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Patented Nov. 19, 1901.

O. JAEGER.
AUTOMATIC VENDING MACHINE.

(Application filed Dec. 24, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

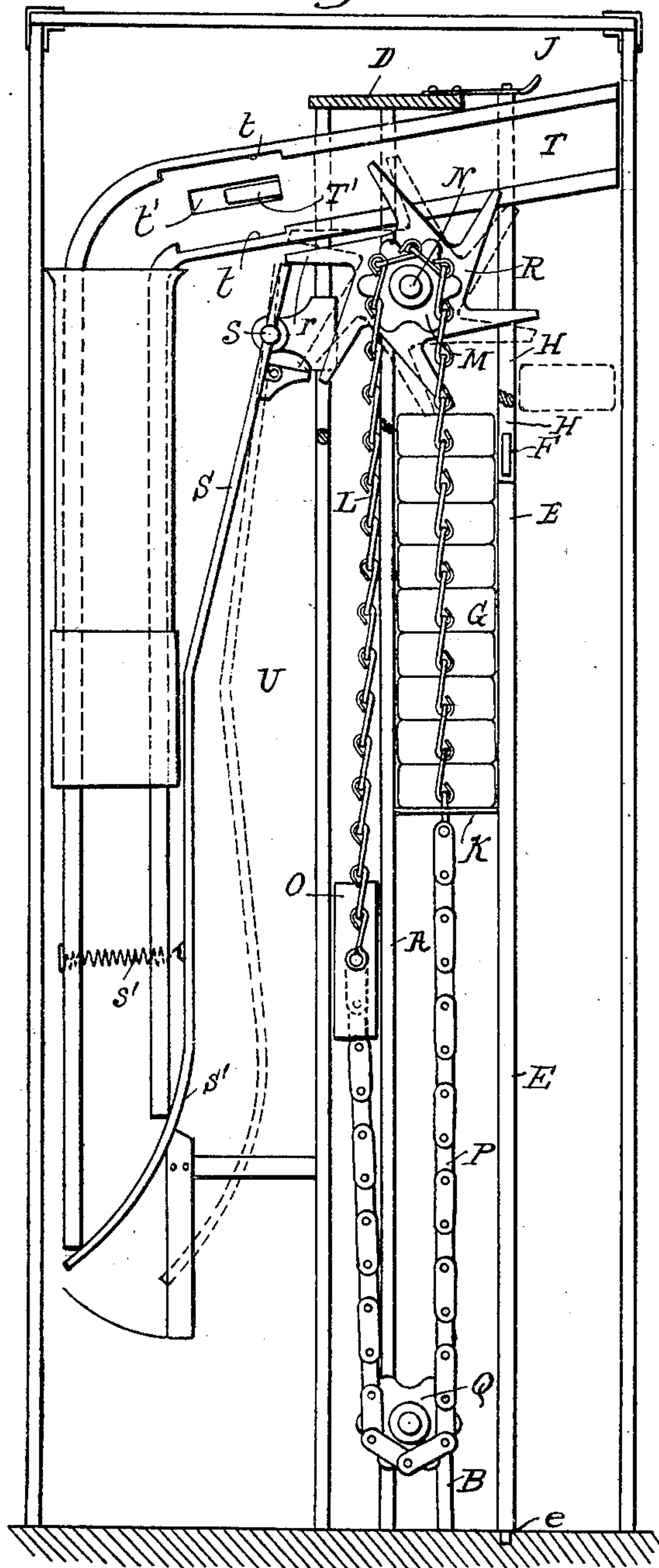
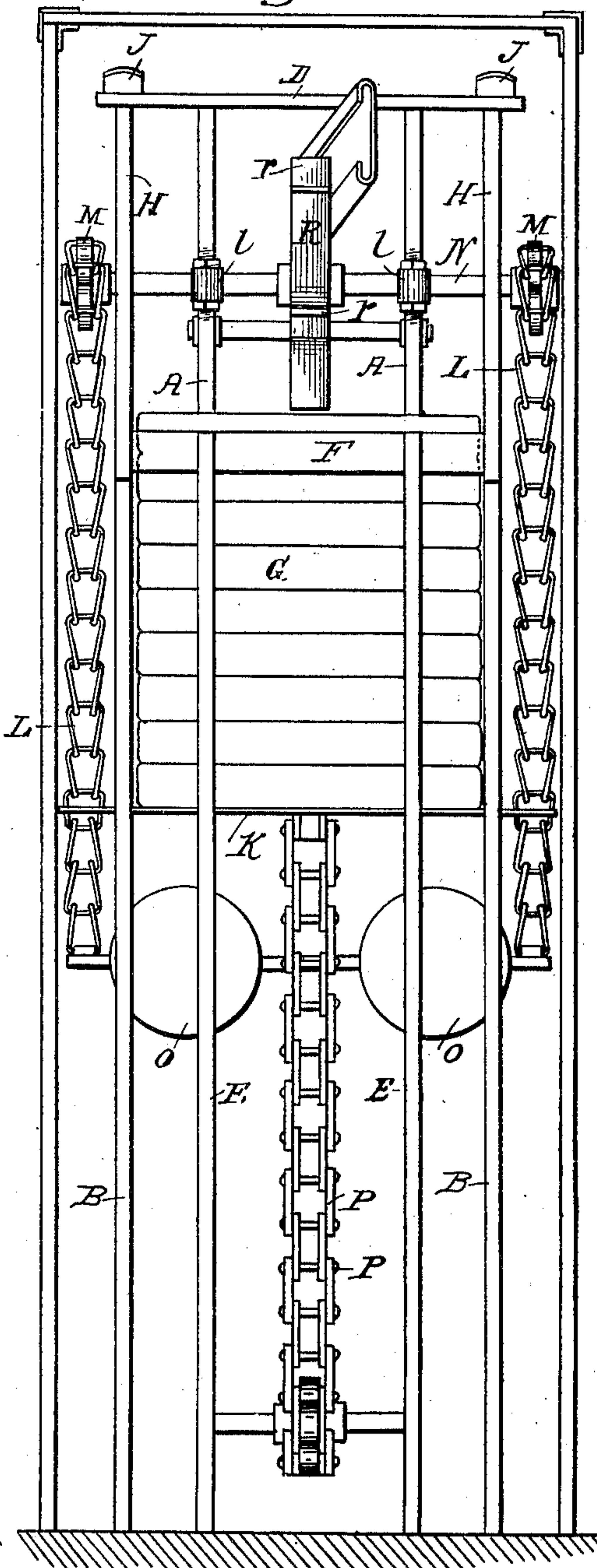


