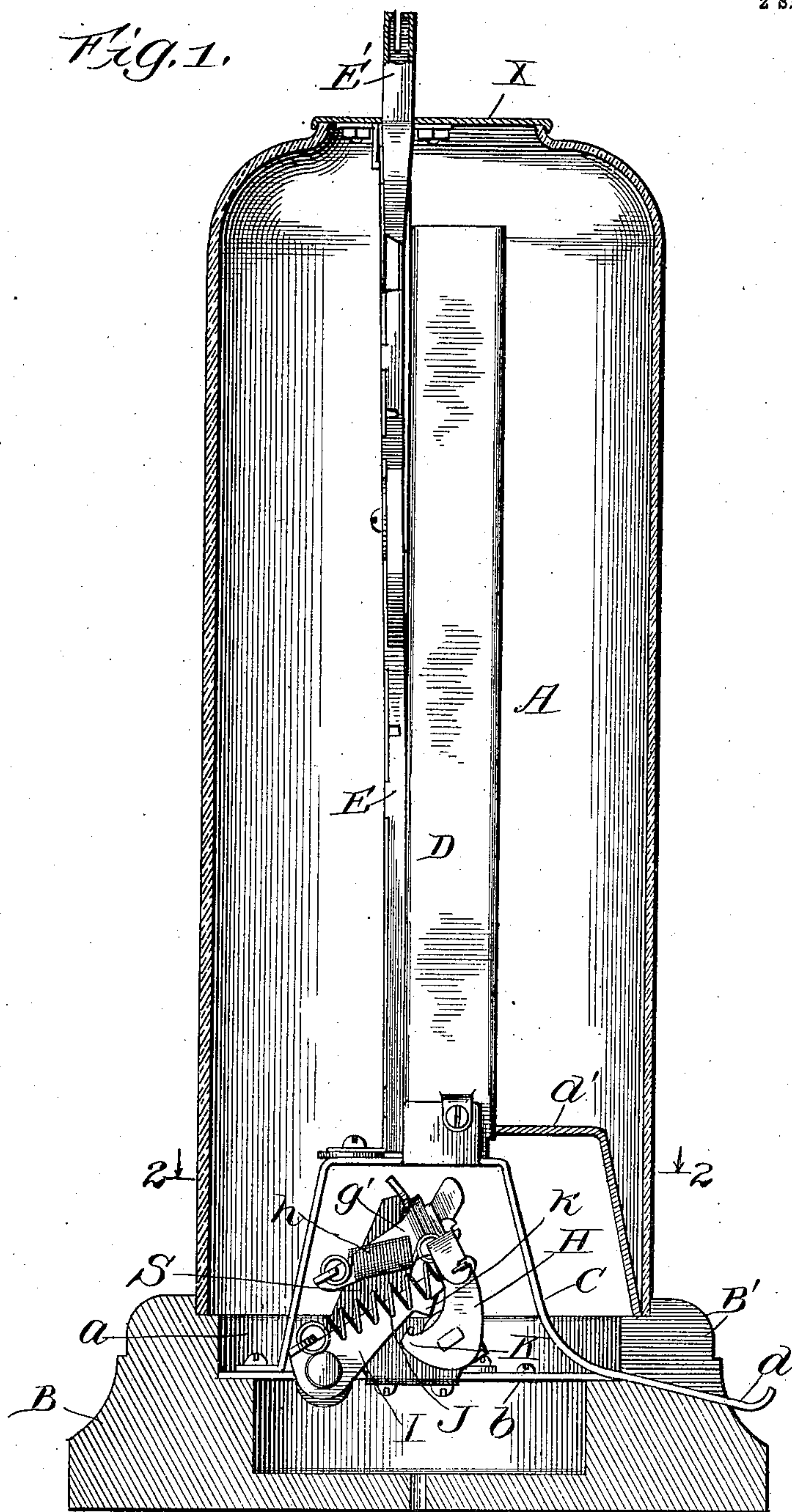


No. 844,509.

PATENTED FEB. 19, 1907.

C. T. FRANTZ.
VENDING MACHINE.
APPLICATION FILED APR. 27, 1905.

2 SHEETS—SHEET 1.



Witnesses:
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2 SHEETS—SHEET 2.

Fig. 2.

