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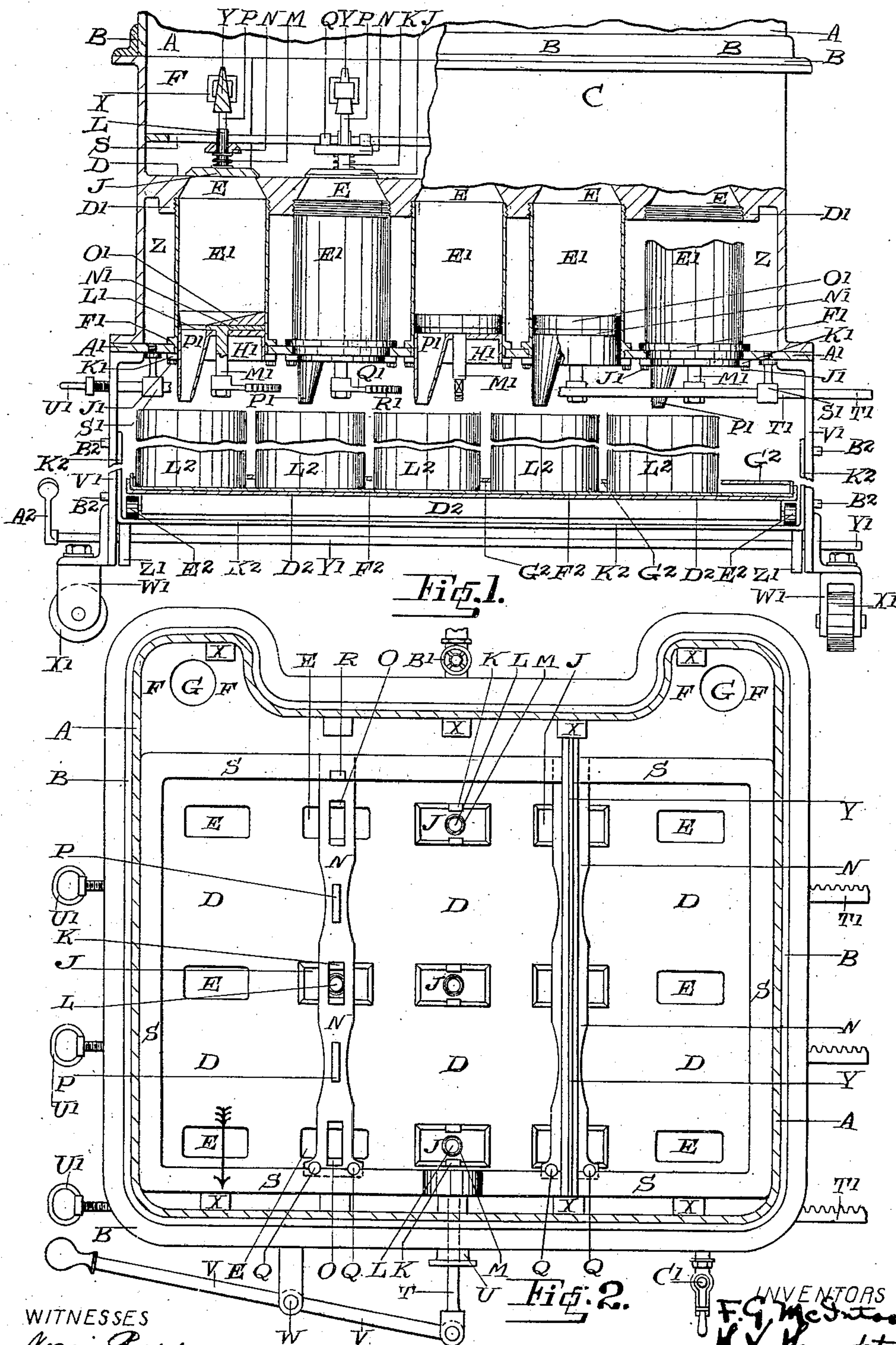
PORTABLE FILLING MACHINE.

