

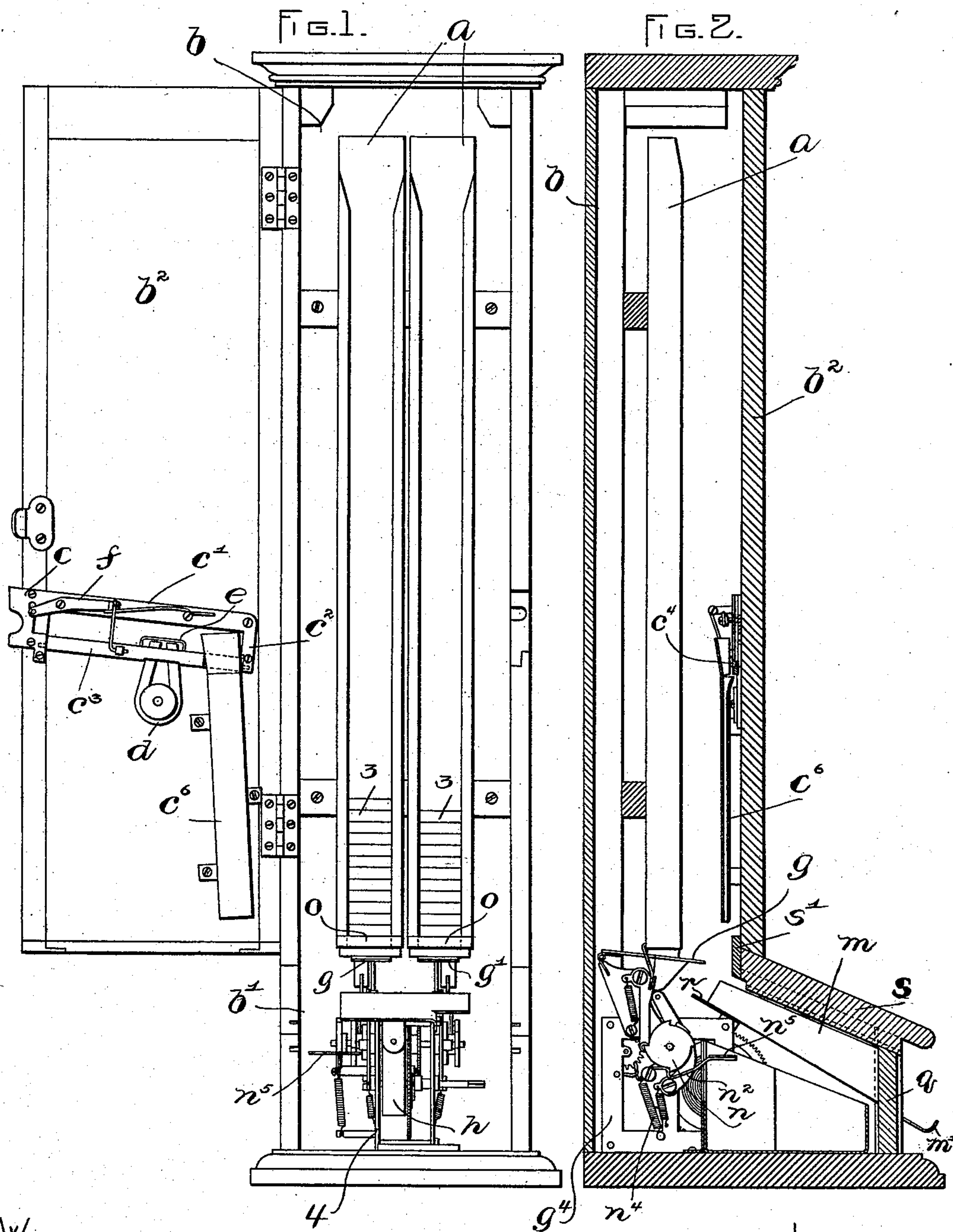
(No Model.)

3 Sheets—Sheet 1.

C. A. SHATTUCK.
COIN CONTROLLED VENDING MACHINE.

No. 533,966.

Patented Feb. 12, 1895.



WITNESSES:

