

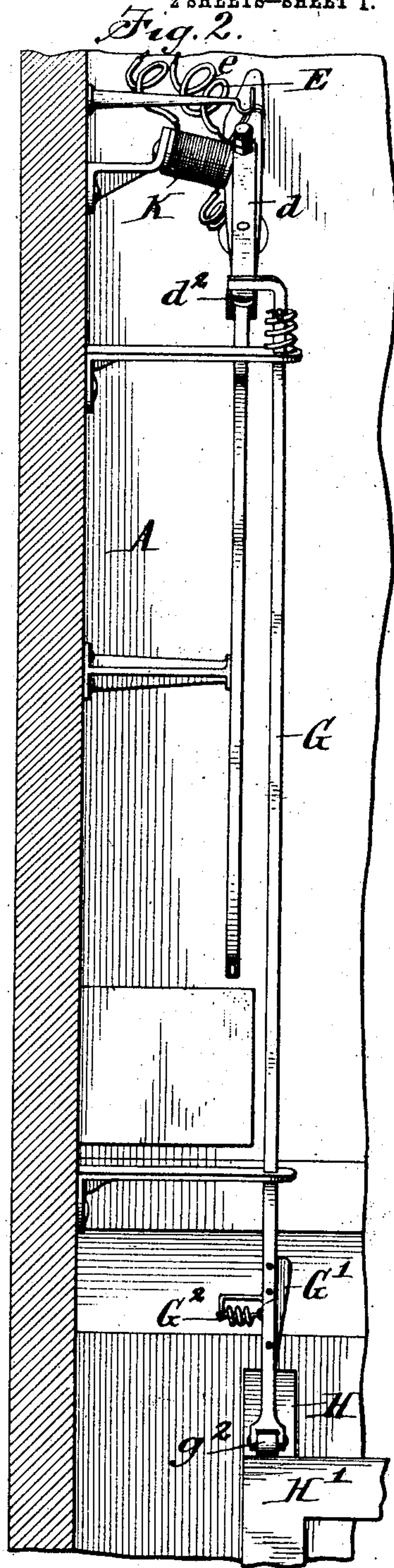
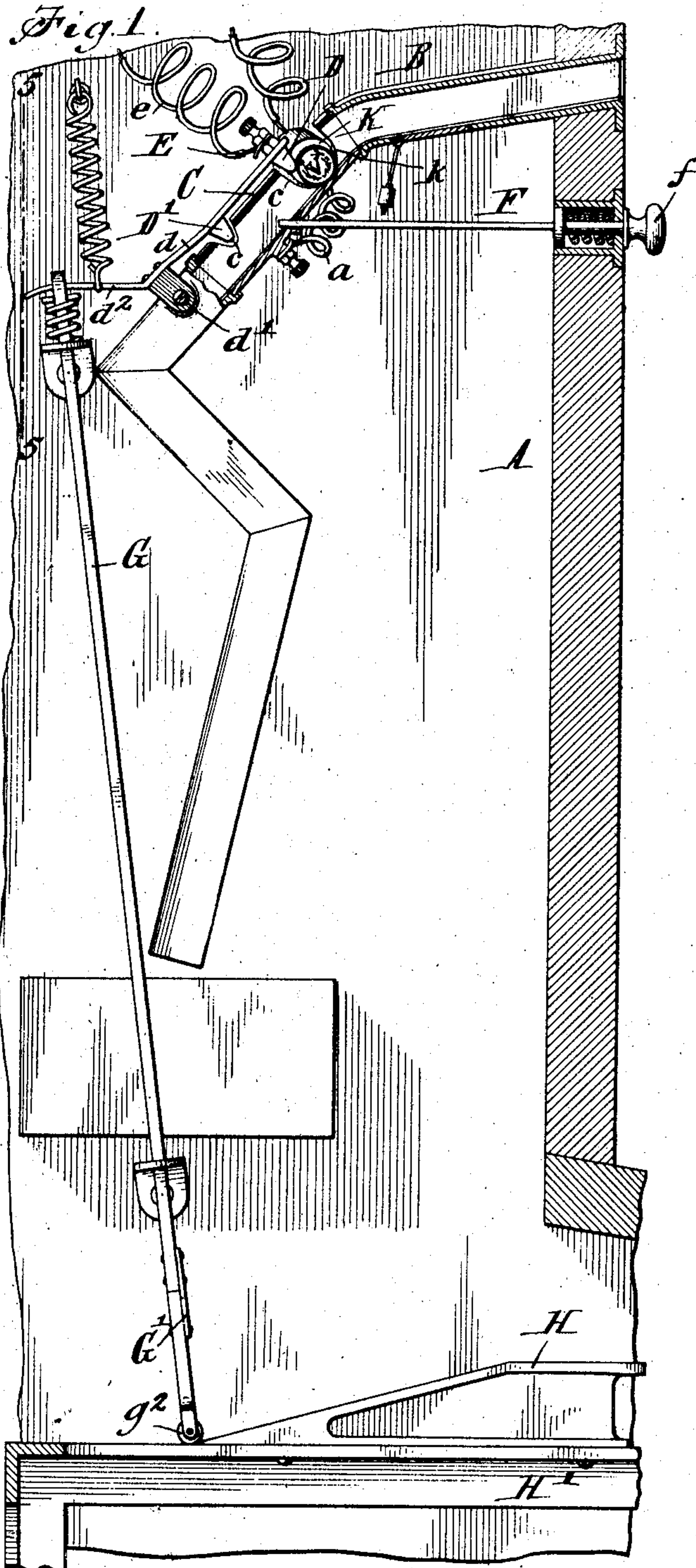
No. 790,125.

PATENTED MAY 16, 1905.

R. O. HAMMOND.
COIN CONTROLLED APPARATUS.

APPLICATION FILED JULY 22, 1904.

