

No. 631,119.

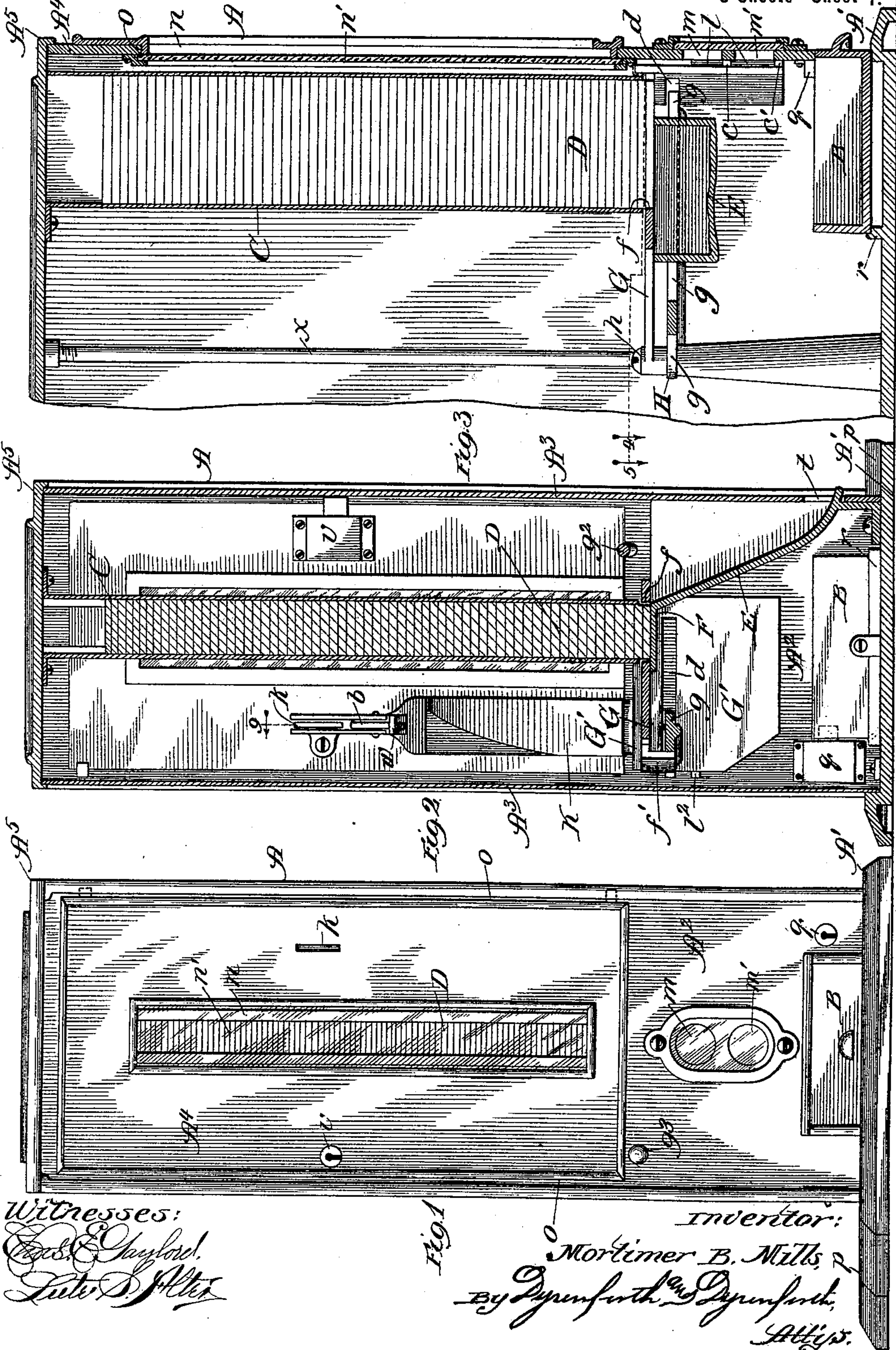
Patented Aug. 15, 1899.

M. B. MILLS.
COIN OPERATED VENDING APPARATUS.

(Application filed Dec. 1, 1898.)

(No Model.)

3 Sheets—Sheet 1.



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Fig. 5.

