

No. 865,828.

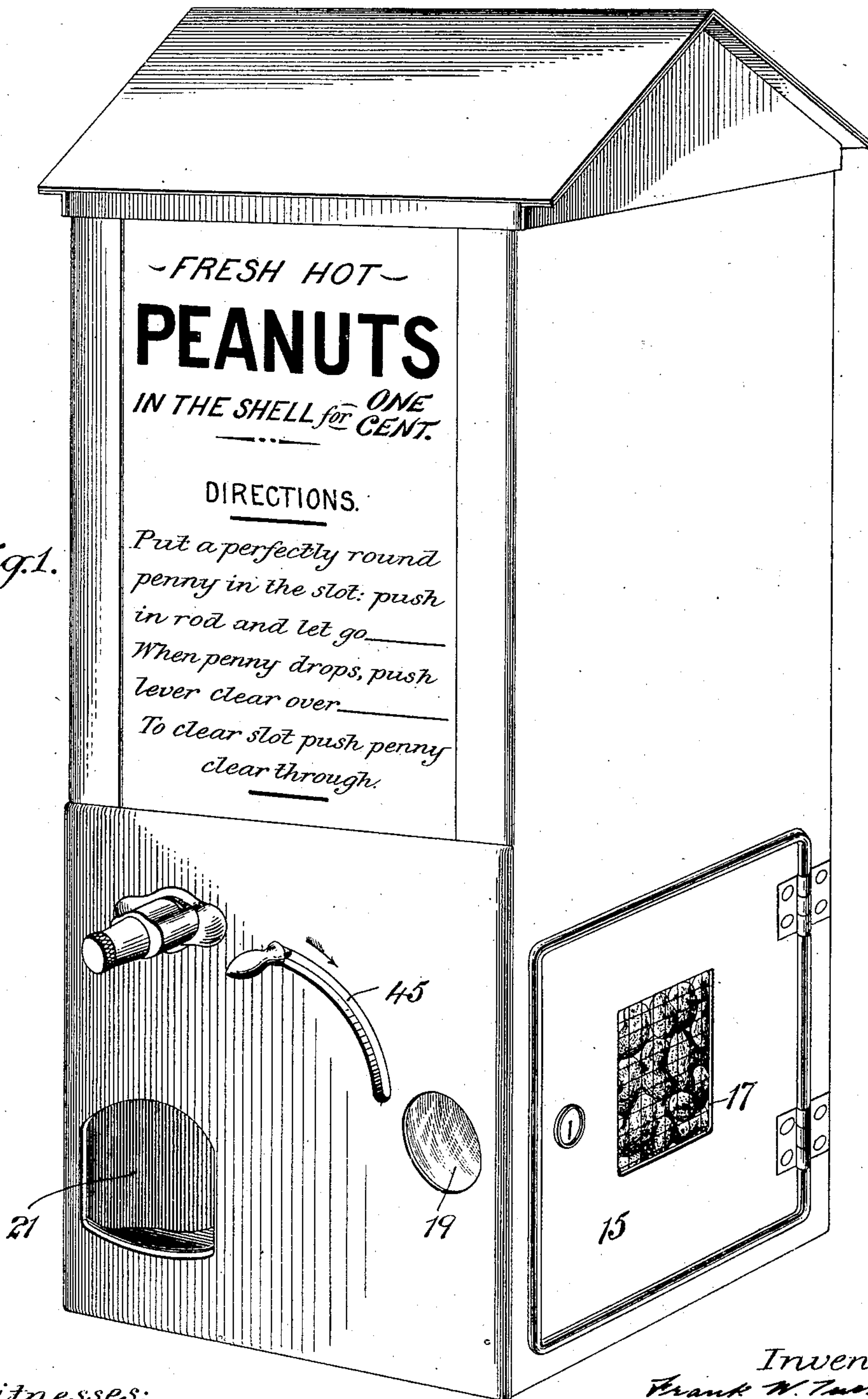
PATENTED SEPT. 10, 1907.

F. W. TUCKER.  
COIN OPERATED VENDING MACHINE.

APPLICATION FILED MAY 27, 1902.

7 SHEETS—SHEET 1.

Fig. 1.



Witnesses:  
John A. Rennie  
Henry Thime

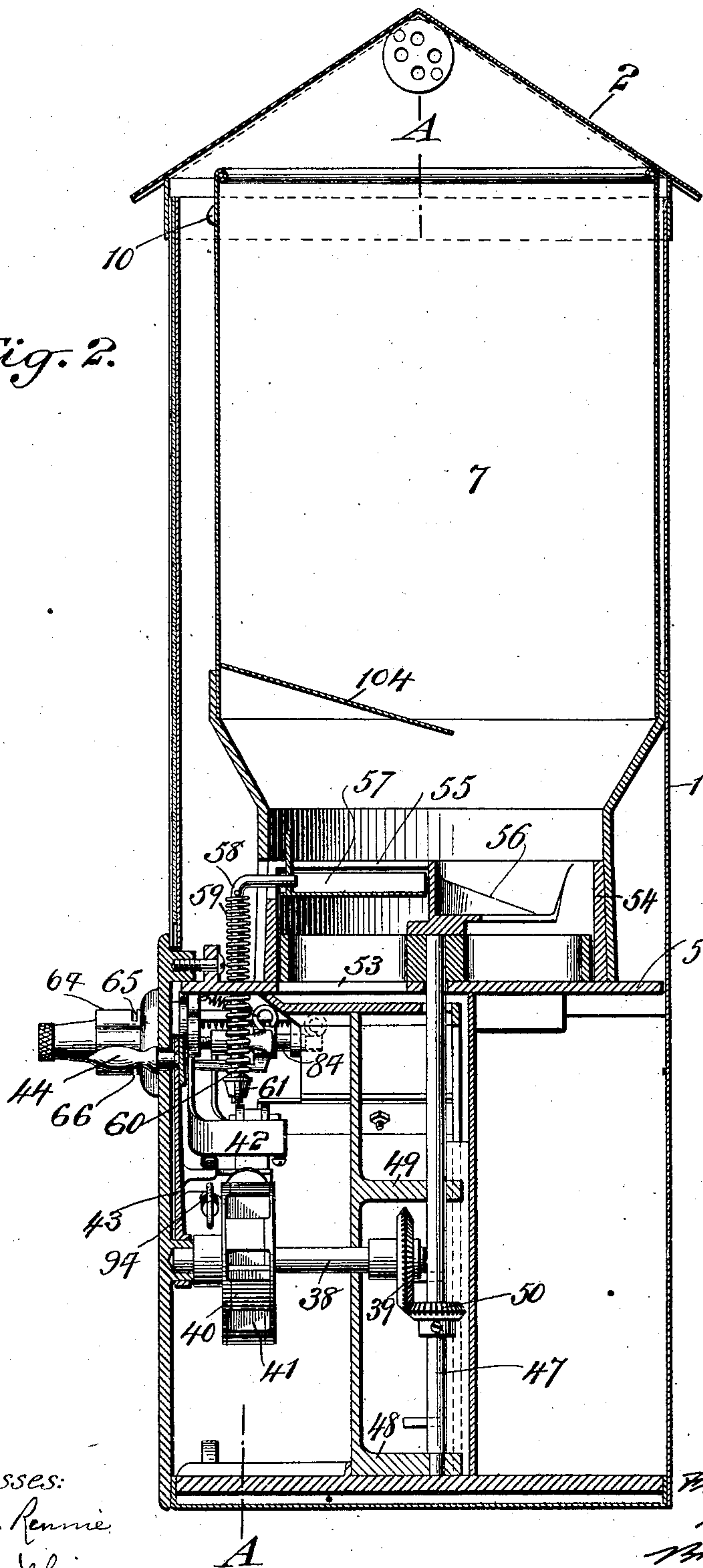
Inventor:  
Frank W. Tucker  
by attorney  
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7. SHEETS—SHEET 2.



