

Nov. 27, 1923

1,475,341

S. HANSON

DISPENSING MACHINE

Filed Sept. 20, 1920

4 Sheets-Sheet 1

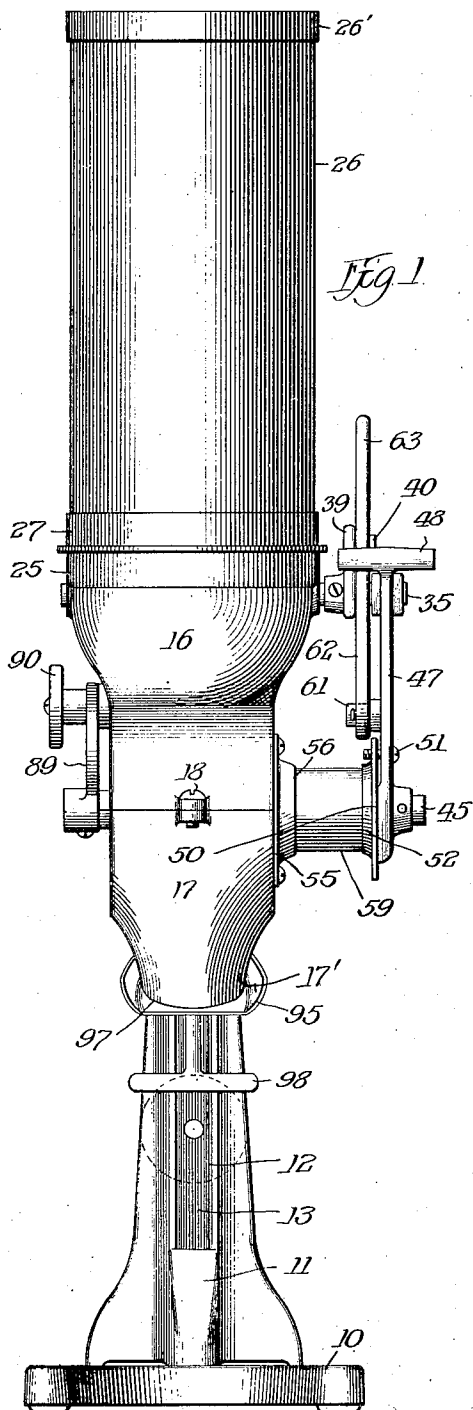


Fig. 1

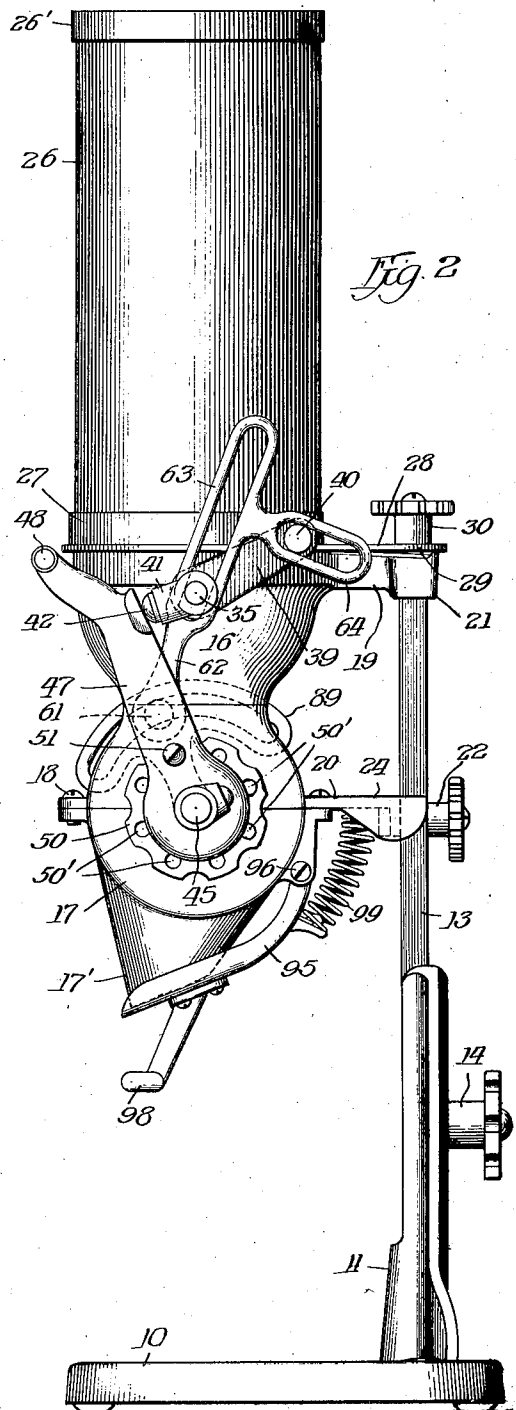


Fig. 2

Witness:
S. Hanson

Inventor
Sigvort Hanson
By James A. Walsh, Att.

Nov. 27, 1923.

