

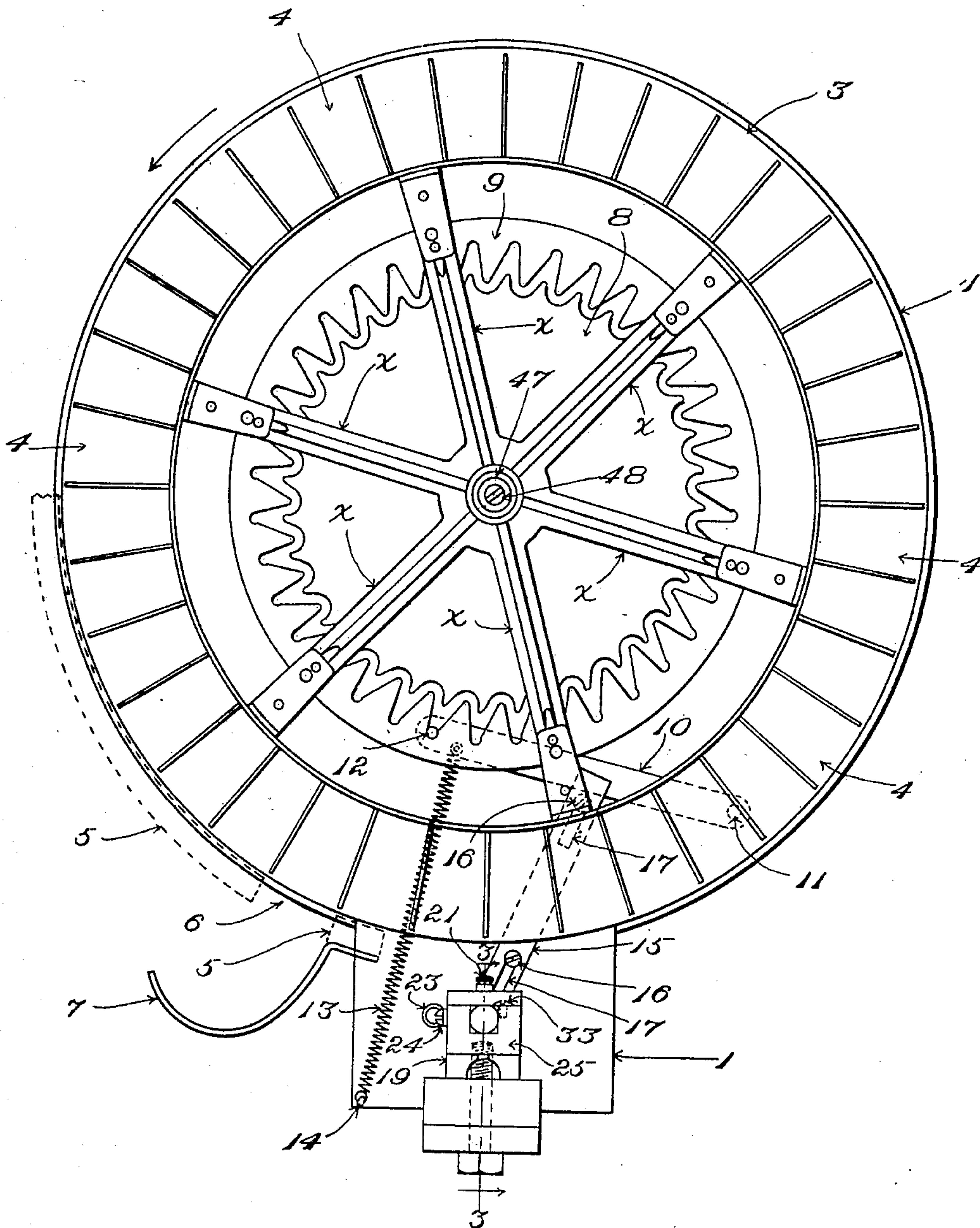
No. 888,404.

PATENTED MAY 19, 1908.