Witnesses:  
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Henry Thime.

Inventor:  
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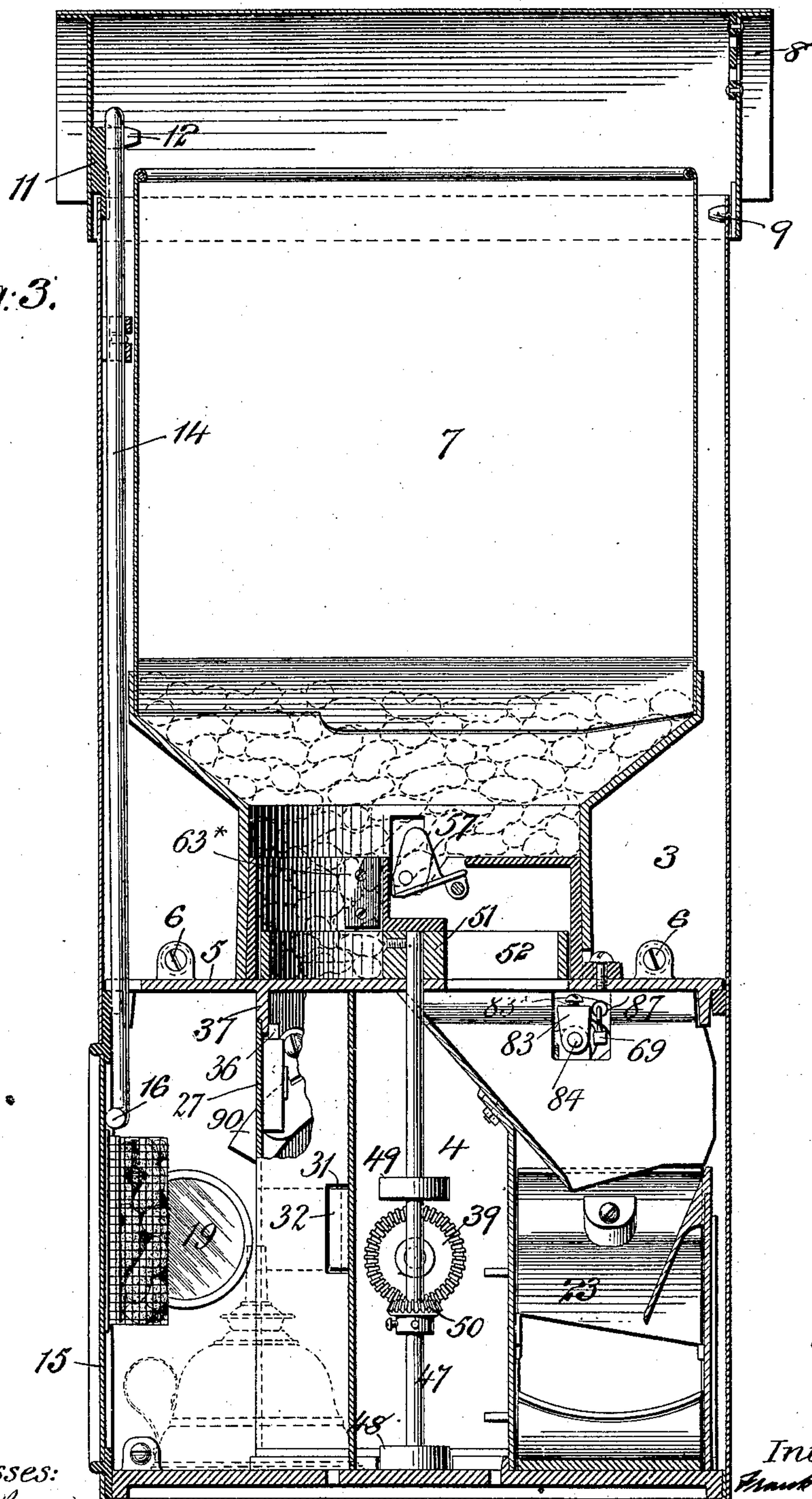
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7 SHEETS—SHEET 3.

Fig. 3.



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No. 865,828.