A. D. Hanson
D. Davis

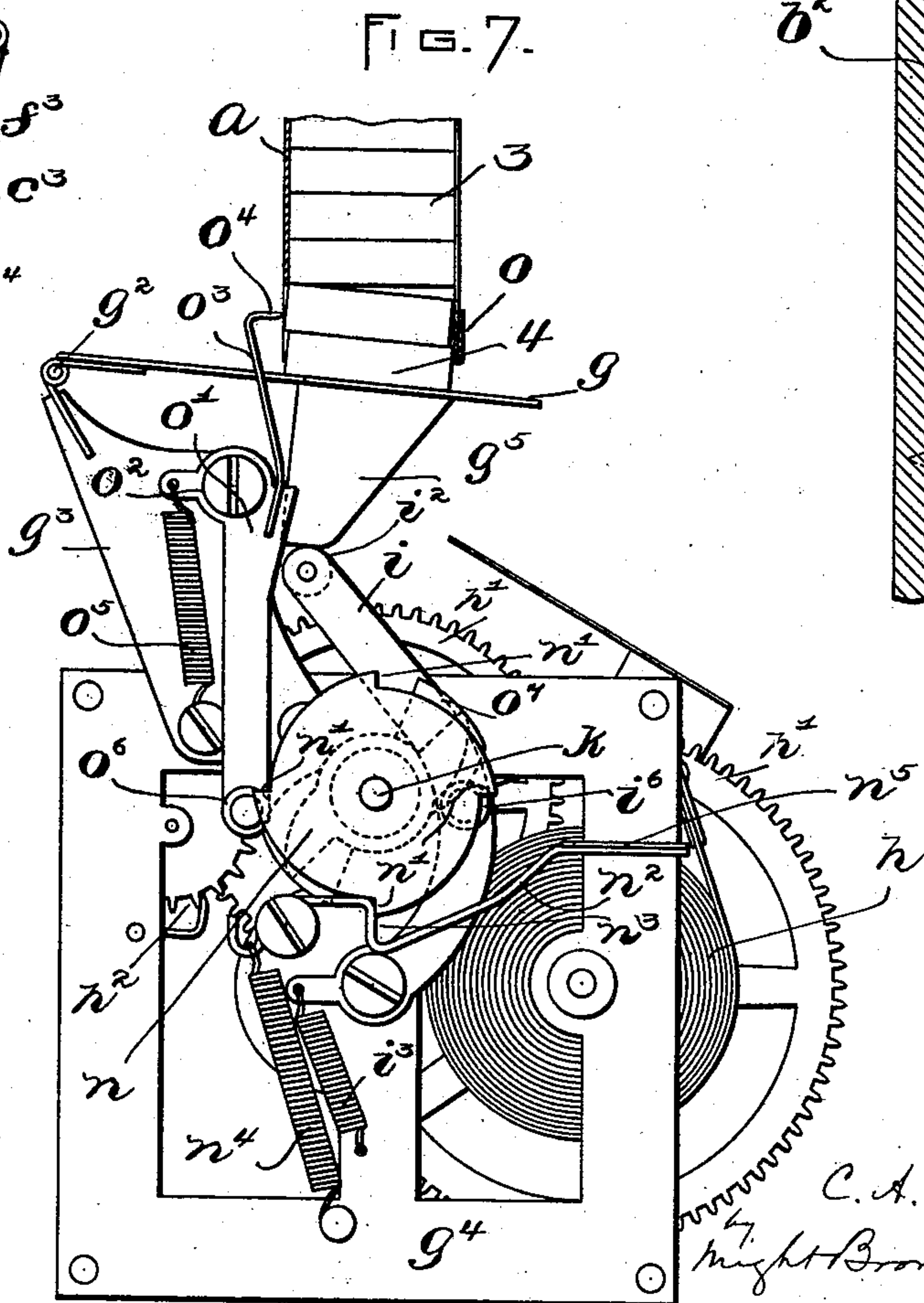