C. H. KELLEY.
VENDING APPARATUS.
APPLICATION FILED MAY 3, 1907.

2 SHEETS—SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 2.

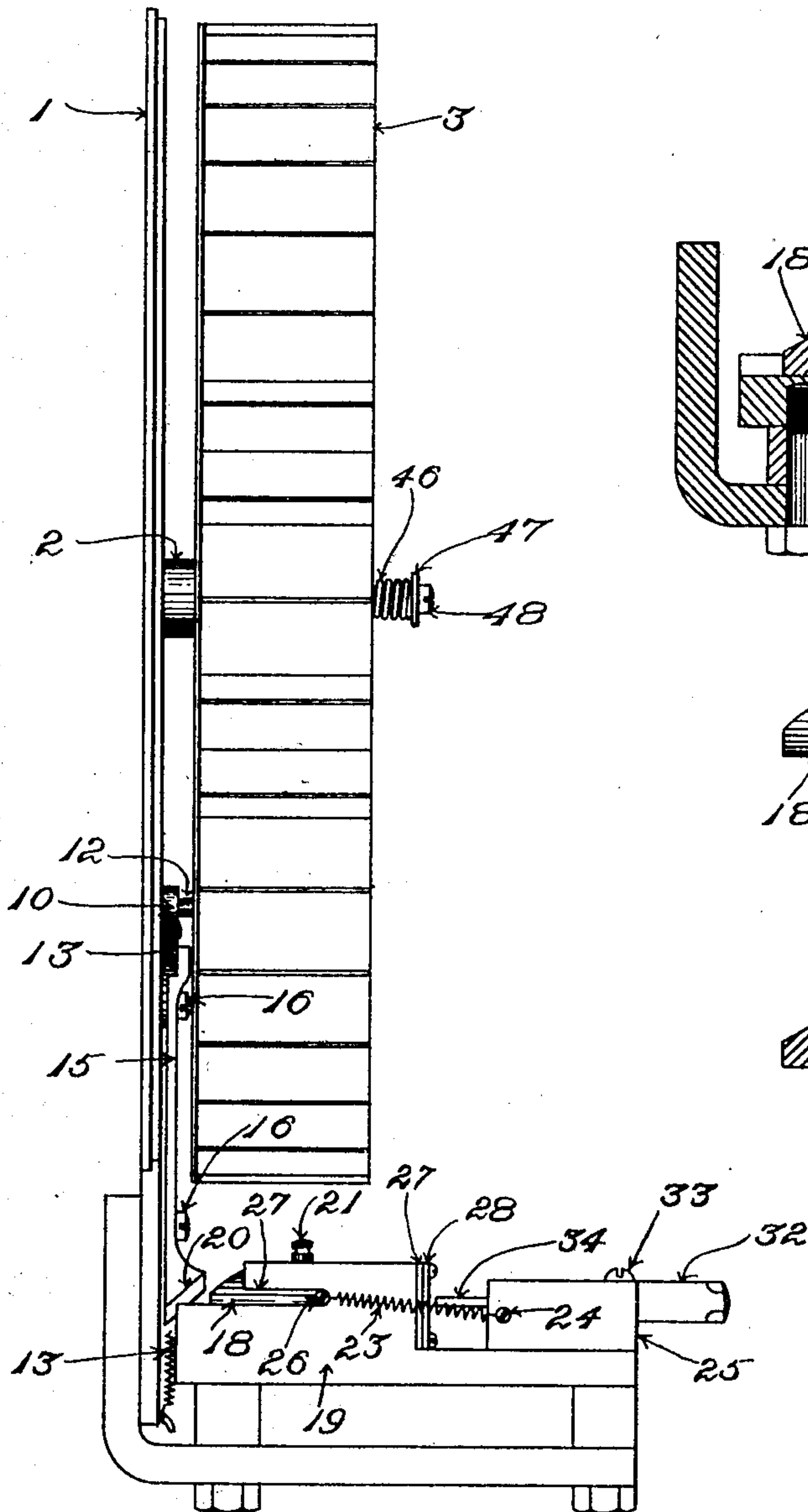


Fig. 3.