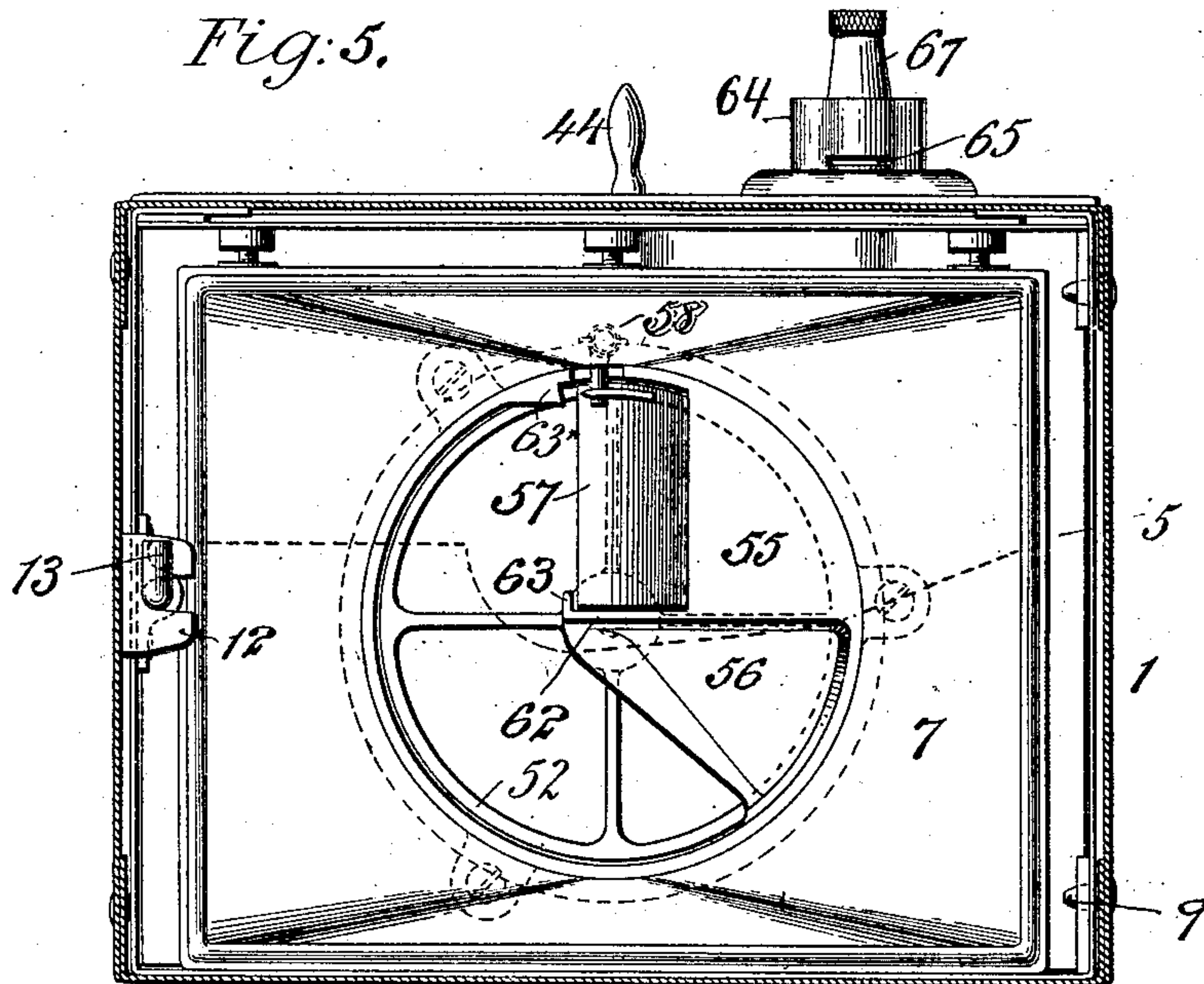
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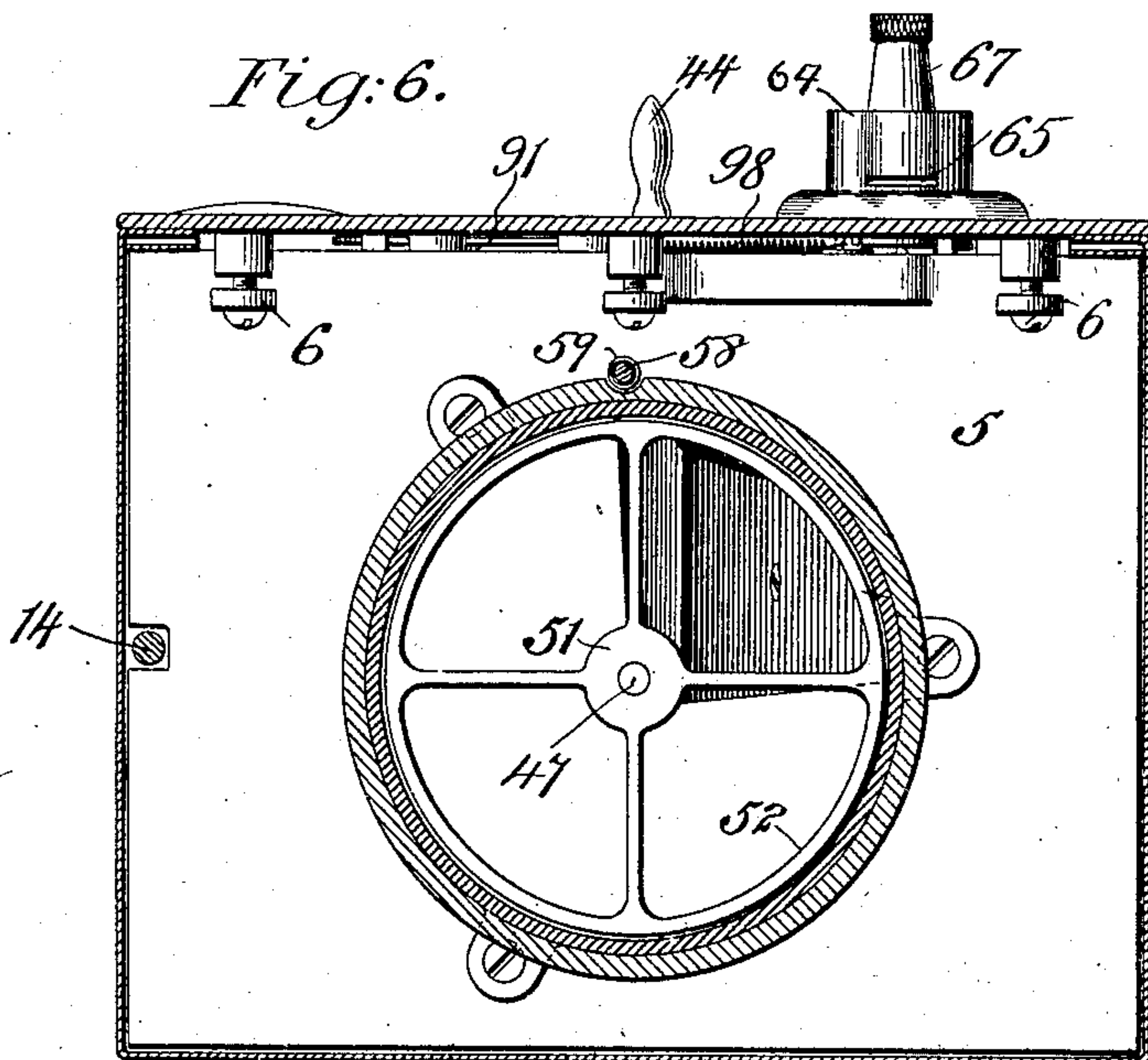
APPLICATION FILED MAY 27, 1902.