Fig. 2.



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Fig. 3.

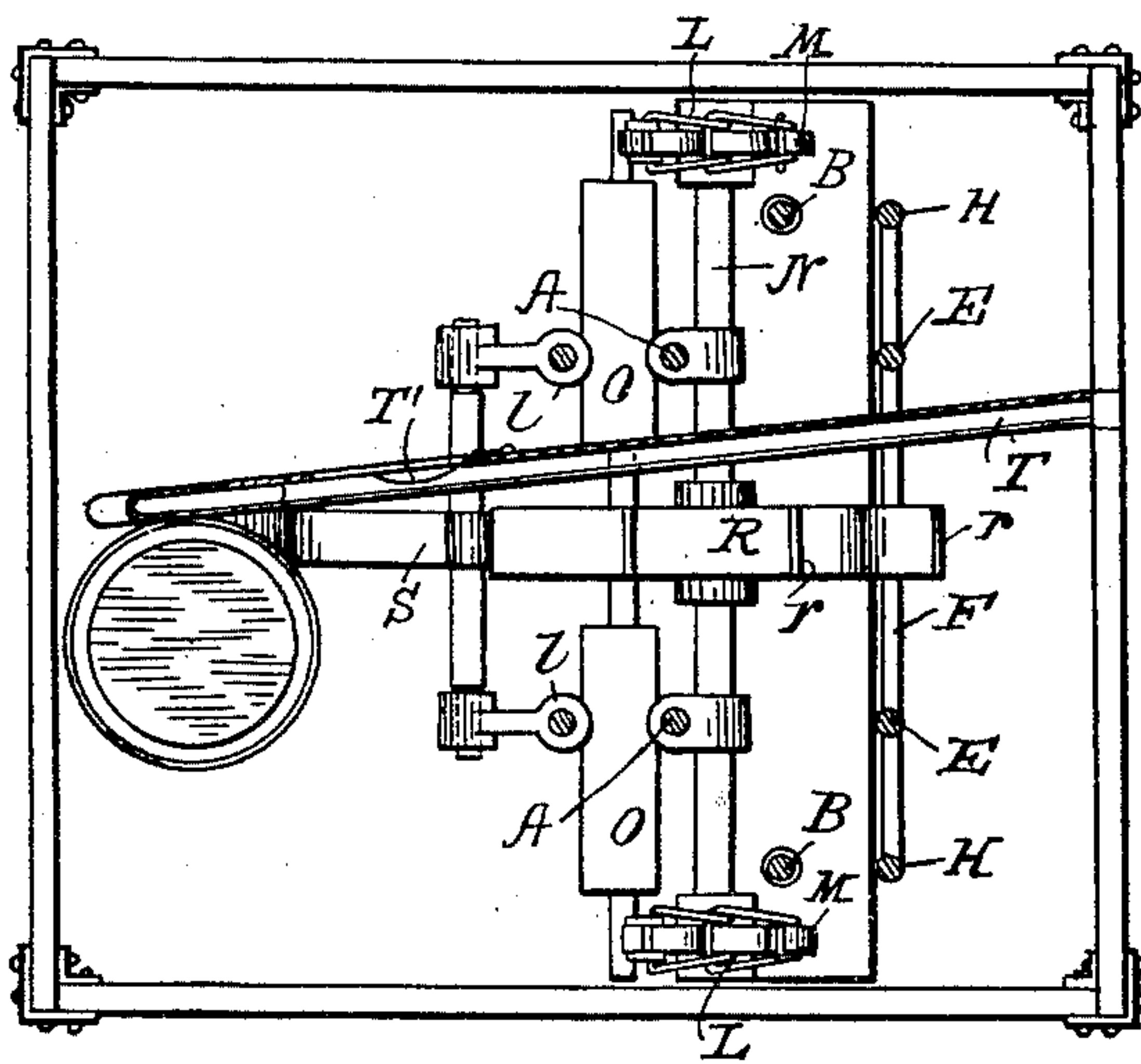


Fig. 5.