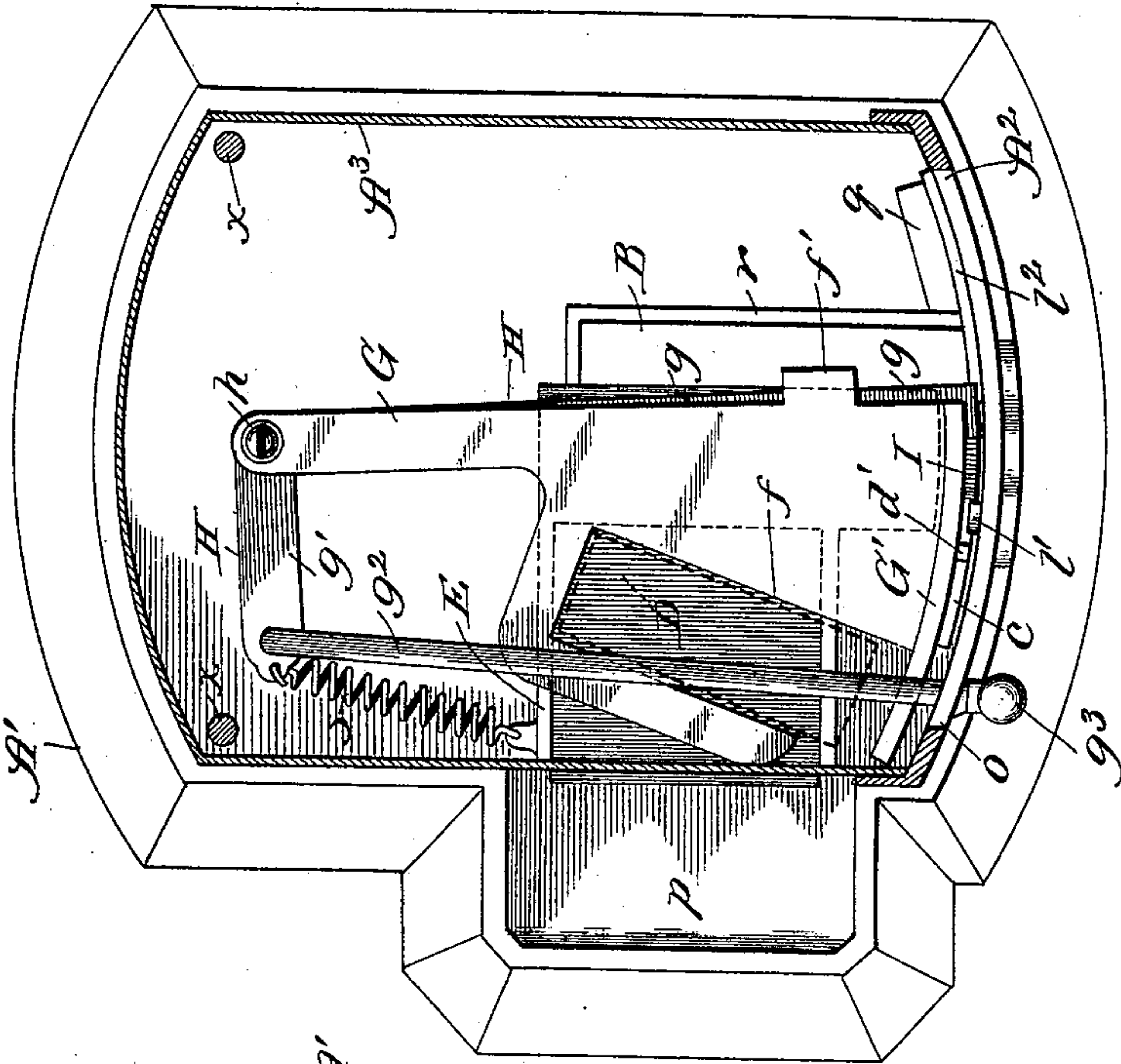
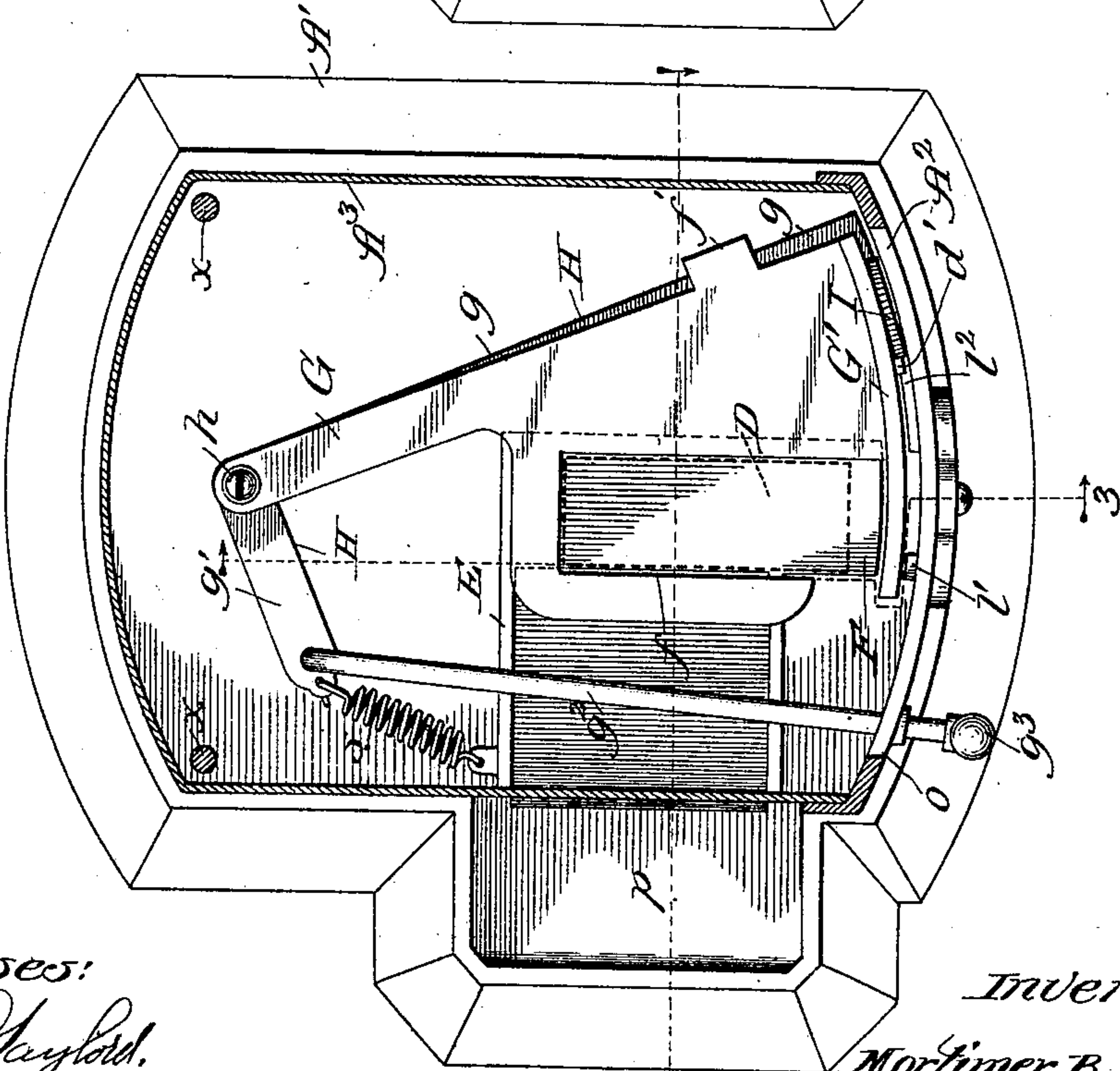