7 SHEETS—SHEET 5.

*Fig. 5.*



*Fig. 6.*



Witnesses:  
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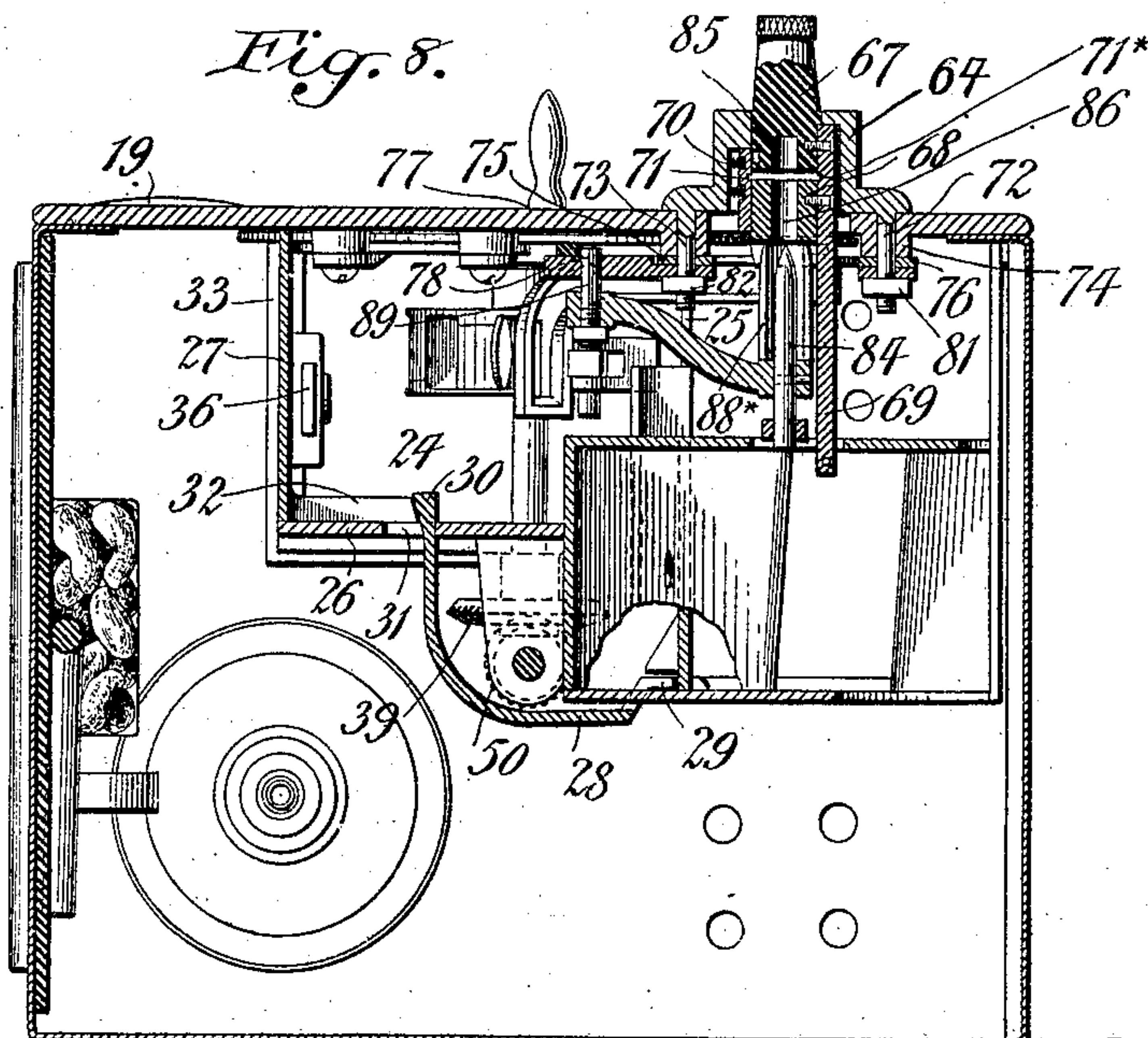
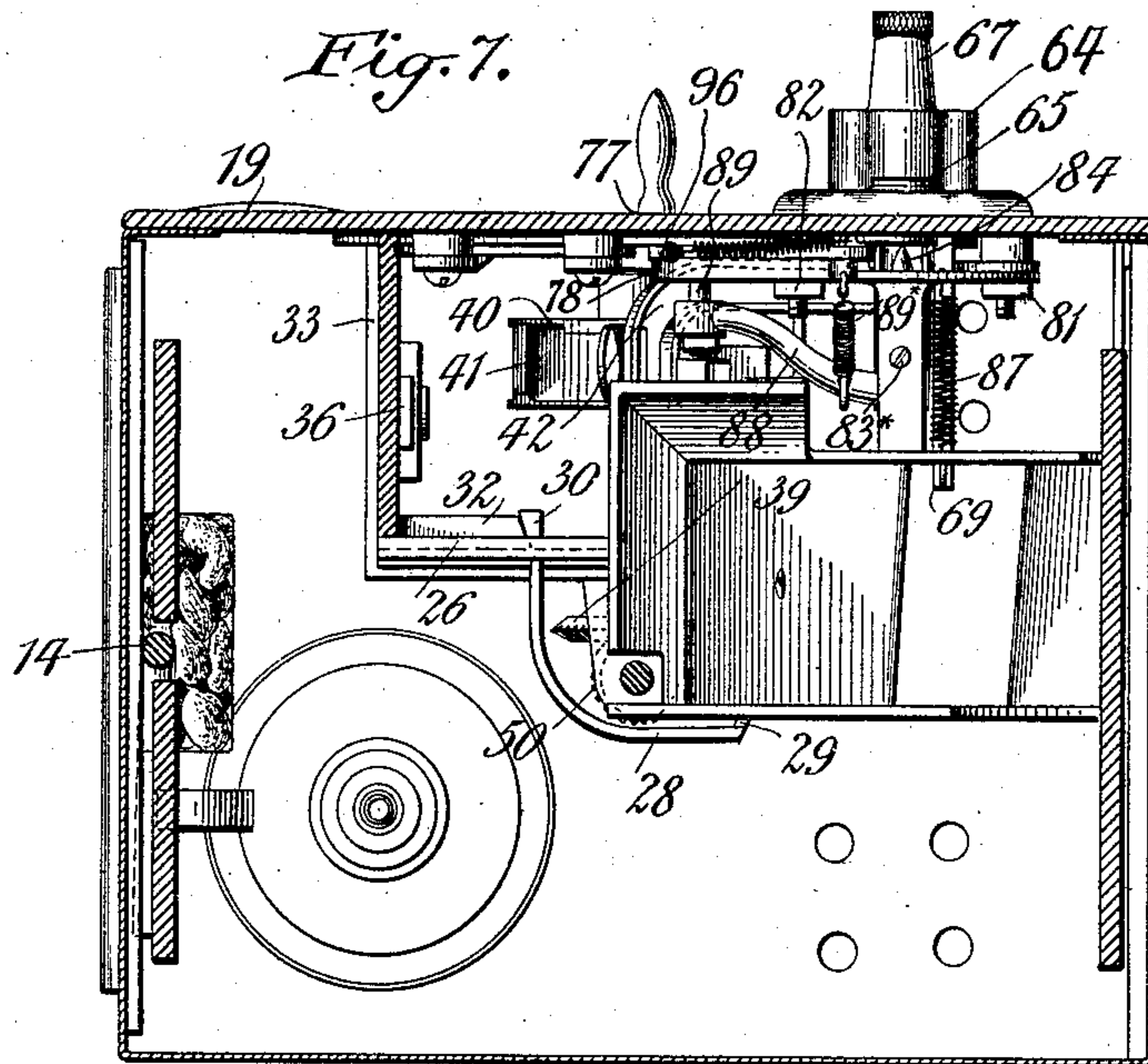
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PATENTED SEPT. 10, 1907.