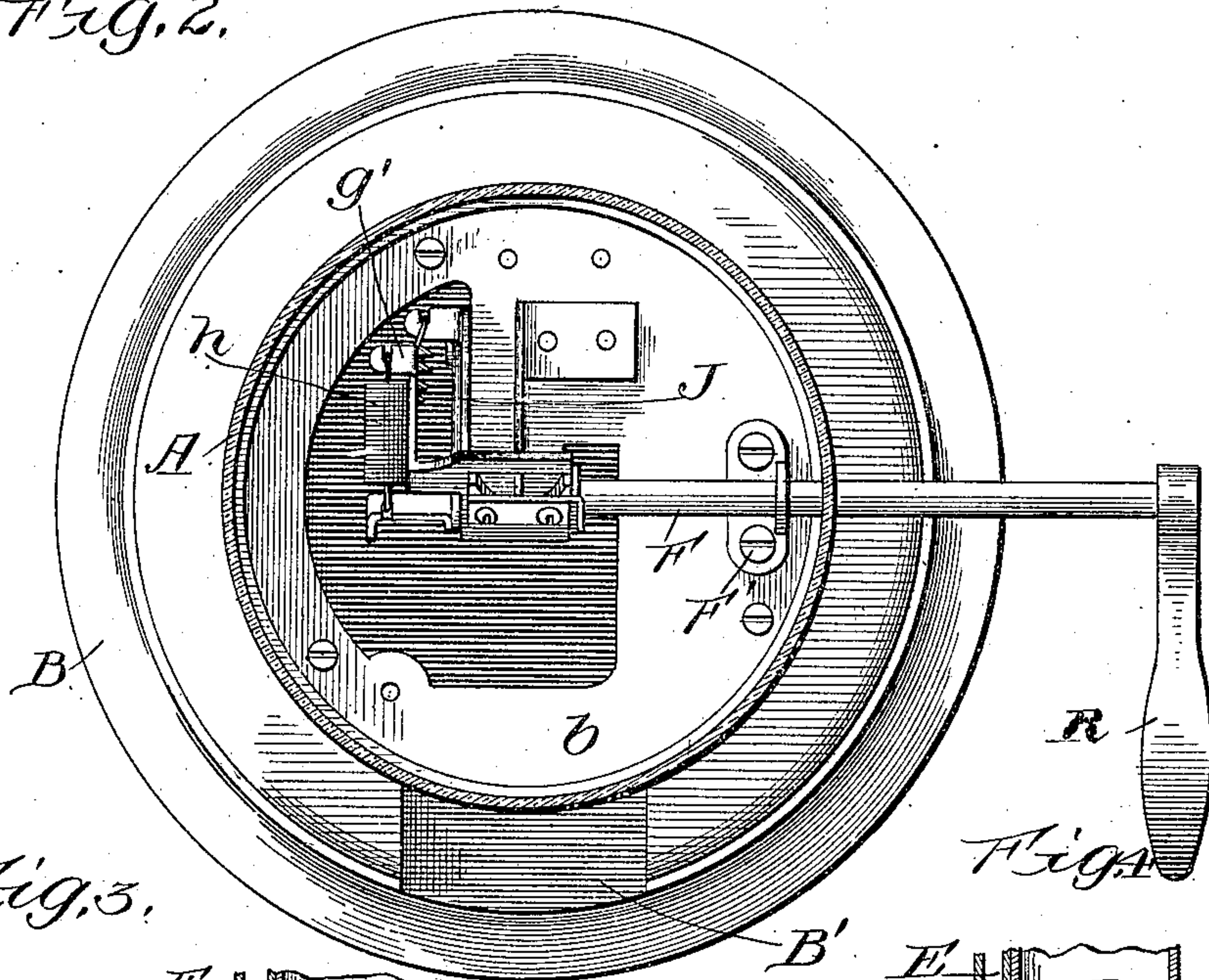


Fig. 3.