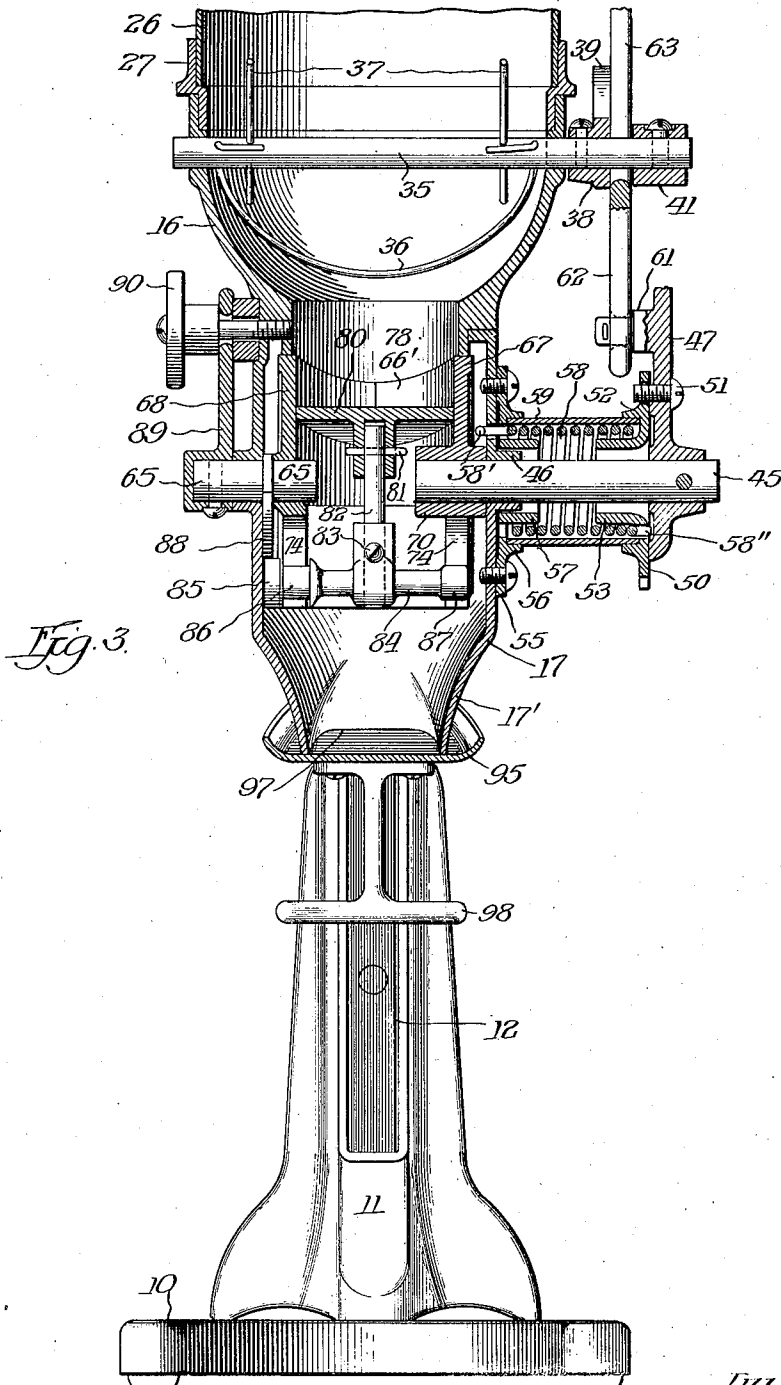
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S. HANSON

DISPENSING MACHINE

Filed Sept. 20, 1920

4 Sheets-Sheet 2



Witness:

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Sigvort Hanson

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Atty.