APPLICATION FILED AUG. 8, 1907.

917,645.

Patented Apr. 6, 1909.

2 SHEETS—SHEET 1.



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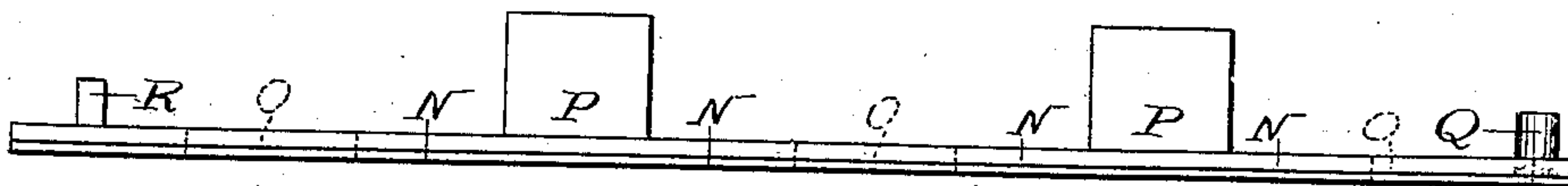
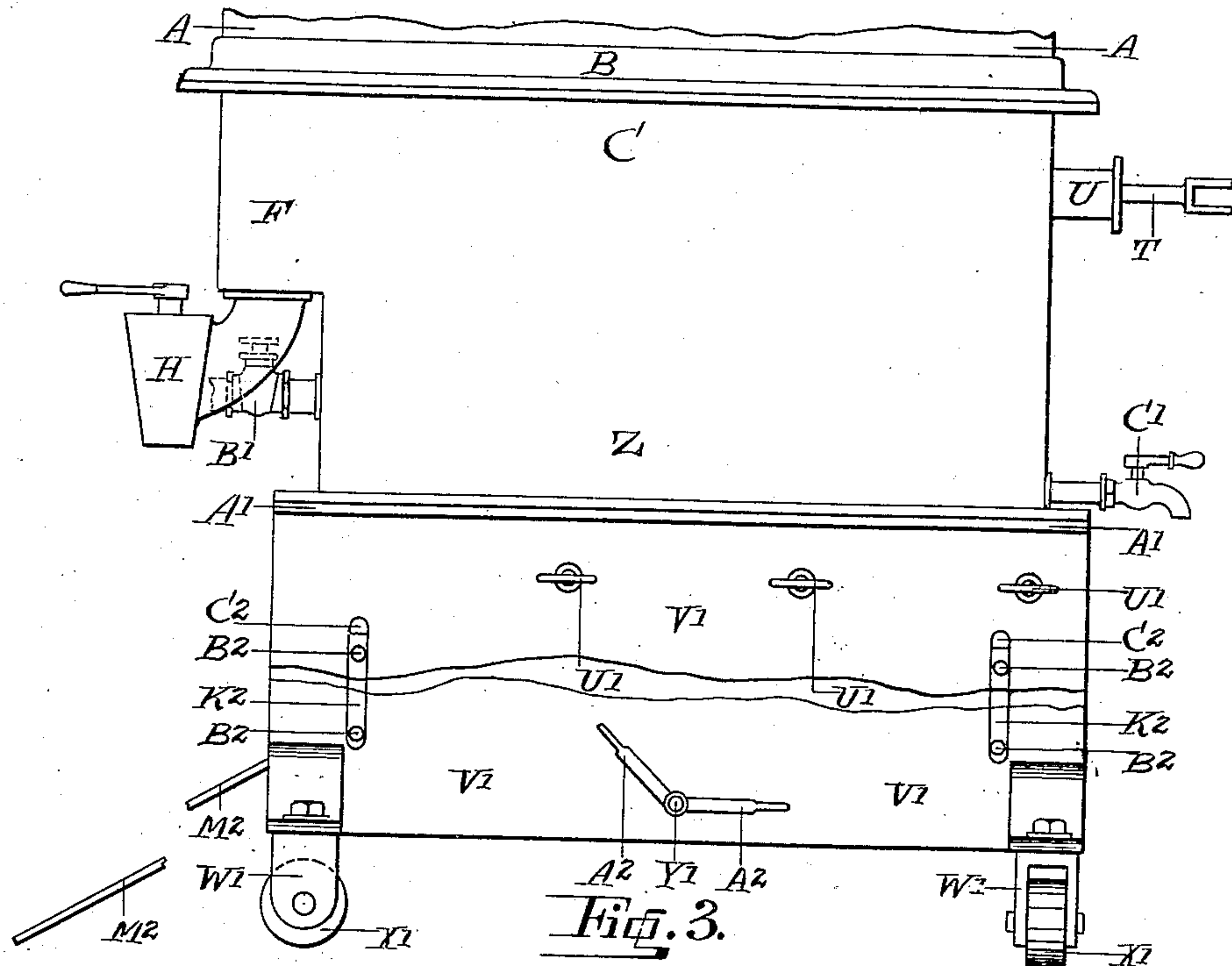