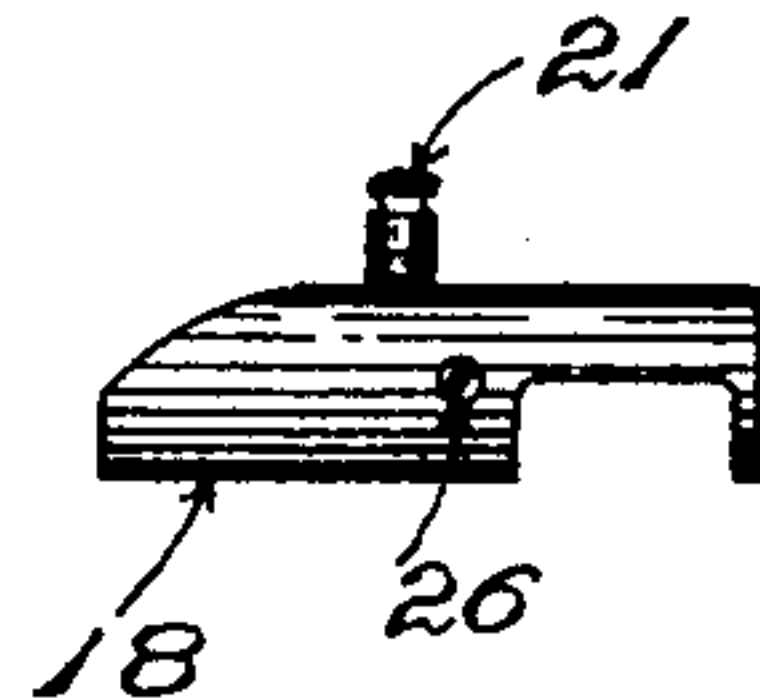
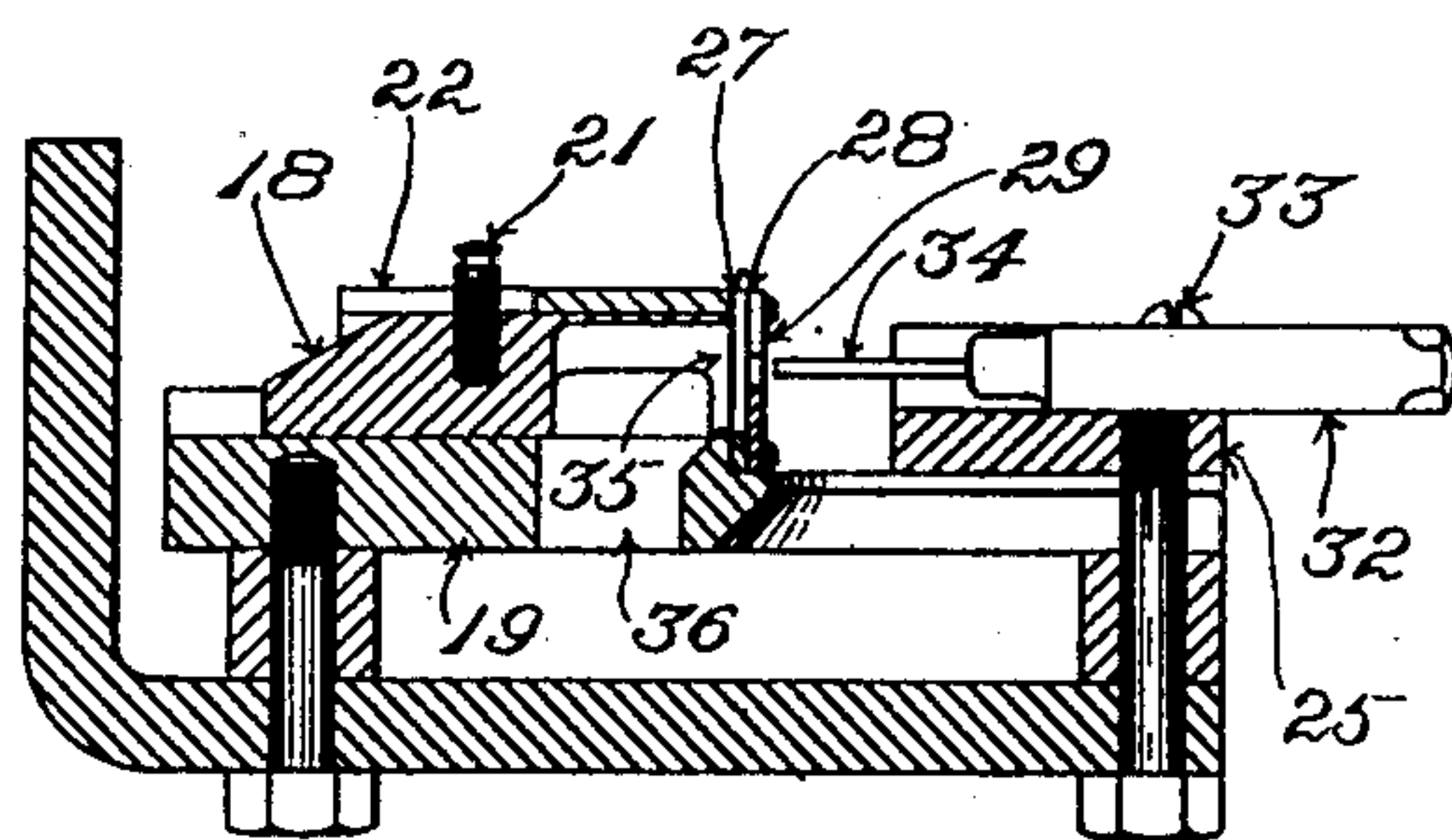