Fig. 4.



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Fig. 6.

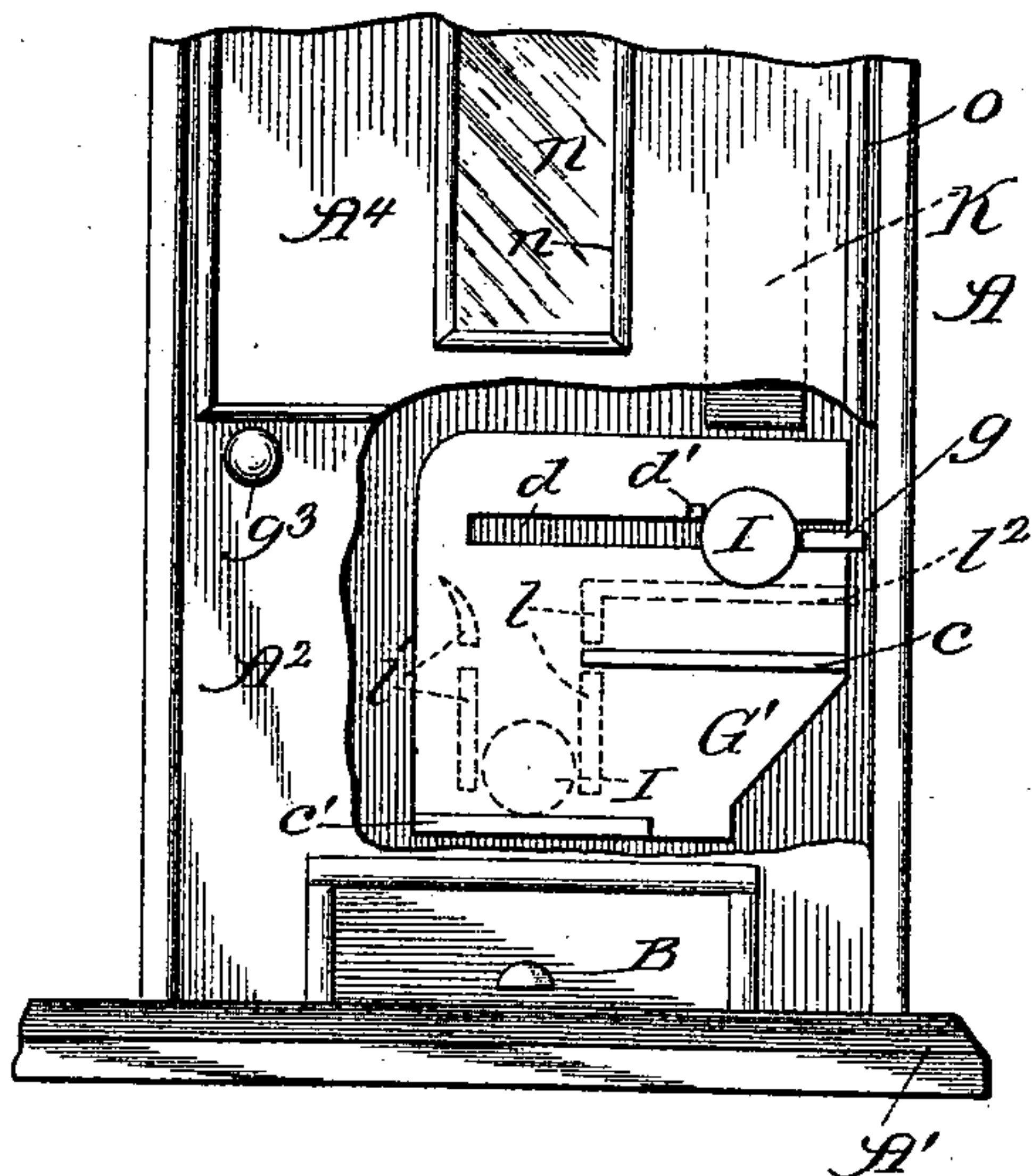


Fig. 7.