Fig. 4.

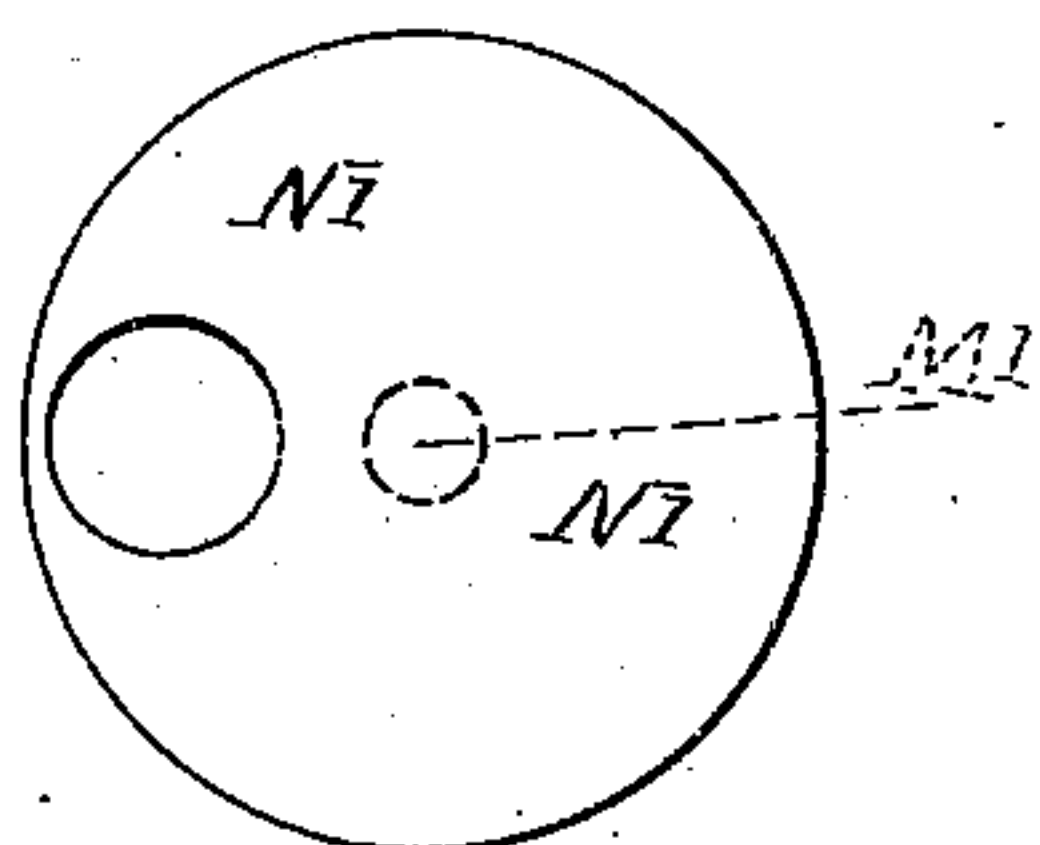


Fig. 5.

