

(No Model.)

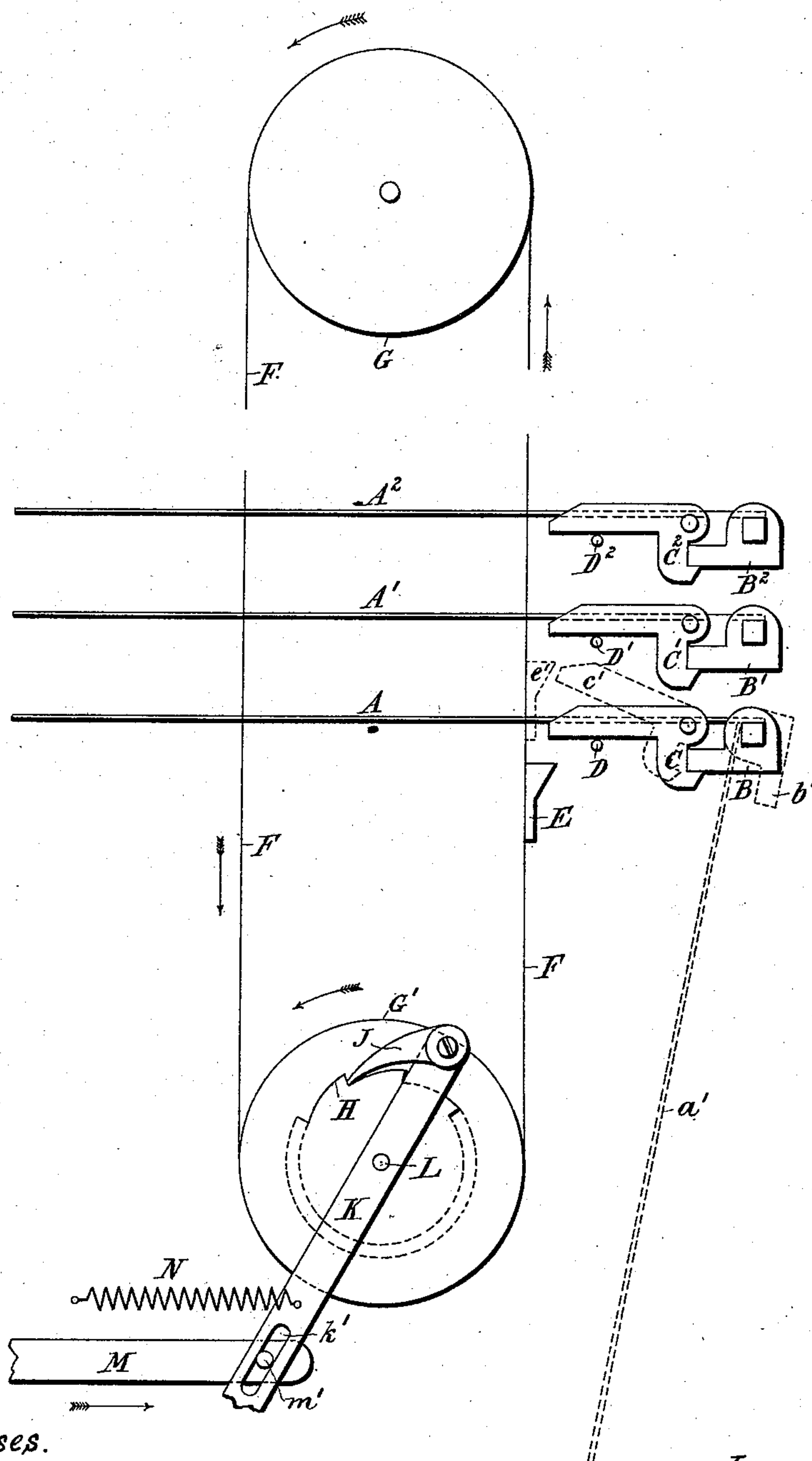
2 Sheets—Sheet 1.

J. A. BRYCE.
COIN CONTROLLED VENDING MACHINE.

No. 532,526.