Nov. 27, 1923.

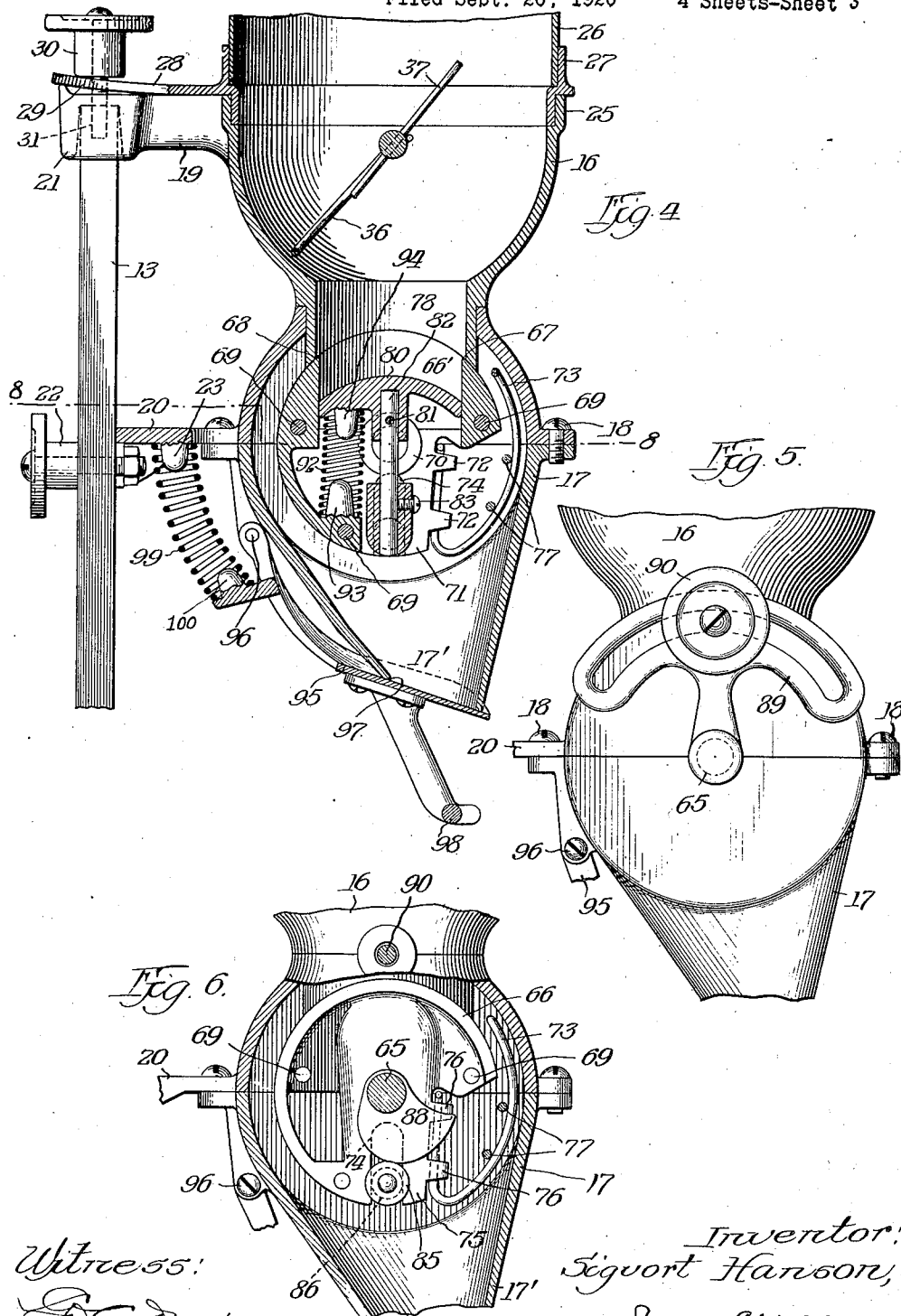
1,475,341

S. HANSON

DISPENSING MACHINE

Filed Sept. 20, 1920

4 Sheets-Sheet 3



Witness:

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Inventor:

Sigvort Hanson,

By *James A. Walsh,*

Att'y

Nov. 27, 1923.