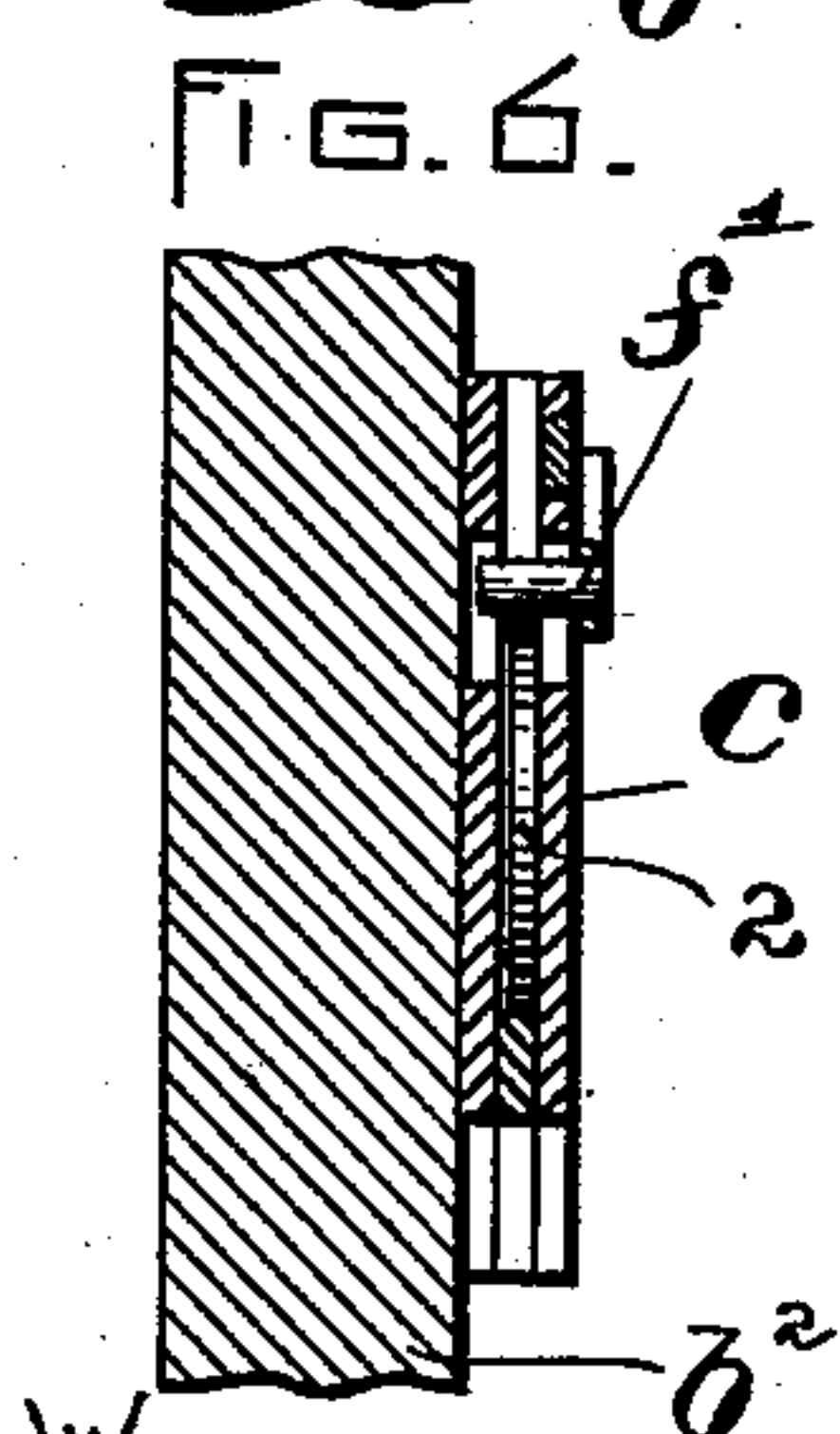
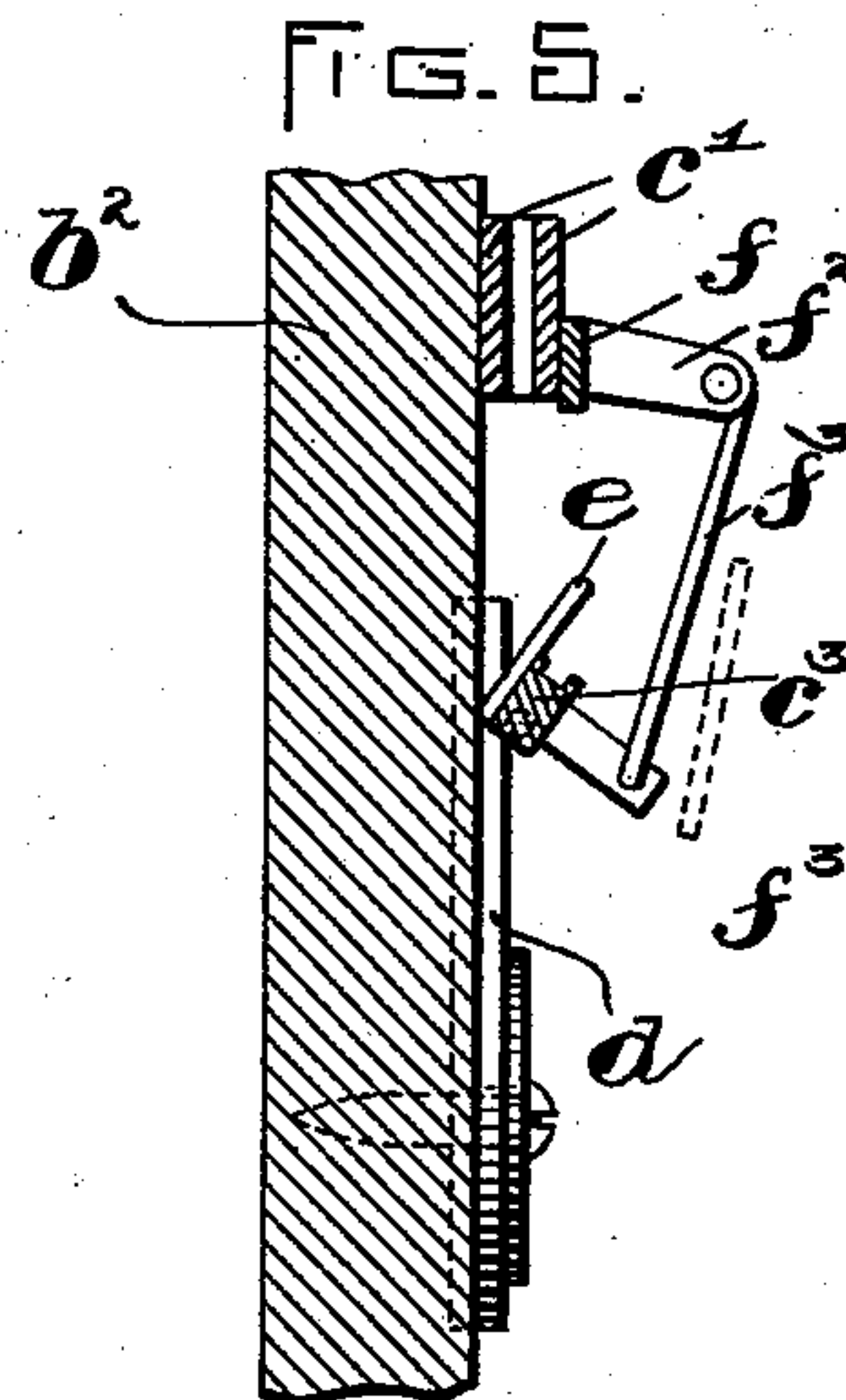