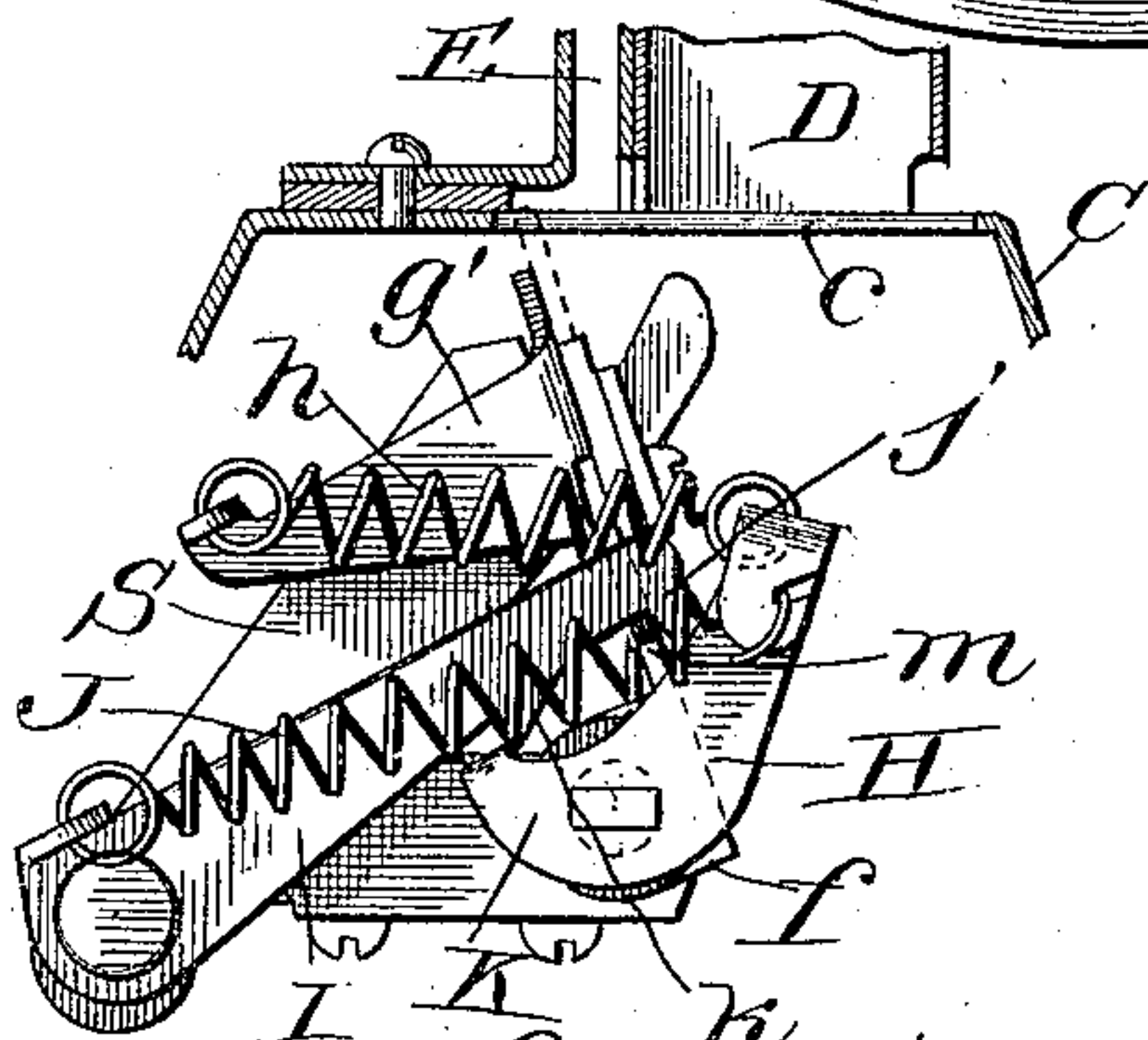
