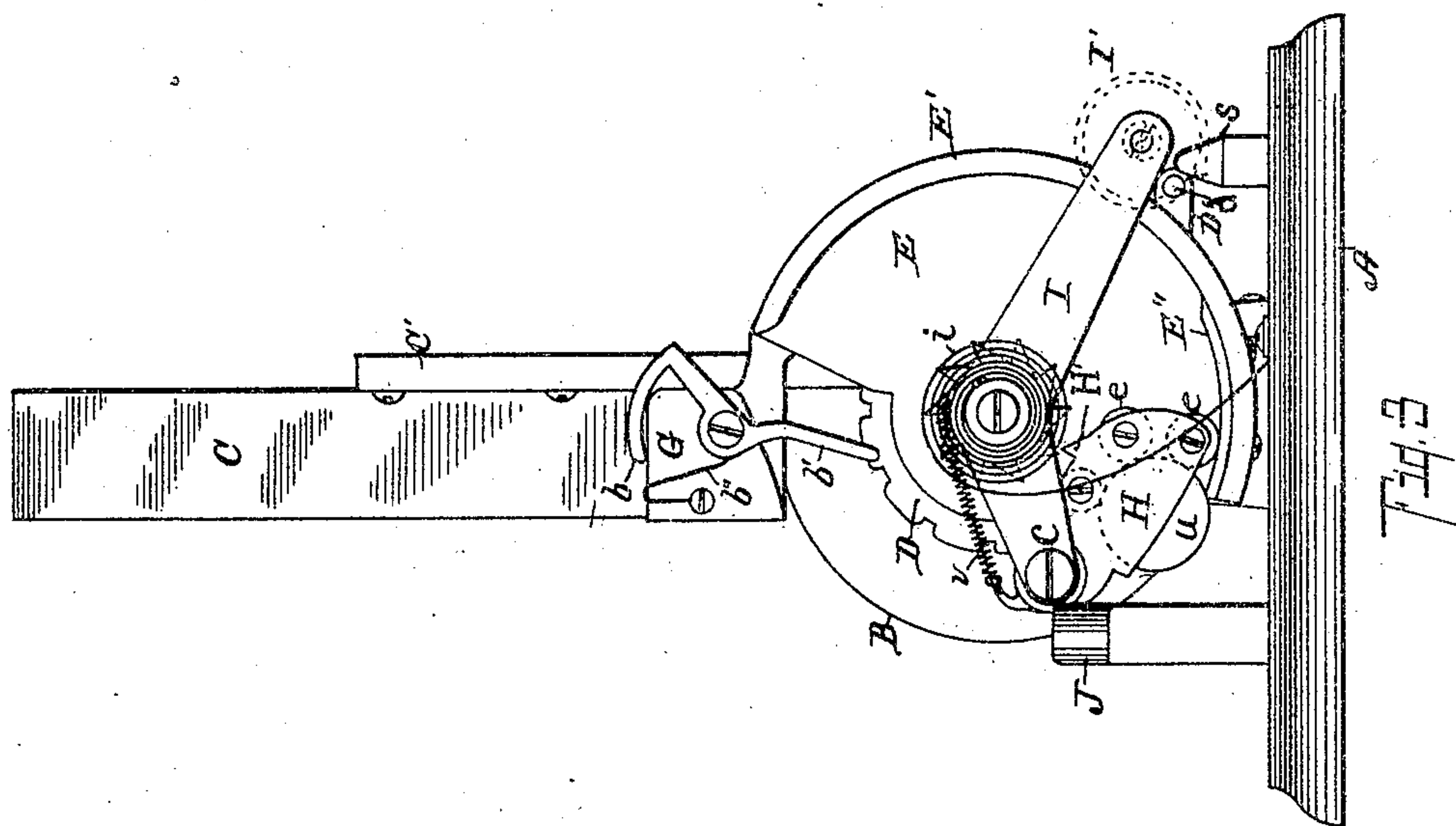