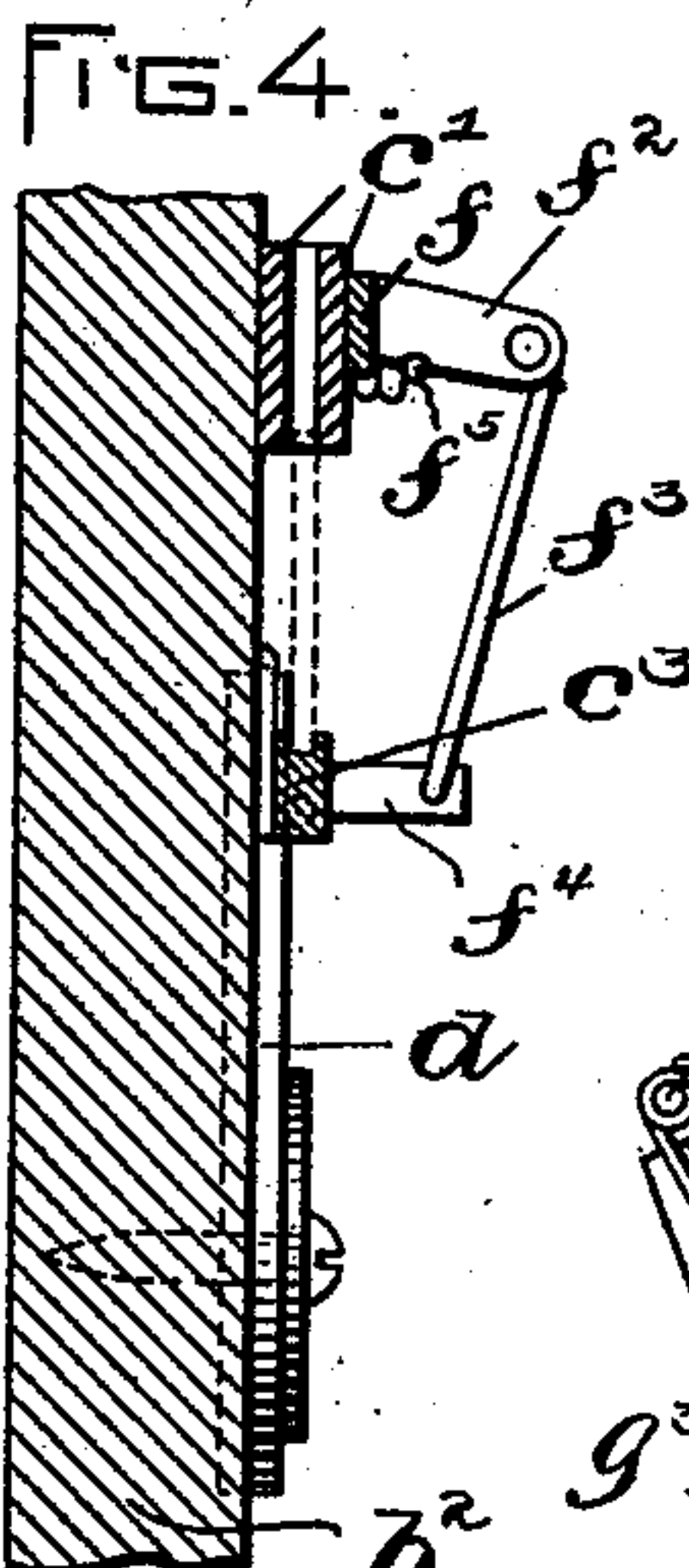
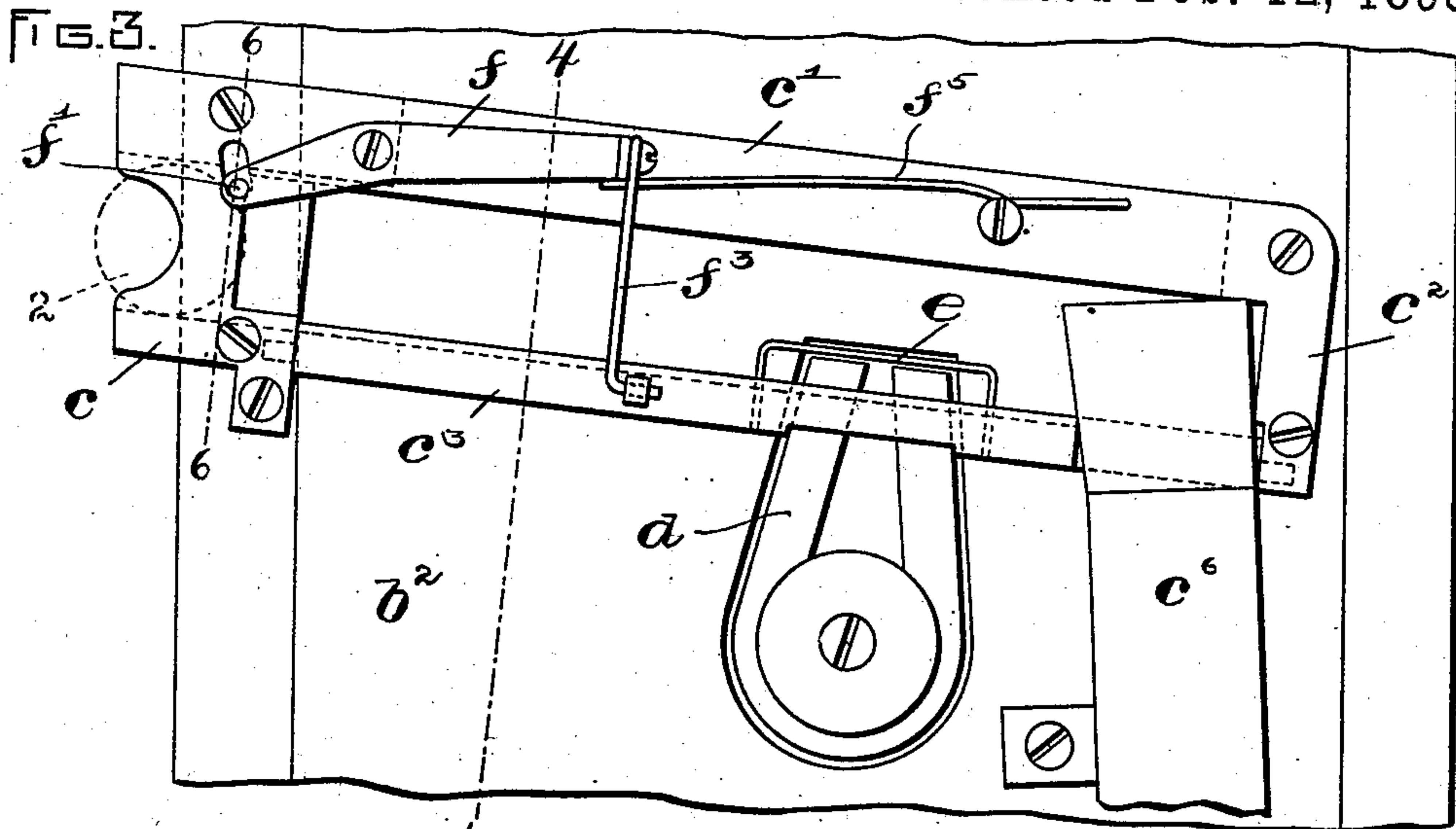
INVENTOR:

