding said core or cylinder in or out to intensify or moderate the strength of the current. Fig. 7 is a plan of a portion of the inclosing casing, exhibiting a slot in said casing, a button or thumb-piece adapted to be moved endwise of said slot and operatively connected with the head or outer end of the core or hollow cylinder aforesaid of the induction-coil, showing also

a graduated scale adjacent to and extending lengthwise of said slot and an indicator or pointer operatively connected with said button or thumb-piece and adapted to indicate, upon said scale, the strength of the current.

A represents the inclosing box or casing within which are located the electro-medical apparatus, B, and the clock-work, C, interposed within the electric circuit of said apparatus, said clock-work being electrically connected, by means of wire *b*, with the induction coil B' of the electro-medical apparatus, and having operatively connected therewith a disk or wheel, C', whose periphery is adapted to revolve in contact with a contact-spring, *b'*, that is supported by an insulating piece, *b*², attached to the supporting-frame of the clock-work, and is electrically connected by means of wire *b*³ with the battery cell, B² of the electro-medical apparatus, *b*⁴ representing the wire that leads from the battery cell to the induction-coil. The electro-medical apparatus and clock-work may be supported and arranged within the inclosing casing in any suitable manner.

C² represents an insulating piece set into and flush with the periphery of disk or wheel C', said insulating piece constituting a circuit-breaker, that, once, in each rotation of wheel or disk C', will electrically disconnect contact-spring *b*² and disk or wheel C' and thereby break the circuit. Disk or wheel C', preferably near its periphery, is provided with an outwardly-projecting pin, lug or member, C³, that is adapted to engage and be engaged by, as will hereinafter more fully appear, the adjacent end of a reciprocating rod or bar, D, composed preferably of wire, and extending laterally of wheel or disk C' and having bearing in lateral flanges *e* of a plate E that is rigidly secured to the supporting-frame of the clock-work, rod or bar D extending through holes *e'* *e*² in said flanges. (See Fig. 5.) The opposite end of rod or bar D terminates in a hook, D', that is adapted to be engaged by a bent arm, *f*, rigid with a tilting-trough F, fulcrumed, as at F', to a bracket G rigid with the inclosing casing. Trough F, normally, preferably declines toward its outer end where it is open. Trough F is only adapted to be tilted downwardly in the one direction, viz., in the direction to descend its open

end, and the descent of said open end of the trough is limited by an inclined apron, H', of a coin-receptacle, H, located within the inclosing casing.

5 I represents an upright tube that depends from and is secured to the top of the inclosing casing above trough F. Tube I is located directly above the trough and is in open relation, at its upper end, with a slot, α , in the
10 top of the inclosing casing. Tube I, in cross-section, and slot α , are of such size and form as to just easily receive and accommodate the passage therethrough, edgewise, of a coin of predetermined size, and we will suppose, for
15 illustration, that, in the present instance, the American nickel or five-cent piece is the requisite size of coin. The coin is dropped into tube I through slot α and thence descends or drops into trough F. The latter, normally
20 declining toward its open end, as already indicated, the coin rolls down, toward the open end of the trough, the latter, in cross-section, being of such width as to compel the coin to pass or travel edgewise in and along the
25 trough. The bottom of the trough, near its open end, is slotted, as at F² (see Fig. 1) and said slot is of such size, relative to the size of coin, for the reception of which the machine is designed, that it (the slot) will receive and
30 arrest said coin, but will permit, to escape or drop therethrough, a coin that is smaller in diameter. The machine illustrated, as already indicated, being designed to receive the American nickel or five-cent piece, the
35 slot in trough F would be of such size as to receive and arrest said coin, but would permit to drop therethrough a smaller coin, such for instance, as the American cent. See Fig. 1, wherein V represents a nickel or five-cent
40 coin and O a one-cent coin. The object of this is quite obvious. In the normal position of parts outwardly-projecting pin, lug or member, C³ of disk or wheel C' engages or rests upon the top of the free end of rod or bar D,
45 and the electric-circuit of the electro-chemical apparatus is broken, circuit-breaker C² being in contact with spring b' and electrically disconnecting the clock-work and said contact-spring. Trough F is so balanced that
50 when the requisite coin, dropped into it, has been passed to and been arrested at slot F², the weight of the coin will tilt the trough, causing the open end of the latter to descend and bringing bent arm f into engagement with
55 the hook-end of rod or bar D to cause said rod or bar to be actuated (see dotted lines, Figs. 1 and 3) to release pin or member C³ and permit the clock-work to resume its operation. The inner end of the tilting trough
60 is preferably weighted to such an extent that it will require the weight of the prescribed coin to properly tilt the trough, and the arrangement of parts is preferably such that the trough will be tilted part way before the
65 coin reaches slot F² in trough F. The coin, of course, more or less protrudes at the bottom of slot F², and, it is quite obvious, will

