Dec. 17, 1929. F. P. PECARD 1,740,032

RECEPTACLE FILLING MACHINE

Filed Nov. 30, 1926 3 Sheets-Sheet 1

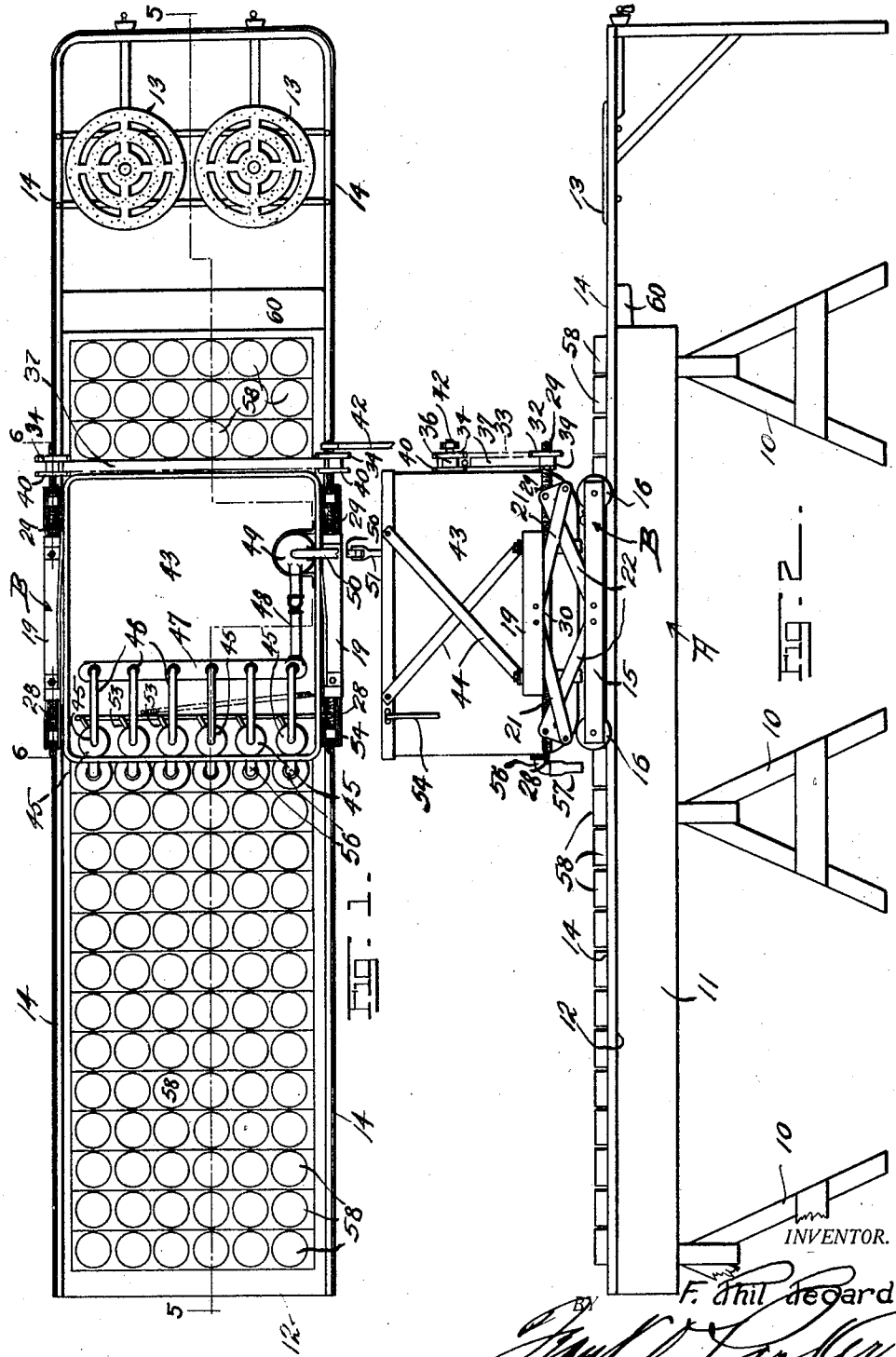


Fig. 1.

Fig. 2.