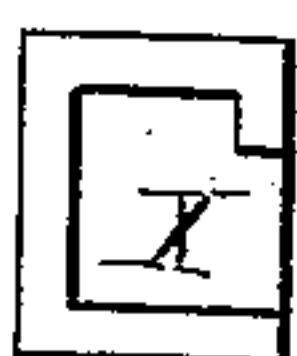


Fig. 7.

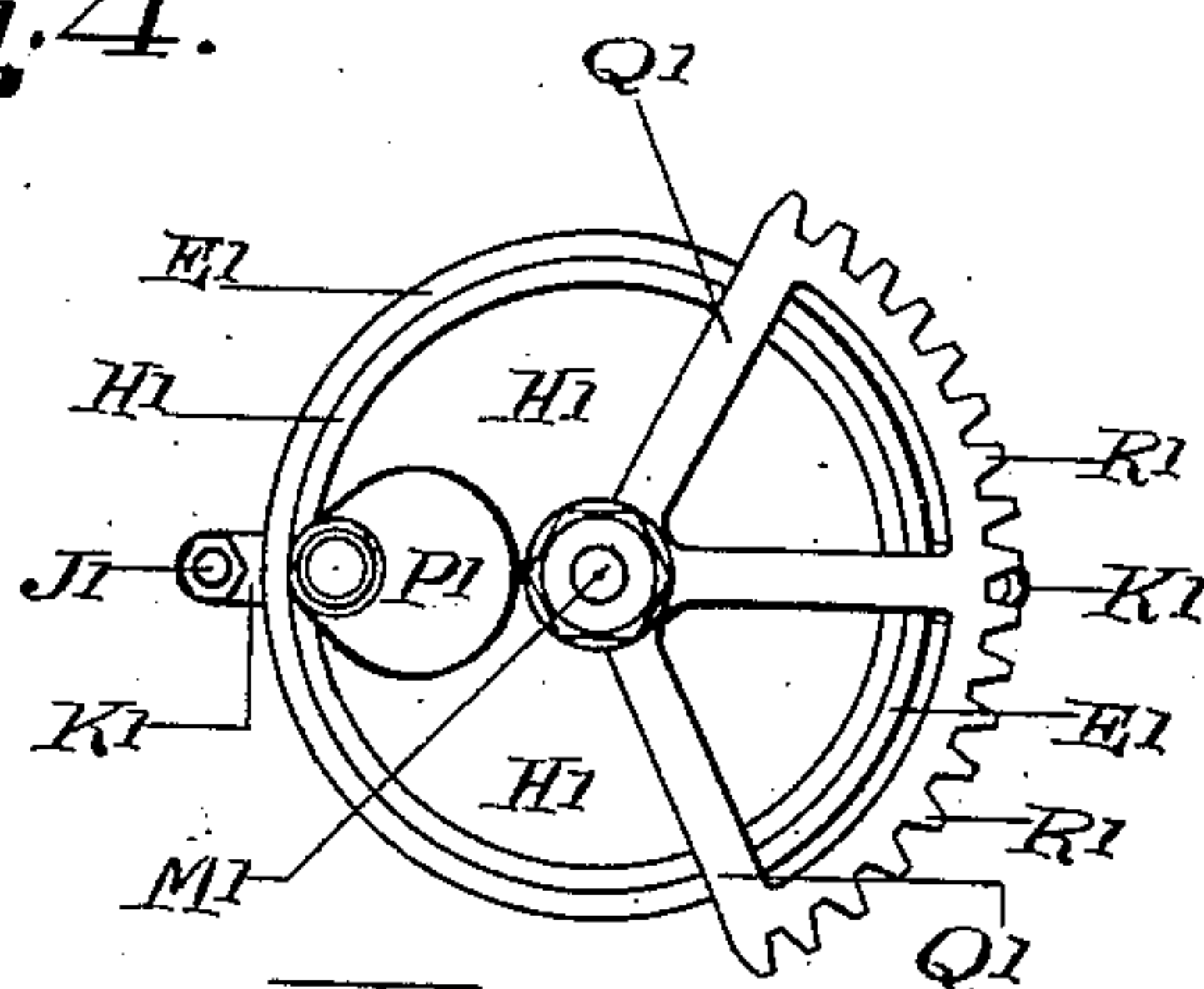


Fig. 6.



Fig. 8.



Fig. 9.

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UNITED STATES PATENT OFFICE.

FARQUHAR GEORGE McINTOSH, OF UPPER FERN TREE GULLY, AND HERBERT VAUGHAN HAMPTON, OF MELBOURNE, VICTORIA, AUSTRALIA; SAID HAMPTON ASSIGNOR TO SAID McINTOSH.

PORTABLE FILLING-MACHINE.

No. 917,645.

Specification of Letters Patent.

Patented April 6, 1909.

Application filed August 8, 1907. Serial No. 387,733.

To all whom it may concern:

Be it known that we, FARQUHAR GEORGE McINTOSH and HERBERT VAUGHAN HAMPTON, subjects of the King of Great Britain and Ireland, residing at Upper Fern Tree Gully, in the county of Mornington, and 504 Elizabeth street, Melbourne, in the county of Bourke, respectively, both in the State of Victoria, Commonwealth of Australia, have invented a certain new and useful Improved Portable Filling-Machine, of which the following is a specification.

This invention relates to apparatus used in the decanting of jam or other products or materials or liquids or semi-liquids. In the past such an operation has been performed in a variety of ways. Some of the devices have been primitive some laborious and some insanitary.

The object of this invention is to provide a cheap, simple, labor saving, effective and reliable apparatus whereby cans, tins, or other receptacles are neither over nor under filled, nor their exteriors disfigured in any way by drippings or deposits.

This invention includes a means for rendering the aforesaid decanting apparatus portable; a means for removing the receptacles from underneath the bottom of the machine; means for elevating the receptacles when beneath spouts which fill them; means for heating the material