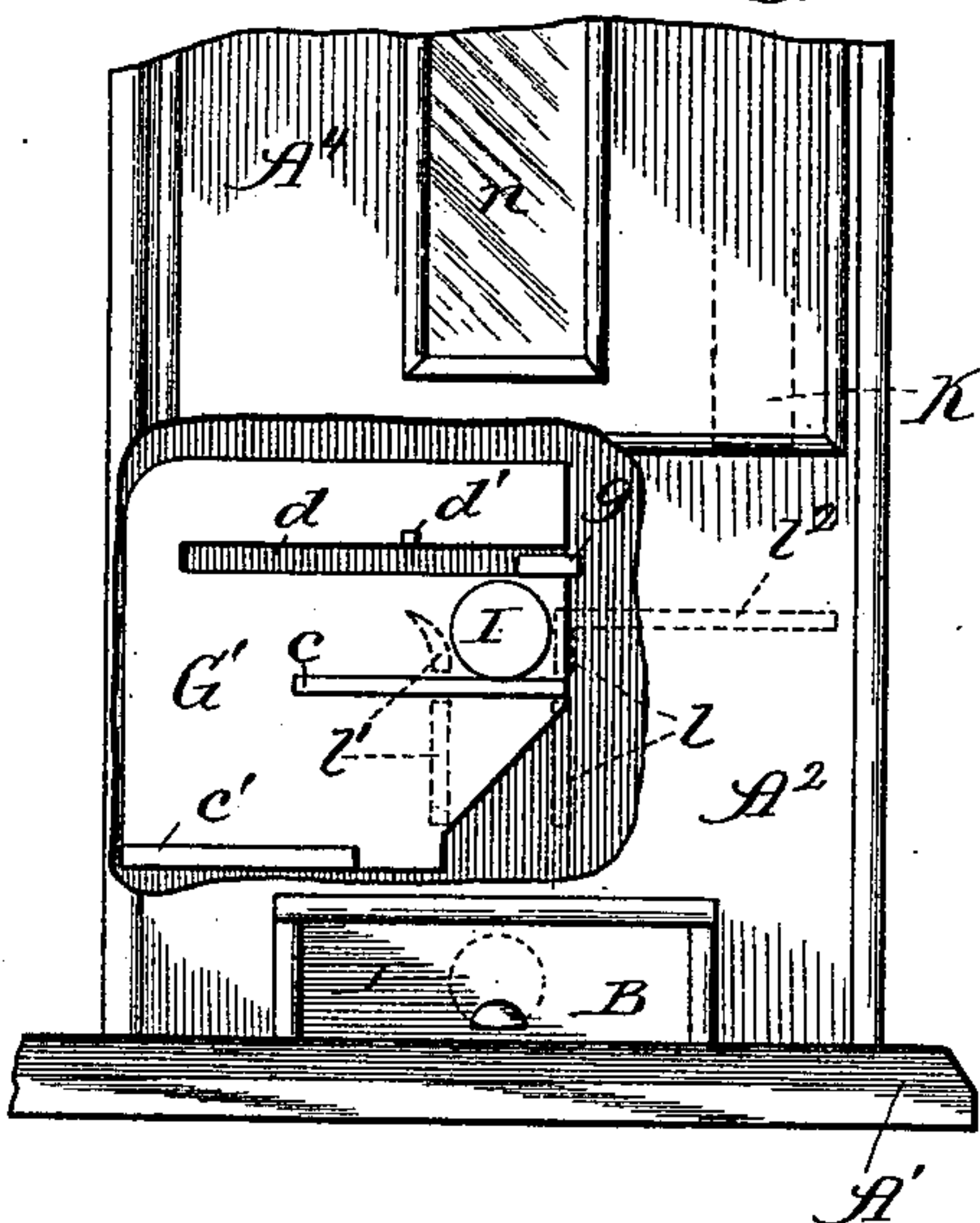


Fig. 8.