2 SHEETS—SHEET 1.

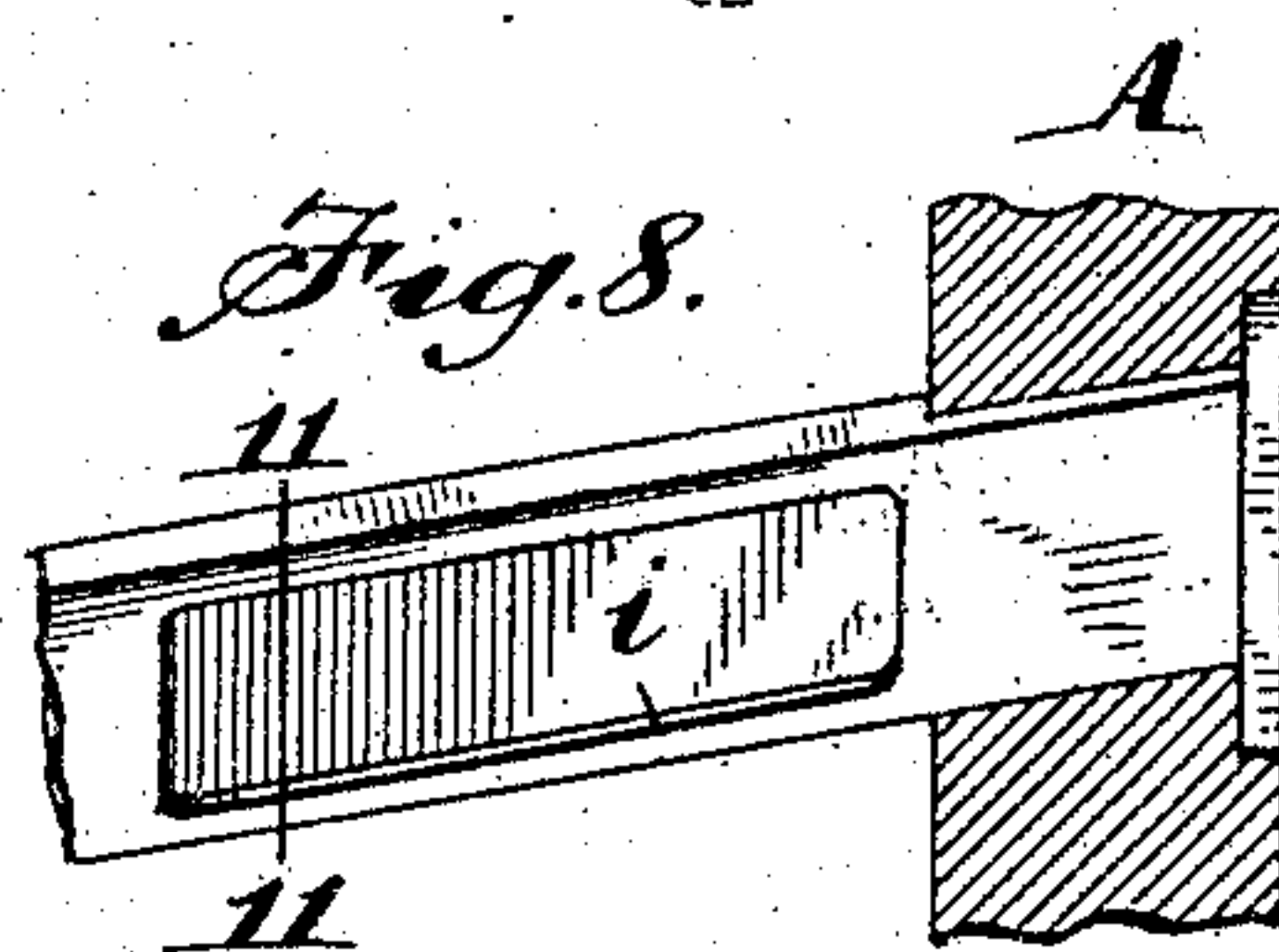
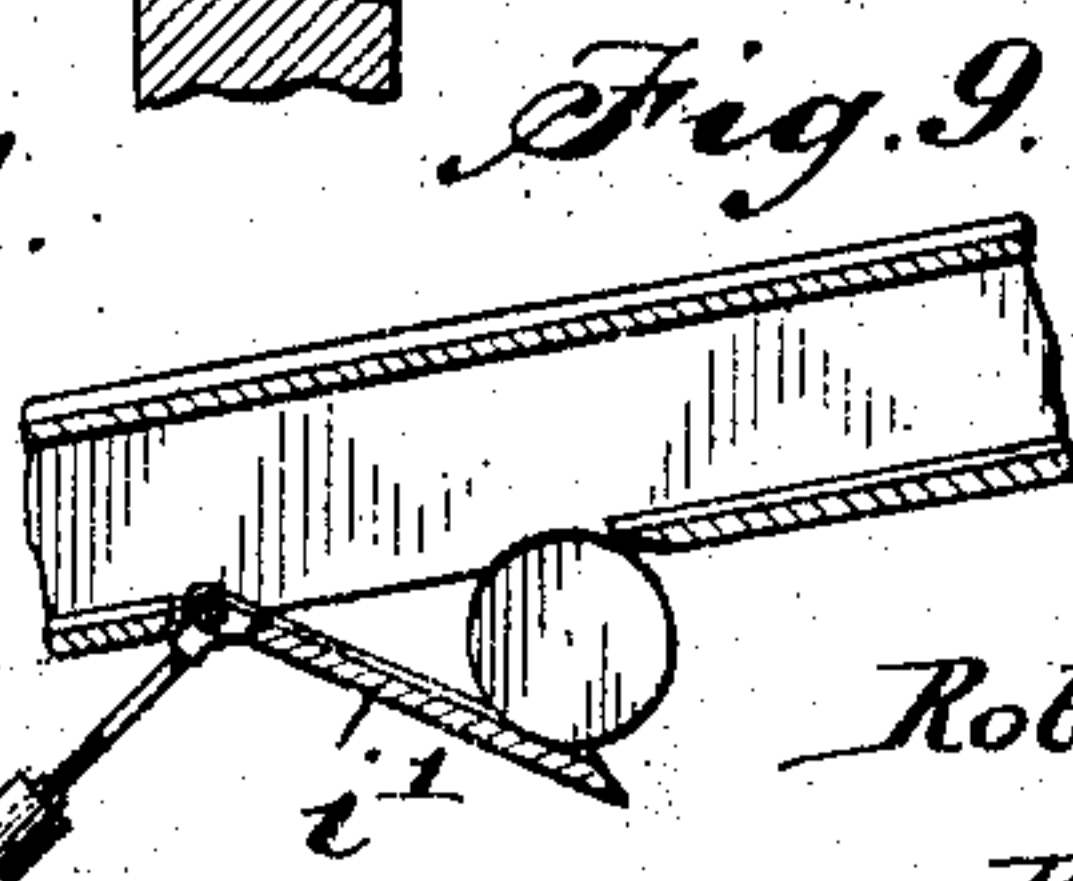