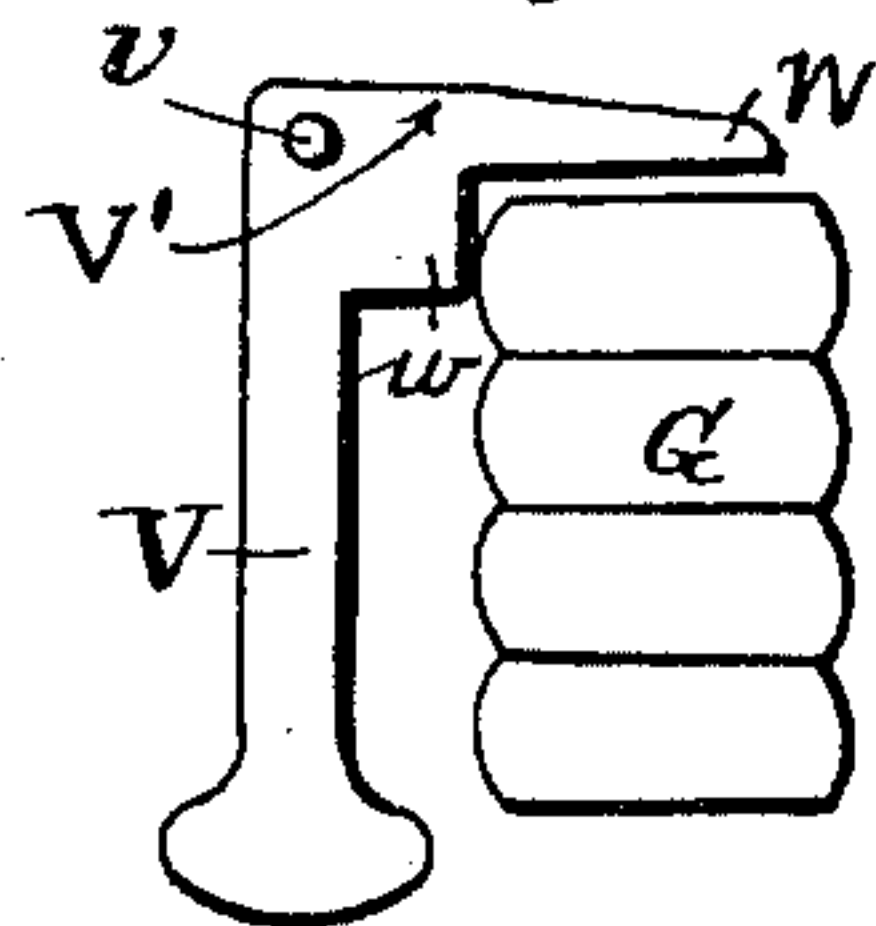
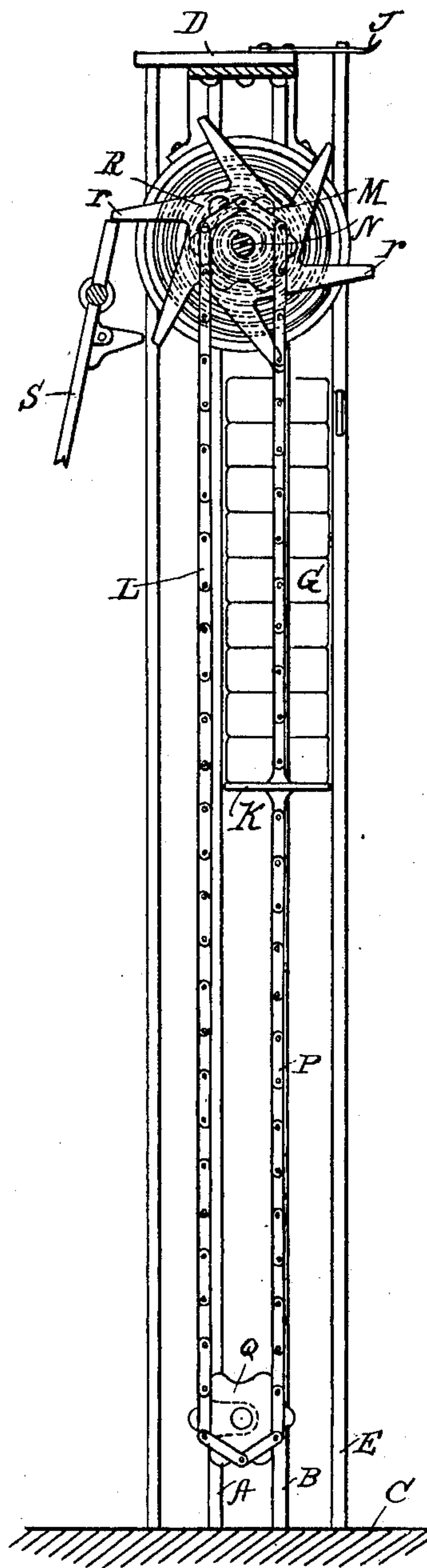


Fig. 4.



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UNITED STATES PATENT OFFICE.

OTTO JAEGER, OF PHILADELPHIA, PENNSYLVANIA.

AUTOMATIC VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 686,734, dated November 19, 1901.

Application filed December 24, 1900. Serial No. 40,964. (No model.)

To all whom it may concern:

Be it known that I, OTTO JAEGER, of Philadelphia, Pennsylvania, have invented a new and useful Automatic Vending-Machine, which is fully set forth in the following specification.

My invention relates to coin-controlled vending-machines for dispensing single articles or packages upon the insertion of the proper coin or token check, and more particularly to machines of the type in which the action is entirely automatic—that is, where no manipulation is required beyond the insertion of the coin.

The invention consists, in brief, in so constructing and arranging the parts that the article shall be delivered from the top of the pile of articles instead of from the bottom, as heretofore. When the article or package is delivered from the bottom of the pile, the free and ready discharge is hindered by the friction due to the weight of the remaining superimposed packages crowded down upon it, which is particularly noticeable in the case of a flat thin package, whereas in my improved construction since the article is removed from the top of the pile instead of having to be forced out from under the bottom of the pile there is practically no resistance whatever. Furthermore, when the article is delivered from the bottom the next succeeding article is liable to be caught in the delivery mechanism so as to clog the apparatus, which is not the case in the present invention.

