No. 771,294. PATENTED OCT. 4, 1904.

C. BIGELOW.

COIN OPERATED VENDING MACHINE.

APPLICATION FILED JUNE 1, 1903.

NO MODEL. 4 SHEETS—SHEET 1.

Fig. 2.

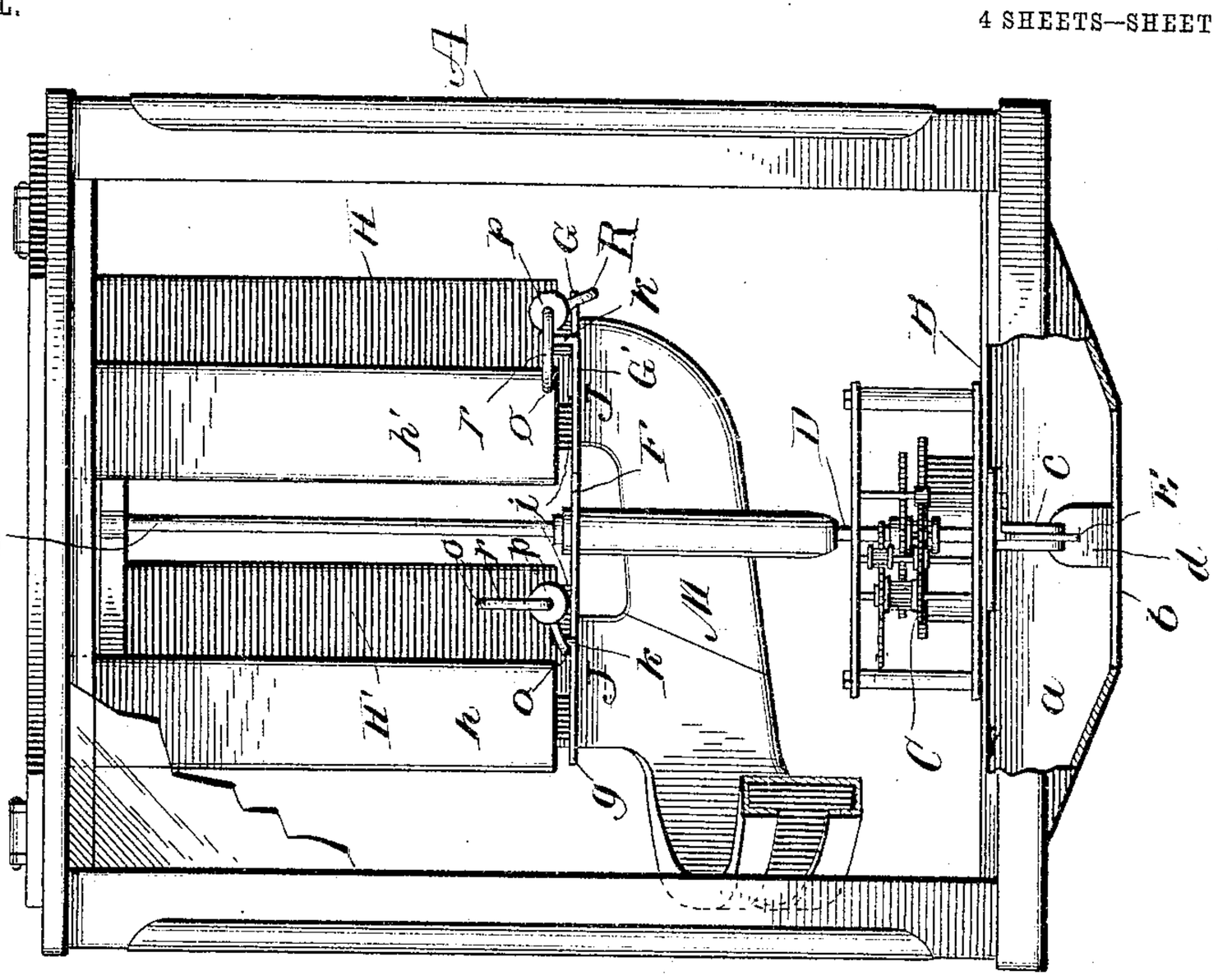
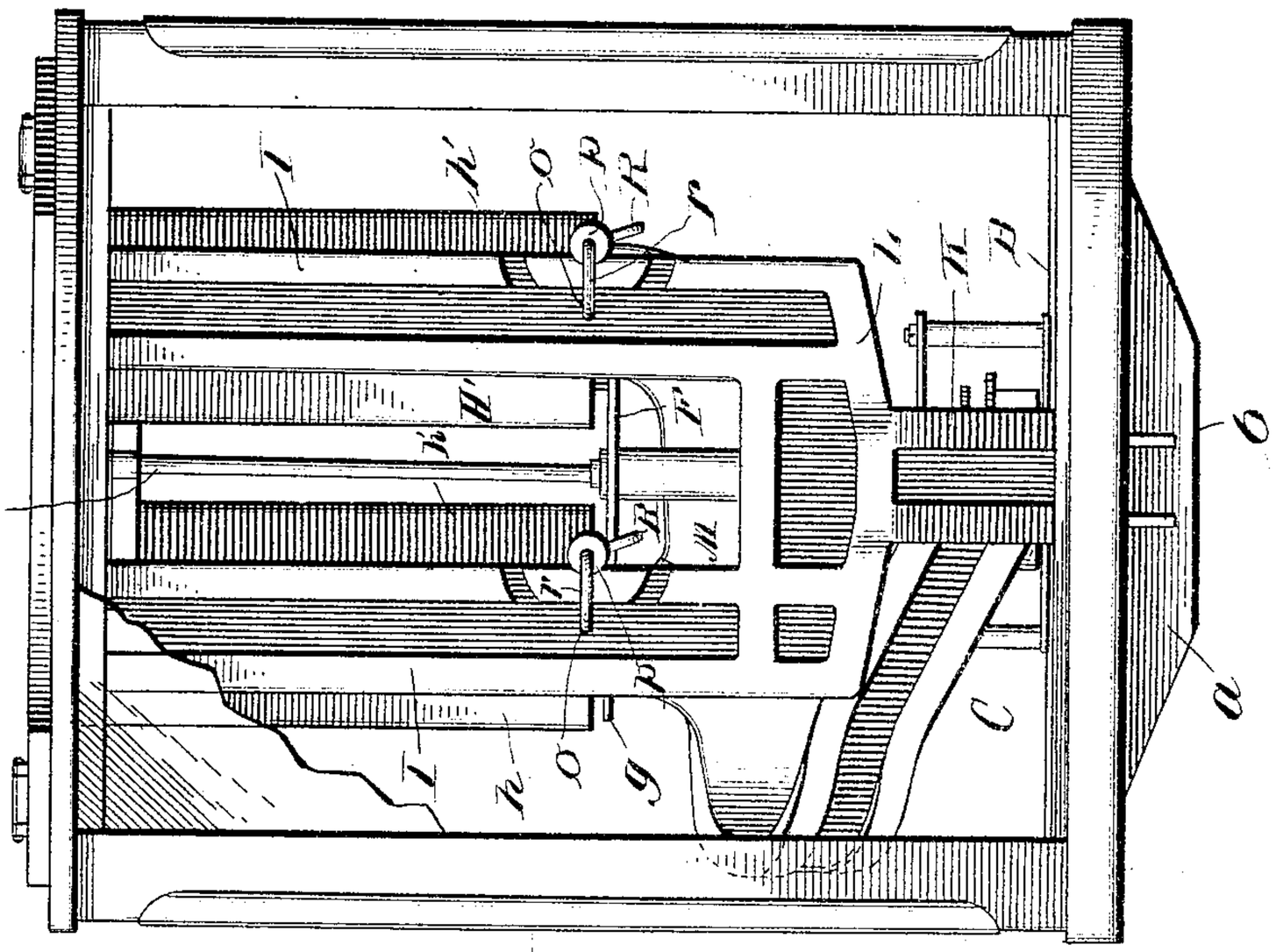