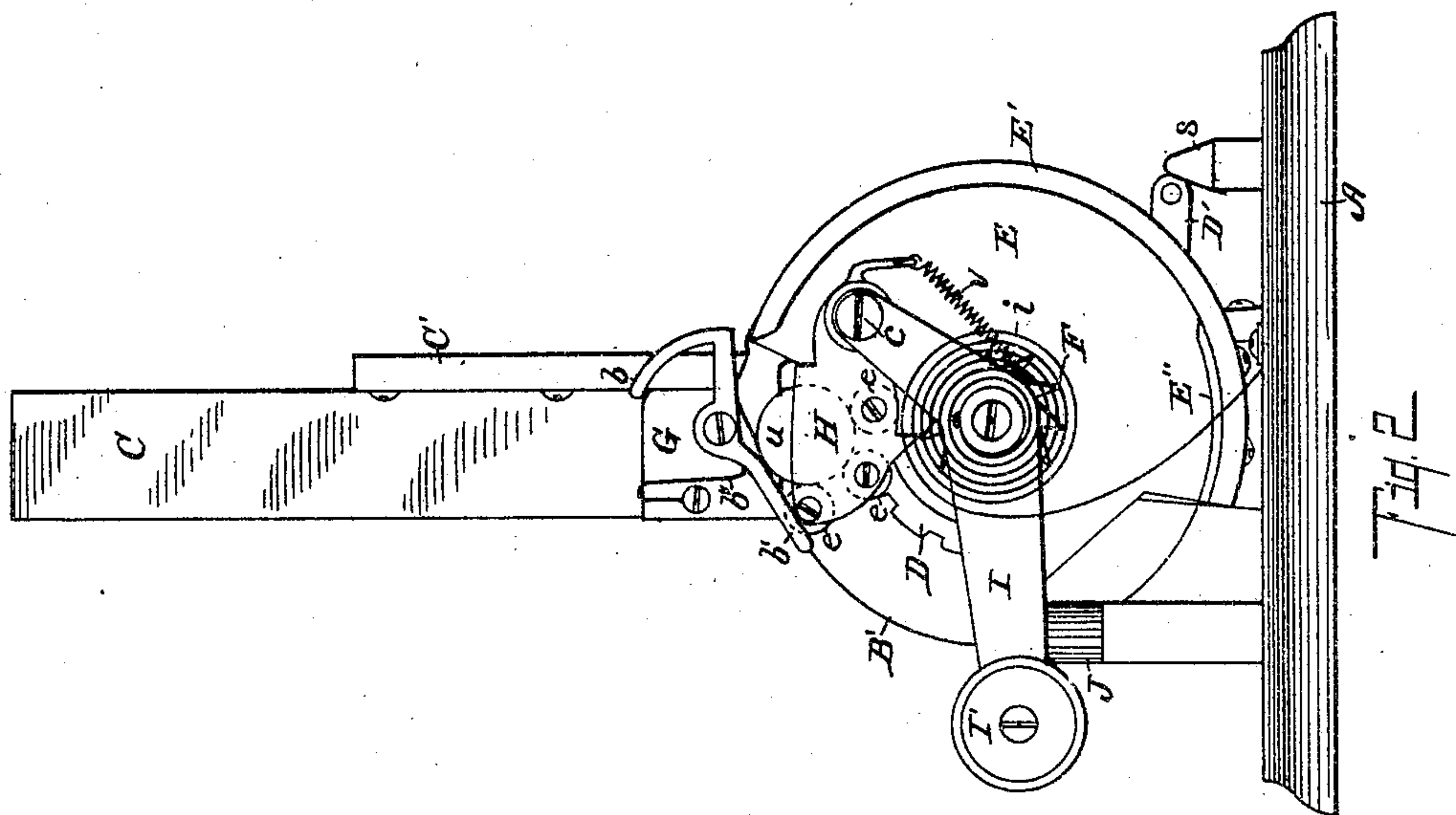