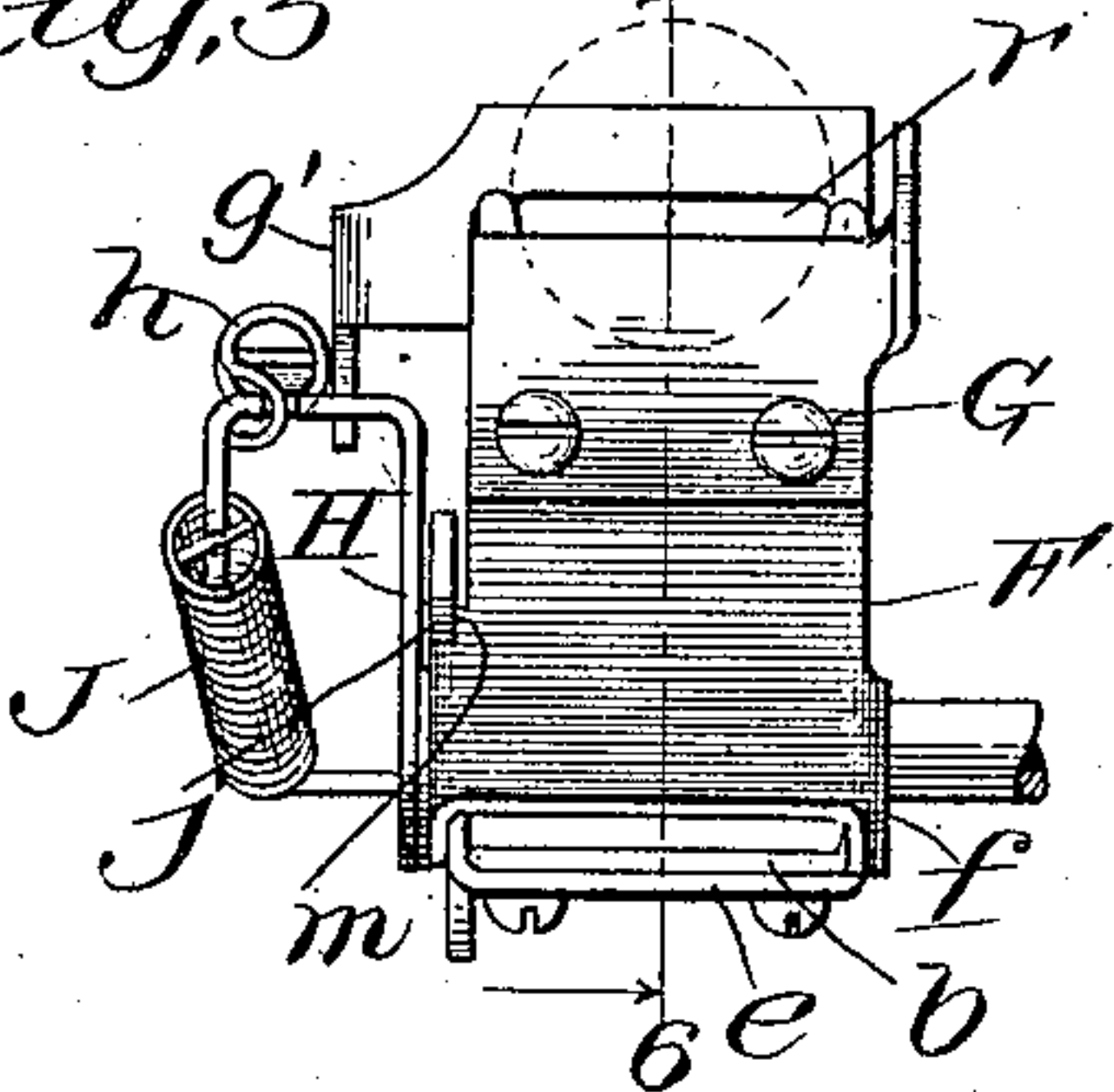