Fig. 1.



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NO MODEL. 4 SHEETS—SHEET 2.

Fig. 4.

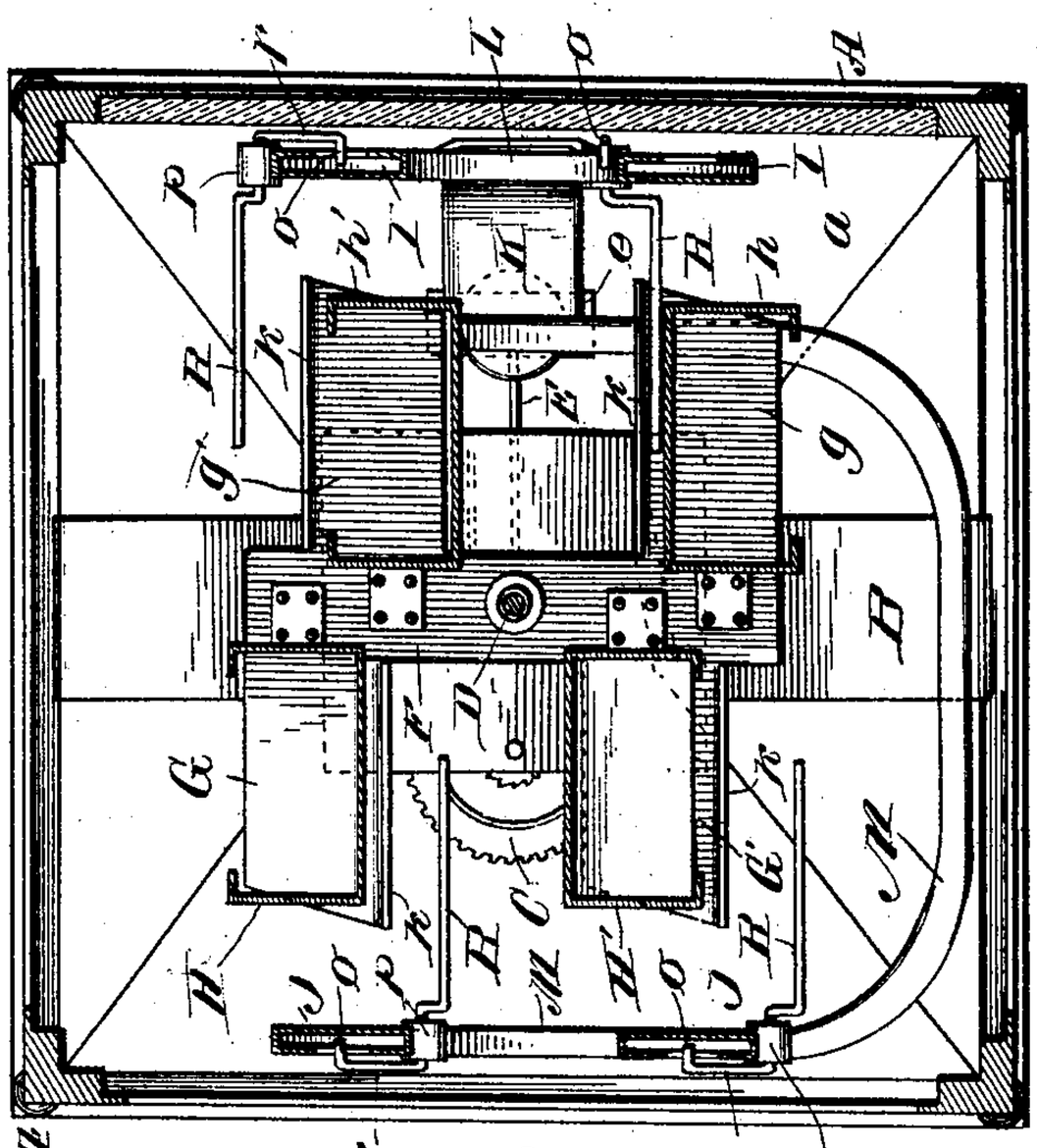


Fig. 5.