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APPLICATION FILED MAY 27, 1902.

7 SHEETS—SHEET 6.



Witnesses:  
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Inventor:  
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# UNITED STATES PATENT OFFICE.

FRANK W. TUCKER, OF MILFORD, CONNECTICUT.

## COIN-OPERATED VENDING-MACHINE.

No. 865,828.

Specification of Letters Patent.

Patented Sept. 10, 1907.

Application filed May 27, 1902. Serial No. 109,124.

*To all whom it may concern:*

Be it known that I, FRANK W. TUCKER, a citizen of the United States, and a resident of Milford, in the county of New Haven and State of Connecticut, have  
5 invented new and useful Improvements in Coin-Operated Vending-Machines, of which the following is a specification.

My invention relates to improvements in coin operated vending machines and relates more particularly to  
10 certain improvements in a machine for vending articles in bulk, such, for instance, as nuts in the shell.

Another object of my invention is to provide a machine capable of vending nuts in predetermined quantities, such, for instance, as peanuts, the peanuts which  
15 are located in position to compose the next portion delivered, being kept hot, while the remaining peanuts are kept warm and dry. This is particularly desirable in the use of peanuts, as it is well known that they absorb moisture very readily and will rapidly deteriorate  
20 if not kept perfectly dry.

Another object is to provide certain improvements in the construction, form and arrangement of the several parts, whereby the operation of the same is materially simplified with respect to the results obtained thereby.

25 A practical embodiment of my invention is represented in the accompanying drawings, in which

Figure 1 is a view in perspective of the vending machine, Fig. 2 is a view in vertical central section taken from front to rear through the machine, Fig. 3 is a view  
30 in vertical central section taken from side to side through the machine, Fig. 4 is a view in vertical section taken from side to side through the machine in the plane of the line A—A of Fig. 2, Fig. 5 is a view in horizontal section taken in the plane of the line B—B of Fig. 4, Fig. 6 is a similar view taken in the plane of the  
35 line C—C of Fig. 4, Fig. 7 is a similar view taken in the plane of the line D—D of Fig. 4, Fig. 8 is a similar view taken in the plane of the line E—E of Fig. 4, Fig. 9 is a view in perspective of the coin operated mechanism in its normal position, certain of the parts being broken  
40 away to more clearly show the construction of the mechanism, and Fig. 10 is a view in perspective of the coin operated mechanism in the position which the parts assume when the coin has been forced into position to  
45 release the delivery lever, certain of the parts being broken away to more clearly illustrate the operation of the same.