be lifted as the free end of the tilting-trough strikes the inclined apron of the coin-receptacle, and, by means of the rebound attending
70 the striking of the coin against said apron in advance of the striking of the apron by the trough, the coin is lifted sufficiently far to enable the same to proceed onward out of the
75 trough onto the apron and adown the latter into the coin-receptacle. The coin having been discharged, the trough automatically returns to its normal position, and to prevent the trough, in thus returning, to swing beyond
80 its normal position, bracket G is provided with an arm, g, adapted to be engaged by the inner end of the tilting-trough in the normal position of the latter. Rod or bar D is
85 returned to its normal position by means of a spring, K, (see Figs. 1, 2 and 5,) secured to the supporting-frame of the clock-work, as at k, and engaging a recess or notch D³ in a bent
arm or member D² rigid with rod or bar D.

The ordinary clock-works in the market would be unreliable in promptly starting in
90 their operation, or starting at all, upon the release of pin or member C³ of disk or wheel C'. I, therefore, preferably employ a round pin or member, C³, as shown, and bevel the under side of the inner end of rod or bar D,
95 as at d, and preferably to a point, as at d', whereby, when said rod or bar returns to its normal position which promptly follows the discharge of the coin and after the release of
100 pin or member C³, the bevel at the inner end of rod D engages the top of pin or member C³ and bears upon the latter, (see dotted lines Fig. 5,) thereby positively starting the operation of the clock-work if the operation has
105 not already been resumed. Again, to avoid the possibility of the point or extremity of the beveled end of rod or bar D, as the latter returns to its normal position, from striking the adjacent side of pin or member D²,
110 that is, from striking said pin or member directly opposite its center, and thereby absolutely prevent the resumption of operation by the clock-work, I elongate the vertical
115 hole e² in the innermost flange of supporting plate E, (see Fig. 5,) so that the beveled end of rod or bar D has a slight vertical movement, and provide a spring L, acting in the
120 direction to retain rod or bar D in engagement with the upper wall of said vertically elongated hole, or slot, a preferable construction being shown in Fig. 5 of the drawings, wherein arm or member D² extends above rod
125 or bar D and spring L is secured, as at l, to the outermost flange e of plate E and extends through a suitable hole, d², or perforation in the upper end of member D². By the construction just described it will be observed that
130 when pin or member C³ has made a revolution and comes into engagement with the top of the beveled end of rod or bar D it will depress said rod or bar, against the action of spring, L, until the rod or bar engages the bottom wall of the aforesaid elongated perforation, or slot, e², and hence when rod or bar D

returns to its normal position endwise, after being again actuated, it follows that by means of spring L the rod or bar is slightly but sufficiently lifted to prevent the point or extremity of the free end of rod or bar D striking pin or member C³ directly opposite the center of said pin or member, but the latter will be properly engaged by the beveled end of said rod or bar at a point above its center. Pendant tube I is preferably located at the side of the fulcrum of tilting-trough F, that is opposite to the discharging-end of said trough, and the lower end of said tube extends as close as practicable to the trough so that said trough cannot be easily tilted, by means of a tool or instrument, inserted at slot *a* in the top of the inclosing casing. Trough F should either be made sufficiently wide so that the side-members thereof, in tilting the trough, will pass outside of tube I, or the latter should be cut away, as at I', so as to accommodate the tilting of the trough. The arrangement of parts is such that the circuit-breaker shall have been brought into position electrically disconnecting contact-spring *b'* and the clock-work at the time the operation of the clock-work is arrested by the revolution of pin or member C² being stopped by rod or bar D. Disk or wheel C', in the present instance, is supposed to be timed so that pin or member C³ will just make a revolution in one minute; consequently the electric circuit of the electro-medical apparatus will be closed for one minute.