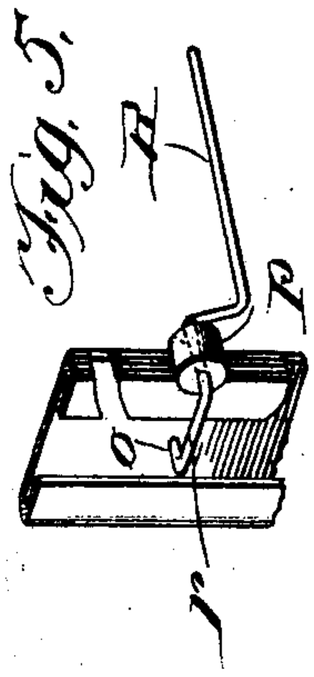
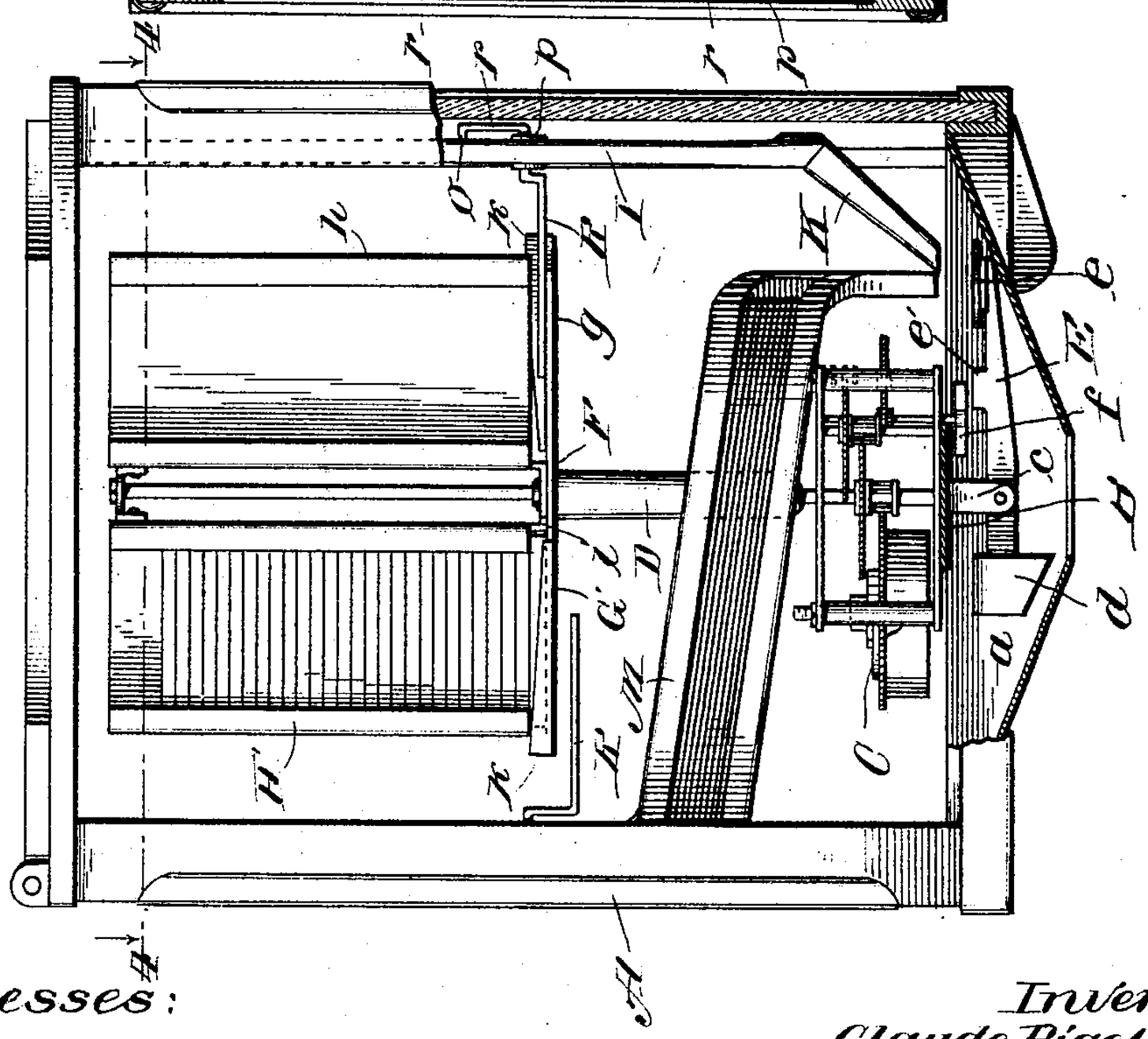


Fig. 3.