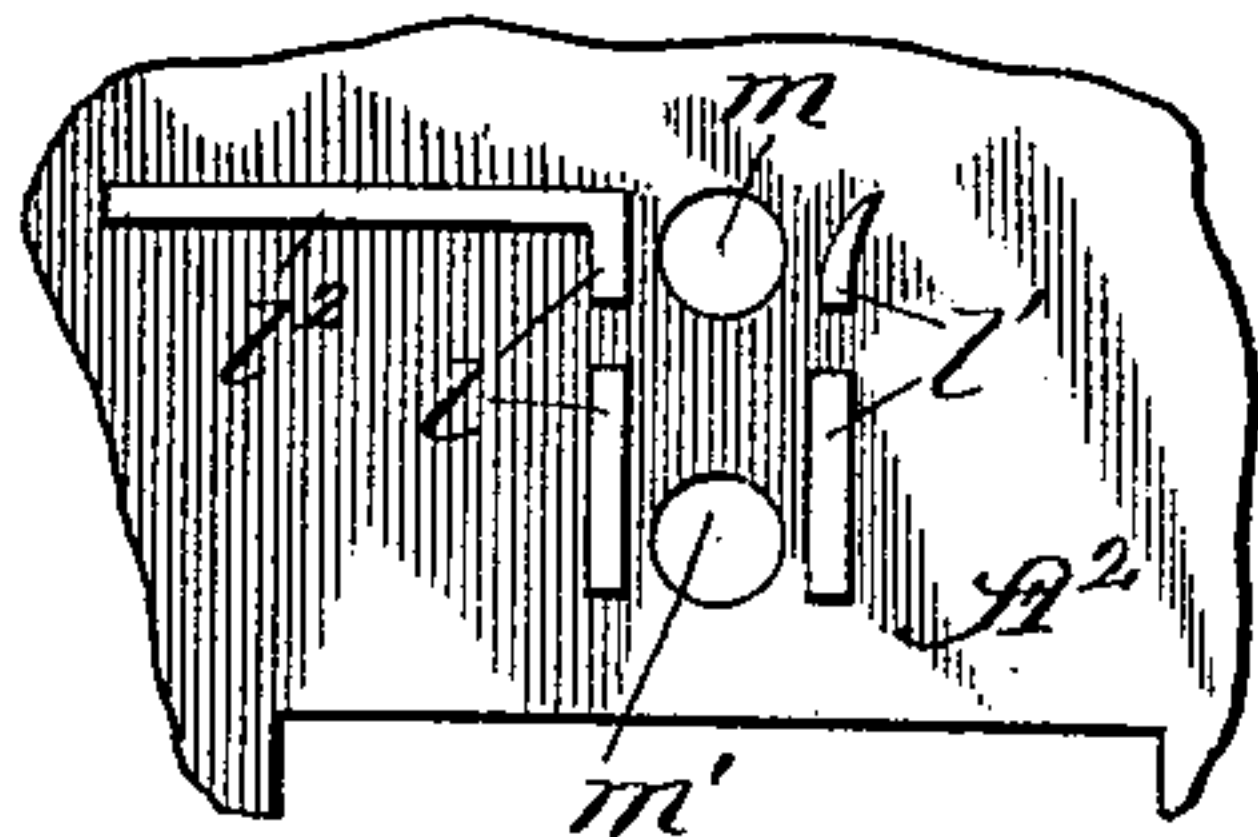
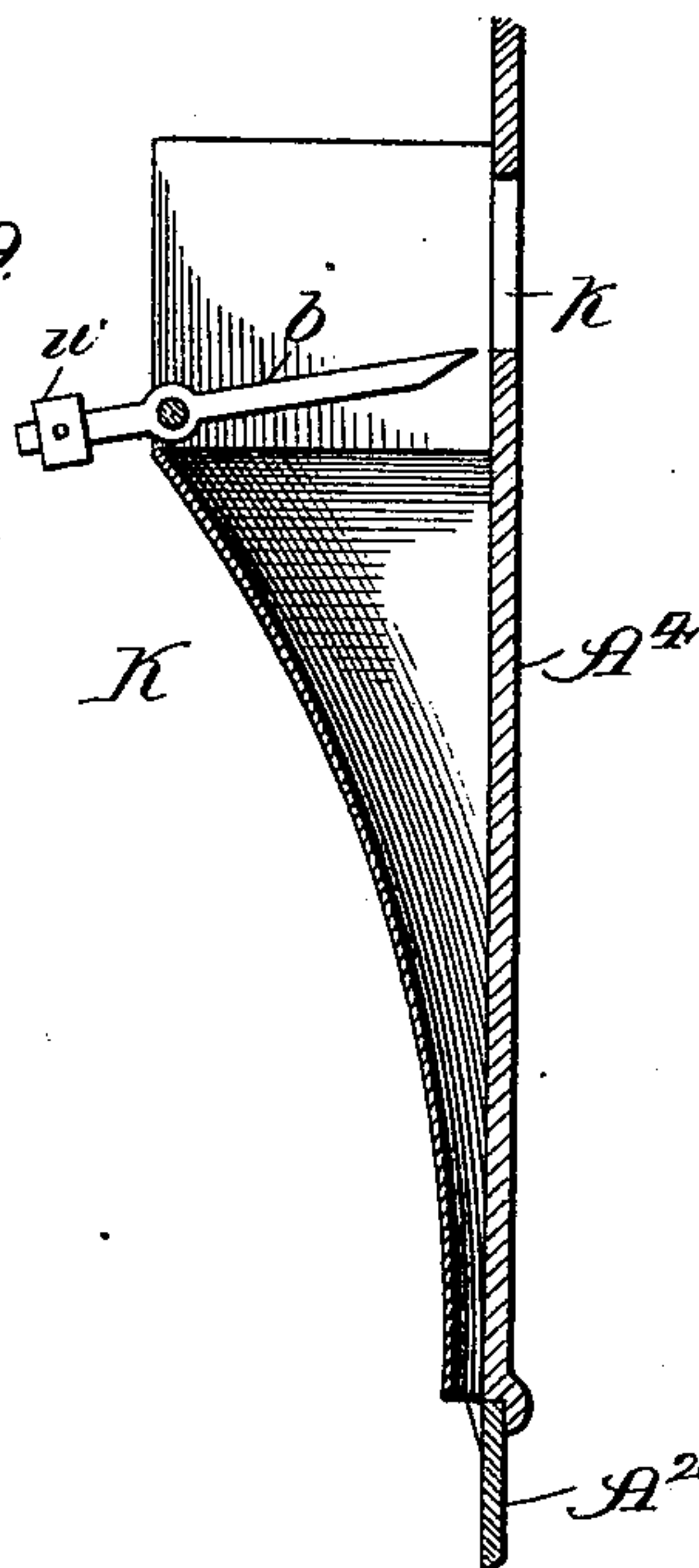