My apparatus comprises an elevator consisting of a vertically-movable platform or carrier for the articles, with a casing to hold the pile of articles in place and serve as a guide for the platform in its up-and-down travel, a counterweight (or equivalent device) for causing the platform to travel upward, and a coin-controlled device (escapement) for controlling the movement of the elevator-platform, whereby upon the insertion of the proper coin the elevator travels upward one step or a distance sufficient to permit the discharge of a single article. I prefer to provide a positive device for ejecting the top article.

In the drawings annexed hereto to illustrate an embodiment of my invention, Figure

1 is a side elevation, Fig. 2 a front elevation, and Fig. 3 a plan, all the views being partly broken away or in section. Fig. 4 is a side elevation of modified form, and Fig. 5 is a detail of another modification.

The casing or guide is formed by rods A A at the rear and rods B B at each end, all of which are fast to the base-plate C and secured at the top to plate D. In front shorter rods E E are set into sockets *e e* in the base-plate and are united at their upper ends by cross-bar F to hold in place the packages G, while rods H H rise from the extremities of cross-bar F and are held by spring-catches J J on plate D. Cross-bar F is so situated and rods H so spaced apart as to permit the escape of the top package only from the pile of packages G. By releasing the catches J the front framework can be removed for refilling the casing.

The carrier consists of the elevator or platform K, which is free to slide up and down on the rods B B, that pass through holes in it. To each end of the platform is secured a sprocket-chain L, that passes up over sprocket-wheels M on a suitably-journaled transverse shaft N and then down and is connected at its other end to the counterweight (or counterweights) O, traveling on suitable guides. A compensation-chain, as P, composed of heavier links than in chains L, may be employed, being secured at one end to the counterweight and at the other to the bottom of the platform. The idle sprocket Q may also be used. The weights O are enough heavier than the platform when loaded—i. e., at its lowest position—to raise the latter when unobstructed. The articles or packages G are piled up on the carrier or platform K, being readily inserted when the front framework has been removed, or they may be slipped into the opening above bar F. By the act of inserting the packages the platform is depressed and the counterweight (or equivalent device) correspondingly raised, wherefore the elevating mechanism may be designated as “self-setting.”

For the controlling device I provide an escapement-wheel R, fast on the transverse shaft N, and a lever S, pivoted, as at *s*, and carrying the escapement-pallets to cooperate with the teeth of wheel R. The lower end of le-

ver S extends, preferably, in an oblique position, as at S', in the path of the descending coin, so that the latter in its traverse will operate to depress the lever, and thereby release
 5 one tooth *r* of the escapement R. Gravity, which may be assisted by a spring, as *s'*, restores the lever to its normal position as soon as the coin has passed. The teeth *r* are so spaced and the parts so arranged relatively
 10 that for each release of the wheel R the platform K is raised just far enough to bring only one package G clear above bar F, and thereupon one of the teeth, as *r'*, acts as a "kicker" to eject this package, which drops down within
 15 reach of the purchaser.

The coin-chute T is shown as terminating just above the lower end of lever S and is provided with the usual intumed flanges for retaining the coin, these flanges (one or both)
 20 being partly cut away, as at *t*, so as to permit the lateral escape of any token smaller than the standard coin. A very thin spring T' is located at this point of the chute, preferably passing through a slot *t'*. When the proper
 25 coin is inserted in the chute, it will press this spring T' out of the way and continue until it acts upon the lever S. A smaller token will be thrown aside by the spring passing out of the cut-away portions, as into a receptacle U.
 30

The mode of operation of my apparatus is obvious and calls for no detailed description. The coin being inserted into the mouth of the chute passes down and depresses the lower
 35 end of lever S. Thereupon the upper pallet of the lever S is tripped from its engagement with one of the escapement-teeth, and the counterweight rotates the shaft N until the lower pallet of the lever is engaged, which
 40 means that a package is being brought up nearly ready for delivery. The coin having now passed by lever S, gravity (or spring *s'*) pulls the lever back, so that the upper pallet again engages another tooth of the escape-
 45 ment, while the proper tooth ejects the topmost article, which latter is guided by suitable chutes or casing into reach of the purchaser, preferably a trough located at the bottom of the apparatus.