Patented Jan. 15, 1895.

Fig. 1.



Witnesses.

James Ernie Loran
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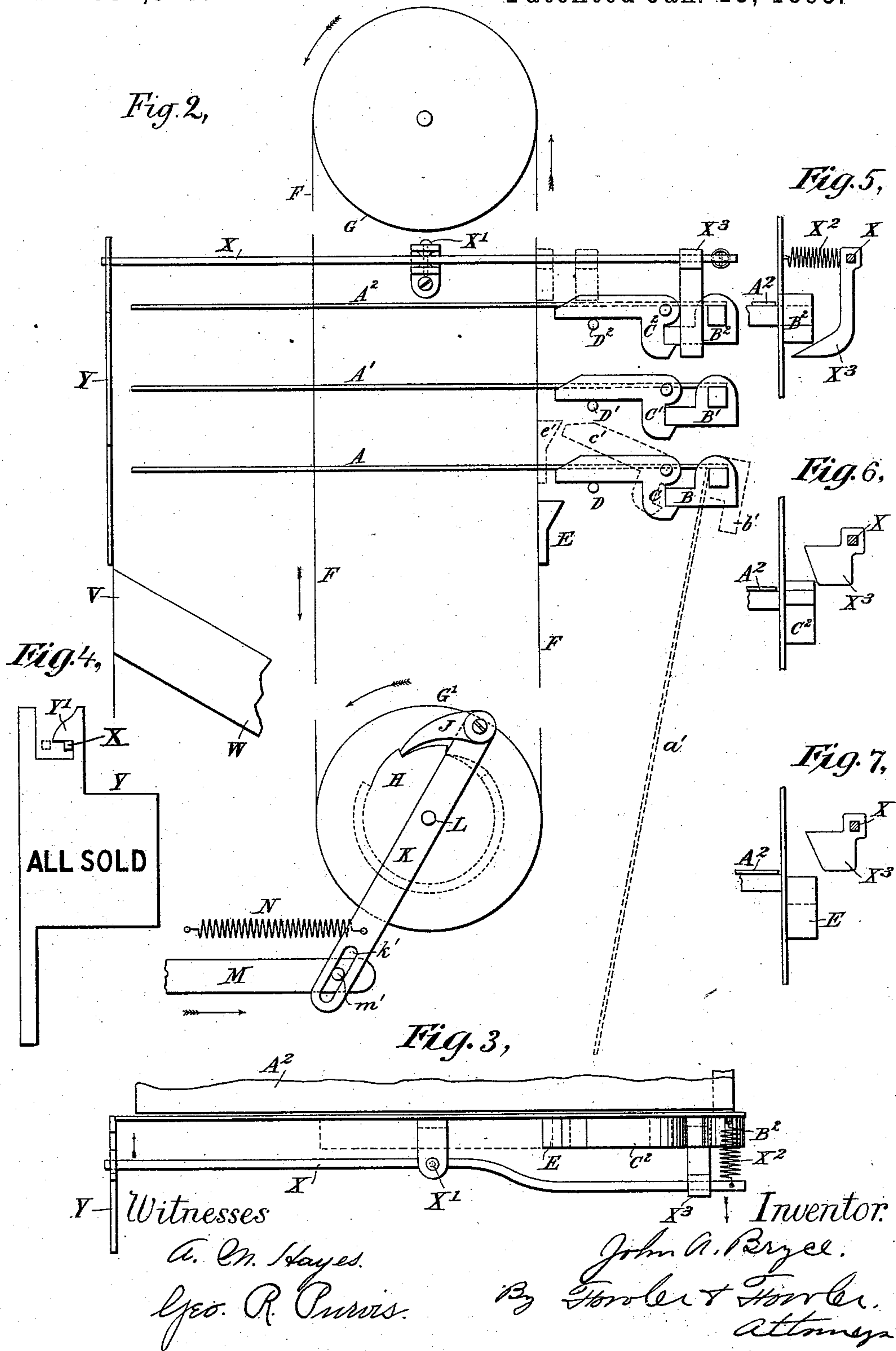
Inventor

John Annan Bryce

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UNITED STATES PATENT OFFICE.