The casing of the machine is denoted by 1, which casing is provided with a removable top or cover 2  
50 for closing the open upper end thereof. The casing is divided interiorly into an upper chamber 3 and a lower chamber 4, by means of a transverse partition 5 which is secured in the casing by suitable fastening devices, such as screws 6. A reservoir 7 for the articles to be vended is located within the upper chamber 3 of the casing and is spaced from the walls thereof

upon three sides of the casing so as to permit the passage of hot air upwardly within the space thus formed for keeping the articles within the reservoir 7 dry. The top or cover 2 of the casing is provided at one end  
60 with a ventilator 8 for permitting the escape of the hot air from the upper chamber 3. This top or cover 2 is removably secured to the top of the casing 1 in the following manner:—One or more lugs 9, in the present instance two are shown, project inwardly  
65 from one end wall of the cover 2, which lugs are caused to enter holes 10 in the top of one of the side walls of the casing. The other end wall of the cover 2 is provided with a stop 11 fitted to overlap the top of the opposite side wall of the casing 1. This stop 11 is  
70 provided with a pair of inwardly extended prongs 12 which are fitted to be engaged by a laterally extended arm 13 of a rocking latch bar 14 which extends downwardly along the inside of the casing adjacent to its side wall into the lower chamber 4 of the casing. The  
75 lower chamber 4 is provided with a door 15 in one side thereof for gaining access to the interior of the lower chamber 4. The latch bar 14 is provided at its lower end with a laterally extended arm 16 extended in the opposite direction from the arm 13 at  
80 the upper end of the bar.

When the door 15 is closed, the latch bar 14 must be in its interlocking position with respect to the cover 2. When the door 15 is opened the arm 16 of the  
85 latch bar is released from its engagement with the door so that the latch bar may be turned a sufficient distance to release the arm 13 from its engagement with the prongs 12 of the stop 11 for releasing the cover from the casing.

The door 15 may be provided with a barred opening 17 back of which may be provided a receptacle  
90 18 for containing samples of the articles vended by the machine, which samples are exposed from the grated opening 17 in the door.

The front wall of the casing may be also provided  
95 with a window 19 communicating with the interior of the lower chamber 4 for the passage of light there-through from the flame of the lamp 20 which is located within the lower chamber for the purpose of heating the articles to be vended and keeping them dry.  
100

The delivery opening is denoted by 21 and it communicates with the hopper shaped mouth 22 of the reservoir 7 through a tortuous chute 23.

A money compartment 24 is formed in the lower chamber 4 of the casing adjacent to the front of the  
105 casing by means of a side partition 25, a back partition 26 and a side door 27. The side wall 25 of the money compartment is an extension of one of the side walls of the delivery chute 23 hereinabove referred to.

A gear casing 28 extends across the corner formed  
110 between the delivery chute 23 and the back wall 26 of the coin compartment, which gear casing is provided



with ears 29 fitted to interlock with the back wall of the delivery chute and a wedge shaped tongue 30 fitted to be inserted through a slot 31 in the back wall 26 of the coin compartment. This gear casing is locked in position by means of an inwardly extended lug 32 carried by the side door 27 of the coin compartment, which lug bears against the wedge-shaped tongue 30 adjacent to the back wall 26 of the coin compartment when the door 27 is locked in position.

10 The bottom of the door 27 may be inserted into a track 33 on the floor 34 of the casing and the top of the door is provided with a lock, the bolt 36 of which is fitted to engage a rib 37 projecting downwardly from the horizontal partition 5 of the casing.

15 The mechanism for positively delivering a predetermined portion of the articles in bulk from the reservoir 7 is constructed, arranged and operated as follows:—A horizontally arranged shaft 38 is mounted in suitable bearings in the front of the casing and the rear wall 26

20 of the money compartment, which shaft is provided with a bevel gear 39 located within the gear casing 28. This shaft 38 is provided within the money compartment with a coin receiving wheel 40, the periphery of the wheel 40 being provided with a plurality

25 of pockets 41 arranged to receive coins of the predetermined size successively therein as they drop from the coin chute 42, the said pockets 41 being of such size that a portion of the coins will project beyond the periphery of the wheel to form abutments arranged

30 to be engaged by the delivery mechanism operating lever 43, which is constructed as follows:—This lever 43 is hinged concentric with the shaft 38 in proximity to the front wall of the casing. The outer end of the lever 43 is provided with an operating handle 44 which

35 projects through a curved elongated slot 45 concentric with the pivot of the lever 43. The lever 43 is provided with a curved guard 46 which is interposed between the delivery mouth of the coin chute 42 and the periphery of the coin wheel 40 so that a coin will

40 be prevented from dropping into the wheel except when the lever is in its normal position, the guard in this instance being swung sufficiently far back to permit the coin to drop from the chute into one of the pockets 41 in the wheel. The front edge of the guard

45 46 is fitted to engage the projecting portion of the coin within the wheel as the lever is swung forwardly so as to lock the lever and wheel together and cause the lever to rotate the wheel and thereby the shaft 38 a predetermined amount. A vertical shaft 47 is

50 mounted in suitable bearings in lugs 48 and 49 projecting from the rear wall 26 of the coin compartment into the gear casing. This shaft 47 is provided with a bevel gear 50 which intermeshes with the bevel gear 39 carried by the horizontal shaft 38. The

55 upper end of the vertical shaft 47 projects into the cylindrical portion of the hopper mouth 22 of the reservoir above the transverse partition 5 and is there provided with a delivery wheel 51 having a plurality of open ended compartments 52 therein. The parti-

60 tion 5 is provided with an opening 53 communicating with the delivery chute 23. This opening 53 in the partition is of substantially the same size as the compartments 52 in the delivery wheel and the several compartments 52 are successively brought into aline-

65 ment with the said opening 53 as the wheel is rotated.