Fig. 4.

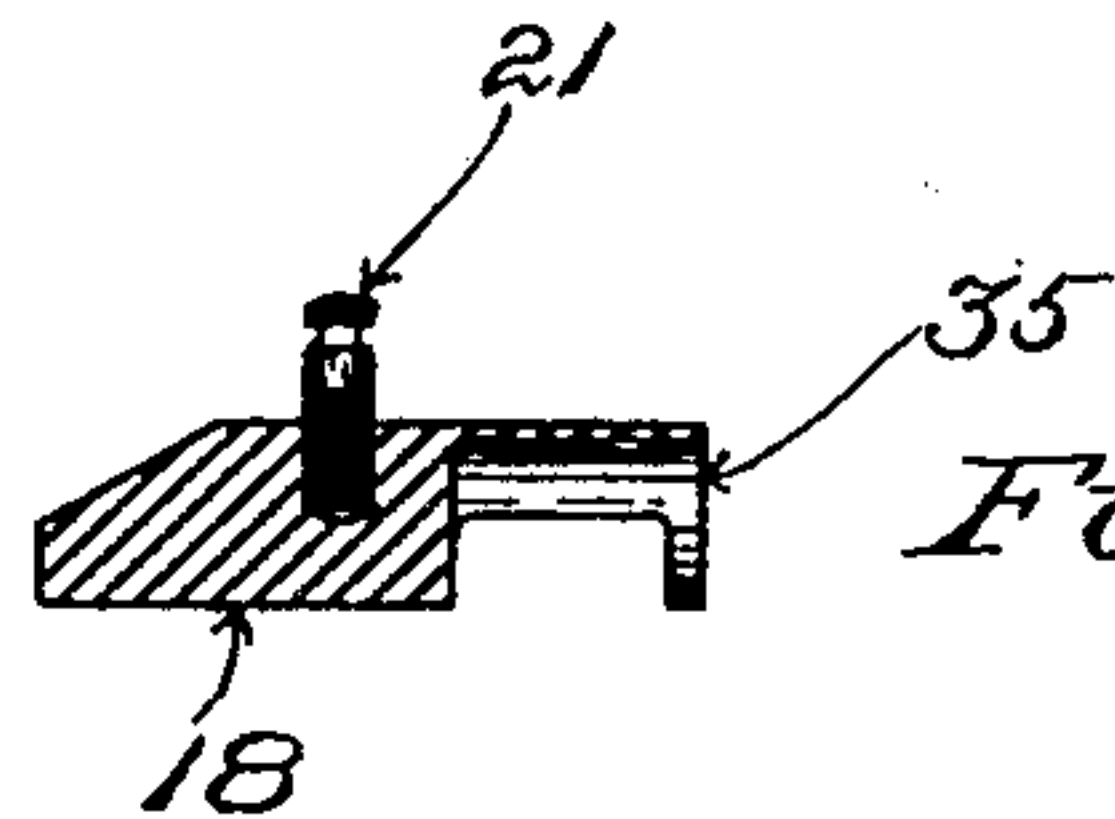


Fig. 5.