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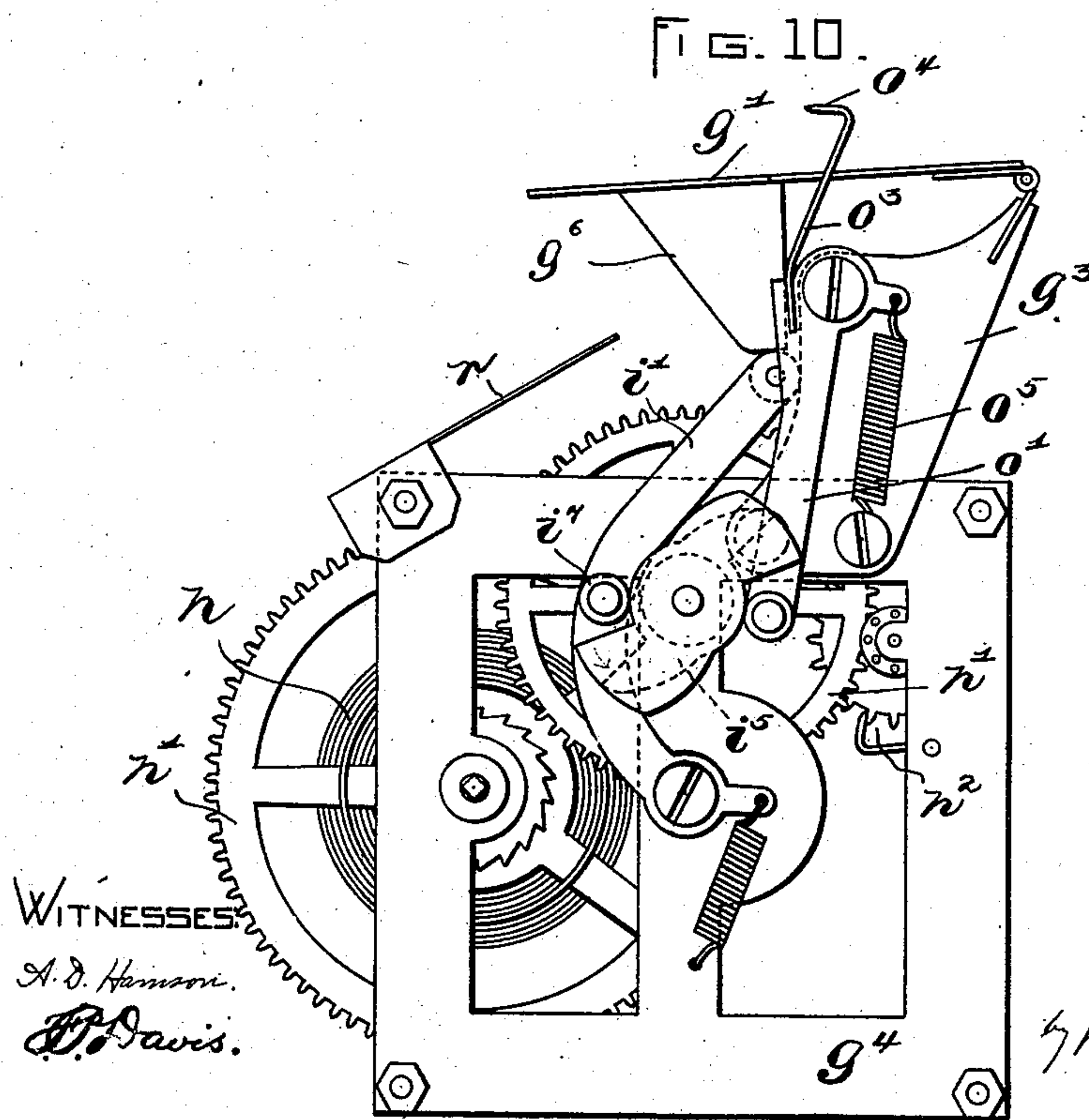
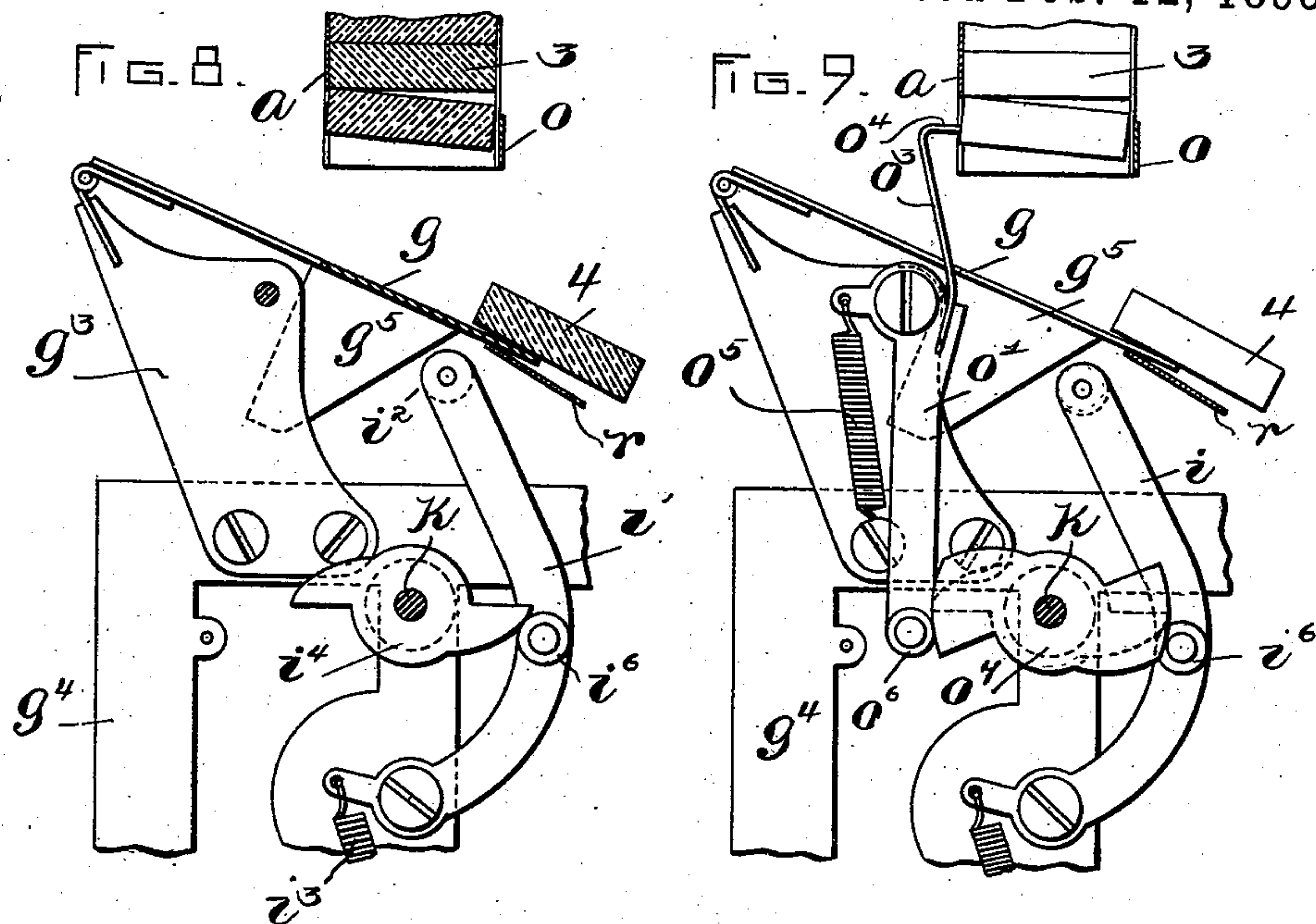
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WITNESSES:
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INVENTOR:
C. A. Shattuck
by Night Brown & Co.
Atty.