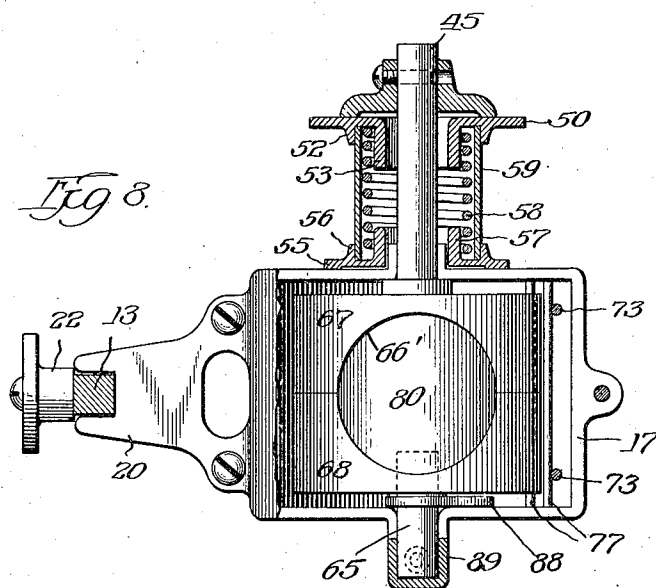
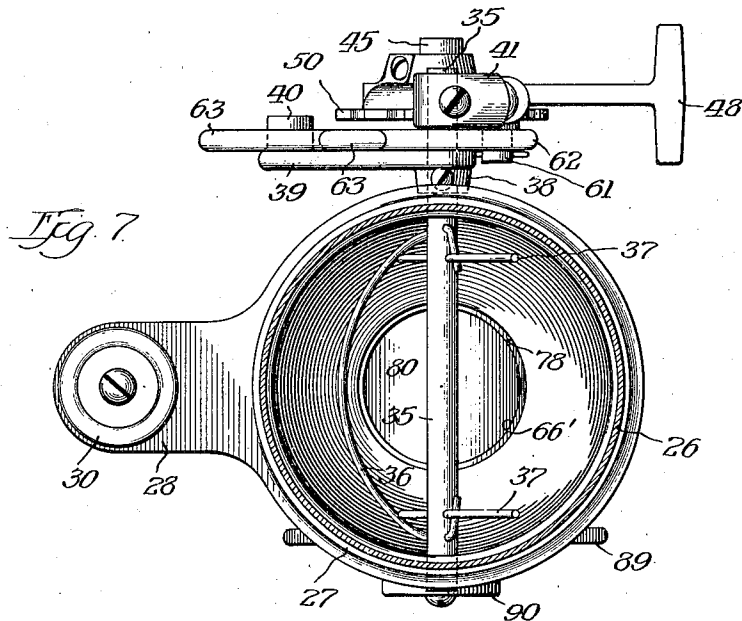
1,475,341

S. HANSON

DISPENSING MACHINE

Filed Sept. 20, 1920

4 Sheets-Sheet 4



Witness:

W. C. Hanson

Inventor:

Sigvort Hanson

By *James A. Walsh*

Atty

Patented Nov. 27, 1923.

1,475,341

UNITED STATES PATENT OFFICE.

SIGVORT HANSON, OF RACINE, WISCONSIN, ASSIGNOR TO RACINE DISPENSER MANUFACTURING COMPANY, OF RACINE, WISCONSIN, A CORPORATION.

DISPENSING MACHINE.

Application filed September 20, 1920. Serial No. 411,628.

To all whom it may concern:

Be it known that I, SIGVORT HANSON, a citizen of the United States, residing at Racine, in the county of Racine and State of Wisconsin, have invented certain new and useful Improvements in Dispensing Machines, of which the following is a specification.

My present invention relates to dispensing machines of that character which are designed to contain a supply of material and dispense the same in predetermined measured quantities so that in serving drinks containing pulverulent material such as malted milk powder and the like, or portions of such character of material for other purposes, a positive uniform quantity will be dispensed for each such service without adjustment of any parts of the machine other than its preliminary adjustment upon determining the quantity of material to be dispensed at each operation of the machine. And it is my object to generally improve and simplify the construction and operation of such machines, an example of which is disclosed in Patent 1,211,577, issued January 9, 1917, upon my application, so that they will occupy but limited space upon counters, and can be readily manipulated by inexperienced dispensers to deliver a uniform portion of material at all times.