No. 788,187.

PATENTED APR. 25, 1905.

L. J. BURDICK.
VENDING MACHINE.
APPLICATION FILED OCT. 21, 1901.

3 SHEETS—SHEET 2.



Witnesses:

D. C. Wood
O. A. Earl

Inventor,

Leo J. Burdick
By Chas. L. Chappell
Att'y.

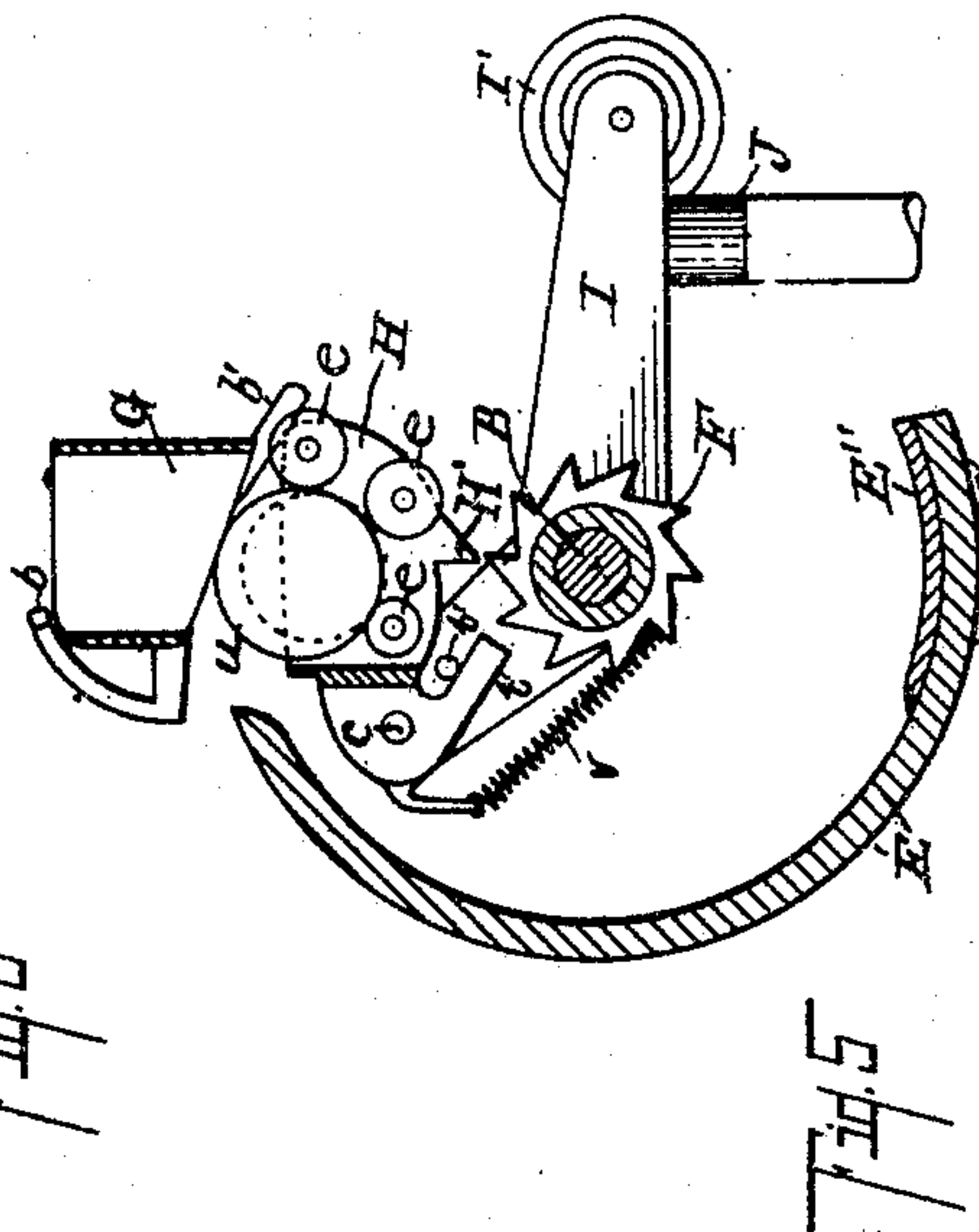
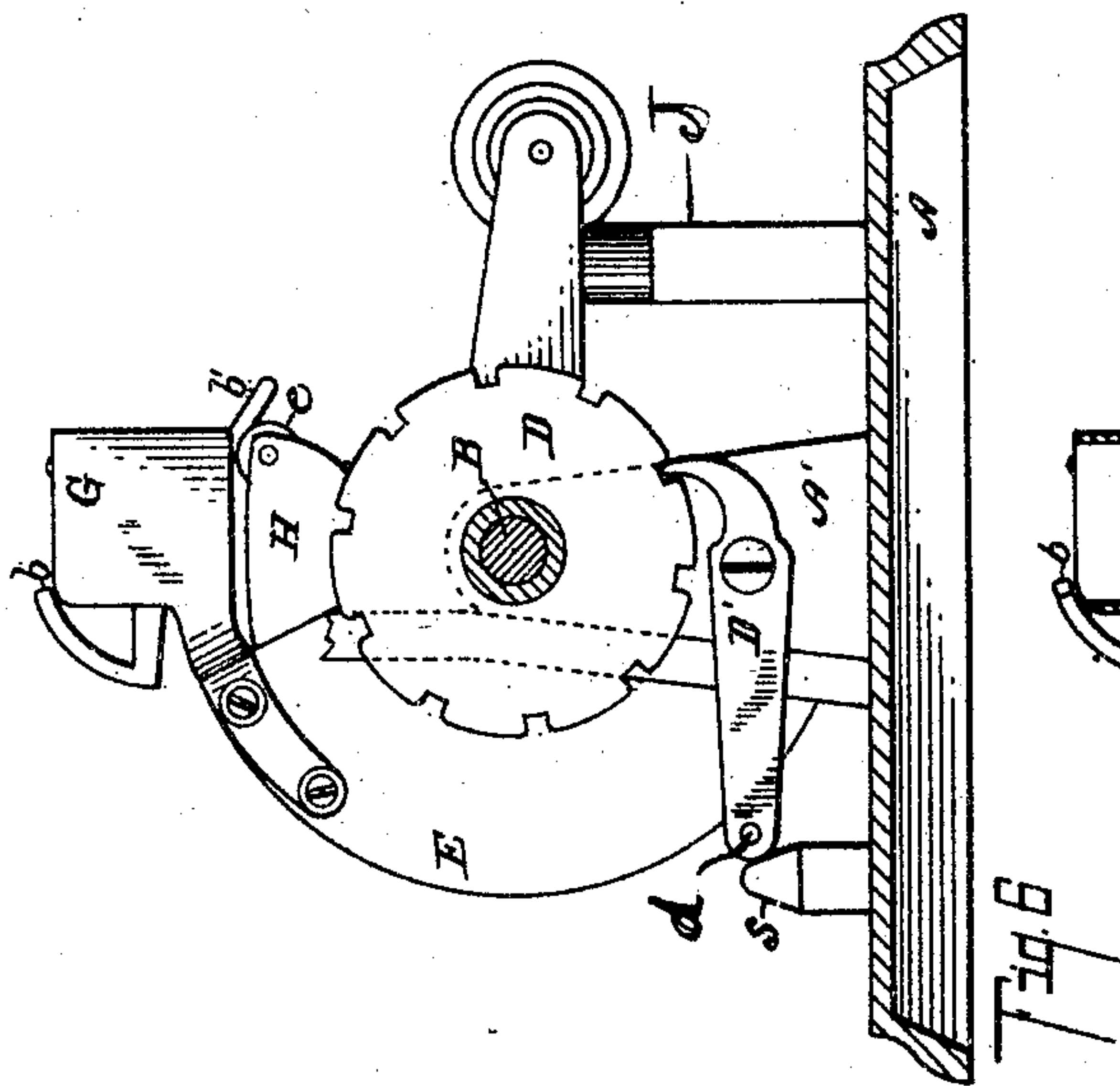
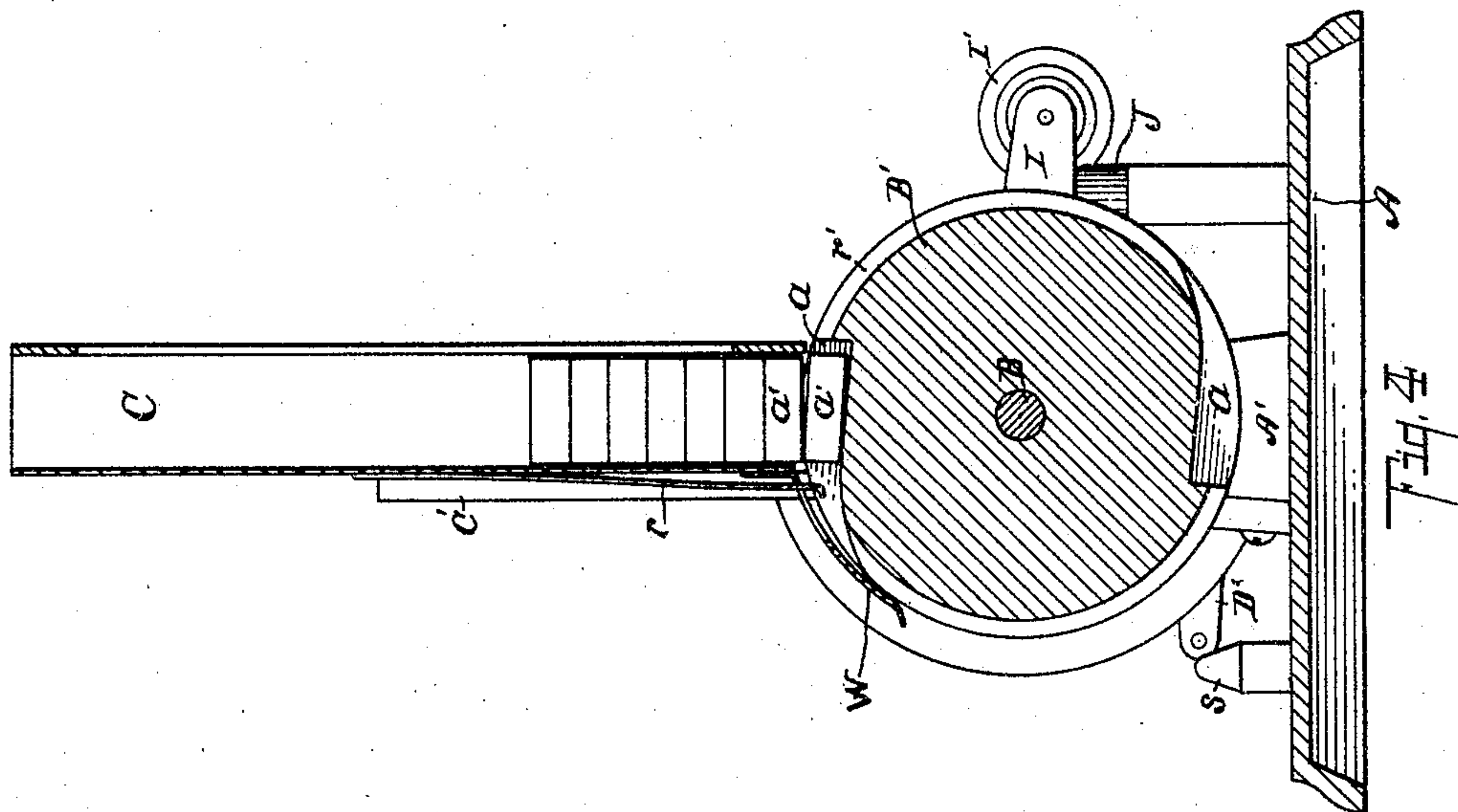
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Witnesses:

