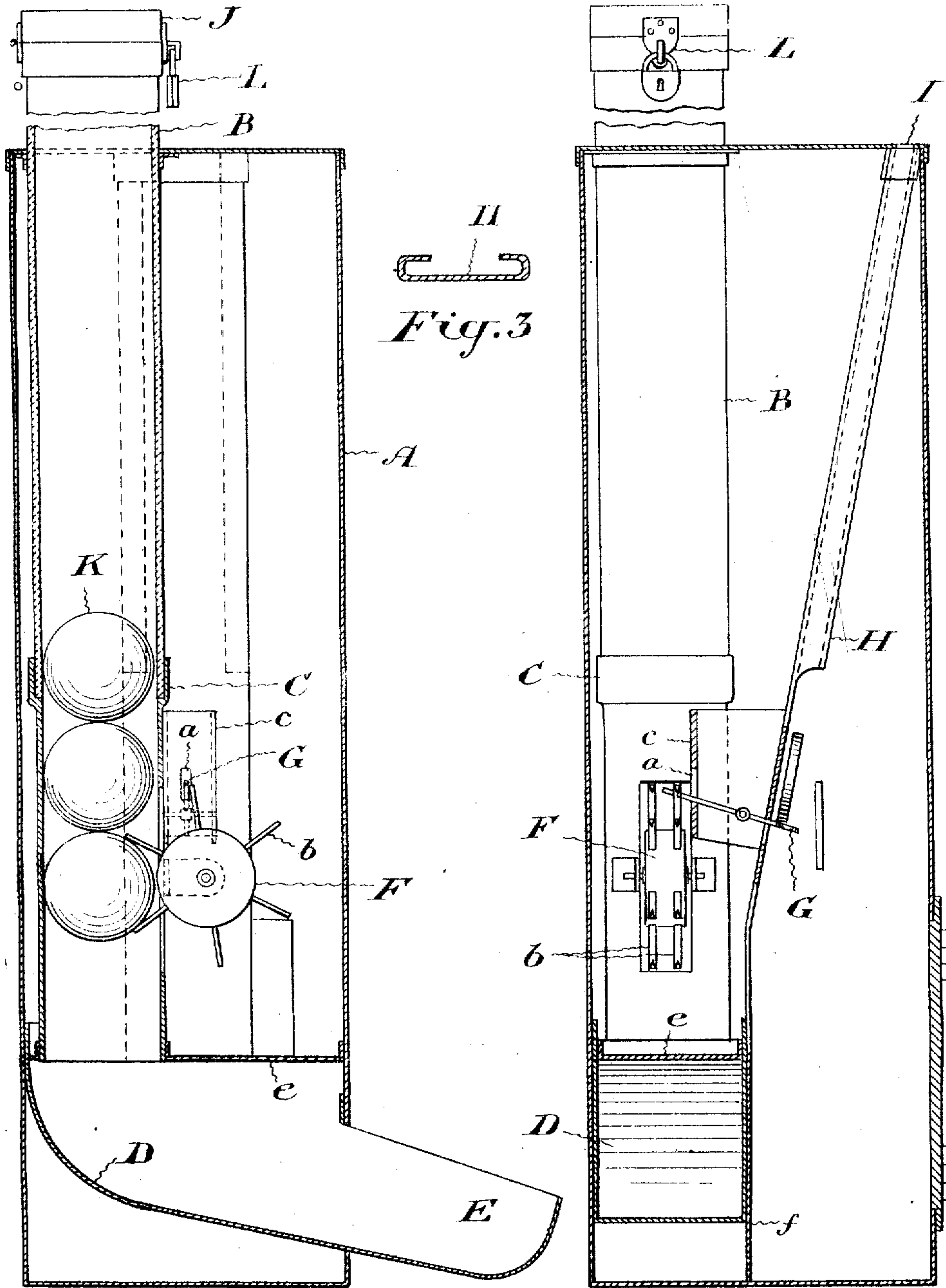


T. H. DUNCOMBE.  
 COIN CONTROLLED VENDING APPARATUS.  
 APPLICATION FILED FEB. 17, 1909.

953,739.

Patented Apr. 5, 1910.



*Fig. 1*

*Fig. 2*

WITNESSES:

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# UNITED STATES PATENT OFFICE.

TYRRELL H. DUNCOMBE, OF ST. THOMAS, ONTARIO, CANADA.

## COIN-CONTROLLED VENDING APPARATUS.

953,739.

Specification of Letters Patent.

Patented Apr. 5, 1910.

Application filed February 17, 1909. Serial No. 478,479.

*To all whom it may concern:*

Be it known that I, TYRRELL H. DUNCOMBE, of the city of St. Thomas, Province of Ontario, Canada, have invented certain new and useful Improvements in Coin-Controlled Vending Apparatus, of which the following is a specification.

My object is to devise a simple coin controlled vending apparatus particularly adapted for the vending of commodities in circular or approximately circular section.