UNITED STATES PATENT OFFICE.

CHARLES A. SHATTUCK, OF MALDEN, ASSIGNOR OF ONE-HALF TO HARRY L. AYER, OF NEWTON, MASSACHUSETTS.

COIN-CONTROLLED VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 533,966, dated February 12, 1895.

Application filed May 10, 1894. Serial No. 510,682. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. SHATTUCK, of Malden, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Coin-Controlled Vending-Machines, of which the following is a specification.

This invention relates to coin-controlled vending machines and one object is to provide improved means for preventing operation of the machine by a spurious piece inserted in place of the proper coin.

Another object is to provide improved delivery mechanism insuring against the issuance of more than the specified number of the articles on sale or amount of the commodity.

Another object is to provide an improved construction of inclosing casing permitting ready access to the delivery mechanism and arranged to be effectually closed by the locking of the main door.

To the above ends the invention consists in certain novel features of construction and combinations of parts recited in the appended claims and specifically described hereinafter.

The accompanying drawings illustrate a construction embodying the invention.

Figure 1 shows a front elevation of the machine with the door thrown back and the slides taken out. Fig. 2 shows a side elevation of the internal mechanism with the casing in section and the door closed. Fig. 3 shows in elevation on an enlarged scale certain devices for arresting and rejecting spurious pieces. Fig. 4 shows a section on line 4-4 of Fig. 3. Fig. 5 shows a similar view to Fig. 4 with the parts in a different adjustment. Fig. 6 shows a section on line 6-6 of Fig. 3. Fig. 7 shows the delivery mechanism in side elevation on an enlarged scale. Figs. 8 and 9 show sectional views of the same illustrating the operation of certain cams. Fig. 10 shows an elevation of the opposite side of this delivery mechanism.

The machine here illustrated is specially designed for vending commodities in the form of cakes as for example, cakes of chocolate, such articles being stacked in vertical chutes or magazines, *a*, two of which are here shown supported side by side in the vertically extending portion, *b*, of an inclosing casing

whose base or lower portion, *b'*, contains delivering mechanism hereinafter described. The portion, *b*, of the casing is closed by a hinged door, *b²*, on the inner side of which are supported certain devices for conducting the coins to the delivery mechanism and for disposing of spurious pieces.

A slotted coin-receiver, *c*, is fastened to the door and protrudes from the edge of the same and an inclined coin-chute or way communicates with the slot of said receiver and is of the following construction: Its upper side is composed of bars, *c'*, with a space between them for the coin to run in, and said bars have right angle portions, *c²*, forming the end of the chute. The lower side of the chute is composed of a bar, *c³*, formed with trunnions which journal in the receiver, *c*, and the end portions, *c²*, of the bars, *c'*, so that said bar, *c³*, may tilt laterally for a purpose hereinafter explained. Said bar, *c³*, is grooved in the upper edge for the coin, and cut away at its lower end, as shown at *c⁴*, to allow the coin to drop out of the chute when it arrives at the lower end thereof, whence it falls into a vertical chute, *c⁶*, fastened on the door and is directed thereby to the detent of the delivery mechanism.

Adjacent to the bar, *c³*, a permanent magnet, *d*, is fastened to the door and the bar is cut away in its rear side so that the poles of the said magnet may form one side of the groove in the bar, at this part and be encountered by a piece passing along the groove. This magnet is designed to arrest a spurious piece or disk of iron or steel by attracting the same, and hold it so arrested until it is ejected from the chute by the introduction of a coin into the receiving slot. A piece of wire, *e*, is fastened to the bar, *c³*, and shaped rectangularly so as to embrace the poles of the magnet. Upon tilting the said bar this wire frame, *e*, will act against a piece arrested by the magnet and eject it from the chute. Thus a spurious piece cannot pass to the delivery mechanism.