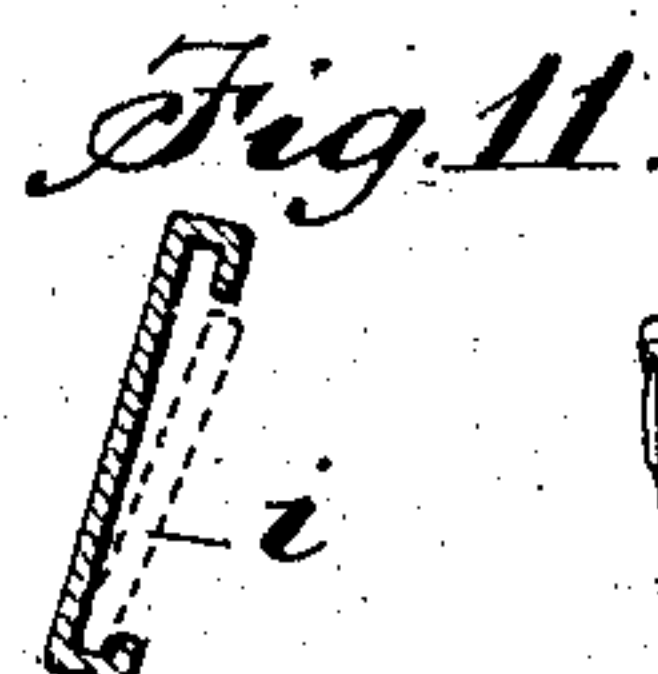
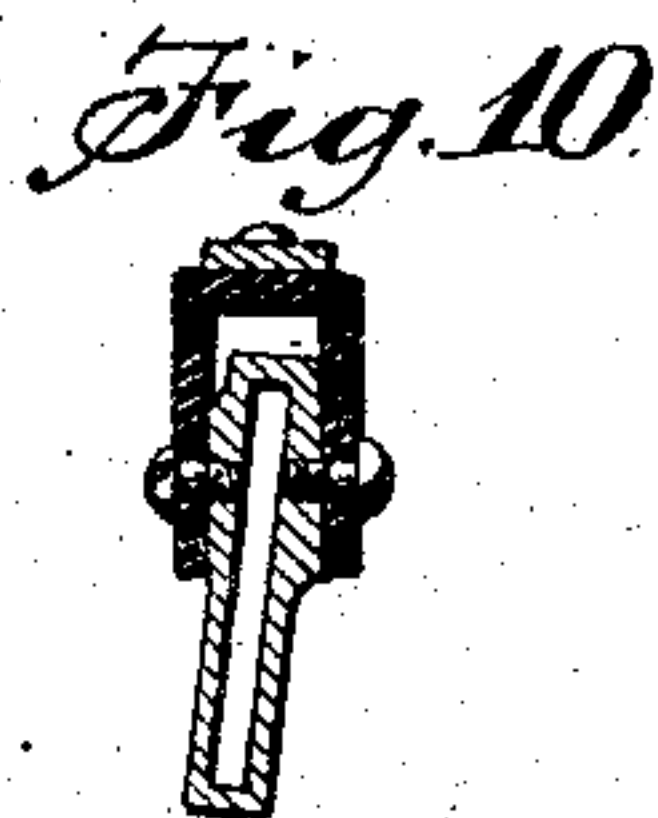