JOHN ANNAN BRYCE, OF LONDON, ENGLAND.

COIN-CONTROLLED VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 532,526, dated January 15, 1895.

Application filed April 26, 1890. Serial No. 349,590. (No model.) Patented in England February 14, 1888, No. 2,202.

To all whom it may concern:

Be it known that I, JOHN ANNAN BRYCE, a subject of the Queen of Great Britain, residing at London, in the county of Middlesex, England, have invented certain new and useful Improvements in Automatic Vending or Delivering Machines, (for which I have obtained a patent in Great Britain, No. 2,202, bearing date of February 14, 1888,) of which the following is a specification.

My invention relates to improvements in automatic vending or delivering machines and has special though not exclusive reference to the delivery of articles deficient in rigidity or of indefinite shape or size.

I employ supports which may for example be of the form of platforms, trays, cups, or the like of suitable size and strength for supporting the articles or material to be sold or delivered: and I hinge, suspend or sustain these supports so as to render them capable of movement in such manner as to release the articles and allow them to drop or pass through a chute or otherwise to the exterior of the machine or into a drawer or compartment from which they can be readily removed. I cause these supports to be successively operated by means of what I may for convenience term a "traveler." This traveler may consist of an endless band or driving chain or the like having at any convenient part thereof a projection or releasing device which successively comes in contact with the supports or with a device or part connected thereto so as to cause them to be released or moved and the article to be delivered; or the traveler may consist of a screw and a nut or carriage traveling thereon and operating the supports after the manner hereinbefore mentioned.

I actuate the traveler by means of a slide or pusher or the like which may act upon a ratchet wheel or other similar or equivalent device by means of a pawl or its equivalent and so cause a definite amount of movement of the traveler. In some cases the said slide or pusher instead of acting directly upon the ratchet wheel may act indirectly through the agency of a coin: and when this is the case suitable arrangements are used to insure the mechanism being operated by a coin of the correct value only, the coin being, after each

operation of the machine, passed to a suitable receptacle. For the ratchet and pawl arrangement referred to I may when desired substitute any other convenient known device for converting reciprocating into rotary motion, and this either with or without the intervention of a coin acting as aforesaid.

When desired I may instead of employing a slide or pusher or other reciprocating actuating device employ an actuating device placed at or connected with the exterior of the machine capable of rotary or angular motion.

To close the coin slit, or orifice through which the coin is introduced, when the last article has been delivered or the last support operated, I employ a shutter connected by any convenient mechanical movement with such last support or with the traveler.

Having thus described in general language the nature and object of my invention I shall now proceed to explain in detail one or more ways in which it is to be or may be performed or carried into effect and in order that this more detailed description may be more readily understood I have annexed hereunto sheets of drawings illustrative of my invention and have inserted in the same figures and letters of reference corresponding with those in the following explanation.

In the drawings similar letters of reference apply to similar or equivalent parts.

Figure 1 is a side view of the essential parts of my improvements, and Fig. 2 is a view of the same with the drop shutter and its actuating mechanism added thereto. Fig. 3 is a plan view of the apparatus shown in Fig. 2 with the traveler omitted. Fig. 4 is a front view of the drop shutter for closing the coin slit when the last article has been delivered from the machine. Figs. 5, 6 and 7 are detailed views of devices for operating the drop shutter indirectly through means of the tumbler of the last of the series of movable supports, or the lock or gripping device engaging such tumbler, or the traveler itself, respectively.