Fig. 9.



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UNITED STATES PATENT OFFICE.

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COIN-OPERATED VENDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 631,119, dated August 15, 1899.

Application filed December 1, 1898. Serial No. 697,984. (No model.)

To all whom it may concern:

Be it known that I, MORTIMER B. MILLS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Coin-Operated Vending Apparatus, of which the following is a specification.

My invention relates to an improvement in the class of coin-operated vending-machines in which the delivery mechanism is connected by an inserted coin to adapt it to be actuated to sweep horizontally across the support of an article in its path to be delivered and convey it to the delivery-outlet.

My objects are to provide a machine of the class referred to of novel, very simple, and comparatively cheap construction, which shall not be liable to material wear or to get out of order, and which shall be reliable in operation and not subject to being defrauded.

Referring to the accompanying drawings, Figure 1 is a view in front elevation of my improved machine; Fig. 2, a section taken at the line 2 on Fig. 4 and viewed in the direction of the arrow, showing the operating mechanism in sectional rear elevation; Fig. 3, a section taken at the line 3 on Fig. 4 and viewed in the direction of the arrow; Fig. 4, a plan section taken at the line 4 on Fig. 3, viewed in the direction of the arrow and enlarged, showing the operating mechanism in its normal or initial position; Fig. 5, a similar view showing the operating mechanism in its extreme position of effecting the delivery; Fig. 6, a broken view of the machine in front elevation with a portion of the front removed to display the relative position of a coin when initially inserted; Fig. 7, a similar view showing the position to which the inserted coin is brought by one operation of the delivery mechanism; Fig. 8, a view in elevation of a broken portion of the lower part of the front of the case, showing the rear side thereof with the coin-guiding tracks thereon; and Fig. 9, a view in longitudinal sectional elevation of the preferred form of coin-chute.