Suitable means are also provided for operating the core, or hollow brass or copper cylinder that surrounds the core of the induction-coil of the electro-medical apparatus, to intensify or moderate the electric-current, from outside of the inclosing casing. As shown in Figs. 1, 6 and 7, suitable means for this purpose comprise a button or thumb-piece, M, seated on top of and adapted to be moved endwise of a slot *a'* in the inclosing casing, the shank *m* of said button or thumb-piece extending downward through the slot and at its lower end having a shoulder or collar, *m'*, adapted to abut the under side of the top member of the inclosing casing to prevent the upward displacement of said button or thumb-piece. To the under side of said shoulder or collar is soldered or otherwise secured a stiff wire or bar *m*² that extends lengthwise of the slot and terminates at either end in an eye or loop, *m*³, to which is attached a cord or wire, *m*⁴. Said cords or wires lead thence lengthwise of the inclosing casing and in opposite directions, respectively, to and over guide-pulleys, *m*⁵, secured to the inclosing casing; thence lead downward to and over guide-pulleys *m*⁶ also secured to the casing, and thence lead toward each other and are operatively connected, in any suitable manner, (for instance, as shown, by a bar or member *m*⁷) with the head or outer end of the core or hollow metallic cylinder aforesaid of the induction-coil. By the means just

described it will be observed that said core or cylinder is slid in or out of the coil according as button or thumb-piece M is moved in the one direction or the other and the current is intensified or moderated as the case may be.

To the top of the casing adjacent to and extending lengthwise of slot *a'* is secured a graduated scale, N, and button or thumb-piece M has operatively connected therewith an indicator or pointer *n* that is adapted to indicate, upon said scale, the strength of current. The inclosing casing is, of course, provided with one or more doors, (not shown) for access to the working parts, and more especially for access to the coin-receptacle.

What I claim is—

1. The combination with an induction-coil or electro-medical apparatus, a clock-work located in the electric-circuit of said coil or apparatus, a circuit-breaker, and an inclosing casing, of a coin-receiving slot in said casing, a tilting trough adapted to receive the coin dropped into said slot, a tube for conducting the coin from the slot to said trough, said tube being located at the side of the fulcrum of said trough opposite to the discharging-end of the latter, suitable mechanism for starting and arresting after a certain interval of time the operation of the clock-work, and suitable means operatively connected with the trough for actuating said mechanism, the arrangement of parts being such that said trough shall be tilted by the weight of the coin and the aforesaid circuit-breaker shall have broken the circuit when the operation of the clock-work stops, substantially as set forth.

2. The combination with an induction-coil or electro-medical apparatus, a clock-work located in the electric-circuit of said coil or apparatus, a circuit-breaker, and an inclosing casing, of a coin-receiving slot in said casing, a coin-receptacle, a tilting-trough adapted to conduct the coin to said receptacle, a tube for conducting the coin from the aforesaid slot to said trough, the bottom of the latter near its discharging-end having a slot to permit the escape of a coin having a smaller diameter than that of the requisite coin, suitable mechanism for starting or permitting the resumption of, and arresting after a certain interval of time, the operation of the clock-work, and suitable means operatively connected with the trough for actuating said mechanism, the arrangement of parts being such that said trough shall be tilted by the weight of the coin and the aforesaid circuit-breaker shall have broken the circuit when the operation of the clock-work ceases, substantially as set forth.

3. The combination with an induction-coil or electro-medical apparatus, a clock-work located in the electric-circuit of said coil or apparatus, a circuit-breaker operatively connected with the clock-work, and an inclosing casing, of a coin-receiving slot in said casing, a tilting-trough adapted to conduct the coin to said receptacle, a tube for conducting the

coin from the aforesaid slot to said trough, said tube being located at the side of the discharging end of the latter, suitable mechanism for starting, and arresting, after a certain interval of time, the operation of the clock-work, and suitable means operatively connected with the trough for actuating said mechanism, the arrangement of parts being such that said trough shall be tilted by the weight of the coin and the aforesaid circuit-breaker shall have broken the circuit when the operation of the clock-work stops, substantially as set forth.

4. The combination with a coil or electro-medical apparatus, a clock-work and contact-spring located in the electric-circuit of said coil or apparatus, an inclosing casing, a circular disk or wheel operatively connected with the clock-work and adapted to travel in contact with said contact-spring, and a circuit breaker set into and flush with the periphery of said disk or wheel, of a coin-receiving slot in the inclosing casing, a coin-receptacle, and tilting-trough for conducting the coin to said receptacle, suitable means for limiting the descent of the discharging end of said trough, a tube for conducting the coin from the aforesaid slot to said trough, suitable mechanism for starting, and arresting after a certain interval of time, the operation of the clock-work, and suitable means operatively connected with the aforesaid trough for actuating said mechanism, the arrangement of parts being such that said trough shall be tilted by the weight of the coin and the aforesaid circuit-breaker shall have electrically disconnected the aforesaid contact-spring and clock-work when the operation of the latter is stopped, substantially as set forth.