In the accompanying drawings, forming part hereof, Figure 1 is a front elevation of my improved machine; Fig. 2, a side elevation thereof; Fig. 3, a transverse vertical sectional view of the same; Fig. 4, a vertical detail sectional view showing certain internal mechanisms embodying my inventions as seen when looking toward the right in Fig. 3; Fig. 5, a fragmentary side elevation showing adjusting mechanisms which I employ; Fig. 6, a detail sectional view taken from Fig. 5 and showing parts controlled by said adjusting mechanisms; Fig. 7, a plan as seen when looking into the machine as shown in Fig. 4; and Fig. 8 is a detail sectional view taken on the dotted line 8—8 in Fig. 4.

In said drawings the portions marked, 10, indicate a base to which is secured an upright support, 11, having a guide-way, 12, therein in which is movably mounted a standard, 13, which latter may be adjusted as desired, and held in position by the screw-bolt, 14.

A combined material containing chamber, 16, and measuring and charge ejecting chamber, 17, suitably connected at, 18, are provided with arms, 19, 20, which are supported on standard, 13, the arm 19 preferably being provided with a socket portion, 21, placed upon the upper end of said standard, while arm 20 is held in position upon said standard by a screw-bolt, 22, the latter arm being provided with a stud, 23, and wings, 24. Chamber 16, as indicated in Fig. 4, is provided with a flange, 25, for the reception of a container, 26, which is secured to a ring, 27, embodying a handle, 28, said handle having an aperture, 29, adapted to register with the socket portion 21 of arm 19, and secured to standard 13 by a screw-bolt, 30, passing through said handle and arm and threaded into standard 13, at 31. In the use of my machine I prefer to employ a container, as 26, of a desired capacity, into which the material to be dispensed is transferred from the ordinary bottles or containers of commerce, and which container 26 I place in position within the flanged end, 32, of chamber 16, so that when so positioned material may be deposited therein by removing its cover, 26', and its contents are thus protected from dust or other extraneous matter, and may be fed as desired by the mechanisms to be hereinafter referred to.

Passing through chamber 16 is a shaft, 35, to which is secured agitators, 36, 37, preferably in the form of wires, the agitator 36 being arranged so that when shaft 35 is rotated it will sweep radially through the lower portion of chamber 16, while the agitators 37 at the same time follow the rocking movement of said shaft 35 to produce a rotary motion. One end of said shaft 35 is fixedly mounted in a collar, 38, from which extends an arm, 39, having a stud, 40, at its outer end, said assemblage of parts constituting a rock-shaft, while upon the extreme outer end of said shaft is secured a stop, 41, having cushioning material, 42, in its outer end.

In the ejecting chamber 17 I mount a driving-shaft, 45, in bearing, 46, at the outer end of which shaft is secured an operating lever, 47, provided with a cross-arm or handhold, 48. A spring adjuster, 50, is mounted about said shaft 45, said adjuster being provided with a series of holes, 50', by which the same is secured to lever 47 by a pin or

screw, 51, and which adjuster also embodies an annular flange, 52, and a hub, 53. Secured to chamber 17 is a plate, 55, embodying an annular flange, 56, and hub, 57, of a similar arrangement as said flange and said hub on adjuster 50. A helical spring, 58, surrounds said hubs 53, 57, one end of said spring being secured to chamber 17, at 58', while the opposite end is engaged in adjuster 50, at 58'', said spring and hubs being ensconced within a protecting collar, 59. By the series of holes 50' in adjuster 50, and the screw 51, it will be understood that the tension of spring 58 may be regulated by rotating said adjuster to the desired position and fixedly securing the same by said screw.

At the inner side of said lever 47 I place a stud, 61, which is in alignment with the stud 40 on the arm 39, said studs being connected by a compound lever strap, 62, comprising the slotted members, 63, 64, for a purpose which will hereinafter appear.