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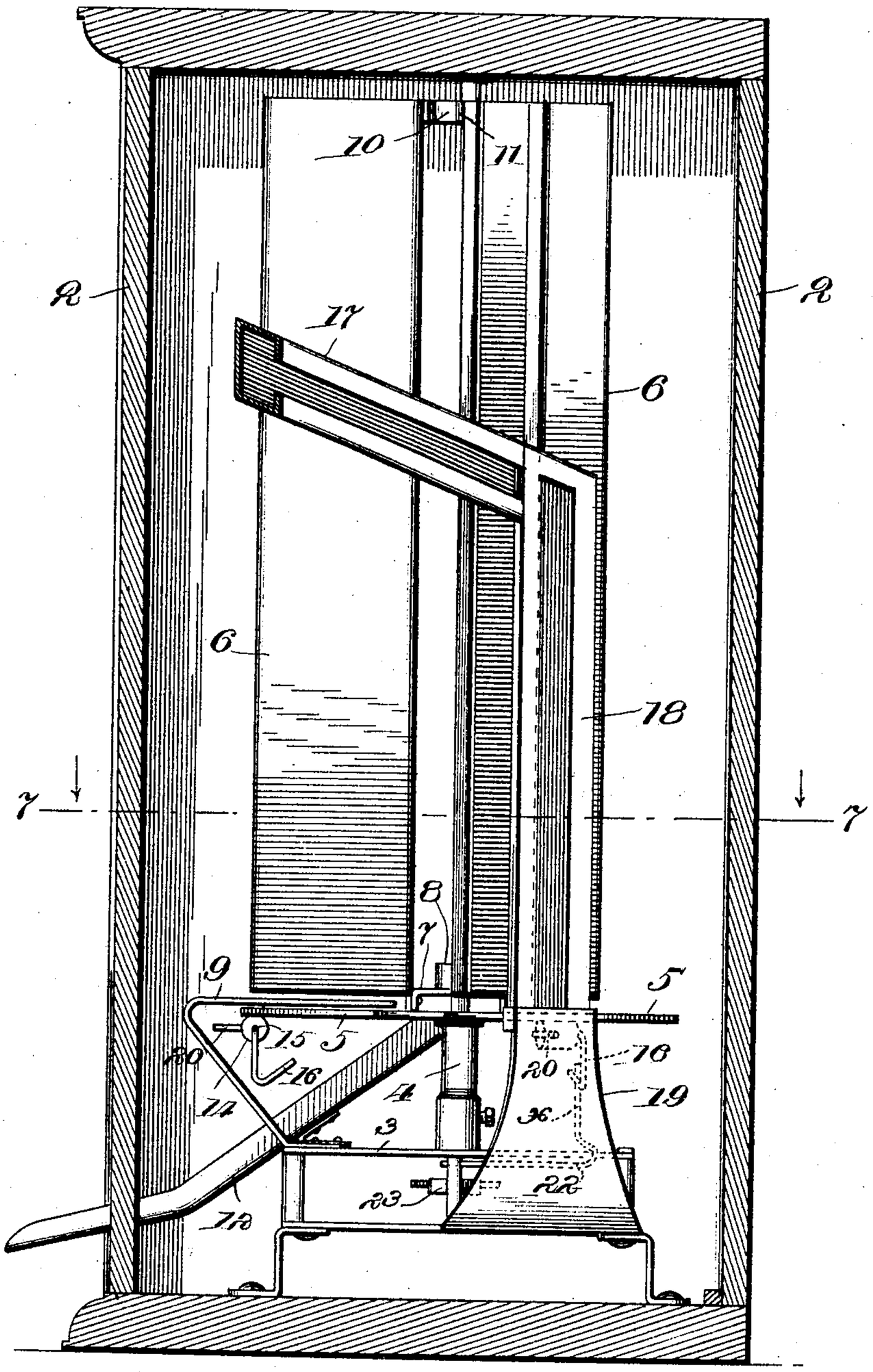
COIN OPERATED VENDING MACHINE.

APPLICATION FILED JUNE 1, 1903.

NO MODEL. 4 SHEETS—SHEET 3.

Fig. 6.



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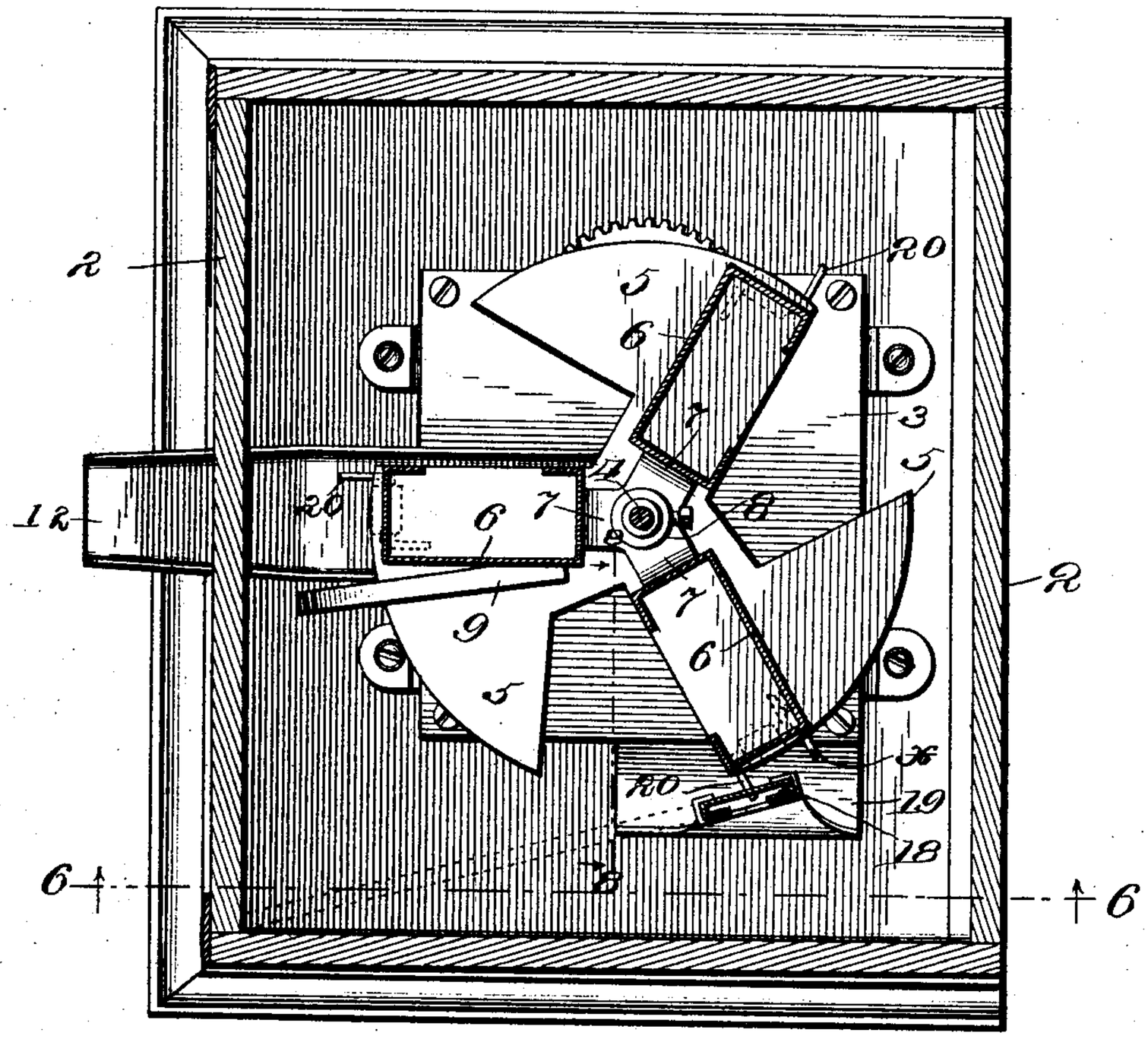
APPLICATION FILED JUNE 1, 1903.