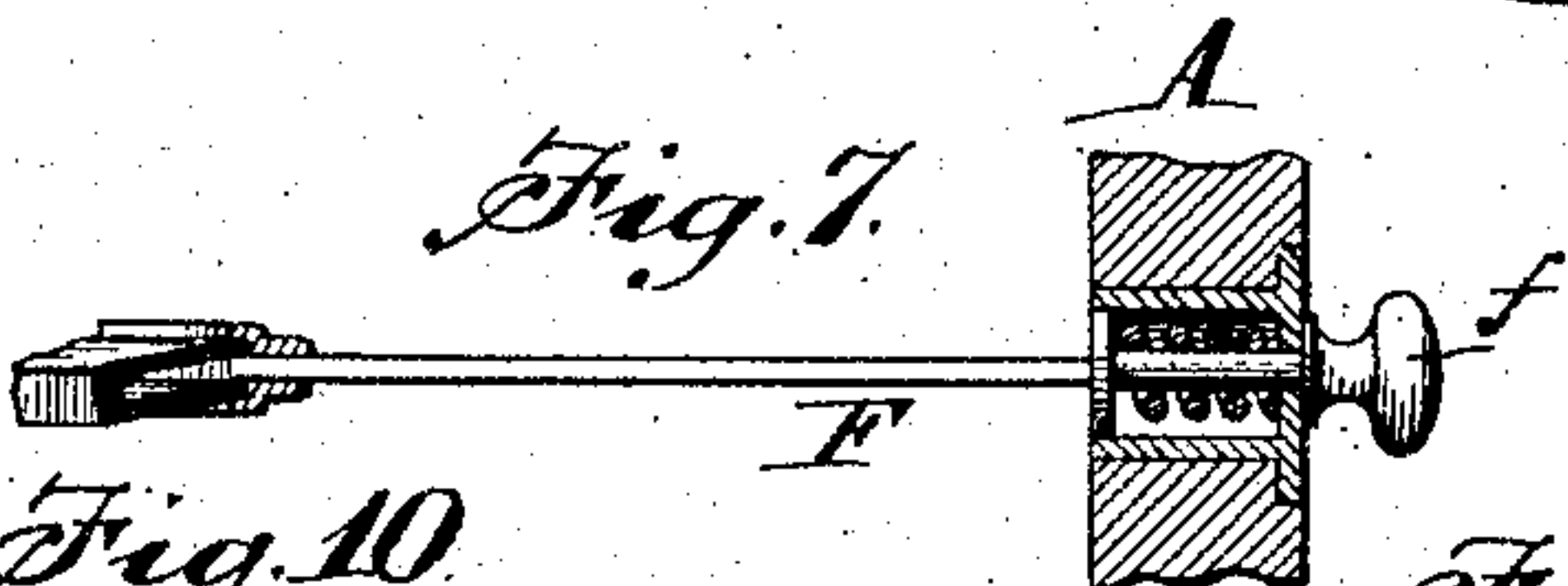
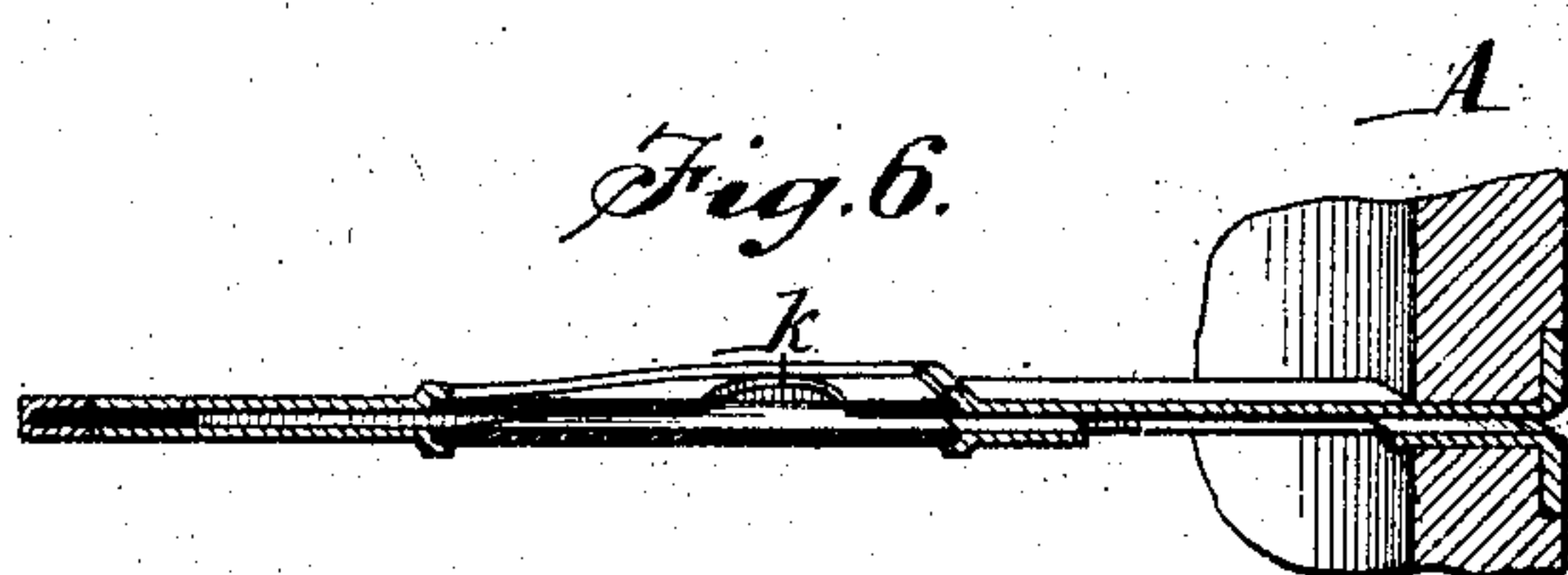