A cylindrical casing 54 is fitted within the mouth of the reservoir 7 which casing is constructed to direct the articles into the compartments 52 of the delivery wheel 51. A portion of the top of the casing 54 is closed, as shown at 55, and an inclined portion 56 extends downwardly from the top 55 into close proximity to the top of the wheel 51. This closed top 55 of the casing 54 is directly above the opening 53 in the partition 5. A double spring actuated article dividing plate 57 is hinged to the casing 54 adjacent to the closed top 55, the lower edge of the plate 57 being yieldingly supported in proximity to the top of the delivery wheel 51 adjacent to the opening 53 in the partition 5. This plate 57 is supported so as to be yielding in both directions by means of a vertically disposed bar 58 projecting above and below the partition 5, which bar is provided with a spring 59 above the partition 5 for permitting the plate to yield downwardly and a coil spring 60 below the partition for permitting the plate to yield upwardly. The tension of these springs is adjusted by means of a thumb nut 61 having a screw threaded engagement with the lower end of the bar 58, the upper end of which is connected to the swinging plate. The function of this swinging plate 57 is to accurately divide the articles and to prevent the articles becoming cramped as they pass beneath the plate. This is especially important where peanuts are being vended as it is not desirable to crush the shells of the peanuts. The web 62 between the incline 56 and the closed top of the casing 54 projects beyond the free end of the plate 57 and is there provided with a laterally extended lug 63 to still further prevent the cramping of the articles at the hub of the wheel 51. The articles are prevented from cramping between the casing and the outer end of the plate 57 by means of a guard 63\* formed on the inner wall of the casing. The several parts of the delivery mechanism hereinabove described are so adjusted with respect to each other that each complete forward movement of the delivery lever 43 will successively bring a compartment 52 in the delivery wheel 51 into alinement with the opening 53 in the partition 5.

The coin operated mechanism is constructed and operated in connection with the delivery mechanism as follows:—A sliding plunger is fitted to slide in a socket piece 64 secured to the front of the casing adjacent to the hand lever 43. The socket piece 64 has slots 65, 66, therein of larger size than the predetermined coin, which slots are located diametrically opposite each other and communicate with the peripheries of the plunger. This plunger comprises an outer section 67, an inner section 68 and an inwardly extended bar 69 counter-sunk in the peripheries of the sections 67, 68, for spacing the sections apart a sufficient distance to receive the predetermined coin between them. A spring actuated pressure plate 70 is located within the socket piece 64 in position to press inwardly against the peripheries of the outer and inner sections of the plunger opposite to the bar 69. The bar 69 is milled out opposite the space between the outer and inner sections of the plunger to co-act with the pressure plate 70 for retaining the predetermined coin in position in the plunger. The bar 69 and the pressure plate 70 are provided with narrow slots 71, 71\* of less width than the space between the outer and inner sections so as to insure a disk of less



width or of greater diameter than the predetermined coin, passing entirely through the plunger and out through the lower slot 66 in the socket piece. Two screw threaded bolts 72, 73, project inwardly from the socket piece 64 through inwardly extended lugs 74, 75, of the casing. Two lugs 76, 77, projecting upwardly from the open top of the coin slot 42 engage the bolts 72, 73, for supporting the coin slot in position to receive the coins as they drop from the plunger when the plunger is at the limit of its inward movement. A bracket 78 is provided with two lugs 79, 80, which also engage the bolts 72, 73, of the socket piece. Nuts 81, 82, engage the screw threaded ends of the bolts 72, 73, for locking the socket piece and the coin slot to the casing and for rigidly spacing the bracket 78 a short distance away from the inner face of the front of the casing. This bracket 78 is provided with an inwardly extended L-shaped arm 83 in the inner downwardly extended branch of which I mount a sliding bar 84, which bar is arranged in alinement with the center of the plunger. The outer and inner sections 67, 68, of the plunger are provided with hollow centrally arranged bores 85, 86, whereby the plunger is fitted to slide over the end of the rod 84 as the plunger is reciprocated. The plunger is normally held at the limit of its outward sliding movement by means of a retracting spring 87 extended between the inner end of the bar 69 and the bracket 78. A stop 83\* in the arm 83 serves to limit the inward sliding movement of the plunger.

The interlocking arrangement between the coin operated mechanism and the delivery mechanism is constructed as follows:—An arm 88 is fixed to the slide bar 84, the free end of the said arm 88 being provided with a forwardly projected locking pin 89. A guard 88\* projects forwardly from the arm 88 for preventing the clogging of the machine when the plunger is forced inwardly with a washer therein, the guard serving to prevent the washer from dropping down into a position where it will prevent the free return movement of the plunger.

The lever 43 is provided at its outer end with curved extensions 90, 91, concentric with the axis of the lever, which extensions are located in close proximity to the inner face of the front wall of the casing. A guide 92 is secured by suitable fastening screws 93 in position to engage the inner faces of the extensions 90, 91, as the lever is rocked for holding the lever in position against the casing. A retracting spring 94 extends from a point on the inner face of the front wall of the casing to the lever 43 for normally holding the lever at the limit of its rearward movement. The lever 43 is provided in its periphery with a notch 95 which is engaged by the pin 89 when the parts are in their normal position thus locking the lever against movement.

As the plunger is forced inwardly with a coin of predetermined size located between the outer and inner sections, the coin will press against the outer end of the spring actuated sliding bar 84 and slide the bar inwardly a sufficient distance to withdraw the pin 89 from the notch 95 in the periphery of the lever 43. When the plunger is in this position a spring actuated sliding hooked latch 96, which has also been released by the withdrawal of the pin 89, will engage a notch 97 in the periphery of the outer section 67 of the plunger for locking the plunger at the limit of its inward movement.

A retarding spring 89\* serves to normally hold the bar 84 at the limit of its outward movement.

The latch 96 is normally held at the limit of its movement toward the plunger by means of a retracting spring 98, one end of which is engaged with the latch and the other end with the bracket 78. This latch 96 is mounted to slide between the bracket 78 and the casing. The latch 96 is provided with a depending hook 99 which engages the pin 89 for holding the latch away from the plunger when the plunger is at the limit of its outward movement.

After the plunger has been locked to the latch 96 at the limit of its inward movement the slight lost motion is sufficient to disengage the coin from the end of the bar 84 thus permitting the coin to drop into the coin chute which coin chute directs the coin down into one of the pockets 41 in the wheel 40.

The rearward movement of the pin 89 caused by the engagement of the coin with the end of the bar 84 as the plunger is forced inwardly also releases the hand lever 43. The hand lever may then be rocked forward. As the lever is rocked forward the curved guard 46 will engage the projecting portion of the coin within the wheel and rock the wheel a distance sufficient to bring one of the compartments 52 in the delivery wheel 51 opposite the opening 53 in the partition 5 leading to the delivery chute as hereinbefore described.

As the hand lever 43 approaches the limit of its forward movement, a lug 100 on the extension 91 of the lever will engage the hook 99 of the latch 96 so that the further forward movement of the lever 43 will withdraw the latch from the notch 97 thus permitting the plunger to be forced outwardly to the limit of its movement by the spring 87.