D. C. Wood.
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Inventor,

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By Fred L. Chappell
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UNITED STATES PATENT OFFICE.

LEO J. BURDICK, OF STURGIS, MICHIGAN, ASSIGNOR TO THE BURDICK & DE BLOIS MANUFACTURING COMPANY, INCORPORATED, OF HARTFORD, CONNECTICUT, A CORPORATION OF CONNECTICUT.

VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 788,187, dated April 25, 1905.

Application filed October 21, 1901. Serial No. 79,402.

To all whom it may concern:

Be it known that I, LEO J. BURDICK, a citizen of the United States, residing at the village of Sturgis, in the county of St. Joseph and State of Michigan, have invented certain new and useful Improvements in Vending-Machines, of which the following is a specification.

This invention relates to improvements in vending-machines.

The objects of this invention are, first, to provide a simple and effective structure whereby a quantity of tablets, as tablets of gum or chocolate, will be delivered, depending upon the denomination of the coin deposited; second, to provide an improved machine in which a given number of tablets will be delivered without the necessity of constructing the same of absolutely accurate dimensions; third, to provide an improved construction of mechanism which will be actuated to a different extent, depending on the size or dimension of the coin deposited within the same.

Further objects and objects relating to structural details will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

A structure embodying the features of my invention is clearly illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a front elevation view of the machine with the outer casing omitted as it appears when a coin has just been introduced. Fig. 2 is an end elevation view of the same with the actuating-lever and parts in their normal position as a coin is introduced before the actuating mechanism. Fig. 3 is an end elevation view of the same with the parts in their actuated position. Fig. 4 is a detail transverse sectional view taken on line 4 4 of Fig. 1, showing the form of discharge-cylinder for vended tablets. Fig. 5 is a detail sectional view on line 5 5 of Fig. 1, showing the details

of the construction of the coin receiving and actuating means, indicating the operation of different-sized coins within the same. Fig. 6 is a detail transverse sectional view on line 6 6 of Fig. 1 of a detaching mechanism to prevent the return of the ratchet when actuated by the introduction of a coin and the swing of the lever.

In the drawings all of the sectional views are taken looking in the direction of the little arrows at the ends of the section lines, and similar letters of reference refer to similar parts throughout the several views.

The casing and the coin-receptacle for receiving the coins after they have been deposited and passed through the mechanism are not illustrated, as they may be of any desired construction to properly inclose and protect the parts.

Referring to the lettered parts of the drawings, A is the supporting-base. Arranged toward each end of this base is a pair of brackets A' A'. A shaft B is supported in suitable bearings in these brackets. Mounted on this shaft is the merchandise-delivery cylinder B'. Supported above this cylinder by the standards C' is a battery of five magazines C. In the path of each magazine is a notch-like pocket or depression *a*, clearly appearing in cross-section in Fig. 4. These pockets or depressions *a* are spirally arranged about the cylinder, being located one-tenth of the circumference of the cylinder apart. Thus arranged there are two pockets equidistant apart beneath each one of the magazines. Spring-shields *w*, which are carried by the magazines, are provided for the delivery-openings thereof. (See Fig. 4.) Spring-stops *r* project a little below the bottom of the magazine into the annular grooves *r'* in the cylinder. These stops *r* prevent the tablets being carried backward.

It will be seen that as the pockets *a* are arranged spirally if the cylinder B' is revolved one-tenth of the way around one pocket will be carried under one of the magazines and it will engage any tablet or package, as *a'*, in the bottom of that magazine, carrying it out

past the spring-stop *v* and under the guard *w* and drop the same out of the machine, and that if the cylinder be rotated one-half the way around it will cause five pockets to pass
 5 from under the five magazines and will discharge five of the said tablets or packages, so that with a proper arrangement of the mechanism when a one-cent coin is introduced one of the pockets will be moved from under one
 10 of the magazines and a single tablet dropped, and when a five-cent piece is deposited within the mechanism and it is actuated the cylinder will be rotated half-way and five tablets will be delivered. The mechanism by which I ac-
 15 complish this result is very simple and efficient in its operation. Mounted on the shaft B is a ratchet-wheel D, which is engaged by a weighted pawl D'. This permits the cylinder to be revolved in one direction but not in
 20 the other. A pin *d* projects from this pawl D' into the path of the actuating-lever I, the end of the pin appearing distinctly in Fig. 3. When the actuating-lever is at the end of its stroke, it engages this pin *d*, so that the cyl-
 25 inder cannot be actuated or thrown past the ratchet by a quick movement.

An actuating ratchet-wheel F is arranged on the shaft B. Arranged within this ratchet is a circular plate E, having an outwardly-
 30 projecting flange E'. This flange extends about half-way around the plate and has a raised or cam portion E'' at the bottom thereof. The actuating-lever I is pivoted on the shaft B outside of the ratchet-wheel F. The
 35 lever I is provided with a suitable knob or handle, as I', for the convenient actuation of the same.