It is obvious that many changes may be made in my invention—as, for instance, the substitution for the framework formed of rods of a casing formed of oppositely-disposed U-shaped sheet metal, in which case
 55 the platform is preferably guided by flanges that travel in vertical slots in such casing. In either construction instead of the counterweights I may employ a spring for rotating the transverse shaft N, as in Fig. 4, or I may
 60 employ a spring placed beneath the platform K to raise the latter or any device that causes the platform to travel upward and that may be controlled by coin mechanism; but in any case the platform or elevating mechanism
 65 will be self-setting. So, also, parts of my invention may be used to the exclusion of other parts without departing from the spirit of my

invention—as, for instance, I may entirely dispense with the positive means for ejecting the article, accomplishing the desired purpose
 70 by giving the casing an oblique direction, so that when the top article clears the cross-bar F gravity will cause it to drop, or I may provide a cam-surface against which the article is raised so that it will be forced out, or
 75 I may employ any arm or lever or system of arms or levers operated by the counterweight or other motive force to eject the article.

In Fig. 5 I illustrate a preferred form. V is a weighted lever pivoted behind the pile of
 80 packages, as at *v*, and having the arm V' extending across the top of the pile G. This arm contains the reduced portion W, lying above the pile, and the heel *w*, adjacent to the rear of the uppermost package. When
 85 the platform travels upward, the topmost article lifts finger W, while at the same time the heel *w* is caused to swing laterally, so as to eject the package as before.

Other changes may be made and other parts
 90 dispensed with while still retaining the substance of my invention.

Having thus described my invention, I claim—

1. In an automatic machine for vending
 95 single articles, the combination of a suitably-supported and vertically-traveling chain, a platform for the pile of articles and a counterweight for the latter, the same carried respectively by opposite ends of said chain, and a
 100 coin-actuated escapement-lever cooperating with an escapement-wheel for controlling the movement of said platform, substantially as described.

2. In an automatic machine for vending
 105 single articles, the combination of a suitably-supported and vertically-traveling chain, a platform for the pile of articles and a counterweight for the latter, the two carried by the respective ends of said chain, a coin-actuated escapement for controlling the move-
 110 ment of said platform, and a device carried by said escapement that ejects the topmost article upon the insertion of the proper coin, substantially as described.
 115

3. In an automatic machine for vending single articles, the combination of a vertically-movable platform for carrying a pile of articles, means for moving the same upward, an escapement that controls said movement, and
 120 a device operated by said escapement to eject the topmost article, substantially as described.

4. An automatic apparatus for vending single articles, consisting of the combination with a vertically-movable platform and means for
 125 raising the same, of a coin-actuated escapement that controls the upward movement of said platform and so located that its arms will act to eject the topmost article, substantially as described.
 130

5. An apparatus for vending single articles, consisting of the combination with a movable platform and means for moving the same, of an escapement-wheel whose arms act to eject

the adjacent article automatically, and a coin-actuated escapement-lever coöperating with said wheel, whereby upon the insertion of a coin a single article is automatically ejected, 5 substantially as described.

6. An automatic apparatus for vending single articles, consisting of the combination with a transverse shaft, a suitably-supported and vertically-traveling chain passing around the 10 same, and a platform for the pile of articles together with a counterweight for the latter carried at the opposite ends of said chain, of a coin-controlled escapement device on said shaft that acts automatically to eject the top- 15 most article, substantially as described.

7. An automatic vending apparatus, consisting of the combination with a platform, means for moving the same upward, and a transverse shaft rotated thereby, of a coin- 20 controlled escapement and ejecting device

carried by said shaft, whereby upon the insertion of a coin the topmost article is automatically ejected, substantially as described.

8. An automatic apparatus for vending single articles, consisting of the combination with 25 self-setting mechanism for moving a pile of the articles upward, of an escapement that normally prevents such upward movement but which upon the insertion of a coin permits such movement, and a device whereby 30 (upon such movement) the topmost article is automatically ejected, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscrib- 35 ing witnesses.

OTTO JAEGER.

Witnesses:

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J. TAYLOR.