Fig. 5.



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Fig. 4.

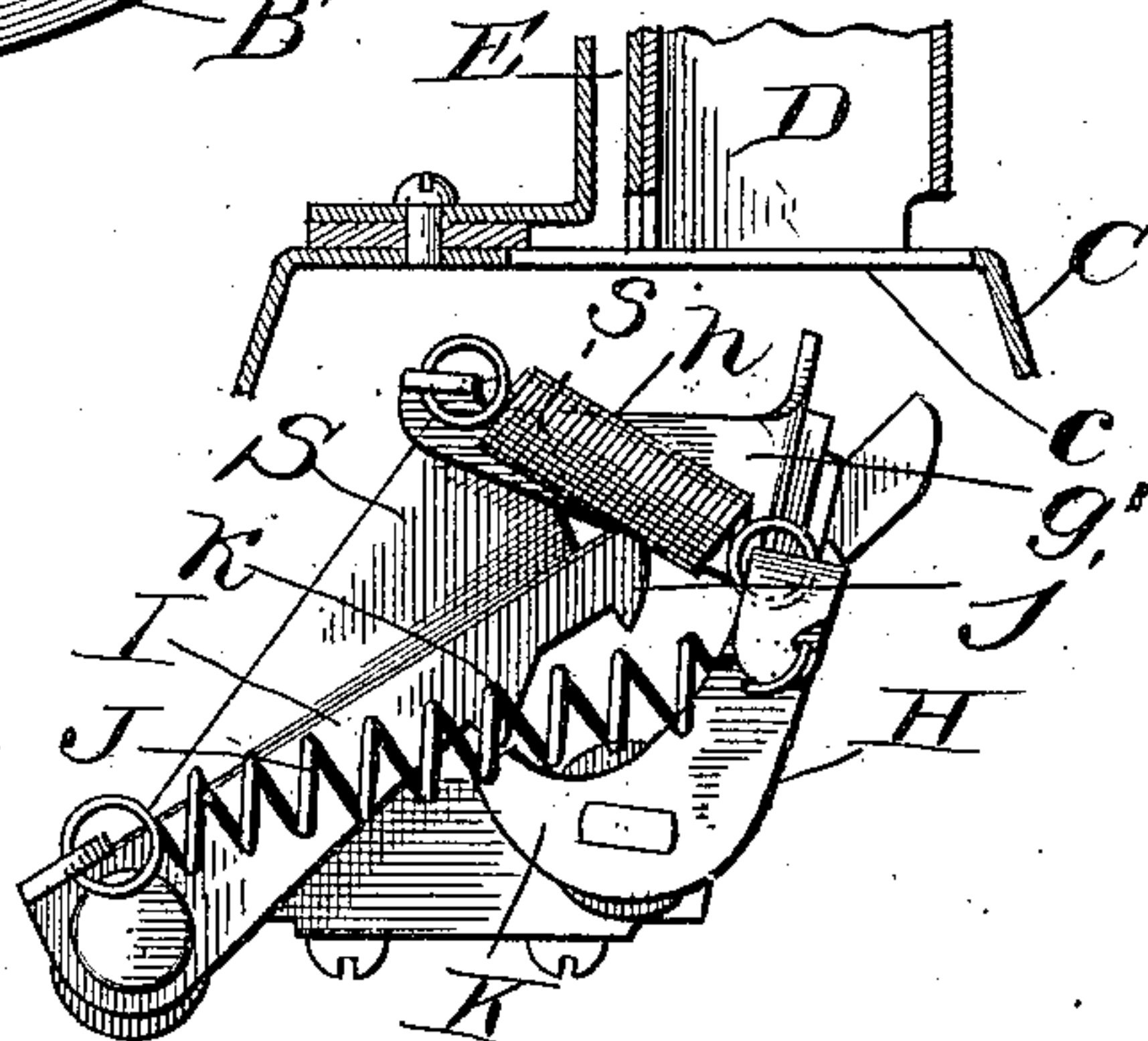
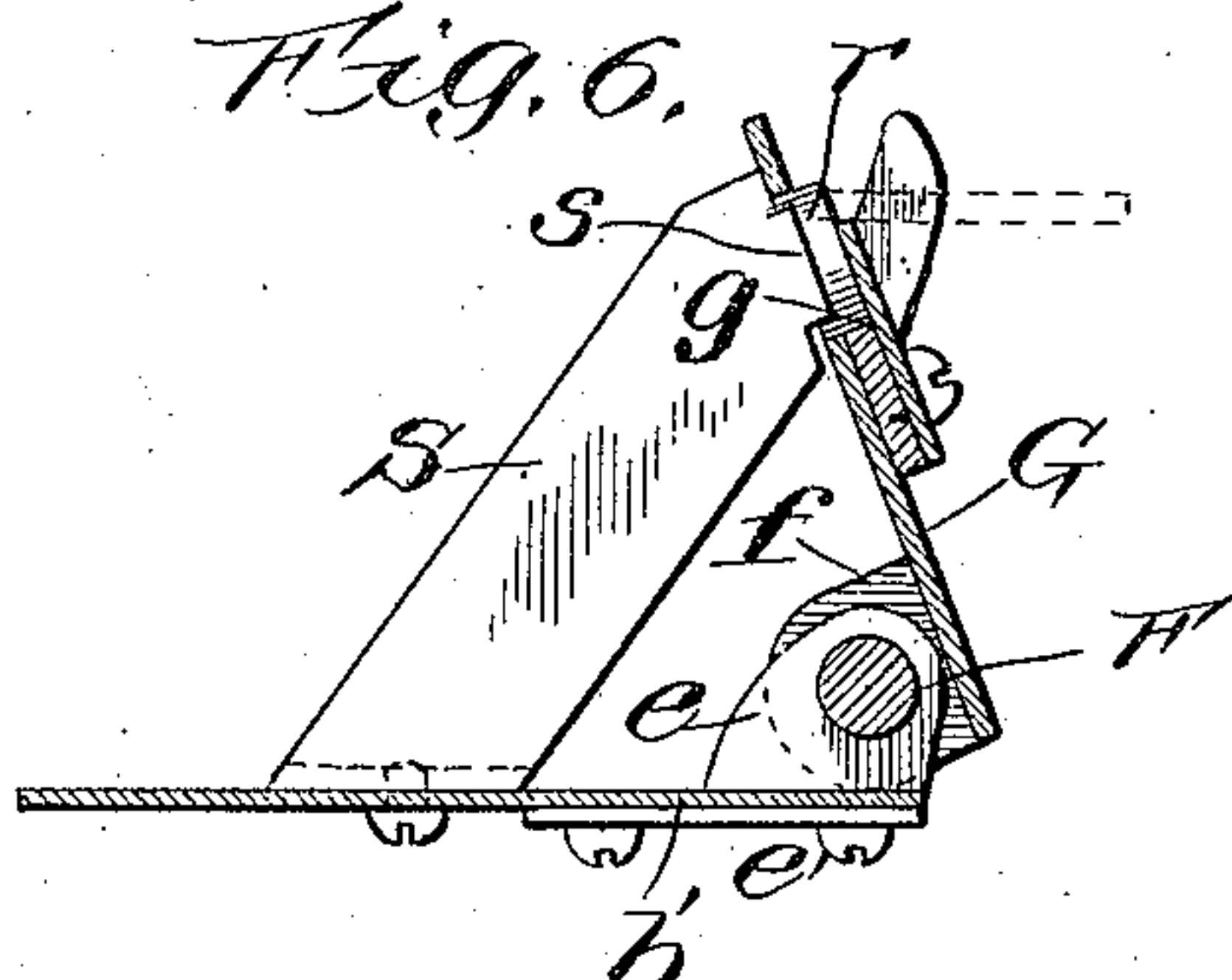