Pivotally secured to the short end of the actuating-lever I, as at *c*, is a coin-carrier H.
 40 The coin-carrier H is provided with small anti-friction-rolls *eeee* between its two sides. The coin-carrier is provided with a rearwardly-projecting arm, to which the spring *v*, which is carried by the lever I, is connected. This
 45 spring holds the coin-carrier normally outward from the center. A chute G is provided, through which the coin is dropped into this carrier H. A closure or lid *b* is provided for the coin-chute G to prevent the introduction
 50 of a coin while the device is being actuated. A spring *b''* engages the downwardly-projecting arm *b'* of the lid *b* to close it. When the coin-carrier is in its initial position, it engages the arm *b'* and opens the lid or cover *b*.

55 On the coin-carrier H is a pawl H' for the engagement of the ratchet F. The outward movement of the coin-carrier is limited by a stop *t* striking against a pin *t'*. When a coin is dropped through the chute into the carrier
 60 and the lever I is actuated, if the coin is of the size of a five-cent piece, it strikes against the flange E' and forces the coin-carrier inward toward the center or shaft B by swinging it on the pivot *c*. This causes its ratchet-
 65 tooth to engage the ratchet F, and when the

movement of the crank continues the coin is carried around and out, being delivered at the lower end of the flange, as distinctly appears in Fig. 3. As soon as the coin is dis-
 charged the spring *v* throws the coin-carrier 70 outward and releases it from the ratchet, when it can be freely swung from place to place without engaging or actuating the delivery mechanism. When a one-cent piece is dropped into the spout and the machine actuated, the
 75 coin does not strike the flange E', but passes around it until it strikes the cam portion E'', when it throws the coin-carrier inward at that point and engages it with a tooth of the ratchet F and rotates the cylinder a distance
 80 equal to one-tenth of its circumference, when a single piece will be discharged. A coiled spring *z*, something like a clock-spring, is secured to the hub of the lever I for returning the same to the normal position, the lever
 85 striking and resting against a suitable cushioned post J when in that position. When the lever is pushed over to the limit, it strikes the pin on the end of the weighted pawl D' and forces it into engagement, so that the delivery
 90 mechanism is absolutely locked when the machine is in that position. A suitable cushioned stop *s* limits the motion in this direction. It will be impossible to engage the
 95 mechanism to actuate it without the introduction of a coin, as the casing will embrace the entire structure, leaving only the coin-spout and the actuating crank or lever exposed.

I have described my improved mechanism in the form in which I have found it best adapted
 100 for use; but I desire to remark, however, that the same can be greatly varied and that it can be adapted for use of different size and dimensions of coins, and it is obvious that
 105 more than two sizes of coins can be used in the same machine. I think the special coin-controlled device might be made use of with other operating mechanism for delivering
 packets or tablets from the magazines, and, on the other hand, the particular form of device
 110 I have illustrated in connection with the battery of magazines is well adapted for the structure of a compact and efficient delivery device, no matter whether one or more than one of the packets is to be delivered at a single
 115 operation.

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

1. In a vending-machine, the combination of 120
 a shaft; a cylinder carried by said shaft, having spirally - arranged delivery - pockets therein; a plurality of merchandise-magazines adapted to deliver to said pockets whereby one or
 more articles will be delivered by said cyl- 125
 inder according to the extent of its rotation; a locking-ratchet for said shaft; a pivoted pawl therefor; an actuating-ratchet; an actuating-lever adapted to engage said pawl for said
 locking-ratchet at the limit of its stroke; a 130

coin-carrier pivotally mounted on said actuating-lever, having a tooth for engaging said actuating-ratchet; a coin-chute adapted to deliver coins to said carrier; a pivoted lid or cover for said coin-chute adapted to automatically close when the machine is actuated; an arm on said lid adapted to be engaged by said coin-carrier when in its initial position for opening the same; and a plate with a flange adapted to be engaged by a coin carried by said carrier to force said carrier into engagement with said actuating-ratchet, whereby the same will be actuated during the period of said engagement which is controlled by the length of said flange, all coacting for the purpose specified.

2. In a vending-machine, the combination of a shaft; a cylinder carried by said shaft, having spirally-arranged delivery-pockets therein; a plurality of merchandise-magazines adapted to deliver to said pockets whereby one or more articles will be delivered by said cylinder according to the extent of its rotation; a locking-ratchet for said shaft; an actuating-ratchet; an actuating-lever; a coin-carrier pivotally mounted on said actuating-lever, having a tooth for engaging said actuating-ratchet; a coin-chute adapted to deliver coins to said carrier; a pivoted lid or cover for said coin-chute adapted to automatically close when the machine is actuated; an arm on said lid adapted to be engaged by said coin-carrier when in its initial position for opening the same; and a plate with a flange adapted to be engaged by a coin carried by said carrier to force said carrier into engagement with said actuating-ratchet, whereby the same will be actuated during the period of said engagement which is controlled by the length of said flange, all coacting for the purpose specified.