while in chambers in which it is measured; means for adjusting the volume of measuring cylinders; means for discharging the material in bulk without it passing through the measuring cylinders; means for rapidly disconnecting upper cut off valves for inspection; means for rapidly disconnecting lower cut off valves for inspection; means for filling all the measuring cylinders at once; means for discharging said measuring cylinders in series.

Referring to the drawings which form a part of this specification; Figure 1 is a side elevation partly in section of the apparatus. Portions have been removed for the convenience of illustration. Fig. 2 is a plan of the apparatus partly in section. The first vertical row of parts is uncovered. The second row is covered by the reciprocating plate and one port by an upper cut off valve. The third row is covered by the valves only. The fourth row by the valves, the reciprocating plate and a cross bar. The fifth row is uncovered. The cross shaft and double foot

lever forks and traveling wheels and bulk discharge cocks have also been removed. Fig. 3 is an end elevation of the apparatus. The upper cut off lever and the projection on the upper valve chamber to which it is immediately pivoted, are removed. Fig. 4 is a side elevation on an enlarged scale of a reciprocating plate. Fig. 5 is a plan of the lower cut off valve or disk. Fig. 6 is a view looking underneath one of the measuring cylinders. Fig. 7 is an elevation of a pocket having a side opening looked at in the direction of the arrow seen in Fig. 2. Fig. 8 is a sectional view of a contents adjusting ring. Fig. 9 is a side elevation of a contents adjusting ring.

Similar letters of reference indicate similar or corresponding parts where they occur in the several views.