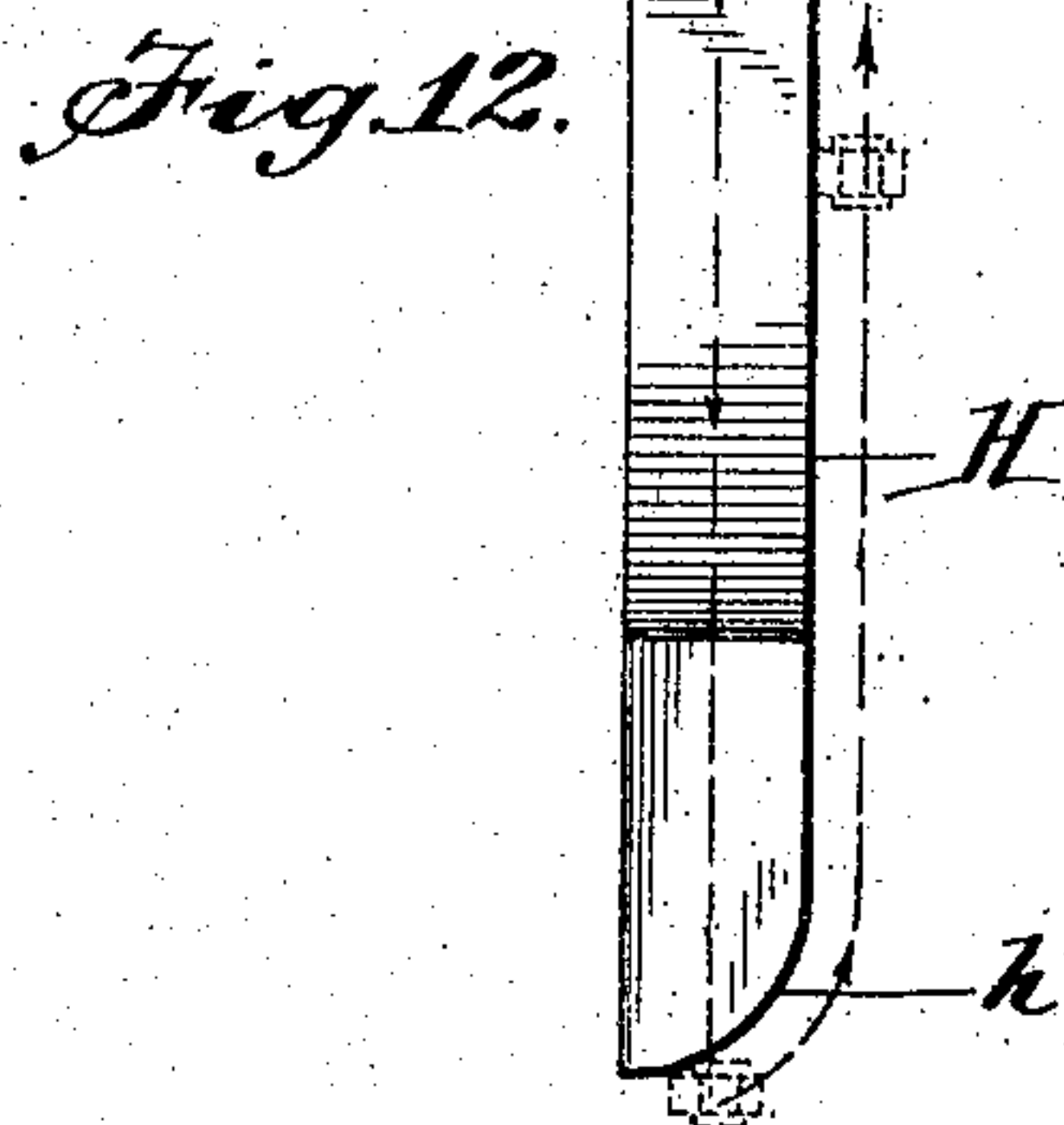
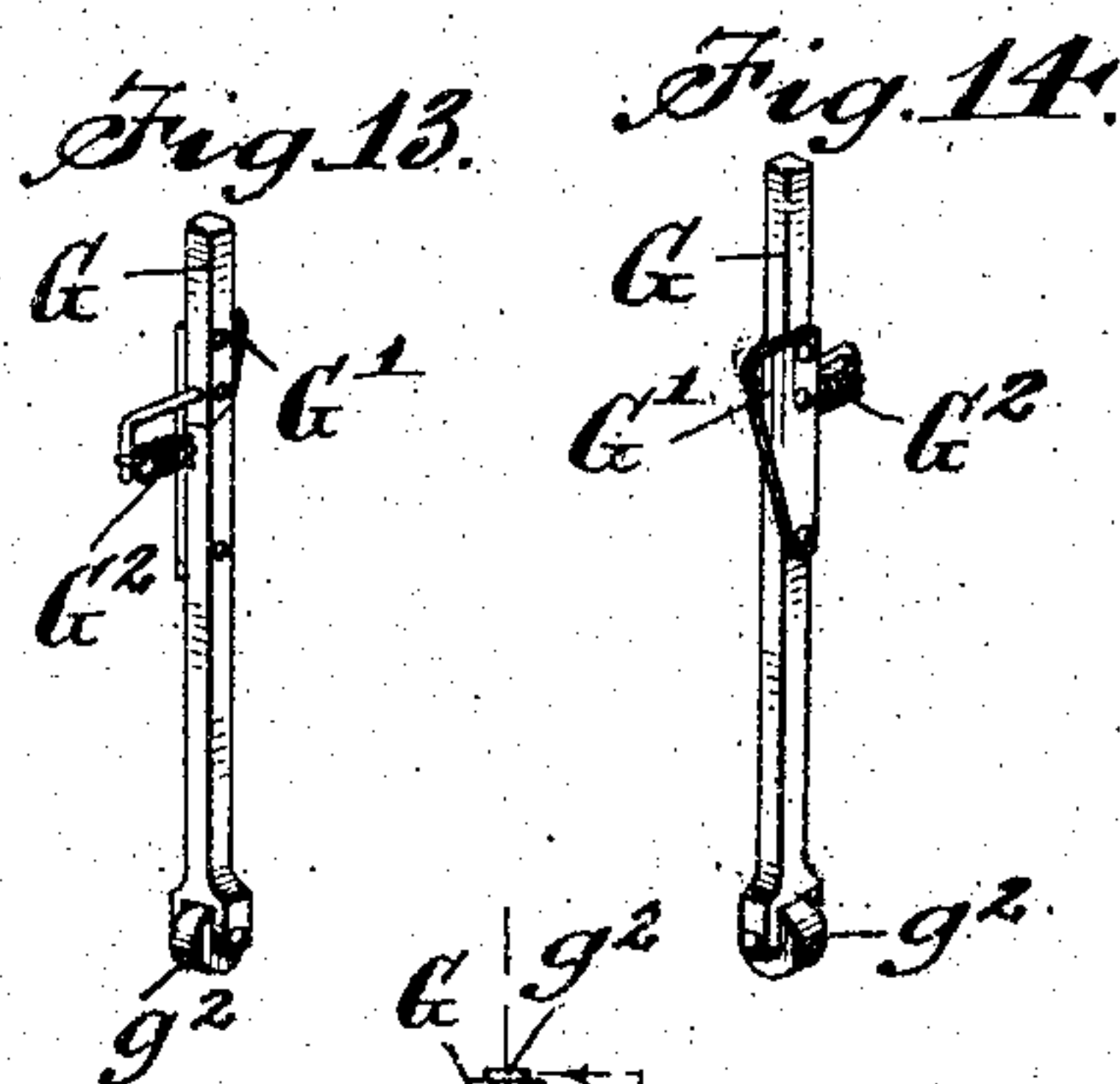
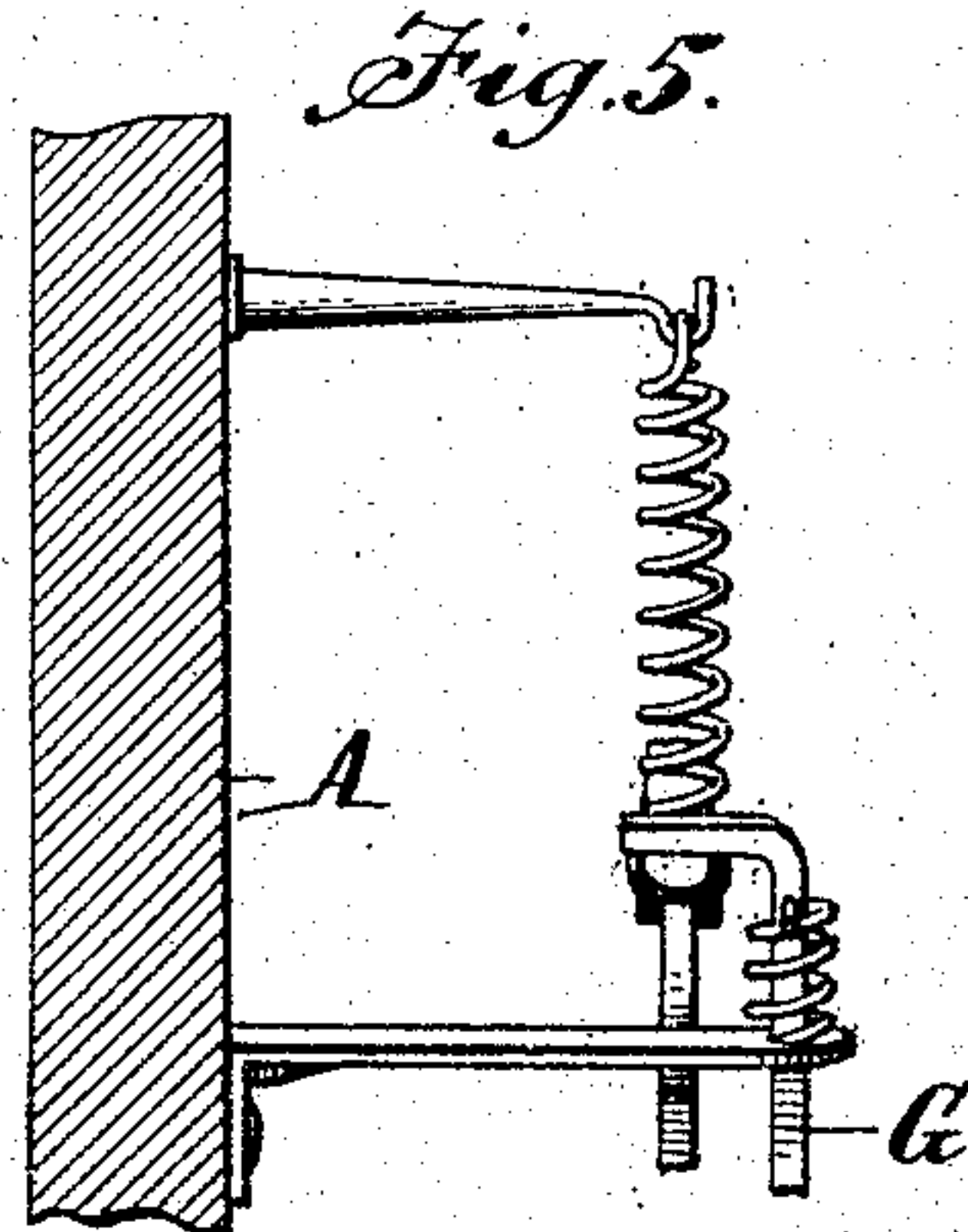