Mounted upon said driving-shaft 45 and also upon stud-shaft 65 is an ejecting chamber 66, preferably comprising two members, 67, 68, (Fig. 8) secured together by pins, 69, (Fig. 4), the peripheral surface thereof being of a smooth and polished character. The wall of member 67 is provided with a hub, 70, mounted upon driving-shaft 45, and a leg, 71, extends downwardly from said hub and is provided with ears, 72, in which one end of a transverse scraper in the form of a wire, 73, is secured, as indicated in Fig. 4, the space between said leg and wall (indicated in dotted lines) forming a guide-way, 74, for a purpose to be explained. The opposite member 68 of said ejector (Fig. 6) is mounted on stud-shaft 65, and embodies a leg, 75, having the ears, 76, and guide-way, 74, similar in respect to the leg 71 and ears 72, in which ears 76 the opposite end of scraper 73 is connected, said scraper being so positioned that its transverse portion which extends across from walls 67, 68, will move in relation to the bars, 77, which are fixed in transverse position within chamber 17, and pass across said bars as said ejector 66 is rotated, thus disintegrating material being discharged through that side of chamber 17.

The ejector 66 is formed with a circular aperture, 66', which, when in registry with the throat or discharge opening, 78, of chamber 16, constitutes a portion of the pocket or hopper into which material is delivered from said chamber 16, and in which hopper the quantity of material to be dispensed at each operation of the machine is determined. This is accomplished by an adjustable bottom, 80, which may be raised and lowered in the hopper as desired so that the capacity thereof may be regulated to hold a greater or lesser amount

of material to be dispensed at each service of the machine. Said bottom 80 is preferably of convex form on its upper surface and has secured thereto, at 81, a vertical shaft, 82, its lower end being secured, as at 83, to a cross-shaft, 84, having bearings, 85, 86, 87, at its ends, the latter two bearings being seated in the guide-ways 74 so as to move vertically therein, while the bearing 85 is in alignment with a cam, 88, mounted on stud-shaft 65, upon which stud-shaft is fixedly secured a slotted segment, 89, the movement of which is controlled by a set-screw, 90, connected to chamber 16. When it is desired to diminish the quantity to be held and delivered by hopper, 78, 66', said segment 89 is moved rearwardly in the direction of standard 13, and as said segment and the cam 88 are fixedly secured to stud-shaft 65, the movement of said shaft causes spring 92, which is held between studs, 93 and 94, on cylinder, 66, and the hopper bottom 80, to contract, thus permitting the cross-shaft 84 by its release through the eccentric movement of cam 88 to move upwardly, consequently carrying with it said bottom 80, and, reversely, when it is desired to increase the capacity of said hopper, the forward movement of said segment, through shaft 65, operates said cam 88 to impel cross-shaft 84 downwardly, and thus accordingly moving said bottom 80 downwardly and increasing the capacity of said hopper portion 66'.

At the lower end of said ejecting chamber 17 I provide a valve or delivery door, 95, which is hinged, at 96, to said chamber, which valve is held normally closed to the mouth, 97, of said chamber, as indicated in Fig. 2, and has embodied therewith an opening device 98, said valve 95 and the arm 20 having interposed therebetween a spring, 99, mounted upon the studs 23, 100, for automatically closing said valve. Said valve, as will be understood, is opened by the pressure of a glass or receptacle against the opening device 98.

In the construction of my improved machine I have the base and parts supported thereby so arranged that it is of a portable character, and may be shifted to different positions, the parts being so related that it is unnecessary to fixedly secure the machine upon a counter or otherwise, as I have so balanced the same that the frequent operation of the machine will not disturb its equilibrium, although the machine occupies a comparatively small space, say eight by six inches, which is an important consideration generally in the installation of devices for soda stands and the like, where the advantage and conservation of space is essential.