Fig. 6.



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UNITED STATES PATENT OFFICE.

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VENDING-MACHINE.

No. 844,509.

Specification of Letters Patent.

Patented Feb. 19, 1907.

Application filed April 27, 1905. Serial No. 257,733.

To all whom it may concern:

Be it known that I, CHARLES THOMAS FRANTZ, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Vending-Machines, of which the following is a full, clear, and exact description.

My invention relates to coin-actuated vending-machines, and particularly gum-vending machines; and its object is to provide simple and effective means that utilize the coin to eject the lowermost package of gum or other commodity contained in the magazine of the machine by a delayed movement of the sweep, which latter when it is released moves rapidly and with a snap that positively expels the said package and avoids the possibility of the package failing to move entirely out of the magazine, and thus clogging the machine. This I accomplish by the means hereinafter fully described and as particularly pointed out in the claims.

In the drawings, Figure 1 is a side elevation of the mechanism of a gum-vending machine embodying my improvements, with the case and base thereof in vertical section. Fig. 2 is a horizontal section of the machine, taken on dotted line 2 2, Fig. 1, with the hopper, coin-chute, and supporting devices therefor removed. Figs. 3 and 4 are side views of the sweep and actuating devices thereof removed from the machine and drawn to a larger scale, which respectively show different positions of said sweep. Fig. 5 is a front elevation of said sweep and actuating devices. Fig. 6 is a vertical section thereof taken on dotted line 6 6, Fig. 5.

The drawings illustrate a gum-vending machine the mechanism of which is housed within a suitable cylindrical glass case A, which is supported by a suitable circular wooden base B, although it will be understood that the design of this case and its supporting-base may be changed as desired. The base B is provided with a circular well *a*, the edges of which are rabbeted to afford a seat for the support of the lower edges of the case A and the lower portion of which is reduced in diameter to afford a shoulder or ledge upon which the marginal portion of a circular false bottom *b* rests and is secured in a suitable manner. This false bottom supports the mechanism for ejecting the gum

and also affords a support for a bridge C, which latter arches over said actuating mechanism and has its rear end secured to the rear of said plate and its forward end extended out through a suitable recess *B'* in the base to form a downwardly-inclined discharge-platform *d*, upon which the packages ejected from the magazine gravitate under the lower edge of the case A and out of the machine.

The portion of the bridge C above the actuating mechanism of the machine is made horizontal and affords a support for a vertically-disposed hopper or magazine D of suitable shape and capacity, in which is placed the stack of packages of gum or other commodity the machine has for sale. This horizontal portion of the bridge also supports the lower end of a coin-chute E, which extends vertically, preferably back of the magazines, and up to the cover or top X. This cover closes the central opening in the upper end of the case and is provided with a tubular standard *E'*, alining with the coin-chute, through the slot in the upper end of which the coin is deposited. The horizontal portion of the bridge C is provided with a longitudinally-elongated opening *c* under the coin-chute and magazine, which extends from a point slightly to the rear of the lower discharge end of said coin-chute, preferably to the bend forming the forward end of the horizontal portion of the bridge. The lower portion of the metal part of the front of the magazine is cut away sufficient to permit of the passage of the lowermost package in the magazines to be swept out upon the inclined discharge-platform *d*, which latter is covered over by a suitable sheet-metal hood *d'*.