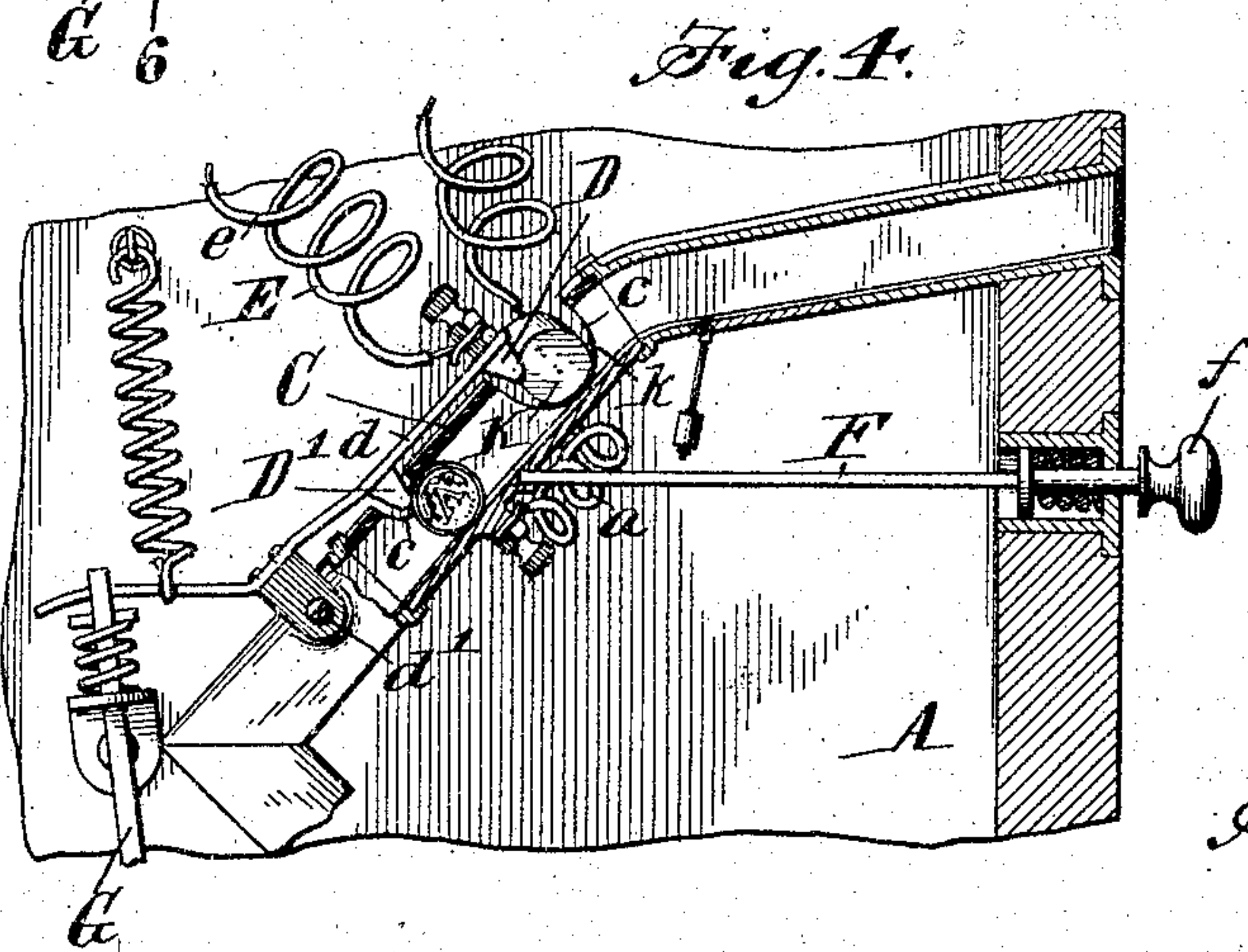
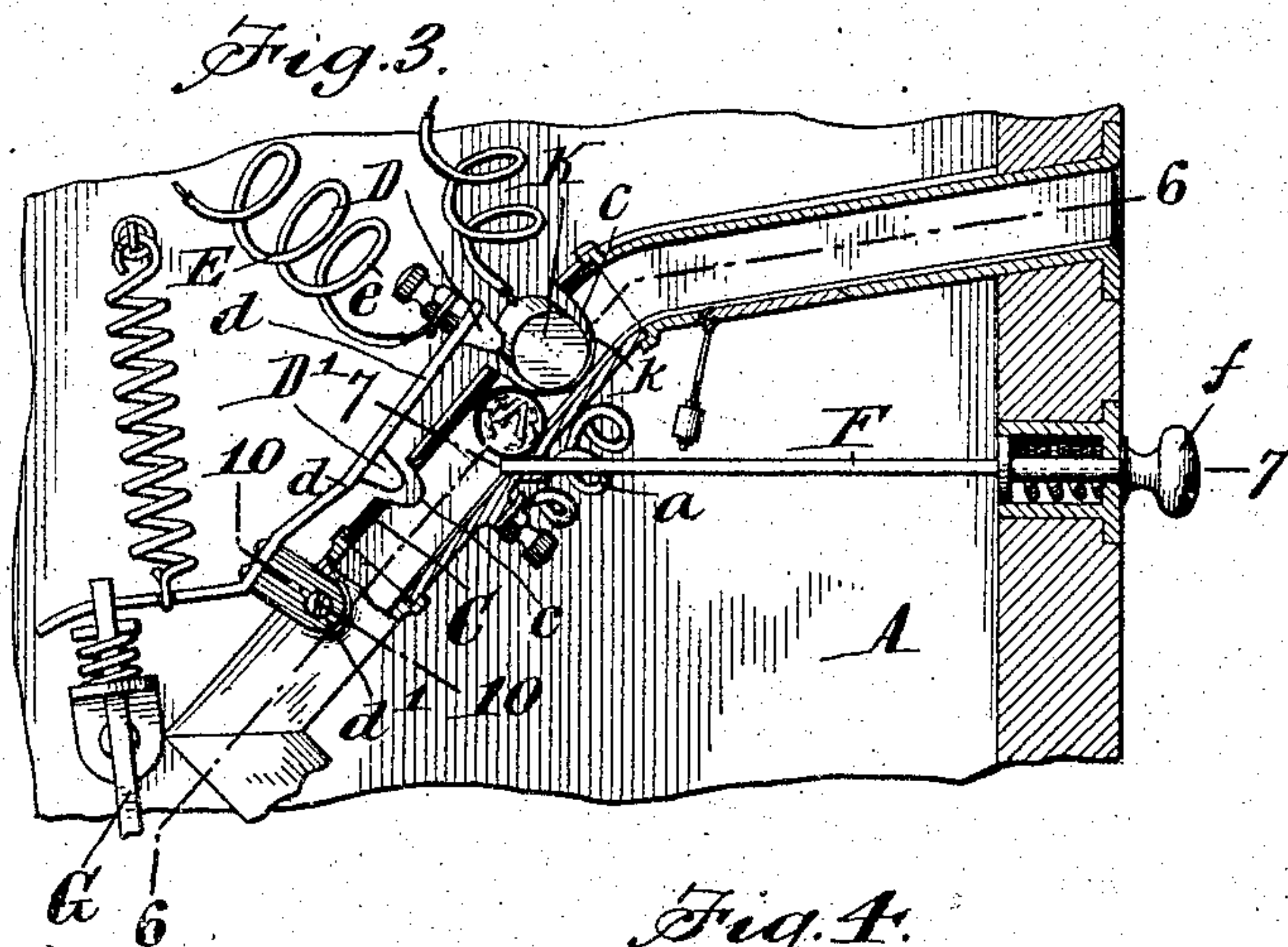