In operation, the various mechanisms of my improved dispensing machine are so

5 timed that the delivery of material there-
 from is accomplished both simply and
 quickly, and the discharge of material from
 hopper 66' to the receiving receptacle (not
 10 shown) is by a simple operation. The ma-
 terial, of course, which is held in store by
 container 26, is discharging into chamber
 16. Upon the forward movement of lever
 47, agitator-shaft 35 and driving-shaft 45
 15 are simultaneously operated through the
 communication and action of strap-lever 62
 so that shaft 35 is rocked, carrying with it
 the agitators 36, 37, which have a sweeping
 and disintegrating effect upon the material
 20 while the same is being discharged through
 throat 78 into hopper 66'. At the same in-
 stant the ejector 66 is revolved by the rotary
 motion of shaft 45 so that the material rest-
 ing upon the bottom 80 and confined within
 25 the ejector walls 67, 68, constituting ejector
 66, to the uppermost limit of said hopper, is
 cut off from the remainder of the supply in
 throat 78 by the rotary movement of the
 ejector, which portion is carried around by
 30 said ejector to the influence of the scraper
 73, which, through the cooperation of bars
 77 over which it passes, further disintegrates
 the material, so that as the cylindrical ejec-
 tor 66 is rotated forwardly by such actua-
 35 tion of said lever, the quantity of material
 thus carried around is delivered through the
 discharge end 17' (Fig. 4) of chamber 17
 into a receptacle (not shown) which has been
 inserted against the device 98 to open said
 40 valve 95, which, through the action of push-
 ing the receptacle against said device 98
 opens said valve and causes the material to
 discharge directly into the receptacle be-
 neath, and upon the withdrawal of said re-
 45 ceptacle the valve instantly closes through
 the action of spring 99. In this manner it
 will be understood that the material to be
 served is kept enclosed within the machine
 until such time as a portion is to be dis-
 50 charged; and that the door or valve is opened
 only momentarily for the introduction of
 the charge into a receptacle, after which it
 instantly becomes automatically closed, and
 the entrance of dust, insects, and the like, is
 55 thus prevented. It will be observed that,
 by controlling shaft 45 through spring 58,
 and the flexible connection of said shaft and
 the shaft 35, there is a synchronous opera-
 tion of the mechanisms when lever 47 is
 60 actuated, which assures the continuous agi-
 tation and delivery of material through the
 chambers 16, 17, and that instantly a charge
 is apportioned and cut off by the rotary
 motion of ejector 66, the same is carried
 65 around and dumped by the forward manipu-
 lation of said lever, which, when released,
 automatically returns to normal position by
 the action of said spring 58 and shaft 45,
 said lever abutting against and being held
 from rearward movement by the stop 41.

It will also be understood that by trans-
 ferring a predetermined amount of material
 into container 26, say for example three
 pounds, and it is desired to divide such an
 amount into a certain number of portions
 70 to be served, the size of such portions may
 be regulated by adjusting bottom 80 in the
 ejector 66, so that the pocket or hopper
 within the confines of the ejector walls 67,
 68, and bottom 80 will be adjusted to con-
 75 tain just the quantity required to make an
 equal division of the gross amount held in
 said container.

In handling material of the character
 herein referred to it will be understood that
 80 atmospheric conditions seriously affect the
 same to a large degree, and it is important
 to protect the material from humidity, other-
 wise rapid crystallization occurs, resulting
 in the hardening and deterioration of the
 material and resultant loss. Therefore, in
 85 providing a system of intercommunicating
 compartments which constantly protect the
 supply and discharge of such material from
 outside atmospheric influences I am enabled
 to dispense the same without exposing it to
 90 such conditions, and also to exclude the en-
 trance of extraneous matter into the ma-
 chine, as hereinbefore explained.

I claim as my invention:

1. In a dispensing machine, an apertured
 ejector therein, a bottom in said aperture,
 a shaft connected to said bottom, a cross-
 shaft connected to said shaft, guide-ways
 in said ejector in which said cross-shaft
 100 travels, yielding means interposed between
 said bottom and said ejector, and means for
 actuating said cross-shaft to permit said
 bottom to raise and lower in said ejector.
2. In a dispensing machine, a cylindri-
 cally formed rotary ejector having a pocket
 and a single adjustable bottom arranged
 diametrically therein, a shaft upon which
 said ejector is mounted, a lever connected to
 said shaft, a spring connecting with said
 110 lever and charge ejecting chamber, and a
 handle on said lever for actuating the sam-
 e to rotate said ejector to select a charge of
 material and discharge the same in a down-
 ward direction.
3. In a dispensing machine, an ejector
 having side walls the peripheries of which
 are cylindrically formed, means for uniting
 said walls, legs extending downwardly from
 said walls to produce guide-ways, a movable
 120 bottom in said ejector, actuating means for
 said bottom seated in said guide-ways, and
 means for operating said actuating means
 to adjust said bottom in said ejector.
4. In a dispensing machine, a rotary
 125 ejector, a driving shaft to which said ejector
 is fixedly secured, a stud-shaft for support-
 ing said ejector, a movable bottom in said
 ejector, actuating means in said ejector to
 130 which said bottom is connected, a cam on

said stud-shaft engaging said actuating means, and means for rotating said stud-shaft to actuate said cam to permit vertical movement of said actuating means.