NO MODEL. 4 SHEETS—SHEET 4.

Fig. 7.



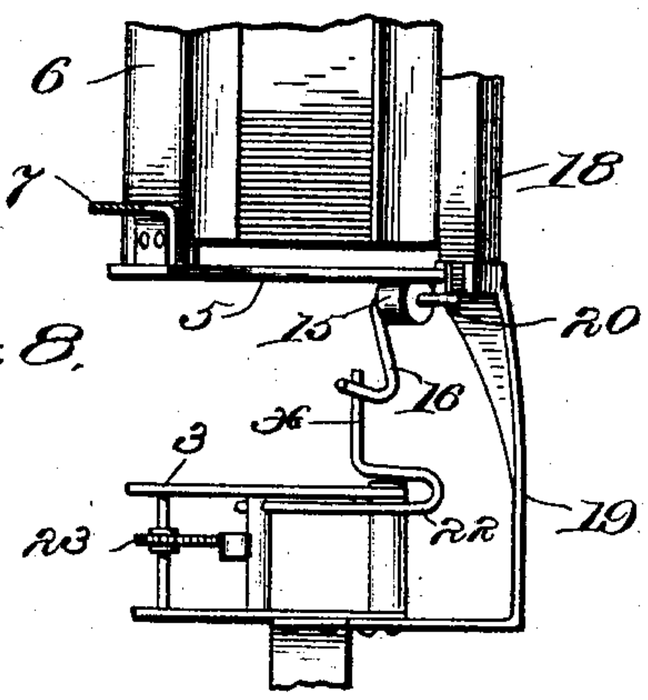
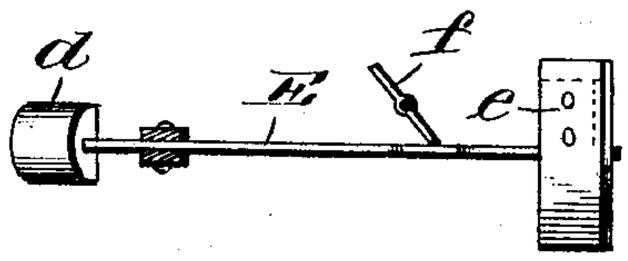


Fig. 8.

Fig. 9



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No. 771,294. Patented October 4, 1904.

UNITED STATES PATENT OFFICE.

CLAUDE BIGELOW, OF CHICAGO, ILLINOIS, ASSIGNOR TO JOHN C. CURTISS, OF CHICAGO, ILLINOIS.

COIN-OPERATED VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 771,294, dated October 4, 1904.

Application filed June 1, 1903. Serial No. 159,595. (No model.)

To all whom it may concern:

Be it known that I, CLAUDE BIGELOW, 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 Coin-Operated Vending-Machines, of which the following is a full, clear, and exact description.

The object of my invention is to provide a coin-operated automatic vending-machine having several commodities to sell, any one of which the purchaser can obtain by dropping his coin in the appropriate slot and in which the several sets of devices, respectively, controlling some particular one of said commodities are respectively actuated by a single common motor and discharge the commodity purchased without disturbing or interfering with the other sets of said commodities in such manner as to greatly reduce the cost of construction of the machine and economize space therein. This I accomplish in the manner hereinafter fully described and as particularly pointed out in the claims.

In the drawings, Figure 1 is a front elevation of my invention, showing the adjacent glass side of the case broken away. Fig. 2 is a similar view showing the adjacent coin-chutes removed from the machine. Fig. 3 is a side elevation of the machine, having the lower and front portions of the case in section. Fig. 4 is a horizontal section taken on dotted line 4 4, Fig. 3. Fig. 5 is a detail view showing a portion of the coin-chute and the sweep in perspective. Fig. 6 is a vertical section of a modified form of my invention, taken on dotted line 6 6, Fig. 7. Fig. 7 is a horizontal section taken on dotted line 7 7, Fig. 6. Fig. 8 is a detail view showing a portion of the motor, the coin-chute, and the lower portion of one of the hoppers or magazines in elevation and section in the plane of dotted line 8 8, Fig. 7. Fig. 9 is a detail view showing a plan of the trip-lever and coöperating fly of the motor of the machine shown in the first four figures of the drawings.