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UNITED STATES PATENT OFFICE.

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VENDING APPARATUS.

No. 888,404.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES H. KELLEY, a citizen of the United States, residing at Winthrop, in the county of Suffolk, State of Massachusetts, have invented a certain new and useful Improvement in Vending Apparatus, of which the following is a specification, reference being had therein to the accompanying drawings.

10 The invention consists in an improved vending apparatus comprising in combination a rotatable carrier and delivery-wheel and novel means of producing step-by-step rotation thereof.

15 The drawings show a machine, embodying the invention, which has been designed for use more especially in vending cakes of soap, although not necessarily limited to employment for vending this particular article, 20 inasmuch as other goods or articles may be handled thereby. The main framework and the supporting stand have been omitted for the sake of simplifying the drawings, and the latter have been confined in their showing to 25 practically the essential working elements of a machine and the more immediate supports of the said elements.

30 In the drawings,—Figure 1 shows the essential parts of the machine, so far as the present invention is concerned, in front elevation. Fig. 2 shows the same in side elevation. Fig. 3 is a view in vertical section in the plane of line 3, 3, Fig. 1 looking in the 35 direction indicated by the arrows at the ends of such line. Fig. 4 shows in side elevation, detached, the coin-operated slide to which reference will be presently made. Fig. 5 shows the said slide in longitudinal vertical section.

40 Having reference to the drawings,—at 1, Figs. 1 and 2, is indicated an upright backing or support, from one side of which projects a stud 2 constituting a supporting journal for the carrier or delivery-wheel 3. The latter 45 is formed around its periphery with a series of pockets 4, 4, 4, etc., to contain the pieces or packages of soap, or other articles or packages which are to be handled, these pockets being open at the periphery of the wheel to 50 facilitate the delivery of the pieces or packages of soap, or other articles or packages as aforesaid, from the said pockets. Preferably, also, the said pockets are open at the front side of the wheel, where in practice 55 there will be employed a facing of glass exposing the whole or some portion of the

wheel and its contents to view. A suitable portion of the casing of the wheel, fitted close to the periphery of the latter, will retain the packages or articles within the pockets in the 60 turning movement of the wheel until a filled pocket arrives at a delivery-opening in the casing, when the contents of the said pocket will be permitted to fall out of or deliver from the pocket. For the purpose of illustration 65 I have indicated in dotted lines in Fig. 1 a portion 5 of casing concentric with the periphery of the wheel, sufficiently close to the said periphery to hold the contents of the pockets in place, and having a delivery-open- 70 ing at 6, with a suitable trough 7 in position adjacent the said delivery-opening to catch the article or package which drops from the pocket brought opposite the delivery-opening. I do not limit myself with respect to 75 these particulars, and the manner and means of providing for the delivery may be varied to meet requirements.

For the purpose of providing for the step-by-step rotary movement of the carrier or 80 delivery-wheel I employ by preference devices, on the order of an escapement, which are shown in Figs. 1 and 2 of the drawings, and which constitute the present invention. The said devices comprise a peripherally 85 toothed disk 8, secured to the radial arms x, x , etc., of the carrier or delivery-wheel, concentric with the latter, an internally toothed ring or rim 9 surrounding the said disk 8 and also secured to the said arms, the 90 teeth of the said disk projecting into the spaces between the teeth of the ring or rim 9, so as to leave a more or less sinuous continuous slot between the disk and ring or rim, an arm 10 which is pivoted by its outer end to 95 the backing 1 at 11, as indicated by dotted lines in Fig. 1, and provided at its inner end with a forwardly-projecting pin 12 which enters the said sinuous slot and is adapted to engage alternately with the teeth of the 100 disk 8 and those of the ring or rim 9 in manner presently to be explained, and a contracting spiral spring 13 having one end thereof connected to the arm 10 and the other end thereof connected to a fixed point 105 14, Fig. 1, at the lower end of the backing 1. The said spring by its tension operates to hold the said arm in its lowest position, with the said pin 12 in the closed outer end of a space between two of the teeth of the ring or rim 9 as represented in Fig. 1. When 110 engaged in the space aforesaid the pin oper-