5 5. In a dispensing machine, a rotary ejector, a shaft to which said ejector is fixedly secured, a stud-shaft for supporting said ejector, a movable bottom in said ejector, yielding means interposed between said ejector and bottom, actuating means in said
10 ejector to which said bottom is connected, and means associated with said stud-shaft for permitting vertical movement of said actuating means through the action of said
15 yielding means.

6. In a dispensing machine, an ejector therein, a movable bottom in said ejector, a stud-shaft upon which said ejector is supported, a cam on said stud-shaft, means associated with said bottom with which said
20 cam engages, adjusting means secured to said stud-shaft for actuating the same and said cam for permitting vertical movement of said bottom, and means for fixedly securing
25 said adjusting means to retain said bottom in predetermined position.

7. In a dispensing machine, a rotary ejector therein, a scraper connected to said ejector, bars in said machine arranged transversely therein, and means for actuating
30 said ejector whereby said scraper moves across said bars for disintegrating material discharging from said ejector.

8. In a dispensing machine, a material receiving and ejecting chamber, an ejector in said chamber, a shaft upon which said ejector is mounted, a lever at the end of said
35 shaft for actuating the same, a spring adjuster secured to said lever, and a spring secured to said chamber and said adjuster for returning said shaft to normal position after
40 said lever has actuated the same.

9. In a dispensing machine, a driving-shaft, a cylindrical ejector connected thereto and having a single diametrically formed
45 pocket therein, a bottom in said pocket adapted to be adjusted to increase and decrease the capacity thereof, a flanged plate secured to said machine, a lever at the end
50 of said shaft, a spring adjuster secured to said lever, a spring mounted upon said plate and said adjuster, and a protecting collar surrounding said spring and retained between said plate and adjuster.

10. In a dispensing machine, a container having an opening for the introduction of material, a receiving chamber to which said container is secured for delivering material
55 therinto, an agitator in said chamber for disintegrating material, an ejector beneath said chamber having a pocket arranged dia-

metrically therein, an adjustable bottom mounted in said pocket, a shaft upon which said ejector is mounted, a lever connected to said shaft for rotating the same, and
65 spring actuating means connected to said chamber and lever for automatically returning the same to normal position after being depressed.

11. In a dispensing machine, a container
70 having an opening for the introduction of material, a receiving chamber with which said container communicates for delivering material therinto, an agitator in said container for disintegrating material, an ejector
75 beneath said container embodying a diametrically arranged pocket and having an adjustable bottom therein, a scraper secured to said ejector, a shaft upon which said ejector is mounted, and a lever connected
80 to said shaft for rotating the same to position said ejector for discharging material from said machine.

12. In a dispensing machine, a revoluble measuring element having a pocket formed
85 therein and provided with guides, a reciprocating bottom fitted in said pocket and provided with a centrally arranged stem, a cross-shaft secured to said stem and operating in said guides to hold said bottom
90 in operative position, a bearing on said cross-shaft, a cam engaging said bearing and adapted to be set to hold said bottom in various retracted positions so as to vary the capacity of said pocket, and means for
95 holding said cam in said set position.

13. In a dispensing machine, the combination with a container having a discharge opening in the bottom thereof, an ejecting chamber arranged beneath said discharge
100 opening, a revoluble measuring element in said chamber, means for varying the capacity of said element, driving means for revolving said measuring element, and means for detachably connecting said element to
105 said driving means to permit said element to be removed from said chamber.

14. In a dispensing machine, the combination with a container adapted to hold the material to be dispensed, a measuring element adapted to segregate a measured quantity of said material and subsequently discharge the same, means for operating said measuring element, means automatically operating to hold said measuring element in its
115 filling position so as to insure against an accidental discharge of material, and means for varying the capacity of said element to deliver apportionments of varying quantities.
120

In testimony whereof I affix my signature.
SIGVORT HANSON.