In the drawings, A represents a rectangular case, which preferably consists of a rectangular skeleton metal frame having vertical glass sides. The bottom *a* of this case is solid and dips downward at its center at a suitable angle, so that the commodities when expelled from the machine will drop down upon and slide on said bottom to and out of a central opening *b* therein. Extending from side to side of this bottom above said central opening is a suitable bridge B, and supported centrally on this bridge is a clockwork-motor C. This clockwork is provided with a vertical shaft or spindle D, which is located about the center of the case and has its lower end extending down below bridge B and provided with a suitable boss *c*. Between the bifurcations of the lower end of this boss *c* a transverse lever E is fulcrumed, which has one end *d* weighted and has its opposite end extended a suitable distance beyond the vertical sides of the frame of the clockwork-motor C and provided with a transverse horizontal pan *e*. Between said pan and the fulcrum thereof the lever has an upwardly-projecting lug *e'*, which is normally engaged by a fly *f*, actuated by said motor, so as to prevent the rotation of said lever and shaft D when the lever is in its normal position.

Shaft D extends vertically up above the frame of the motor C, preferably into suitable bearings in the top of the case, and at a suitable point above the said motor it has secured thereto a suitable horizontal cross-bar F, which supports and has projecting laterally therefrom platforms *g g'* and G G'. Platforms *g g'* project in the opposite direction from platforms G G' and are arranged in planes tangential to the axis of said shaft, and the tangential plane in which platforms *g'* and G' are in are nearer said shaft than those of platforms *g* G. Above each of these platforms a vertical hopper *h h'* and H H', respectively, is supported by means of L-shaped plates *i*, secured to the cross-bar F in such manner that their lower edges are separated and raised above said platforms a suitable distance sufficient to permit of the lowermost package of said commodity to be swept horizontally out from under the same. These hoppers are preferably constructed of a U or channel shaped strip of sheet metal having

the vertical edges thereof flanged inward toward each other, and in order that the gum may be exposed to view I prefer to place these hoppers upon the platforms so that the closed backs of the hoppers, supported by the platforms projecting in the same direction, will face each other. The shaft D is preferably revolved from left to right, and the advanced horizontal edge *k* of each platform is flanged upward slightly.

When it is desired to operate the machine, the coin is deposited in a slot and falling upon the pan of lever E tilts said lever so that lug *e'* thereof passes under the fly *f*. Thereupon the motor causes the shaft D to revolve. When the lever is tilted, the coin slides off the pan into a suitable receptacle made therefor, and when the weight of the coin is removed from the lever it immediately assumes its original position until it arrives at its original station, where it again strikes against and is arrested by the fly. The normal position of the lever E is in a vertical plane coming between and parallel to those in which the hoppers are arranged. The coin to operate the machine is conveyed thereto by means of suitable chutes, two of which, I I, are arranged in front of the hoppers *h h'* on one side of the machine, and the other two, J J, of which are arranged in front of the hoppers H H' on the opposite side of the machine. These coin-chutes extend below the horizontal plane of the platforms *g g'* and G G', and the lower ends of the chutes I I are connected by a transverse chute L, the lower edge of which is inclined from both ends toward its center of length, where it is provided with a suitable opening or slot for the downward passage of the coin into an inclined chute K, that conveys the coin to and discharges it into the pan *e* of lever E when the latter is in its normal position. The lower end of the chutes J J are likewise connected by the horizontally-disposed inclined sinuous chute M, which extends beyond the vertical side of one of the vertical chutes J and continuing in its inclined course extends around the case to the opposite side of the machine, where terminal chute K is located, and there has its discharge end portion dipped downward, preferably to a greater angle than the remainder of its length, to convey the coin deposited in either of said chutes J J to and deposit it upon the pan of the lever E.

When it is desired to purchase a package of any particular kind of gum contained in the machine, the coin is deposited in the chute located in front of the hopper containing the same, and the coin in falling through said chute actuates devices that as the hoppers revolve sweep the lowermost package of gum in the coöperating hopper off its supporting-platform. These devices comprise a short spindle having a laterally-projecting arm *r*, that extends in front of the chute and has its end *o* inturned and entering the outer open side of the same to such an extent that the coin dropping through said chute will strike the same. When thus struck, the arm revolves, and in order to provide a free passage for its inturned end the inturned side flange of the coin-chute is recessed or cut away, substantially as shown in the drawings. The spindle of arm *r* is journaled in suitable bearings *p*, secured to the vertical edge of the chute in the same vertical plane, or nearly so, as the upturned edge *k* of the platform and slightly above the horizontal plane thereof. The inner end of this spindle extends beyond its bearings and is bent sidewise, so that when arm *r* is in its normal position, as shown in Fig. 5 of the drawings, it will depend therefrom at an angle of about one hundred degrees (100°) from said arm, and then extends longitudinally in a plane parallel to its axis a suitable distance to form a sweep R. Now when the falling coin strikes the inturned end *o* of arm *r* it revolves the spindle thereof and throws the sweep R up over the raised edge *k* of the platform until it rests thereon, and then when the said coin actuates the motor the sweep brushes the lowermost package of gum resting on said platform off the same and then resumes its normal position, in which it is not affected by nor does it interfere with the contents of the other hoppers. There is a sweep actuated in a similar manner provided for each of said hoppers, thus placing it absolutely in the control of the operator to purchase just the gum he desires.

It will be obvious that instead of the hoppers being constructed for the purpose of containing packages of gum they may be constructed each different from the other to contain packages of other commodities, and it is also apparent that the sweep might be differently constructed to accommodate itself to the changed character of the commodity contained in the hopper with which its operation is identified without departing from the spirit of my invention.