ates to lock the carrier or delivery-wheel from rotation. In practice, a suitable spring or weight may be connected with the wheel to turn or assist in turning the same for the purpose of presenting the filled pockets successively at the delivery-opening. However, I contemplate utilizing the weight of the contents of the pockets in causing the wheel to rotate, for which purpose in filling the pockets I leave some thereof at the ascending side of the wheel empty so that the weight at the descending side of the wheel shall preponderate, and shall occasion a tendency of the wheel to rotate in the proper direction. The front or advancing sides of the teeth of the ring or rim 9 are formed, with reference to the path in which the pin 12 moves when the arm 10 swings inwardly toward the center on which the wheel turns, so that the wheel shall be held by the engagement of the front or face of one of the said teeth with the said pin from movement until the latter has passed inward beyond the tip or apex of the tooth, at which instant the wheel will be free to advance until the face of the succeeding tooth projecting outward from the disk 8 fetches up against the said pin.

Should the wheel not start of itself as the pin 12 moves inwardly past the tip or apex of the said tooth of the ring or rim 9, the pressure of the pin 12 against the back of the preceding tooth of the disk as arm 10 completes its inward movement will communicate a forward impulse to the wheel. Outward movement of the arm 10 and pin 12 produced by the action of spring 13 will carry the said pin into the closed outer portion of the succeeding space between the teeth of the ring or rim 9, this representing an advance of the wheel sufficient to present a fresh pocket at the delivery-opening.

Should the wheel lag in turning, the pressure of the pin 12 against the inclined back of the tooth of ring or rim 9 which has just passed the same will operate to impel the wheel forward. Thus the escapement devices not only act to control and regulate the extent of each advance of the wheel, but they insure and effectuate the said advance in case for any reason the wheel is slow or retarded in its movement. For the purpose of operating the arm 10 to move it inward when desired, against the tension of the spring 13, I employ in the present instance a slide-bar 15 held in place against the front side of the backing 1 by screws 16, 16, and formed with longitudinal slots 17, 17, which accommodate the stems of the said screws and permit the slide-bar to move lengthwise upon the screws. The upper end of the said slide-bar is shouldered as shown in Fig. 2 to engage with the under side of the arm 10, so that when the slide-bar is pushed upwardly it acts against the said edge and

carries the arm 10 with it, overcoming the power of the spring 13. When the force tending to hold the slide-bar and arm uplifted ceases, the spring 13 acts to draw down the arm and the pressure of the latter returns the slide-bar to its normal position.

For the purpose of actuating the slide-bar 15 to raise the arm 10 and pin 12 in the manner referred to above, I provide a coin-operated slide 18 which is shown in place in the machine in Figs. 2 and 3, and separately in Figs. 4 and 5. This slide works in a passageway which is formed in a fixed bed 19. The rear end of the said slide is formed with a bevel or incline to act against the corresponding bevel or incline at 20 with which the lower end of the upwardly extending slide-bar 15 is formed. When the slide 18 is pushed rearwardly, its bevel or incline by acting against the bevel or incline of the slide-bar causes the latter to move upward so as to operate the arm 10 and pin 12 to provide for an advance of the carrier or delivery-wheel 3. The slide 18, which in the present instance is cylindrical, is prevented from turning in its passageway by means of a pin 21 which is screwed into a threaded hole that is tapped in the upper part of the slide, the said pin extending upward from the slide through a longitudinal slot 22 formed in the top of the bed 19 and extending in the direction of the length of the passageway. The upper end of the pin rises above the top of the bed as shown most clearly in Figs. 2 and 3. The slide is held normally in a retracted forward position by the action of a contracting spiral spring 23 having one end thereof engaged with the screw 24 applied to the block 25 which is mounted on the front end of bed 19, the rear end of the spring being engaged with a screw 26 which is set in one side of a slide 18 and projects through a slot 27, Fig. 2, formed in one side of bed 19 and extending in the direction of the length of the said bed.