The tilting of the bar, *c³*, is effected through the following means: A vertically swinging lever, *f*, is pivoted intermediate of its ends to one of the bars, *c'*, and its forward end carries a pin, *f'*, projecting across the receiving

slot and occupying a side slot in the receiver, *c*. The opposite end of said lever has a lateral arm, *f*², which is connected by a rod, *f*³, with a lateral projection, *f*⁴, on the bar, *c*³.

5 A spring, *f*⁵, presses against the lever arm, *f*², and holds the pin, *f*¹, down in the path of a coin in the receiving slot. Upon pushing a coin as, 2, into said receiving slot it encounters said pin and raises the same thereby depressing the opposite end of the lever and
10 tilting the bar, *c*³, away from the door. The spring, *f*⁵, returns the bar, *c*³, to its normal position as soon as the coin passes the pin and before it reaches the bar, so that the latter will be ready to receive the coin.

15 The delivery mechanism will next be described.

Gates in the form of hinged plates, *g*, and *g*¹, extend under the lower ends of the magazines, *a*, and the stacks of cakes, 3, rest upon them. These plates are hinged at *g*², to uprights, *g*³, on a frame, *g*⁴, which rests on the bottom of the casing and supports a spring-motor or clock movement, the letter, *h*, designating the main spring thereof, *h*¹, the gears, and, *h*², the escapement. The plates, *g*, and, *g*¹, have supporting legs, *g*⁵, and, *g*⁶, the front edges of which are inclined as shown so that they serve as cams to be acted on as herein-
25 after described. Levers, *i*, and, *i*¹, pivoted to the frame, *g*⁴, carry rollers, *i*², supporting the gates, *g*, and, *g*¹, by engagement with the bottom edges of the legs, *g*⁵, and, *g*⁶. Springs, *i*³, impel the levers in a direction to move said rollers under the lowest portion of the legs
35 and hold the gates up close to the magazine-chutes so as to close the same. A shaft, *k*, of the spring-motor has affixed to it cams, *i*⁴, and, *i*⁵, arranged to act on rollers, *i*² and, *i*²¹, on the levers, *i*, and, *i*¹. These cams are double-ended, as shown, so that in one complete revolution of the shaft each one acts twice on the lever to move it outward and permit the gate to lower. The said cams are set at right angles to each other on the shaft so that they
45 do not both act at the same time on their respective levers, but alternately during quarter revolutions of the shaft. It will be seen that outward movement of either one of the levers imparted to it by the cam takes the roller at its upper end out from under the bottom of the leg on the gate it is supporting so as to allow said gate to lower by its own weight as the roller progresses outward on the inclined front edge of the leg. When the cam has passed the roller
55 it engages, the lever is returned by the spring, *i*³, and by the roller at its upper end acting against the inclined front edge of the leg under impulse of said spring, the gate is raised to closed position. When it lowers the lowermost cake, 4, which is resting upon it, may slide out of the magazine and into a delivery chute, *m*, below.

65 The spring motor is released by a coin and its continued action limited to a quarter revolution of the shaft, *k*, through the following means: affixed on said shaft is a disk, *n*,

having radial shoulders, *n*¹, at four equidistant points. A detent-arm, *n*², is pivoted on a post projecting from the frame and formed
70 with a shoulder, *n*³, for engagement with the shoulders, *n*¹, of the disk, *n*, a spring, *n*⁴, exerting itself to produce such engagement. The outer end of the arm, *n*², carries a plate, *n*⁵, below the lower end of the chute, *c*⁶, so that a coin falling through the latter will drop
75 upon said plate and by the impetus it has gathered in its descent, move the arm, *n*², downward against the stress of the spring, *n*⁴, and disengage its shoulder from that of the disk. Upon the disengagement of the detent
80 from the disk the motor immediately starts, and one of the gates is opened and a cake drops out and down the delivery chute, and the gate closes again. This takes place during a quarter revolution of the shaft, *k*, at
85 the end of which movement the motor is stopped, for, after depressing the detent-arm the coin immediately slides off the plate, *n*⁵, by reason of the inclination thereof produced by its downward movement, and the spring,
90 *n*⁴, returns the detent against the periphery of the disk so that its shoulder is standing in the path of the next radial shoulder of the disk. The coin will be received in a suitable
95 till or box.

The provisions for preventing more than one cake issuing at a time from the magazine will next be described.

It will be observed that each of the magazine-chutes, *a*, is preferably open at the front with flanges at each side to confine the cakes. At the lower end of each chute, a bar, *o*, extends across the front, and the rear side of the chute opposite this bar is cut out to accommodate a stop device which acts against
105 the next lowest cake and by pressing it against the bar, *o*, blocks the stack of cakes while the gate is open so as to prevent escape of any but the lowermost one.

The stop-device above referred to is in the form of a lever, *o*¹, pivoted at, *o*², to the frame, and its upper arm composed of a resilient piece, *o*³, whose upper end is bent over and toothed or serrated, as shown at, *o*⁴, to take a hold in
110 the cake. A spring, *o*⁵, exerts itself to retract the upper end of the lever. The lower end of the lever carries a roller, *o*⁶, which is arranged to be acted upon by a double-ended cam, *o*⁷, on the shaft, *k*, to move the upper end of the lever against the cake. The two stop-levers
115 act at different times and the cams, *o*⁷, are therefore set on the shaft at right angles to each other.