In Figs. 6, 7, and 8 of the drawings I show a modified construction of my invention, in which the idea of a series of revolving hoppers or magazines operated by a single motor is involved, but in which the idea of vending one of several commodities is eliminated and the machine operated through the medium of one coin-chute. In this modification, 2 represents the case, 3 the motor located in the bottom of the case, 4 a vertical shaft extending from and actuated by said motor and having its upper end journaled in the top of the box. At a suitable distance above the motor shaft 4 is provided with a horizontal circular plate 5, which has three vertical magazines or hoppers 6 6 6, constructed similar to those hereinbefore described, secured thereto and mounted thereon by brackets 7 7 7, projecting radially from the boss 8, secured to said shaft. These

magazines 6 6 6 are so supported that their lower open ends are located a suitable distance above the plate 5 to permit of the lowermost package of gum stacked therein to be swept out from under the same by a stationary sweep 9. This sweep 9 consists of a V-shaped arm located near the front of the machine, which has its lower end secured to the frame of the motor and its upper horizontal arm extending horizontally back over plate 5, as shown. The hoppers or magazines 6 preferably have their upper ends secured to brackets 10, radiating from a boss 11, secured to shaft 4 near its upper end, and are arranged in radial planes at equal distances apart. Plate or platform 5 is recessed or cut away immediately in front of the vertical plane of the open side of each hopper to provide openings down through which the gum brushed out from under the same by sweep 9 will fall into the gutter 12, located in front of the machine and secured to the motor about midway its sides and under the platform. The upper portion of this gutter 12, into which the gum first drops, is inclined at such an angle that the momentum acquired by the gum will cause it to slide down the same and out upon the horizontal extension 13 thereof through and beyond the front of the case to within convenient reach of the operator. Secured to the under side of the platform 5, immediately below each hopper or magazine, is a suitable bearing 14, and journaled in this bearing is a spindle 15, which has one end bent horizontally and radially and the other end depending downward therefrom and bent to form an L-shaped trip-arm 16. The machine is provided with a coin-chute having an upper inclined stretch 17, the upper end of which extends to and out of a suitable slot in the front of the machine adjacent to its side, and a vertical stretch 18, into which the lower end of the stretch 17 discharges. The lower end of this vertical stretch 18, which terminates in about the horizontal plane of the platform 5, is preferably secured to the upper end of the L-shaped bracket 19, extending from the under frame of the motor at such a point that the radially-projecting end 20 of the spindle 15 will as the platform revolves pass under its mouth or discharge-opening. Projecting laterally from under the side edge of the upper frame of the motor, near its rear side, is a vibratory arm 22, which is operatively connected to the escapement 23 of the motor and is so bent that its vertically-extended extremity x will come in the path of the L-shaped depending end of the trip-arm 16 of the spindle and arrest the further rotation of the platform 5 and the hoppers or magazines in such position that the end 20 of the spindle 15, whose trip-arm engages vibratory arm 22, will be under the discharge-opening of the coin-chute. The operation of this modified machine is such that when the coin deposited in the coin-chute drops from its lower end it strikes the end 20 of the spindle and moves the trip-arm 16, so that it releases the end x of the arm 22 and permits the same to vibrate. When the arm 22 is free to vibrate, the motor is free to actuate and revolve shaft 4, platform 5, and the hoppers or magazines for a third of a revolution or until the trip-arm 16 under the next hopper or magazine strikes against and intercepts arm x of the motor and checks and arrests the further operation thereof. By the use of this modification about three times as much gum or other commodity being sold by the machine can be supplied to the machine at one time as in any other coin-operated motor vending-machine known to me, and besides economizing space and simplifying the construction of the machine a great saving of labor and machinery is obtained by its use.

What I claim as new is—

1. A coin-operated vending-machine comprising two or more independent hoppers or magazines simultaneously movable in the same horizontal plane, that discharge from their lower ends, and have inert means independent of the releasing mechanism below the discharge-point for supporting the contents thereof, which supporting means are movable therewith, a motor for imparting motion thereto, and coin-actuated means for intermittently releasing and stopping the operation of said motor.

2. A coin-operated vending-machine comprising two or more independent hoppers or magazines having discharge-openings in their lower ends which are simultaneously revoluble in the same horizontal plane about a common center, and each of which have inert means independent of the releasing mechanism for supporting the contents thereof that are movable therewith, a motor for imparting motion thereto, and coin-actuated means for intermittently releasing and stopping the operation of said motor.

3. A coin-operated vending-machine comprising two or more independent hoppers or magazines having discharge-openings in their lower ends and are simultaneously movable in the same horizontal plane about a common center, and each of which have inert means independent of the releasing mechanism for supporting the contents thereof that are movable therewith, a single motor for imparting motion thereto, means for intermittently releasing and stopping the operation of said motor, and expelling devices for said hoppers which engage the same one at a time.

4. A coin-operated vending-machine comprising two or more independent hoppers or magazines having discharge-openings in their lower ends and are simultaneously movable in the same horizontal plane about a common center, and each of which have inert means independent of the releasing mechanism for supporting the contents thereof that are movable

therewith, a single motor for imparting motion thereto, means for intermittently releasing and stopping the operation of said motor, and coin-actuated expelling devices for said hoppers which engage the same one at a time.

5. A coin-operated vending-machine comprising two or more independent hoppers having discharge-openings in their lower ends and are simultaneously movable in the same horizontal plane about a common center, and each of which have inert means independent of the releasing mechanism for supporting the contents thereof that are movable therewith, a single motor for imparting motion thereto, a coin-actuated trip, and means for arresting the movements of said trip and thereby stopping the operation of the said motor.

6. A coin-operated vending-machine comprising two or more independent hoppers having discharge-openings in their lower ends and are simultaneously movable in the same horizontal plane about a common center, and each of which have inert means independent of the releasing mechanism for supporting the contents thereof that are movable therewith, a single motor for imparting motion thereto, a coin-actuated trip, and movable means actuated by said motor for arresting the movement of said trip, and thereby stopping the operation of said motor.

7. A coin-operated vending-machine comprising a single motor, a vertical shaft actuated thereby, a coin-actuated trip for said motor, two or more independent hoppers secured to and revoluble around said shaft, a platform beneath and movable with each of said hoppers, a radially-disposed independent sweep adapted to come between said hopper and platform when the same revolve.