The slide 18 is operated through the pressure against the front end of the same of a coin of a predetermined size which has been dropped into position in line with the said end and engaged and pressed against by a manually-operated plunger. A pocket is provided in connection with the bed at the front end of the passageway for the slide, within which pocket the coin is placed, it being held with one face thereof presented to the end of the slide and the other face presented to the action of a manually-operated plunger which, when pressed lengthwise, carries the coin flatwise against the end of the slide and pushes the latter endwise. The pocket is formed by means of two plates 27 and 28, the first mentioned of which is formed with an opening, extending to the top thereof, of a width corresponding very closely or almost exactly with the diameter of the

said coin. The side-walls of the said opening constitute opposite side-guides for the edge of the coin. The bottom wall of the opening constitutes a ledge on which the lower part of the edge of the coin comes to rest between the front end of the slide and the plate 28. The said plate 28 constitutes the front wall of the pocket and is formed with an opening 29 therethrough. The plunger is designated 32. It works in a longitudinal guideway that is formed in the top of the block 25, and is held down in place within the said guideway by the flange of the head of a screw 33 which is applied to the top of the said block, the said flange extending over the top of the plunger and thereby serving to prevent the plunger from lifting. At its rear end the plunger is provided with a prolongation or pin 34 of small diameter to pass through the hole 29 of the plate 28 and act against the outer face of a coin occupying the pocket.

When a coin is inserted within the coin-pocket and the plunger is pushed in, the action at the end of the pin 34 against the face of the coin will press the coin against the front end of the slide, the marginal portion of the coin engaging with the rim around the opening 35 that is formed in the slide, and the slide will be forced rearwardly so as to actuate the slide-bar and bring about a feeding movement of the carrier or delivery-wheel. The opening 35 extends through the front end of the side and the bottom thereof, as indicated in Figs. 3, 4 and 5, and is designed to permit a coin smaller in diameter than the rim at the front end of the plunger to drop through, either because of losing its balance, or when pressed against by the end of the plunger, without operating the slide.

I claim as my invention:—

1. In a vending apparatus, the combination with the carrier or delivery-wheel, of two series of teeth operatively connected therewith, a detent normally locking with a tooth of one series to hold the wheel from rotation, and acting, when shifted from its position of rest, to engage with teeth of the other series, to thereby control in attaining the desired movement of the wheel, and then engage with a succeeding tooth of the first series to again lock the wheel, and operating means for the said detent.

2. In a vending apparatus, the combination with the carrier or delivery-wheel, of two

series of detent teeth operatively connected therewith, a detent normally locking with a tooth of one series to hold the wheel from rotation and when shifted from its position of rest engaging with teeth of the other series to impel the wheel forwardly as well as check the same, and then reengaging with a succeeding tooth of the first series to again lock the wheel, and operating means for the said detent.

3. In a vending apparatus, the combination with the carrier or delivery wheel, of the series of locking teeth and the series of detent teeth, both positively connected with the said wheel, the movable detent, normally engaging a locking tooth and holding the wheel from rotation, and manually-operated detent-actuating means for causing alternating engagement of the detent with teeth of the two series for the purpose of an advance of the carrier or delivery-wheel.

4. In a vending apparatus, the combination with the carrier or delivery wheel, of the series of locking teeth and the series of detent teeth, arranged one within the other and both operatively connected with the said wheel, a radially-movable detent normally engaging a locking tooth to hold the wheel from rotation and in its opposite position engaging a detent tooth, and manually-operated means through which said detent is vibrated between the two series of teeth in producing a partial rotation of the wheel and occasioning a delivery.

5. In a vending apparatus, the combination with the carrier or delivery wheel, of the two concentric series of teeth operatively connected with the said wheel, the detent, means to hold the detent normally in locking engagement with a tooth of one series and thereby keep the wheel stationary, and manually-operated means by which the detent is disengaged from said tooth and engaged with teeth of the other series to insure and check the advance of the wheel, the detent on resuming its normal position engaging with a subsequent locking tooth to again lock the wheel.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES H. KELLEY.

Witnesses:

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