Fig. 1 is a drawing illustrating the essential parts of the delivering mechanism of one form of my invention. In this form a number of platforms A, A', A², constituting the supports, are superposed one over the other; and each

of these serves to support a single newspaper or other article. These platforms are rigidly attached to the tumblers B, B', B² which engage with the gripping pieces C, C', C² which latter rest on the pins D, D', D² when free from the releasing device or "tripper" E. This releasing device or tripper is mounted on the driving chain F which engages and passes over the sprocket wheels G G' (for convenience of drawing the driving chain F is shown in the figure by the simple line, and the sprocket wheels G, G' by circles). To the wheel G' is rigidly attached the ratchet wheel H this being engaged by the pawl J mounted on the lever K which moves loose upon the same arbor or center L upon which the ratchet H and the wheel G' are fixed. M is a slide or pusher upon which is a pin m' working in the slot k' of the lever K, the latter being retained in its normal position by the spring N. To explain the operation of the apparatus shown in this figure let us assume that the slide or pusher M is actuated so as to move in the direction shown by the arrow. Such a movement will cause the lever K to be turned on the center L so as to cause the pawl J to move the ratchet wheel H and with it the sprocket wheel G' and driving chain F in the direction shown by the arrow. The dimensions and the adjustment of these parts are such as to cause the distance moved by the releasing device E to be such as to actuate one of the platforms at each complete operation of the slide or pusher. It will thus be seen that the releasing device E and the gripping device C will on the operation of the slide M move into the positions e' and c' shown in dotted lines. The tumbler B being now freed from the gripping device C will be free to turn, and with it the platform to which it is attached by reason of the weight of the latter into the position shown by the dotted lines b' and a' so that the article which was supported on the platform will drop downward into a chute or be otherwise passed to the exterior of the machine, or into a drawer or compartment from which it can be removed.

A convenient device for closing the coin slit when the last support has been operated consists of a shutter or plate which is normally engaged by a lever so that when the said lever is moved laterally the plate will be dropped over the coin slit so as to close it. I find it convenient to operate the said lever by attaching to the end farthest from the said plate a beveled piece so that the pressure or impact, of the last support, or a part connected thereto, or of the traveller when the level of the last support has been attained, upon the beveled surface will move the lever laterally. On the said plate the words "All sold" may be engraved or a separate plate having such words may be attached to the plate which covers the coin slit so as to come opposite a window and make the announcement when the plate drops.

The construction of the device for closing

the coin-slit and the connections for operating the same by means of the coin-controlled mechanism is as follows: Y is a vertically-moving drop shutter bearing the inscription "All sold" and provided with a projection Y' which is normally engaged by a lever X pivoted at X' to a bracket and provided with a suitable spring X² for returning it to normal position after it has been laterally moved by the device arranged to throw it into operation upon the delivery of the last article from the machine. This lever is provided at its end farthest from the shutter with a suitably beveled push-piece X³ which is arranged to be engaged and pushed aside by the movement of either the tumbler B² of the last of the series of supports A², as shown in Fig. 5, or by the movement of the tripping device C² thereof, as shown in Fig. 6, or by the movement of the trip or striker E of the traveler F, as shown in Fig. 7. The several described parts lie normally in the positions shown. When, now, the last support A², of the series of supports, delivers its article, the push-piece X³ will be shoved aside thereby moving laterally the lever X in the direction indicated by the adjacent arrows in Fig. 3 and dropping the shutter Y over the coin slit V.

When one article is to be sold or delivered for each payment made to, and operation of, the machine one article only is placed upon each support. When more than one article is to be sold or delivered that number of articles is placed upon each support. When the article is to be sold or delivered in bulk then the proper quantity is placed upon each support.

It will be seen that the articles sold by means of my apparatus are not necessarily of any definite size or shape nor do they require to be rigid. It is sufficient that they can be supported on a platform or tray or cup or the like as before described.

It will be understood that in the case where the machine is constructed to sell or deliver a specific article the supports may be conveniently of such size and shape and distance apart as to suit the said articles. When however the machine is not constructed to sell a specific article then the supports should be constructed of such distance apart and of such shape and strength as to be suitable for the largest and heaviest articles likely to be sold or delivered from the machine.