3. In a vending-machine, the combination of a shaft; a cylinder carried by said shaft, having spirally-arranged delivery-pockets therein; a plurality of merchandise-magazines adapted to deliver to said pockets, whereby one or more articles will be delivered by said cylinder according to the extent of its rotation; an actuating-ratchet; an actuating-lever; a coin-carrier pivotally mounted on said actuating-lever, having a tooth for engaging said actuating-ratchet; a coin-chute adapted to deliver coins to said carrier; a pivoted lid or cover for said coin-chute adapted to automatically close when the machine is actuated; an arm on said lid adapted to be engaged by said coin-carrier when in its initial position for opening the same; and a plate with a flange adapted to be engaged by a coin carried by said carrier to force said carrier into engagement with said actuating-ratchet, whereby the same will be actuated during the period of said engagement which is controlled by the length of said flange, all coacting for the purpose specified.

4. In a vending-machine, the combination of a shaft; a cylinder carried by said shaft, having

spirally-arranged delivery-pockets therein; a plurality of merchandise-magazines adapted to deliver to said pockets whereby one or more articles will be delivered by said cylinder according to the extent of its rotation; a locking-ratchet for said shaft; a pivoted pawl therefor; an actuating-ratchet; an actuating-lever adapted to engage said pawl for said locking-ratchet at the limit of its stroke; a coin-carrier pivotally mounted on said actuating-lever, having a tooth for engaging said actuating-ratchet; and a plate with a flange adapted to be engaged by a coin carried by said carrier to force said carrier into engagement with said actuating-ratchet, whereby the same will be actuated during the period of said engagement which is controlled by the length of said flange, all coacting for the purpose specified.

5. In a vending-machine, the combination of a shaft; a cylinder carried by said shaft, having spirally-arranged delivery-pockets therein; a plurality of merchandise-magazines adapted to deliver to said pockets whereby one or more articles will be delivered by said cylinder according to the extent of its rotation; a locking-ratchet for said shaft; an actuating-ratchet; an actuating-lever; a coin-carrier pivotally mounted on said actuating-lever, having a tooth for engaging said actuating-ratchet; and a plate with a flange adapted to be engaged by a coin carried by said carrier to force said carrier into engagement with said actuating-ratchet, whereby the same will be actuated during the period of said engagement which is controlled by the length of said flange, all coacting for the purpose specified.

6. In a vending-machine, the combination of a shaft; a cylinder carried by said shaft, having spirally-arranged delivery-pockets therein; a plurality of merchandise-magazines adapted to deliver to said pockets whereby one or more articles will be delivered by said cylinder according to the extent of its rotation; an actuating-ratchet; an actuating-lever; a coin-carrier pivotally mounted on said actuating-lever, having a tooth for engaging said actuating-ratchet; and a plate with a flange adapted to be engaged by a coin carried by said carrier to force said carrier into engagement with said actuating-ratchet, whereby the same will be actuated during the period of said engagement which is controlled by the length of said flange, all coacting for the purpose specified.

7. In a vending-machine, the combination of a shaft; a cylinder carried by said shaft having spirally-arranged delivery-pockets therein; a plurality of merchandise-magazines adapted to deliver to said pockets whereby one or more articles will be delivered by said cylinder, according to the extent of its rotation; a locking-ratchet for said shaft; a pivoted pawl therefor; an actuating-ratchet; an actuating-lever adapted to engage said pawl for said locking-ratchet at the limit of its stroke; a

coin-carrier pivotally mounted on said actuating-lever, having a tooth for engaging said actuating-ratchet; a coin-chute adapted to deliver coins to said carrier; a pivoted lid or
 5 cover for said coin-chute adapted to automatically close when the machine is actuated; an arm on said lid adapted to be engaged by said coin-carrier when in its initial position for opening the same; and a cam-plate adapted to
 10 be engaged by a coin carried by said carrier to force the said carrier into engagement with said actuating-ratchet, whereby the same will be actuated during predetermined periods which are controlled by the size of the coin,
 15 for the purpose specified.

8. In a vending-machine, the combination of a shaft; a cylinder carried by said shaft having spirally-arranged delivery-pockets therein; a plurality of merchandise-magazines adapted to deliver to said pockets whereby one or more
 20 articles will be delivered by said cylinder, according to the extent of its rotation; a locking-ratchet for said shaft; an actuating-lever; a coin-carrier pivotally mounted on said actuating-lever, having a tooth for engaging said
 25 actuating-ratchet; a coin-chute adapted to deliver coins to said carrier; a pivoted lid or cover for said coin-chute adapted to automatically close when the machine is actuated; an
 30 arm on said lid adapted to be engaged by said coin-carrier when in its initial position for opening the same; and a cam-plate adapted to be engaged by a coin carried by said carrier to force the said carrier into engagement with
 35 said actuating-ratchet, whereby the same will be actuated during predetermined periods which are controlled by the size of the coin, for the purpose specified.