A is the case, shown in general rectangular form in cross-section. As I prefer to construct the case it comprises a heavy metal base A', having formed upon its upper side a guide-support τ , opening to the front of the base for a sliding cash-drawer B, equipped

with a suitable lock (indicated at q and provided in the face-plate A², hereinafter described,) and at one side the base is extended into a dish-shaped receptacle or tray p for the articles delivered. The face-plate A² rises from the base near its forward edge and contains a rectangular opening o to receive a removable cover A⁴, containing a central vertical slot n , which may be covered with glass n' , through which to display the articles to be sold contained in the magazine hereinafter described. Below the opening o in the center of the face-plate are provided the two circular glass-covered coin-display openings m and m' , one above the other, at opposite sides of which are formed on the inner surface of the face-plate the vertical divided coin-guiding flange l' and the similar flange l , having at its upper end a horizontal or laterally-projected track extension l^2 . The cover is shown equipped with a key-operated lock (indicated at v in Fig. 1) and contains the coin-insertion slot k .

The sides and back of the case A are formed with a three-sided shell A³, which may be composed of sheet metal, fitting at its lower end on the base A' and at its front edges against the face-plate A². The top of the case is shown in the form of a heavy metal cap A⁵, seated over the upper edges of the shell A³ and face-plate A² and fastened in place by rods x , depending from it, and secured at their lower ends to the base A', near the rear edge thereof, as by screws tapped into them through the base. From the under side of the cap depends a magazine C, open at its lower end and front side and adapted to confine the stack of articles to be vended, to the shape of which it should at least approximately conform in cross-section. The open front of the magazine coincides with the slot n in the cover A⁴, whereby the condition of the supply of the contents is always open to inspection.

While I intend my machine for use in vending any of different articles, as shown, it is more particularly adapted for vending the commercial article of chewing-gum D, a stack of which is indicated in position in the magazine.

E is a delivery-chute, forming the outlet for the article to be vended, fastened at its lower

end to the base A' , near the inner end of the tray p , adjacent to which there is an outlet-opening t in the shell A^3 , Fig. 2.

The chute E inclines toward its upper end, at which it terminates in a horizontal table F , coinciding with the lower open end of the magazine, which reaches short of it to permit the reciprocating action in the space between the two of the horizontally-swinging pivotal delivery-arm G , hereinafter described.

Rising from the base A' , near its rear edge, is a post h , on which is fulcrumed at its angle, in horizontal position to extend below the plane of the table F , a bell-crank lever H , having a shorter arm g' , connected by a spring s with the adjacent side of the delivery-chute E , and a longer arm g , reaching close to the face-plate A^2 . From the free end of the arm g' extends an operating-rod g^2 , passing through an opening in the face-plate, beyond which it terminates in a knob or handle g^3 .

The delivery-arm G is fulcrumed at one end on the post h to adapt it to turn independently of the bell-crank H , over which it extends in a plane above that of the table F , on which it may bear lightly. This delivery-arm is shown as widening toward its free end, from which there extends into it a recess f , conforming to the shape of the base of the magazine with which it normally alines. A lip f' is shown depending from an edge of the arm G across the adjacent edge of the arm g of the bell-crank H . From the front end of the arm G , which reaches short of the inner surface of the face-plate A^2 , there depends a rigid apron G' , conforming to that surface and bearing lightly against the coin-track flanges thereon, the length of the apron vertically being sufficient to cause it to cover both coin-detector openings m and m' . In the apron, near its upper edge, is formed a horizontal slot d to admit the free end portion of the bell-crank arm g , and adjacent to which, near the center of its length, there projects from the front side of the apron a coin-stop d' . Below the slot d there is provided on the front face of the apron a horizontal coin-arresting rib c , extending from one edge of the apron to or about to its vertical center, Figs. 6 and 7, and below the plane of the rib c is formed, on the outer face of the apron, a similar rib c' , extending from the opposite edge of the apron to or about to its vertical center.

On the rear side of the cover-plate A^4 is fastened a coin-chute K , with the inlet near its upper end coinciding with the coin-insertion slot k and its lower (discharge) end coinciding with the space between the face-plate A^2 and apron G' , near one side of the case A . A lever b is fulcrumed between its ends to extend one arm across the path through the coin-chute K , and it carries an adjustable weight w on its other projecting arm, so that only a coin of sufficient gravity to turn the lever b against the resistance of the weight w out of the path through the coin-chute can enter the machine for con-