On reference to Figs. 1, 2 and 3 it will be seen that A is a receiver. This is open topped and the bottom of it by rivets or other means is secured to an angle flange B. The said flange B is attached to a flange on the upper valve chamber C. The said upper valve chamber C has a valve surface D extending over the whole of the same. Through this (Figs. 1 and 2) are ports E. There are also on the valve surface D (not seen in Fig. 3) valve chamber extensions F in which are bulk discharge holes G. Underneath each bulk discharge hole is situated (Fig. 3) a bulk discharge cock H. By this cock the material, when necessary, instead of passing through the ports E can discharge through the said cock H. Inside the upper valve chamber C and over each port E is an upper cut off valve J. Upstanding from the said valve J are lugs K (Fig. 1). Between the lugs K is situated a core L. Around the core L is situated a spiral spring M.

Above the top of each transverse set of upper cut off valves is a reciprocating plate N. In this (Figs. 2 and 4) are lug holes O. The holes in the said reciprocating plate drop over the lugs K and the said plates rest on the top of the spiral springs M. Above the top of each reciprocating plate are guide lugs P. At one end of the said reciprocating plate N are two upstanding pins Q. At the other end is an upstanding pin R.

Resting on the top surface of the aforesaid reciprocating plates N and having suitable holes or incuts therein to accommodate the upstanding pins Q and R is a valve frame S.

On one side of this valve frame is attached (Figs. 2 and 3) the inner end of a slide rod T. The intermediate portion of the said slide rod T passes through a stuffing box and gland U. To the outer end is pivoted the upper cut off lever V. The said lever by a pivot pin W is intermediately pivoted to a projection from the upper valve chamber C.

Inside the upper valve chamber C and on each side of the same are pockets X (Figs. 1, 2 and 7). These pockets on one side of the apparatus may have (Fig. 7) side openings. On the other side of the apparatus they may have underneath openings. Into these pockets X are placed the ends of cross bars Y. The underneath portions of the said cross bars bear on the top of the guide lugs P, and the pressure to retain the upper cut off valves J upon the valve surface D is thereby obtained.

Beneath the upper valve chamber C and preferably integral with the same is a steam chamber Z (Figs. 1 and 3). Attached to the bottom of the steam chamber Z is a bottom plate A¹. Steam is entered into the said steam chamber (Figs. 2 and 3) by a steam inlet cock B¹ and pipe. The condensed water escapes by the drain cock C¹.

Beneath each port E and integral with the valve surface D is a ring D¹. (Fig. 1). The interior of this is threaded. Into it is threaded the upper end of a measuring cylinder E¹. Near the lower end of each of the said measuring cylinders is a collar F¹. The bottom portion of this collar rests upon the bottom plate A¹. Suitable tie studs may be used to compress the bottom plate A¹ against the collars F¹, if necessary. The bottom end of each of the said measuring cylinders E¹ is closed by a member H¹ (Figs. 1 and 6) therein. The said member is retained to the bottom plate A¹ by stud nuts J¹ pressing upon lugs K¹. Through each cover is a material discharge hole L¹ (Fig. 1) having beneath the same a spout P¹. The bottom of this spout has a knife edge. Through the center of the said cover H¹ is a hole to accommodate the lower cut off valve spindle M¹. Attached to or integral with the upper portion of the said spindle M¹ is a lower cut off valve or disk N¹ (Figs. 1 and 5). Through this disk is a discharge hole L¹ to register with the discharge hole L¹ in the cover H¹. Above this disk N¹ is a discharge accelerator O¹ also having a hole L¹ therein to register with the discharge hole L¹ in the disk N¹ and cover H¹. The said discharge accelerator O¹ is secured to the disk N¹ in any well known way and has an inclined upper surface to more efficiently empty the cylinders E¹. On the bottom of the spindle M¹ are flattened portions. On to these flattened portions is mounted the inner end of a segment Q¹ (Figs. 1 and 6). The outer portion of the segment has teeth R¹ thereon.