I provide a spring actuated pawl 101 hinged to the coin chute 42 for preventing the forward movement of the wheel beyond the point to which it is rotated by the lever. The pawl 101 is held out of engagement with the wheel by the curved guard 46 when the hand lever 43 is at the limit of its rearward movement. As the hand lever 43 is rocked forwardly together with the guard 46, the pawl 101 is positively brought into engagement with one of the coin pockets 41 in the wheel 40 by means of a retraction spring 102. As the hand lever is swung back to its normal position the curved guard 46 will swing the pawl 101 out of its coin pocket 41 ready to permit the lever to rotate the wheel another step when a coin has been brought into position to connect the curved guard of the lever with the said wheel. A spring actuated pawl 103 is secured in position to engage the pockets 41 in the wheel 40 to prevent the reverse movement of the wheel.

I preferably provide a deflector plate 104 within the reservoir 7 for directing the articles onto the top of the inclined portion 56 of the casing 54 and for insuring the agitation or stirring up of articles to prevent their becoming wedged within the reservoir so as not to properly free themselves.

The complete operation of the machine is as follows:—A coin of the predetermined size is inserted through the slot 65 in the top of the socket piece 64 into the space between the outer and inner members 67, 68 of the plunger. The spring actuated pressure plate 70 tends to hold the coin in the said space. The plunger is then forced inwardly and the coin is brought



into contact with the end of the bar 84 thus forcing the bar and thereby the pin 89 inwardly a sufficient distance to release the sliding latch 96 and the hand lever 43. The latch 96 will engage the notch 97 in the outer member of the plunger thus locking the plunger against outward movement. The coin will then drop from the space between the outer and inner members into the coin chute 42. This chute will direct the coin into one of the pockets 41 in the wheel 40. The handle 44 of the hand lever is then rocked forwardly, the coin serving to lock the lever to the wheel thus rocking the shafts 38 and 47 a predetermined distance sufficient to bring one of the pockets 52 in the delivery wheel 51 opposite the opening 53 in the partition 5 communicating with the delivery chute 23. This will permit the articles within the measuring pocket 52 to drop down into the delivery opening 21 where the said articles may be removed by the operator. As the measuring pocket 52 in the wheel 51 is being brought into position over the opening 53, the double yielding plate 57 will trim off the articles so as to insure substantially the proper number being delivered. This plate 57 will also yield either up or down to prevent the breaking or crushing of the said articles, as hereinbefore described. The flame from the lamp 20 within the lower compartment 4 of the casing keeps the partition 5 heated beneath the delivery wheel 51 so that the articles which are located in the measuring pockets 52 in the said wheel are kept hot. The hot air also passes upwardly through the interior of the reservoir 7 and around the exterior thereof and from thence outwardly through the ventilator 8. This will keep the articles within the reservoir dry. This is very important where the machine is used for vending peanuts which are liable to deteriorate by becoming moist. As the hand lever 43 reaches the end of its forward movement in delivering the articles, the lug 100 thereon will engage the latch 96 and withdraw it from the plunger thus permitting the plunger to be forced back to its normal position by its retracting spring. If a disk of metal thinner than the coin intended be inserted into the slot 65 in the socket piece 64, it will fall through the space between the outer and inner members of the plunger and the lower slot 66 in the socket piece. If a washer of the same thickness as the coin intended is inserted into the space between the outer and inner members of the plunger, the said washer will not operate the mechanism for the reason that the bar 84 will pass through the opening in the washer as the plunger is forced inwardly. As the plunger is returned to its normal position, the washer will also be returned where it must be forced out before a coin of the predetermined size may be inserted.

The novel features of construction of the casing, set forth but not claimed herein, form the subject matter of a separate application filed of even date herewith.

It is evident that changes might be resorted to in the form, construction and arrangement of the several parts without departing from the spirit and scope of my invention; hence I do not wish to limit myself strictly to the structure herein set forth, but

What I claim is:—

1. A coin operated vending machine comprising a delivery mechanism, an operating lever arranged to be locked to the delivery mechanism by a coin, a coin receiving plunger and mechanisms arranged to lock the lever in its normal position, to release the lever as the plunger is forced inwardly, to lock the plunger at the limit of its inward movement and to release the plunger.

2. A coin operated vending machine comprising a delivery mechanism, an operating lever arranged to be locked to the delivery mechanism by a coin, a coin receiving plunger, means for locking the lever in its normal position, said means being under the control of the coin for releasing the lever as the plunger is forced inwardly, means for locking the plunger at the limit of its inward movement and means for releasing the plunger.

3. A coin operated vending machine comprising a delivery mechanism, an operating lever arranged to be locked to the delivery mechanism by a coin, a coin receiving plunger, means for locking the lever in its normal position, said means being under the control of the coin for releasing the lever as the plunger is forced inwardly, means for locking the plunger at the limit of its inward movement and means carried by the lever for releasing the plunger as the lever is rocked to operate the delivery mechanism.

4. A coin operated vending machine comprising a delivery mechanism, an operating lever arranged to be locked to the delivery mechanism by a coin, a coin receiving plunger, means for locking the lever in its normal position, for releasing the lever, and for locking the plunger at the limit of its inward movement, comprising a spring-actuated latch, a sliding bar fitted to engage the coin and a locking pin carried by the bar in position to engage and disengage the latch and lever.

5. A coin operated vending machine comprising a delivery mechanism, an operating lever arranged to be locked to the delivery mechanism by a coin, a coin receiving plunger, and means for locking the lever in its normal position, for releasing the lever as the plunger is forced inwardly and for locking the plunger at the limit of its inward movement, comprising a spring-actuated latch for engaging the plunger, a spring-actuated sliding bar engaged by the coin, a locking pin carried by the bar and arranged to engage and disengage the lever and latch, and a lug carried by the lever in position to engage the latch for releasing the plunger as the lever is rocked for operating the delivery mechanism.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two witnesses, this 8th day of May 1902.

FRANK W. TUCKER.

Witnesses:

FREDK. HAYNES,  
ROET. B. SEWARD.