I desire it to be understood that my invention does not include what is known as the coin-releasing or coin-actuating mechanism employed in automatic vending machines; nor does it include any particular arrangement for insuring that the machine shall be operated by a coin of the required value only. There are many forms of coin-releasing or coin-actuating mechanism and of mechanism for insuring that the machine shall only be actuated by a coin of the correct value which may conveniently be employed in conjunction with my delivering mechanism.

I do not limit myself to any particular method of hinging or suspending or otherwise sustaining the supports: nor do I limit myself to any particular devices or mechanism for operating the supports.

I desire it to be understood that the essence of my invention (except in so far as it relates to the device for closing the coin slit and making the announcement that all the articles are sold) lies in the employment of a number of superposed supports each serving to support the exact amount of material or number of articles (one or more as the case may be) as are to be sold or delivered at each operation of the machine these supports being successively operated by a traveler so as to move or alter their position and so allow the material or articles which they support to drop and pass either to the exterior of the machine or to a receptacle from which it or they can be conveniently removed.

My invention may be employed in conjunction with a part or parts of other forms of automatic vending or delivering machines.

My invention is particularly suitable for the automatic sale of newspapers and magazines.

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

1. In a vending machine, the combination of a series of movable supports each moving about a fixed axis and each serving of itself to sustain an article or commodity, mechanism for retaining said supports in position for sustaining its said article or commodity, and traveling means for engaging said retaining mechanism and consecutively discharging the articles or commodities.

2. In a vending machine the combination of a series of supports each serving of itself to sustain an article or commodity and capable of moving to release an article sustained thereby, a traveler adapted to successively operate said supports and means for controlling the movement of said traveler.

3. In a vending machine the combination of a series of superposed supports each serving of itself to sustain an article or commodity and capable of moving to release an article sustained thereby, a traveler adapted to successively operate said supports and means for periodically operating the said traveler.

4. In a vending machine the combination of a series of hinged or pivoted supports each serving of itself to sustain an article or commodity and provided with a gripping device for holding it in position to sustain an article, a traveler for successively engaging and releasing said gripping devices and means for periodically operating said traveler.

5. In a vending machine the combination of a series of supports each serving of itself to sustain an article or commodity and consist-

ing of one or more members capable of moving to release an article sustained thereby, a traveler for successively operating said supports and means for periodically moving said traveler.

6. In a vending machine the combination of a series of supports each serving of itself to sustain an article or commodity, tumblers connected therewith and gripping devices controlling said tumblers, a traveler for successively engaging said locks or gripping devices and thereby operating said supports *seriatim*, and means for periodically actuating the traveler.

7. In a vending machine the combination of a series of movable supports, each serving of itself to sustain an article or commodity an endless traveler provided with a releasing-device for engaging and releasing said supports and means for periodically operating said traveler.

8. In a vending machine the combination of a series of movable supports, each serving of itself to sustain an article or commodity an endless traveler provided with a releasing-device for engaging and successively operating said supports, a drive-wheel for said traveler and ratchet connected with said wheel and provided with a feeding pawl for periodically driving the ratchet.

9. In a coin-operated vending machine, the combination of a coin-chute and a slit for depositing a coin therein, a series of hinged supports controlled by a coin, a shutter for closing said coin-slit and an intermediate hinged lever holding said shutter normally open and actuated by the last of the series of said supports.

10. In a coin-controlled vending machine, the combination of a coin-chute having a slit for depositing a coin therein, a shutter for closing said coin-slit upon the delivery of the last article from the machine and a hinged lever for operating said shutter, a movable support provided with a tumbler and a gripping device for said tumbler, said tumbler adapted to engage and actuate said lever, substantially as and for the purpose set forth.

11. In a coin-controlled vending machine, the combination of a coin-chute having a slit for depositing a coin therein, a shutter for closing said coin-slit upon the delivery of the last article from the machine and a hinged lever for operating said shutter, a series of movable supports and a traveler for operating the same in succession, said traveler adapted to engage and actuate said lever when the last of said supports is thrown into operation, substantially as and for the purpose set forth.

JOHN ANNAN BRYCE.

Witnesses:

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HAROLD RUTTER.