Protruding from the bottom plate A¹ (see Fig. 1) are stanchions S¹. In the bottom of each of these is a guide hole to accommodate a toothed rack T¹. The said segments Q¹, stanchions S¹, and toothed rack T¹ are so arranged that there is a rack for each longitudinal series of measuring cylinders E¹. On the outer end of each rack is a lower cut off valve handle U¹.

Beneath the steam chamber Z are attached side frames V¹. Beneath the side frames V¹ are pivoted the upper ends of forks W¹. In each of the said forks, upon a suitable pivot pin, turns the wheel X¹.

Extending from one side frame V¹ to the other is a cross shaft Y¹. This has cams Z¹ thereon. On the outer overhanging end of the cross shaft Y¹ is (Figs. 1 and 3) a double foot lever A². Above the said cross shaft is situated either a table K² or rails. Protruding from the said table or rails K² are guide pins B². These move in suitable vertical slots C² (Fig. 3) in the side frames V¹. Upon the said table or upon the said rails is a trolley D² having wheels B² beneath the same. The said trolley is secured beneath the machine in any well known way. Above the top of the trolley is a tray F². This tray fits in a suitable lip around the trolley top. Above the tray is situated a guide plate G². In this are holes to guide the receptacles L² to be filled. They register beneath the spouts P¹ before referred to. The table or rails K² may be extended (Fig. 3) as at M² diagonally to the ground or floor.

To adjust the contents of the measuring cylinders E¹ there can be placed therein divided adjusting rings H² (see Figs. 8 and 9). These can be made of any suitable material. Preferably they are formed exteriorly to closely fit the interiors of the measuring cylinders and rounded on the interior. These are turned to a larger diameter than the interior of the cylinder and then have a removed portion J² cut out from them. When sprung inside the cylinder they remain in any desired position.

The above description is not to be understood as limiting the invention to the exact details of construction and arrangement described since various slight and immaterial modifications may be made therein without departing from the spirit and the scope of the invention.

The cycle of operations with this invention is as follows:—The apparatus is wheeled to the pan or vessel containing the material which is ready for discharge into the receiver A. A tray full of cans or other receptacles is placed upon the trolley D² and the said trolley pushed up the extension M² on to the table or rails K² and underneath the spouts P¹. The double foot lever A² is then pressed and the cross shaft Y¹ and the cams Z¹ partially rotated. This elevates the cans

or other receptacles until their mouths are on a level with or above the spouts P^1 . The lower cut off valve handles U^1 are then pushed thereby turning the segments Q^1 .
 5 These turn the disks N^1 and the discharge from the measuring cylinders E^1 is cut off. Steam is then admitted by the cock B^1 into the steam chamber Z . The upper cut off valve lever V is then pulled. This moves
 10 the slide rod T , the valve frame S , the reciprocating plates N , and the upper cut off valves J . The ports E are then open. The material to be decanted is then poured into the receiver A and it passes down through
 15 the ports E and into the measuring cylinders E^1 . When all the air has been excluded from the said cylinders the upper cut off valve lever V is moved in the reverse direction and the ports are closed. The lower
 20 cut off valve handles U^1 are then pulled one after the other and the contents of the measuring cylinders slide down the inclined upper surface of the discharge accelerator O^1 , through the discharge hole L^1 in the lower
 25 cut off valve or disk N^1 , through the discharge hole L^1 in the cover and through the spouts P^1 to a can or other receptacle E^1 . After the material has drained off into the cans or other receptacles the higher end of
 30 the foot lever A^2 can be pressed and the trolley D^2 descends. A drip gatherer or cut off tray may then be placed underneath the spouts and the trolley withdrawn. Should it not be desired to discharge all the material
 35 through the ports it may pass through the bulk discharge cocks H .