When the motor is tripped, the stop device
125 over the gate which is lowered, is thrown forward against the next lowest cake of the stack and the escape of any but the lowermost cake is prevented. After the gate has closed the stop is retracted so as to allow the stack of
130 cakes to lower.

The two stop-levers are alternately worked as are the two gates.

The bottom or base portion, *b*¹, of the in-

closing casing has its front side closed by a sliding board, *q*, having beads engaging vertical grooves in the sides of said base-portion. Said board, *q*, supports the delivery chute, *m*, the sides of which are fastened to the board and the bottom of which extends out through an opening in the board and has an upturned lip, *m'*, to stop the descending cake and hold it where the vendee can readily extract it.

An inclined plate, *r*, is preferably fastened to the motor frame, and the upper end of the delivery chute rests upon it.

The top side of the base-portion, *b'*, is closed by a sliding board, *s*, having beads for engagement with grooves in the sides of the base-portion, *b'*, said board sliding in over the board, *q*. The board, *s*, is provided with an upstanding flange, *s'*, at its upper inner side which when the board is in place is flush with the front edges of the sides of the vertically extending portion of casing. The door, *b²*, shuts against this flange. It will now be seen that when the door is locked the two slides, *s*, and, *q*, are also locked. When the door is opened the slides can be readily removed and access had to the delivery mechanism for purposes of repair or adjustment.

It is evident that the invention is not limited to the particular embodiment here shown but may be carried out by other means.

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

1. In a coin-controlled vending machine, the combination of an inclined coin-guide pivotally mounted to permit lateral tilting, means for arresting a spurious piece in its passage along said guide, and coin-actuated means for tilting the guide.

2. In a coin-controlled vending machine, the combination of an inclined coin-guide pivotally mounted to permit lateral tilting, a permanent magnet arranged in proximity to said guide and adapted to arrest a spurious piece of magnetic material in its passage along the chute, and coin-actuated means for tilting the guide.

3. In a coin-controlled vending machine, the combination of an inclined coin-guide pivotally mounted to permit lateral tilting, and carrying an ejecting frame, a permanent magnet arranged with its poles in said frame and adapted to arrest a spurious piece of magnetic material in its passage along the guide, and coin-actuated means for tilting the guide to eject the arrested piece.

4. In a coin-controlled vending machine, the combination of an inclined coin-chute having its lower side, on which the coin rolls, pivoted to permit lateral tilting, means for arresting a spurious coin in its passage along the chute, and coin-actuated means for tilting the pivotal side of the chute.

5. In a coin-controlled vending machine having a coin-receiving slot, the combination of an inclined coin-guide communicating with said slot and pivotally supported to permit

lateral tilting, means for arresting a spurious piece in its passage along said guide, a spring-actuated lever having a portion standing in the coin-receiving slot and adapted to be displaced by a coin introduced into said slot, and a rod connecting said lever and a lateral projection on the tilting guide.

6. In a coin-controlled vending machine, the combination of a gate controlling egress of the commodity from its magazine, a spring-motor having a cam controlling said gate, and a coin-released detent checking the motor.

7. In a coin-controlled vending machine, the combination of a vertically extending magazine for the commodity, a hinged gate at the lower end of the same and having a cam-piece on the under side, a lever co-acting with said cam-piece to cause opening and closing of the gate, a spring-motor having a cam to actuate said lever, and a coin-released detent checking said motor.

8. In a coin-controlled vending machine, the combination of a gate controlling egress of the commodity from its magazine, a stop for preventing egress of more than a specified amount, a spring-motor having cams controlling the gate and the stop, and a coin-released detent checking said motor.

9. In a coin-controlled vending machine, the combination of a gate controlling egress of the commodity from the magazine, a stop-lever for preventing egress of more than a specified number, a spring-motor having cams controlling the gate and the stop-lever, and a coin-released detent checking said motor.

10. In a coin-controlled vending machine, the combination of a vertically extending magazine for the commodity, a hinged gate at the lower end of the same and having a cam-piece on the under side, a lever co-acting with said cam-piece to cause opening and closing of the gate, a stop-lever having provisions for engaging and holding back the articles in the magazine, a spring-motor having cams for actuating the gate-controlling lever and the stop-lever, and a coin-released detent checking the motor.

11. In a coin-controlled vending machine, the combination of gates controlling egress from two different magazines, a spring-motor having cams to alternately operate the gates, and a coin-released detent checking the motor.

12. In a coin-controlled vending machine, the combination of a pair of vertically extending magazines, hinged gates extending over the lower ends thereof respectively, and controlling egress of the commodity therefrom, levers whose vibrations cause opening and closing of the gates, a spring-motor having cams to act alternately on the said levers, and a coin-released detent checking said motor.

13. In a coin-controlled vending machine, the combination of a pair of vertically extending magazines, hinged gates extending over the lower ends thereof respectively and controlling egress of the commodity there-

from, levers whose vibrations cause opening and closing of the gates, stop-levers for holding back the article in the magazines, a spring-motor having double-ended cams to actuate
5 the gatecontrolling levers and the stop-levers and a rotary stop having four equidistant shoulders; and a coin-released detent for engagement with said shoulders to check the motor.

10 14. In a coin-controlled vending machine, an inclosing casing having a hinged door at the front, and front and top slides controlling access to the delivery mechanism one of said slides locking the other in place, and that one
15 being locked in position by said hinged door.

15. In a coin-controlled vending machine,

an inclosing casing having a hinged door at the front, a front slide supporting a delivery chute, and a top-slide covering the delivery mechanism and extending over the front slide 20 and having a flange for the hinged door to close against, substantially as and for the purpose described.

In testimony whereof I have signed my name to this specification, in the presence of 25 two subscribing witnesses, this 23d day of April, A. D. 1894.

CHAS. A. SHATTUCK.

Witnesses:

C. F. BROWN,

A. D. HARRISON.