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APPLICATION FILED JULY 22, 1904.

2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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COIN-CONTROLLED APPARATUS.

SPECIFICATION forming part of Letters Patent No. 790,125, dated May 16, 1905.

Application filed July 22, 1904. Serial No. 217,664.

To all whom it may concern:

Be it known that I, ROBERT O. HAMMOND, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Coin-Controlled Apparatus, of which the following is a specification.

This invention relates to coin-controlled apparatus; and its object is to provide a device of this character in which an intermittent operation of the serving mechanism is effected by the passage of one coin through the machine.

The invention consists, broadly, in a serving mechanism—meaning by this any element or combination of elements adapted to give a return for money deposited in the machine—a plurality of actuating elements operatively connected with such mechanism, and a coin-passage having such relation to these actuating elements that the coin will engage with them successively, thereby producing an intermittent operation of the serving mechanism. It also includes means for arresting the movement of the coin after engaging with the first actuating element and before engaging with the second actuating element, whereby the intermittent action of the serving mechanism is properly timed and spaced. In the preferred application illustrated in the accompanying drawings the serving mechanism is represented by what I term an “operating-circuit”—that is, an electric circuit adapted to operate or cause to be operated the actual serving elements. As the construction of the latter forms no part of the present invention, they have not been illustrated; but said operating-circuit is to be construed as the representative or equivalent of these devices. Each of the actuating elements comprises a pair of contacts connected with the circuit, and the coin in passage is adapted to connect the members of these pairs successively, thereby successively making and breaking the operating-circuit. These contacts constitute stops for arresting the motion of the coin, and means is provided for successively retracting these stops at proper intervals, thereby insuring the

closing of the circuit for the desired space of time.

Referring to the drawings, Figure 1 is a vertical longitudinal section through a portion, of a slot-machine embodying my invention showing part of the elements in elevation. In this view the coin is shown resting against the first contact. Fig. 2 is a vertical transverse section of the casing of the machine, the coin-controlled mechanism being shown in end elevation. Fig. 3 is a fragmentary view similar to Fig. 1, except that the contacts are shown as retracted and the coin resting against the detent member. Fig. 4 is a fragmentary view similar to Fig. 1, except that the coin is shown resting against the second contact. Fig. 5 is a transverse vertical section through the casing of the machine, taken on line 5 5, Fig. 1, the coin-controlled mechanism being shown in end elevation. Fig. 6 is a section taken on line 6 6, Fig. 3. Fig. 7 is a section taken on line 7 7, Fig. 3. Fig. 8 is a fragmentary side elevation of the upper section of the coin-passage. Fig. 9 is a fragmentary view of the coin-passage, showing the trap-door in an open position. Fig. 10 is a section taken on line 10 10, Fig. 3. Fig. 11 is a section taken on line 11 11, Fig. 8, indicating by dotted lines a spurious coin dropping from the passage. Fig. 12 is a plan view of the inclined way, indicating diagrammatically the travel of the lower end of the trip-rod. Figs. 13 and 14 are fragmentary perspective views of the lower portion of the trip-rod.

A represents the casing, and B the coin-passage. The latter is provided with an insulated section C, having two apertures *c*, which receive contacts D and D', carried on a bar *d*, which is pivoted intermediate its length, as at *d'*. This bar is connected with one end of a wire E, in which is formed a solenoid *e*, and whose other end is electrically connected with the coin-passage, as at *a*. Wire E constitutes a partial circuit, the operating-circuit referred to above. Contact D and the non-insulated portion of the coin-passage form one pair of contacts, and contact D' and said non-insu-

lated portion of the passage form a second pair of contacts. As clearly illustrated in the drawings, (see Figs. 1 and 4,) the coin successively connects the members of these two pairs of contacts, thereby completing the circuit.

F represents the detent member, whose function it is to arrest the coin between the two sets of contacts, and in this instance it comprises a spring-controlled pull-rod, whose inner end projects within the coin-passage between the contacts and whose outer end extends through the casing and is provided with an operating-knob *f*. As has already been intimated, contacts D and D' constitute stops for arresting motion of the coin, and it should be clear that throughout the entire period while the coin is in contact with either pair the operating-circuit is continuously closed, and the serving elements are understood to be in continuous operation.

I shall now describe the means whereby contacts D and D' are retracted to permit the further passage of the coin. The other end d^2 of the bar *d* is adapted to be depressed at suitable moments by a trip-rod G. The latter is normally held out of contact with end d^2 , or at least merely in light engagement therewith, by a coil-spring *g*, which lies between a stop on the trip-rod and a stationary bracket *g'*. The trip-rod is suitably mounted for reciprocating motion, and its lower end is preferably provided with an antifriction-roller g^2 . This roller operates upon an inclined way H, borne upon a reciprocating carriage H', said way sloping upward from its end normally adjacent the roller and being abruptly cut away at its other end. The movement of the carriage is intended to be such that the roller g^2 is caused to travel over the surface of the inclined way, thus elevating the trip-rod, and finally to make an abrupt plunge over the rear end of the way, whereby the weight of the trip-rod overcomes the action of spring *g* and momentarily depresses end d^2 of the bar *d*. This movement will be sufficient to elevate contacts D and D', thereby permitting the coin to pass onward to engage with detent member F or to the coin-receptacle, as the case may be. A spring g^3 is provided for returning the contacts to their normal positions; but of course this spring must not be of such strength as to prevent the elevation of the contacts by the action of the trip-rod. Trip-rod G is formed in two sections so pivotally connected that they may be thrown out of alinement only by a force operating in a certain direction. As clearly shown in Figs. 13 and 14, one of the members of the trip-rod is provided with a plate G', rigidly secured thereto, while the other member is pivotally connected to this plate. The meeting ends of the two sections are inclined, so that pivotal motion is permitted only in one direction, and a spring G^2 operates to return the

two members into alinement. Upon the forward end of way H, disposed oppositely to what I may term the "yielding side" of the trip-rod, is a cam-surface *h*. (Illustrated in Fig. 12.) In this figure the path of roller g^2 is diagrammatically illustrated. Beginning at the forward end of the inclined way, the roller rides upward, as already described, and plunges down over the abrupt end, after which on the return movement of carriage H' the lower end of the trip-rod is engaged by the cam-surface *h* and the lower end of the rod is deflected to the side of way H. When the carriage has resumed its normal position, the lower end of the trip-rod has sprung into alinement by action of spring G^2 and is ready for a second trip over the surface of the way.