5. The combination with an induction-coil or electro-medical apparatus, a clock-work located in the electric-circuit of said coil or apparatus, an inclosing casing, a circuit-breaker, and a revolving pin or member operatively connected with the clock-work, of a coin-receiving slot in said casing, a coin-receptacle, a tilting-trough for conducting the coin to said receptacle, a tube for conducting the coin from the aforesaid slot to said trough, a reciprocating-rod or bar adapted to arrest the movement of the aforesaid revolving pin or member, said rod or bar being provided with a hook, a bent arm or member rigid with the aforesaid tilting-trough for engaging said hook to effect the actuation of said rod or bar to release the aforesaid revolving pin or member, and suitable means for returning said rod or bar and tilting-trough to their normal position, the arrangement of parts being such that said trough shall be tilted by the weight of the coin and the aforesaid circuit-breakers shall have broken the circuit when the aforesaid revolving pin or member is arrested, substantially as set forth.

6. The combination with an induction-coil or electro-medical apparatus, a clock-work lo-

cated in the electric-circuit of said coil or apparatus, an inclosing casing, a circuit-breaker, and a revolving pin or member operatively connected with the clock-work, of a coin-receiving slot in said casing, a coin-receptacle, a tilting-member for conducting the coin to said receptacle, a tube for conducting the coin from the aforesaid slot to said tilting-member, a reciprocating rod or bar and suitable means operatively connected with said tilting-member for actuating said rod or bar to release said revolving pin or member, said rod or bar at the point where it is adapted to engage said revolving pin or member being beveled, and suitable means for returning said rod or bar into position for starting and subsequently arresting the movement of the aforesaid revolving pin or member, the arrangement of parts being such that said trough shall be tilted by the weight of the coin and the aforesaid circuit-breakers shall have broken the circuit when the operation of the clock-work stops, substantially as set forth.

7. The combination with an induction-coil or electro-medical apparatus, a clock-work located in the electric-circuit of said coil or apparatus, an inclosing casing, a circuit-breaker, and a revolving pin or member operatively connected with the clock-work, of a coin-receiving slot in the inclosing casing, a coin-receptacle, a tilting-member for conducting the coin to said receptacle, a tube for conducting the coin from the aforesaid slot to said tilting-member, a reciprocating-rod or bar adapted to arrest the movement of said revolving pin or member, the end of said rod or bar, that is adapted to engage and be engaged by said revolving pin or member, having a limited vertical movement, suitable means acting to lift said end of the rod or bar, suitable means operatively connected with the aforesaid tilting-member for actuating said rod or bar to release the aforesaid revolving pin or member, and suitable means for returning said rod or bar into position to arrest the movement of said revolving pin or member when the latter has made a revolution, the arrangement of parts being such that the aforesaid tilting-member shall be actuated by the weight of the coin and the aforesaid circuit-breaker shall have broken the circuit when the operation of the clock-work stops, substantially as set forth.

8. The combination with an induction coil or electro-medical apparatus, a clock-work located in the electric-circuit of said coil or apparatus, an inclosing casing, a circuit-breaker, and a revolving pin or member operatively connected with the clock-work, of a coin-receiving slot in the inclosing casing, a coin-receptacle, a tilting-member for conducting the coin to said receptacle, a tube for conducting the coin from the aforesaid slot to said tilting-member, a reciprocating rod or bar adapted to start and to arrest the movement of said revolving pin or member, the end of said rod or bar adapted to engage and be engaged by

said revolving pin or member having a limited vertical movement and being beveled at the point where it is adapted to engage said revolving pin or member, suitable means acting to lift the beveled end of the rod or bar, suitable means operatively connected with the aforesaid tilting-member for actuating said rod or bar to release the aforesaid revolving pin or member, and suitable means for returning said rod or bar into position to start and subsequently arrest the movement of said revolving pin or member, the arrange-

ment of parts being such that said trough shall be tilted by the weight of the coin and the aforesaid circuit-breaker shall have broken the circuit when the operation of the clock-work stops, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 14th day of September, 1892.

ROBERT J. MERKER.

Witnesses:

C. H. DORER,
WARD HOOVER.