Having now described our invention, what we claim as new and desire to secure by Letters Patent is:—

40 1. In apparatus of the class described, in combination, a plurality of measuring cylinders and means for regulating the capacity of said cylinders, comprising split rings adapted to be inserted in the interior thereof.

45 2. In apparatus of the class described, in combination, a plurality of measuring cylinders, and capacity regulating devices for said cylinders, each of which comprises a split ring formed exteriorly to fit the inner
 50 walls of the measuring cylinders, and having rounded or curved interior portions.

3. In apparatus of the class described, in combination, a receiver having a valve chamber in its lower portion, the bottom wall
 55 of said valve chamber being provided with ports, a cut-off valve for each of said ports, said valve being provided with upwardly extending lugs, a reciprocating plate through which said lugs extend, and means for reciprocating said plate whereby said ports may
 60 be opened or closed at will.

4. In apparatus of the class described, in combination, a receiver having a valve chamber in its lower portion, the bottom wall
 65 of said valve chamber being provided with a

plurality of ports, a cut-off valve for each of said ports, said cut-off valves having upwardly extending lugs, a core between said lugs, springs about said cores, a reciprocating plate resting upon said springs, a valve frame
 70 resting upon said plate, a slide rod connecting with said frame, and a lever for operating said slide rod.

5. In apparatus of the class described, a receiver having a valve chamber in its lower
 75 portion, the bottom wall of said valve chamber being provided with ports, a cut-off valve for each of said ports, said cut-off valves having upwardly extending lugs, a core between said lugs, a spring positioned about
 80 each of said cores, reciprocating plates resting upon said springs, a valve frame resting upon said plates, a slide rod and a lever for reciprocating said frame, said plates having
 85 guide rods above the same, and cross-bars for holding said plates in a downward position.

6. In apparatus of the class described, a receiver, the bottom wall of which is provided with a plurality of ports, a plurality of
 90 measuring cylinders, the top ends of which are threadedly connected to said bottom wall beneath said ports, a valve for closing each of said ports, a steam chamber surrounding said cylinders, a member provided with a
 95 discharge port provided in the bottom of each of said cylinders, a cut-off valve provided in each of said cylinders and lying in contact with the bottom member thereof, each of said valves being provided with a
 100 stem which extends exteriorly of the cylinder, a toothed segment attached to the lower end of each of said stems, and racks for actuating said segments.

7. In apparatus of the class described, a
 105 receiver, the bottom wall of which is provided with a plurality of ports, a measuring cylinder disposed beneath each of said ports, and supported by the bottom wall of said receiver, a steam chamber surrounding said
 110 measuring cylinders, a closure member located in the bottom portion of each of said cylinders, said closure member being provided with a discharge port, a valve comprising an apertured disk located in said receiver,
 115 and lying in contact with said closure member, a discharge accelerator located above said disk, and being provided with a discharge opening, a spindle extending through said closure member and connected with said
 120 disk, a toothed segment mounted upon each of said spindles, and racks for actuating said segments.

8. In apparatus of the class described, in combination, a receiver having in its lower
 125 portion a valve chamber provided with ports, cut-off valves for said ports, a reciprocating plate for operating said valves, a frame connected with said plate, a slide rod connected with said frame, a lever for operating said
 130

slide rod, said valves being adapted to permit material within said receiver to be discharged through said ports, a measuring cylinder provided beneath each of said ports
5 into which said material is discharged, a discharge port formed in each of said cylinders, a valve for controlling each of said ports, a discharge accelerator located in each of said cylinders, a spindle extending through
10 the bottom wall of each of said cylinders and connected with the valve therein, a toothed segment mounted upon the lower end of

each of said spindles, racks meshing with said segments and adapted to rotate the same, and handles for actuating said racks. 15

In testimony whereof we affix our signatures in the presence of two subscribing witnesses.

FARQUHAR GEORGE MCINTOSH.
HERBERT VAUGHAN HAMPTON.

Witnesses:

EDWIN PHILLIPS,
CECIL W. LE PLASTRIER.