I shall now describe the various means employed for rejecting spurious coins and preventing the operation of the serving mechanism thereby. The upper section I of the coin-passage is laterally inclined, as clearly illustrated in Figs. 10 and 11, and this portion is provided in its lower inclined side with a slot *i* of less width than the diameter of the coin intended to be used within the machine. Thus if a coin of smaller size is introduced it will be allowed to fall out of the passage through slot *i*, as indicated by dotted lines in Fig. 11. The bottom of this section of the passage is provided with a counterweighted trap-door *i'*, so adjusted that it will not yield under the weight of the standard coin; but if an object of greater weight—as, for instance, a lead disk—be introduced then the door will yield beneath its weight and allow it to drop from the passage, as shown in Fig. 9. For the rejection of iron disks I have provided an electromagnet K, which is operatively disposed with reference to an aperture *k* in the side of the coin-passage immediately above the first contact D. Thus when the coin engages with this contact the operating-circuit is closed, as before described, and the magnet is excited. If the coin be genuine, the usual operation of parts will proceed; but if it be of a metal capable of becoming magnetized it will be immediately drawn by the magnet through aperture *k*, thus breaking the operating-circuit before the serving elements have had sufficient opportunity to operate. Of course as soon as the circuit is broken the magnet becomes deenergized, and the coin is permitted to drop within the casing.

In considering the operation of the parts already described the invention will be understood as being applied to a coin-controlled shoe-blacking machine; but it may be used with other styles of check-controlled apparatus. The operator places one foot in contact with the brushes (not shown) and deposits a coin in the coin-passage. If the check is not rejected by one of the several protective devices, it will first engage with contact D. The brushes will be set in movement, and after

a sufficient interval of time has elapsed for the completion of the operation of blacking one shoe carriage H will be moved toward the trip-rod, preferably through some connection with the serving mechanism. The trip-rod will be elevated and will finally operate to retract the contact, as already described. The coin now passes onward until it contacts with the inner end of detent member F, when it is prevented moving farther by the restriction of the passage. The circuit is now broken and the brushes have ceased operation. The operator may now withdraw his foot from the brushes at leisure and place the other shoe in position to be operated upon. He now pulls forward upon knob f', thereby releasing the coin and permitting it to pass onward into engagement with contact D'. The circuit is again closed, and the operation just described in connection with contact D is repeated, except that upon the retraction of contact D' the coin is permitted to pass onward to a suitable receptacle, and the operation of the serving elements is concluded.

What is claimed as new is—

1. In a device of the character described, the combination with a coin-operated serving mechanism; of a plurality of actuating elements operatively connected therewith, a coin-passage so disposed with reference to said elements that the coin engages therewith successively, and means for arresting the coin after engaging with the first actuating element and before engaging with the second element, whereby an intermittent operation of the serving mechanism is effected.

2. In a device of the character described, the combination with a coin-operated serving mechanism; of a coin-passage, a plurality of actuating elements operatively connected with the serving mechanism, said elements being disposed adjacent the coin-passage and comprising stops for successively arresting the movement of the coin, means for releasing the coin from the elements, and means for arresting the coin intermediate said elements.

3. In a device of the character described, the combination with an operating-circuit; of a plurality of contacts connected therewith, a coin-passage so disposed with reference to said contacts that the coin engages therewith successively, and a releasable detent member for arresting the coin after engaging with the first contact and before engaging with the second contact, whereby the circuit is closed and opened a plurality of times.

4. In a device of the character described, the combination with an operating-circuit; of a coin-passage, a plurality of contacts connected with said circuit, said contacts being disposed adjacent the coin-passage and comprising stops for successively arresting the movement of the coin, means for temporarily arresting the coin intermediate said contacts and out of electrical connection therewith,

and means for retracting said contacts to permit the further passage of the coin.

5. In a device of the character described, the combination with an operating-circuit; of a coin-passage electrically connected with one terminal thereof, a pivoted bar, two contacts secured thereto and normally standing adjacent the passage forming stops for arresting the coin, and means for rotating said bar to retract both contacts and permit the further passage of the coin.

6. In a device of the character described, the combination with an operating-circuit, of a coin-passage electrically connected with one terminal thereof, a pivoted bar, a contact borne thereby and normally standing adjacent the passage forming a stop for arresting the coin, and a gravity trip-rod for rotating said bar to retract the contact and permit the further passage of the coin.

7. In a device of the character described, the combination with an operating-circuit; of a coin-passage electrically connected with one terminal thereof, a contact normally adjacent the passage forming a stop for arresting the coin, a bar pivoted intermediate its length and bearing said contact on one side of its pivot, a gravity trip-rod normally out of operative engagement with the other end of the bar, and means for releasing said rod whereby it engages with the bar, to rotate the latter by force of gravity alone.

8. In a device of the character described, the combination with an operating-circuit; of a coin-passage electrically connected with one terminal thereof, a contact normally adjacent the passage forming a stop for arresting the coin, a bar pivoted intermediate its length and bearing said contact on one side of its pivot, a gravity trip-rod normally out of operative engagement with the other end of the bar, and a reciprocating inclined way engaging with one end of the trip-rod and having an abruptly-cut-away region at its elevated end, whereby the trip-rod is elevated and permitted to drop by force of gravity.

9. In a device of the character described, the combination with an operating-circuit; of a coin-passage electrically connected with one terminal thereof, a contact normally adjacent the passage forming a stop for arresting the coin, a bar pivoted intermediate its length and bearing said contact on one side of its pivot, a gravity trip-rod, a spring normally holding said rod out of operative engagement with the other end of the bar, and means for successively elevating and releasing said bar, whereby the strength of said spring is overcome and engagement effected between the trip and bar to rotate the latter by force of gravity alone.

10. In a device of the character described, the combination with an operating-circuit; of a coin-passage electrically connected with one terminal thereof, a contact normally adjacent the passage forming a stop for arresting the

coin, a bar pivoted intermediate its length and bearing said contact on one side of its pivot, a gravity trip-rod normally out of operative engagement with the other end of the bar, said
5 trip-rod being formed in two parts, means for permitting said parts to be thrown out of alignment only by a force operating in a certain direction, and a reciprocating inclined way engaging with one end of the trip-rod and having
10 an abruptly-cut-away region at its ele-

vated end, said end being provided with a cam-surface for throwing the parts of the trip-rod out of alinement.

In testimony whereof I have affixed my signature in the presence of two subscribing witnesses. 15

ROBERT O. HAMMOND.

Witnesses:

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CHAS. F. BURKHART.