8. A coin-operated vending-machine comprising a single motor, a vertical shaft actuated thereby, a coin-actuated trip for said motor, two or more independent hoppers secured to and revoluble around said shaft, a platform beneath and movable with each of said hoppers, and a radially-disposed independent rotatable sweep adapted to come between said hopper and platform when the same revolve.

9. A coin-operated vending-machine comprising a single motor, a vertical shaft actuated thereby, means for intermittently actuating said motor, two or more independent hoppers secured to and revolving around said shaft, a platform beneath and moving with each of said hoppers, and a radially-disposed independent sweep adapted to come between said hopper and platform when the same revolve.

10. A coin-operated vending-machine comprising a single motor, a vertical shaft actuated thereby, means for intermittently actuating said motor, two or more independent hoppers secured to and revolving with said shaft, a platform beneath and moving with each of said hoppers, and a radially-disposed coin-actuated revoluble sweep adapted to come between said hopper and platform when the same revolve.

11. A coin-operated vending-machine comprising a single motor, a vertical shaft actuated thereby, means for intermittently actuating said motor, two or more hoppers, a platform beneath and moving with each of said hoppers, coin-operated rotatable sweep adapted to come between said hopper and platform when the same revolve.

12. A coin-operated vending-machine comprising a single motor, a vertical shaft actuated thereby, means for intermittently actuating said motor, two or more hoppers secured to and revolving with said shaft, a platform beneath and moving with each of said hoppers, and an independently-coin-operated sweep for each of said hoppers adapted to come between its coöperating hopper and platform when the same revolve.

13. A coin-operated vending-machine comprising a single motor, a vertical shaft actuated thereby, means for intermittently actuating said motor, two or more hoppers secured to and revolving with said shaft, a platform beneath and moving with each of said hoppers, and an independently-operated rotatable sweep for each of said hoppers adapted to come between its coöperating hopper and platform when the same revolve.

14. A coin-operated vending-machine comprising a single motor, a vertical shaft actuated thereby, means for intermittently actuating said motor, two or more hoppers secured to and revolving with said shaft, a platform beneath and moving with each of said hoppers, a coin-chute for and located adjacent to the plane of rest of each hopper, a rotatable sweep journaled to the side of each of said chutes and adapted to be actuated by the passage of the coin therethrough.

15. A coin-operated vending-machine comprising a single motor, a vertical shaft actuated thereby, coin-actuated automatically-returnable devices for intermittently actuating said motor, two or more hoppers secured to and revolving with said shaft, a platform beneath and moving with each of said hoppers, and a sweep adapted to come between said hopper and platform when the same revolve.

16. A coin-operated vending-machine comprising a single motor, a vertical shaft actuated thereby, coin-actuated automatically-returnable devices for intermittently actuating said motor, two or more hoppers secured to and revolving with said shaft, a platform beneath and moving with each of said hoppers, and a revoluble sweep adapted to come between said hopper and platform when the same revolve.

17. A coin-operated vending-machine comprising a single motor, a vertical shaft actua-

ted thereby, coin-actuated automatically-returnable devices for intermittently actuating said motor, two or more hoppers secured to and revolving with said shaft, a platform beneath and moving with each of said hoppers, and an independently-operated sweep for each of said hoppers adapted to come between its coöperating hopper and platform when the same revolve.

18. A coin-operated vending-machine comprising a single motor, a vertical shaft actuated thereby, coin-operated automatically-returnable devices for intermittently actuating said motor, two or more hoppers secured to and revolving with said shaft, a platform beneath and moving with each of said hoppers, a coin-chute for and located adjacent to the plane of rest of each hopper, a rotatable sweep journaled to the side of each of said chutes and adapted to be actuated by the passage of the coin therethrough.

19. A coin-operated vending-machine comprising a motor, a vertical shaft actuated thereby, a counterbalanced lever pivoted to the lower end thereof and rotatable therewith having a pan on one extremity thereof, a fly actuated by the motor located in the normal path of the lever and arresting said lever when in its normal pivoted position, a hopper connected to and revoluble with the upper end of said shaft, and a coin-chute the lower end of which terminates at a point above the pan of said lever when in its normal position.

20. A coin-operated vending-machine comprising a motor, a vertical shaft actuated thereby, a counterbalanced lever pivoted to the lower end thereof and rotatable therewith having a pan on one extremity thereof, a fly located below and actuated by the motor and arresting said lever when in its normal pivoted position, a series of hoppers connected to the upper extension of said shaft, a multiple platform secured thereto immediately below said hoppers having suitable discharge-recesses therein, a coin-chute the lower end of which terminates at a point above the pan of said lever when in its normal position, and a sweep for brushing over said platforms.

21. A coin-operated vending-machine comprising a motor, a vertical shaft actuated thereby, a counterbalanced lever pivoted to the lower end thereof having a pan on one extremity thereof, a fly actuated by the motor and arresting said lever when in its normal pivoted position, a series of hoppers connected to the upper extension of said shaft, a multiple platform secured thereto immediately below said hoppers having suitable discharge-recesses therein, a coin-chute the lower end of which terminates at a point above the pan of said lever when in its normal position, and rotating sweeps actuated by the passage of the coin through said chute to engage said platform during the rotation of its coöperating hopper.

22. A coin-operated vending-machine comprising a motor, a vertical shaft actuated thereby, a counterbalanced lever pivoted to the lower end thereof having a pan on one extremity thereof, a fly actuated by the motor and arresting said lever when in its normal pivoted position, a series of hoppers connected to the upper extension of said shaft, a multiple platform secured thereto immediately below said hoppers having suitable discharge-recesses therein, a coin-chute the lower end of which terminates at a point above the pan of said lever when in its normal position, and rotating spindles journaled in bearings secured to said coin-chute having an inner crank-shaped sweep extending therefrom and having an arm extending from its outer end that is engaged by the coin passing through its supporting-chute, as and for the purpose set forth.

In testimony whereof I have hereunto set my hand this 2d day of April, 1903.

CLAUDE BIGELOW.

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