I attain my object by a construction which may be briefly described as follows. A containing tube is slotted toward its lower end and through the slot work the arms of a star wheel. This star wheel is suitably journaled and is so proportioned that when the machine is non-operative one pair of arms will prevent any discharge from the tube, and so that when the wheel is rotated the lowest of the articles to be vended will be allowed to escape and the next pair of arms in rotation will pass below the article next above and prevent its exit. Suitable coin controlled mechanism is provided for locking and releasing the star wheel.

Figure 1 is a longitudinal section of the machine taken through the receptacle and the delivery spout. Fig. 2 is a vertical section taken at right angles to Fig. 1. Fig. 3 is a horizontal section of the coin chute.

In the drawings like letters of reference indicate corresponding parts in the different figures.

A is the casing of the apparatus which is suitably shaped to contain and support the mechanism, being preferably cylindrical.

B is the receptacle for the commodity to be vended. This is preferably a glass tube and extends up through the top of the casing to any convenient height. The lower end of the tube communicates with the tube C within the lower part of the casing which tube is preferably of metal. Below the lower end of the tube C is a curved guide D extended out through an opening in the casing to form the delivery spout or tray E. The tube C is slotted at its lower end to permit of the arms *b* of the star wheel F working through the tube to engage the commodity to be vended. The commodity to be vended is preferably substantially circular in section or of any shape in which only a small portion of the contiguous surface or adjacent articles are in contact. In the drawing I show a plurality of spherical articles K,

this form giving the greatest satisfaction. The star wheel has its arms *b* arranged in pairs, as shown particularly in Fig. 2. This enables the arms to work in the lateral spaces necessarily left on each side of the axis of the tube passing through the points of contact between the spherical article K. The star wheel is suitably journaled and is so proportioned that when the machine is non-operative one pair of arms will prevent any discharge from the tube C, and so that when the star wheel is rotated the articles to be vended will be allowed to escape one by one. The star wheel F thus forms the escapement and I provide a mechanism by which this escapement may be locked and the lock released by coins inserted in the apparatus.

The weight of the articles to be vended tends to rotate the star wheel, but normally the wheel is held from rotating by a trip lever G suitably fulcrumed in the apparatus. This trip lever operates in a guide slot *a* formed in the plate *c* forming part of the frame. This trip lever is so proportioned that it normally tends to maintain the position shown in the drawings. The other end of the lever lies below the open lower end of the coin chute H, which is inclined as shown and communicates with the coin slot I. The coin chute it will be seen is formed by the guiding flanges *d* which leave the slot open at what may be termed its under side, that is the right hand side as shown in Fig. 1. The lower end of the coin chute not being directly above the lever, very light or small coins will drop down without engaging the trip lever owing to the fact that the lower end of the chute is some distance above the trip lever, so that only coins of approximately full weight will overcome the friction in the chute and acquire sufficient velocity to hit the end of the trip lever.

The curved guide D is shut off from the compartment for the mechanism and the compartment for the receipt of the coins by the partitions *e* and *f*.

The tube B may be made of any length desired and its upper end is provided with a hinged cap J for the insertion of the commodity to be vended. A suitable lock L will be provided for the cap.

The great certainty with which my invention operates is due to two features resulting from the arrangement and construction. 1st. The pairs of arms of the star wheel work in the lateral spaces between the ar-



articles in the tube and can not therefore jam on these articles, as they have no separating functions to fill. 2nd. It will be noted that the ends of the pairs of arms are circumferentially separated by a space preferably less than, and in any case not greater than, the vertical diameter of the articles to be vended. From these two features it results that the whole series of articles in the tube rest on the lowermost one of the series and it is supported on the lowermost pair of arms in the tube, while the upper pair of arms in the tube are some distance below the points on the surface of the article above them with which they will contact when the said article becomes the lowermost article in the tube. When the lowermost article is released by the arms of the star wheel the whole column of articles will for a moment be unsupported, then they will drop and settle in place with the former next-to-the-bottom article in position on the arms which formerly were below, but not in contact with it.

What I claim as my invention is:—

25 1. In vending apparatus the combination of a substantially vertical tube, slotted near its lower end and adapted to contain a plurality of articles, shaped to contact only at the central portion of their contiguous sur-

faces, thus forming lateral spaces; a suitably 30 journaled star wheel provided with a plurality of pairs of arms, working through the slot in the tube and located and proportioned to enter the lateral spaces between the aforesaid articles at each side of the axis 35 of the tube.

2. In vending apparatus the combination of a substantially vertical tube, slotted near its lower end and adapted to contain a plurality of articles, shaped to contact only at 40 the central portion of their contiguous surfaces, thus forming lateral spaces; a suitably journaled star wheel provided with a plurality of pairs of arms, working through the slot in the tube and located and proportioned 45 to enter the lateral spaces between the aforesaid articles at each side of the axis of the tube, the ends of the pairs of arms being separated circumferentially by a distance less than the vertical diameter of the articles 50 to be vended.

Dated, St. Thomas, this 8th day of February 1909.

TYRRELL H. DUNCOMBE.

Signed in the presence of—

WILLIAM L. WICKETT,  
EDNA CAMPBELL.