The mechanism for causing the coin deposited in the machine to sweep the lowermost package out of the magazine is preferably supported by a central portion of the false bottom *b*, which latter is cut away at and to one side of the center thereof, so as to leave a rectangular-shaped tongue *b'*, that has secured to the under side thereof the plate *e* of corresponding dimensions, that has its longitudinal side edges upturned to provide bearing-lugs for the rock-shaft F. This rock-shaft extends diametrically out through a suitable recess in the upper edges of the base B and is also journaled in suitable bearings *F'*, secured to the platform *b* just within the circumference of the case A.

G represents a sweep, that consists of an arm made of a flat piece of metal, the face of which is somewhat rectangular in shape and has lugs *f f* extending rearwardly from the lower portion of its vertical edges, that are loosely journaled on rock-shaft F just outside of the lugs *e' e'* of plate *e*, against which they lap. The upper portion of the forward face of this sweep has a suitable coin-holder *g* secured thereto, which preferably comprises a rectangular flat piece of metal, the upper horizontal edge of which is concaved to form a seat for the lower edge of the coin deposited therein and a plate secured in front of said seat, so as to prevent the coin from independently falling out of the same. In its normal position the sweep inclines to the rear, substantially as shown in Fig. 6 of the drawings, and the coin-holder *g* thereof comes directly under the lower end of the coin-chute and receives the coin edgewise therein as it drops from said chute. As the sweep moves toward the front of the machine with a coin in the holder *g* thereof the coin, which projects above the upper edge of the sweep—say about one-third its diameter—enters the opening *c* in the bridge below the magazine D and sweeps the lowermost package of the stack of packages in the said magazine out into the discharge-platform or slide *d*. As has been stated, the sweep is loosely mounted on the rock-shaft. On the inner end of this shaft I secure an upwardly-projecting arm H, which is of a somewhat gooseneck shape. The upper end or bend of this arm H is connected by a coil contraction-spring *h* to the rear extremity of a lug *g'*, projecting to the rear from the upper part of the adjacent edge of the sweep, and the latter is retained in its normal position, as shown in Fig. 1, by a pawl I. This pawl is pivoted to a suitable lug depending from the adjacent edge of the tongue *b* of the false bottom, and its forward hooked end *j* is normally kept in engagement with the shoulder *m* of the adjacent pivotal lug of the sweep to restrain the independent forward movement of the same. A coil contraction-spring J connects pawl I, preferably, at a point above the pivot thereof, with the overhanging extremity of arm H. Arm H has its lower end extended past its center of movement and bent upward to form an extension K, which when said arm is moved forward a sufficient extent engages a teat *k*, projecting down from the under edge of the pawl, and lifts the pawl, so as to release the sweep and permit said sweep to move forward.

In operation, when the coin is deposited in the coin-holder, handle R on the outer end of rock-shaft F is depressed, thus moving said shaft and arm H forward. At the commencement of the movement of arm H the sweep remains stationary, but the spring *h* is elongated, and just as soon as the extension

K of arm H raises the pawl sufficient to release the sweep the contractive power of spring *h* causes said sweep to move forward rapidly with a snap, and the coin carried thereby shoves the lowermost package in the hopper or magazine with a momentum which insures said package being thrown out upon the delivery-platform, on which it gravitates out of the machine. During this forward movement of arm H spring J is elongated, and when the pressure on handle R is removed said spring automatically restores said arm, and through the medium of spring *h* and sweep G, back to their normal positions, whereupon pawl I automatically catches over the shoulder *m* of the sweep and retains it in said normal position. The rearward movement of the sweep is limited by coming in contact with a brace S, which is secured to and arises from the false bottom *b*. After the coin has expelled the lowermost package from the magazine it usually falls into a horizontal position; but in order to avoid its being carried back with the sweep to the limit of the rearward movement thereof I provide said sweep with an opening *r* just back of the coin-holder. Thus as the coin tilts over the front plate of the coin-carrier its lower edge will swing up and engage the upper portion of opening *r* slightly within the plane of the inside of the coin-pocket, and in this position it will rest until it is displaced by the projection *s* on the upper end of the brace, which enters said opening *r* and ejects the coin as the sweep returns to its position of rest.

What I claim as new is—

1. In a vending-machine the combination with a suitable magazine having an open bottom, and a coin-chute, of a sweep pivoted at its end opposite said coin-chute, and constructed to receive the coin therefrom so that when said sweep moves in the proper direction the upper edge of the coin will project above the sweep and will be carried thereby through the bottom of the magazine, a rock-shaft the axis of which coincides with the center of movement of the sweep, and means, independent of the coin, for transmitting from the rock-shaft to the sweep an ejecting movement subsequent to the movement of the rock-shaft.