trolling the operation of the delivery mechanism, which is as follows: With the parts in the relative positions they are shown to occupy in Fig. 4, by dropping a coin I of proper denomination—say a copper cent to buy a piece of gum D —through the slot k it falls past the lever b through the chute K and finds lodgment on the ledge or track l^2 , being supported by it in position between the bell-crank arm g and coin-stop d' on the apron of the delivery-arm G . Thus the coin affords a connecting medium between the bell-crank and delivery-arm, whereby turning the former will press the coin against the latter to turn it also. The lowermost piece of gum D in the package thereof confined in the magazine and imposed on the table F is within the confines of the recess f in the delivery-arm and is thus in the path thereof to be swept by its movement off the table to the delivery-chute E . With the coin thus positioned, by pressing inward the operating-rod g^2 at its handle g^3 the bell-crank H is turned on its fulcrum against the resistance of the spring s , thereby forcing the coin I along the track l^2 against the coin-stop d' , and thus by the continued movement of the bell-crank arm g moving the delivery-arm G on its fulcrum to sweep across the table F and displace ahead of it from the bottom of the stack a piece of gum D till the latter reaches the chute E , down which it falls and is delivered to the tray p . The movement is so timed that as soon as the delivery has been effected the coin has ridden on the ledge l^2 to its end, whence it drops between the guides l l' till it is arrested by and rests upon the apron-rib c , then extending across said guides in the coin-path between them, and in that position the coin shows through the upper detector-opening m . When the operator releases the rod g^2 , the recoil force of the spring s returns the bell-crank H to its initial position, in moving toward which it abuts against the pendent lip f' on the arm G , thereby carrying the latter along with it, and thus moving it and the apron G' back to their normal positions. This movement of the apron withdraws its rib c from underneath the coin, which thereupon drops between the guides l l' till it encounters the apron-rib c' , then brought into its path below the lower ends of the guides. This rib c' supports the coin coincident with the lower detector-opening m' till another coin is inserted into the machine and the delivery mechanism is again operated, when the turning of the apron G' withdraws the rib c' from under the coin upon it and permits the coin to drop into the drawer B .

It is important to provide a detector to enable the coin to be arrested in view before it is deposited in the drawer; but one opening m and one rib c would suffice for the purpose, and these might be increased beyond two to any desired number, according to the prolongation of time desired to maintain a coin in view for inspection.

While I have seen fit for the sake of clearness to describe quite minutely the different details of construction shown as composing my improved machine, I do not limit my invention thereto, as they may be modified in various particulars without departure from it.

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

1. In a coin-operated vending-machine, the combination with the case provided with a delivery-outlet, of a coin-chute, a table, for supporting the articles to be vended, adjacent to said outlet, and coin-controlled delivery mechanism comprising a spring-controlled horizontally-movable lever having an operating-handle connected with it, a delivery-arm engaged by said lever and fulcrumed to turn, independently thereof, horizontally across said table and sweep therefrom the article, in the path of the arm, to said outlet, a coin-stop on said arm, against which the operating-coin is confined by said lever to connect them, and a track for supporting said coin between said lever and arm and to which said coin-chute leads, substantially as described.

2. In a coin-operated vending-machine, the combination with the case provided with a delivery-outlet, of a coin-chute, a table, for supporting the articles to be vended, adjacent to said outlet, a coin-detector having an opening in a wall of the case, and coin-controlled delivery mechanism comprising a spring-controlled lever provided with means for actuating it, a delivery-arm fulcrumed to turn horizontally across said table and sweep therefrom the article upon it to said outlet, an apron depending from said arm provided with a coin-stop against which the operating-coin is confined by said lever to connect them, a track for supporting the coin while so confined and to which said coin-chute leads, and a coin-

arrester on the apron, substantially as described.

3. In a coin-operated vending-machine, the combination with the case provided with a delivery outlet of a coin-chute, a table, for supporting the articles to be vended, adjacent to said outlet, a magazine in the case discharging upon said table, and coin-controlled delivery mechanism, comprising a spring-controlled bell-crank lever having an operating-handle connected with it, a delivery-arm engaged by said lever and fulcrumed to turn, independently thereof, horizontally across said table and sweep therefrom the article in the path of the arm to said outlet, a coin-stop on said arm against which the operating-coin is confined by said lever to connect them, and a track for supporting said coin between said lever and arm and to which said coin-chute leads, substantially as described.

4. A coin-operated vending-machine comprising, in combination, a case A containing a delivery-chute E provided with a table F, a magazine C discharging on said table, a coin-chute K, delivery mechanism comprising a bell-crank lever H controlled by a spring s and having connected with it a rod g^2 provided with an operating-handle, an arm G fulcrumed to extend over said table along an arm of said bell-crank with which it engages in turning in one direction, an apron G' on said arm carrying a coin-stop d' and a coin-track l^2 facing said apron and to which the coin-chute leads, the whole being constructed and arranged to operate substantially as described.

MORTIMER B. MILLS.

In presence of—

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D. W. LEE.