9. In a vending-machine, the combination of
 40 a shaft; a cylinder carried by said shaft having spirally-arranged delivery-pockets therein; a plurality of merchandise-magazines adapted to deliver to said pockets, whereby one or more articles will be delivered by said cylinder, according to the extent of its rotation; an actuating-ratchet; an actuating-lever; a coin-carrier pivotally mounted on said actuating-lever, having a tooth for engaging said actuating-ratchet; a coin-chute adapted to deliver
 50 coins to said carrier; a pivoted lid or cover for said coin-chute adapted to automatically close when the machine is actuated; an arm on said lid adapted to be engaged by said coin-carrier when in its initial position for opening the same; and a cam-plate adapted to be engaged by a coin carried by said carrier to force the said carrier into engagement with said actuating-ratchet, whereby the same will be actuated during predetermined periods which are
 60 controlled by the size of the coin, for the purpose specified.

10. In a vending-machine, the combination of a shaft; a cylinder carried by said shaft having spirally-arranged delivery-pockets therein; a plurality of merchandise - magazines
 65

adapted to deliver to said pockets whereby one or more articles will be delivered by said cylinder, according to the extent of its rotation; a locking-ratchet for said shaft; a pivoted pawl therefor; an actuating-ratchet; an actuating-lever adapted to engage said pawl for said locking-ratchet at the limit of its stroke; a coin-carrier pivotally mounted on said actuating-lever, having a tooth for engaging said actuating-ratchet; and a cam-plate adapted to
 70 be engaged by a coin carried by said carrier to force the said carrier into engagement with said actuating-ratchet, whereby the same will be actuated during predetermined periods which are controlled by the size of the coin,
 80 for the purpose specified.

11. In a vending-machine, the combination of a shaft; a cylinder carried by said shaft having spirally-arranged delivery-pockets therein; a plurality of merchandise - magazines
 85 adapted to deliver to said pockets whereby one or more articles will be delivered by said cylinder, according to the extent of its rotation; a locking-ratchet for said shaft; an actuating-ratchet; an actuating-lever; a coin-carrier pivotally mounted on said actuating-lever, having a tooth for engaging said actuating-ratchet; and a cam-plate adapted to be engaged by a coin carried by said carrier to force said carrier into engagement with said actuating-ratchet, whereby the same will be actuated during predetermined periods which are controlled by the size of the coin, for the purpose specified.

12. In a vending-machine, the combination of a shaft; a cylinder carried by said shaft having spirally-arranged delivery-pockets therein; a plurality of merchandise - magazines adapted to deliver to said pockets whereby one or more articles will be delivered by said cylinder, according to the extent of its rotation; an actuating-ratchet; an actuating-lever; a coin-carrier pivotally mounted on said actuating-lever, having a tooth for engaging said actuating-ratchet; and a cam-plate adapted to be engaged by a coin carried by said carrier to force said carrier into engagement with said actuating-ratchet, whereby the same will be actuated during predetermined periods which are controlled by the size of the coin, for the purpose specified.

13. In a vending-machine, the combination of a suitable magazine; an article-delivery device, adapted to deliver one or more articles according to the extent of its actuation; an actuating-ratchet therefor; an operating-lever; a coin carrier or holder carried by said operating-lever, adapted to engage said actuating-ratchet; and a cam-plate adapted to engage a coin carried by said carrier whereby it is caused to engage said actuating-ratchet at a predetermined point in the movement of said actuating-lever, depending on the size of the coin, for the purpose specified.

14. In a vending-machine, the combination

of a suitable magazine; an article-delivery device adapted to deliver one or more articles according to the extent of its actuation; an operating-lever; a coin-carrier carried by said operating-lever, adapted to engage said article-delivery device; and a cam-plate adapted to engage a coin carried by said carrier whereby said carrier is caused to engage said article-delivery device at a predetermined point in the movement of said actuating-lever, depending on the size of the coin, for the purpose specified.

15. In a vending-machine, the combination of a suitable magazine; an article-delivery device adapted to deliver one or more articles according to the extent of its actuation; a coin-carrier adapted to engage said article-delivery device; and a cam-plate adapted to engage a coin carried by said carrier and cause it to engage said article-delivery device at a predetermined point in the movement thereof, depending on the size of the coin, for the purpose specified.

16. In a coin-controlled vending-machine, the combination of an article-delivery device adapted to deliver one or more articles accord-

ing to the extent of its actuation; an actuating-lever; a pivoted or yielding coin-carrier mounted thereon; a ratchet adapted to be engaged by said coin-carrier; and a cam-plate adapted to engage a coin carried by said carrier to cause it to engage said ratchet at a predetermined point in the movement of said actuating-lever, depending on the size of the coin, for the purpose specified.

17. In a vending-machine, the combination of a suitable article-delivery device adapted to deliver one or more articles according to the extent of its actuation; an operating-lever; a coin-carrier mounted thereon; and a cam-plate adapted to engage the coin as it is carried by said carrier to cause it to engage said delivery mechanism, whereby said delivery mechanism is actuated at a predetermined point in the movement of the lever, for the purpose specified.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

LEO J. BURDICK. [L. s.]

Witnesses:

THEO. T. JACOBS,

CHAS. O. BAILEY.