2. A vending-machine comprising a coin-chute, a rock-shaft, a sweep adapted to receive a coin from said chute, and means, independent of the coin, for transmitting from the rock-shaft to the sweep, an ejecting movement subsequent to the movement of the rock-shaft.

3. In a vending-machine the combination with a suitable magazine having an open bottom, and a coin-chute, of a rock-shaft, a sweep constructed to receive the coin from said chute so that the upper edge of the coin will project above the sweep and will be carried thereby in an arc through the bottom of

the magazine, and means, independent of the coin, for transmitting from the rock-shaft to the sweep an ejecting movement subsequent to the movement of the rock-shaft.

5 4. In a vending-machine the combination with a suitable magazine having an open bottom, and a coin-chute, of a rock-shaft, a rotary reciprocal sweep loosely mounted upon and pivoted at one end to said shaft, said
10 sweep adapted to receive a coin from said coin-chute and carry the same through the bottom of said magazine and means independent of said coin for operatively connecting said shaft and sweep.

15 5. In a vending-machine, the combination with a suitable magazine having an open bottom, and a coin-chute, of a rock-shaft; a sweep adapted to receive a coin from said coin-chute so that the upper edge of said
20 coin will project above the same and will be carried thereby through the bottom of the magazine; means independent of said coin for connecting said shaft and sweep whereby the former is rocked independent of the latter to energize the means to operate the
25 sweep; devices for retarding the ejecting movement of the sweep independent of the shaft and for releasing said sweep.

6. In a vending-machine, the combination
30 with a coin-chute; of a rock-shaft; a sweep having an ejecting movement independent of the shaft and means, independent of the coin for transmitting from the rock-shaft a snapping motion to the sweep.

35 7. In a vending-machine, the combination with a coin-chute; of a rock-shaft; an arm secured to the inner end of said shaft; a sweep having an ejecting movement independent of the movement of said shaft which
40 is operatively engaged by said arm; means for retarding the ejecting movement of said sweep until after the initial movement of the shaft and means for releasing said retarded sweep.

45 8. In a vending-machine, the combination with a suitable magazine having an open bottom, and a coin-chute; of a rock-shaft; a sweep adapted to receive a coin from said coin-chute so that the upper edge of said
50 coin will project above the same and will be carried thereby through the bottom of the magazine; means independent of said coin for operatively connecting said shaft to said sweep; and devices for retarding the forward
55 movement of said sweep and for releasing said retarded sweep when said shaft has been turned to a certain extent.

9. In a vending-machine, the combination
60 with a suitable magazine having an open bottom, and a coin-chute; of a rock-shaft; a sweep constructed to receive a coin there-

from so that the upper edge of said coin will project above the same and will be carried thereby through the bottom of the magazine, an arm secured to the inner end of said shaft; 65 means operatively connecting said arm and sweep; and devices for retarding the forward movement of said sweep, and for releasing the retarded sweep when said arm engages the same to permit the ejecting movement to 70 said sweep.

10. In a vending-machine, the combination with a coin-chute; of a rock-shaft; a sweep journaled independently of said rock-shaft and having an ejecting movement that 75 is independent of the shaft; a spring connected to said sweep; means for retarding said sweep until said shaft has turned to a given extent; and a device for releasing said retarded sweep that releases said spring to 80 actuate said sweep to perform the ejecting movement thereof.

11. In a vending-machine, the combination with a coin-chute; of a rock-shaft; an arm secured to the inner end of the same; a 85 sweep journaled independently of said rock-shaft and having an ejecting movement independent of the shaft; a spring connecting said sweep and arm, which spring actuates said sweep to perform its ejecting movement; 90 devices that detain said sweep in its normal position until said arm has moved a given distance; and means for releasing said detained sweep.

12. In a vending-machine, the combination 95 with a coin-chute; of a rock-shaft; an arm secured to the inner end of the same; a sweep journaled independently of said rock-shaft and having an ejecting movement independent of the shaft; a spring connecting 100 said sweep and arm, which spring actuates said sweep to perform its ejecting movement; a pawl that detains said sweep in its normal position until said arm has moved a given distance and a device for releasing said de- 105 tained sweep.

13. In a vending-machine, the combination with a coin-chute; of a rock-shaft; an arm secured to the inner end of the same; a sweep journaled independently of said rock- 110 shaft; a spring connecting said sweep and arm; a pawl actuated by said arm that detains said sweep in its normal position until said arm has moved a given distance and a device for releasing said detained sweep. 115

In testimony whereof I have hereunto set my hand this 17th day of April, A. D. 1905.

CHARLES THOMAS FRANTZ.

Witnesses:

FRANK D. THOMASON,
E. K. LUNDY.