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RECEPTACLE FILLING MACHINE

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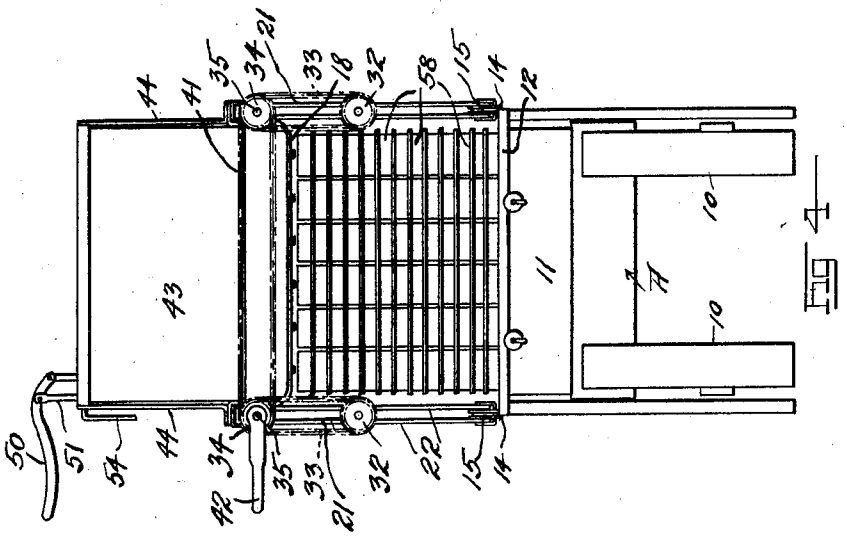


Fig 4

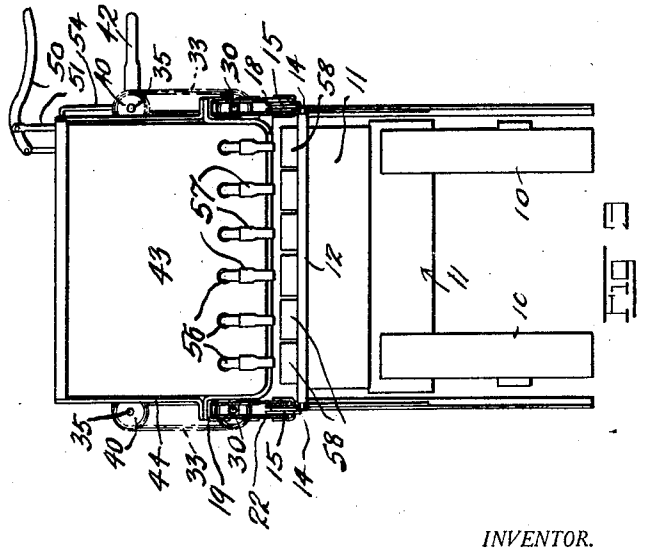


Fig 5

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RECEPTACLE FILLING MACHINE

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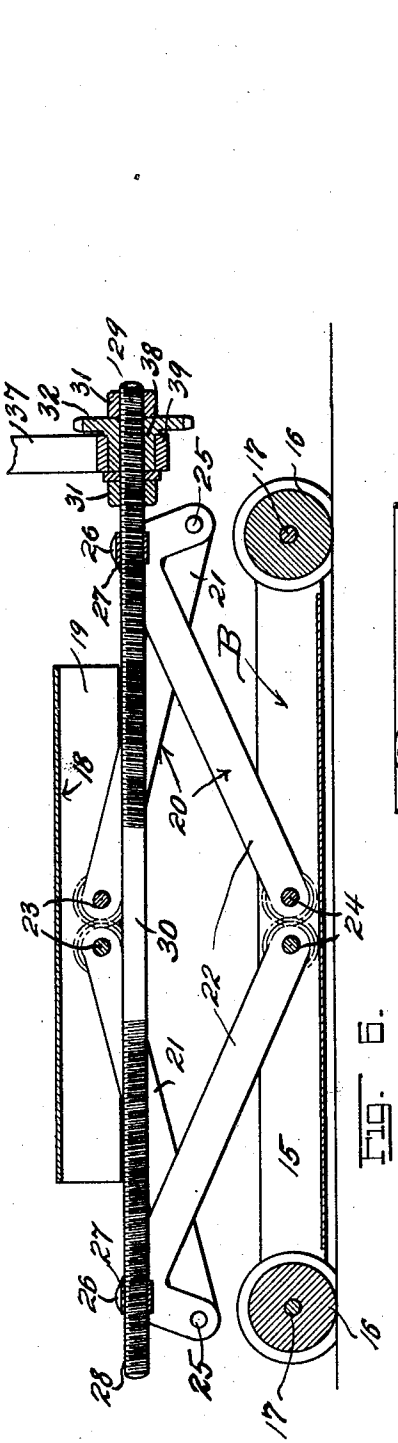


Fig. 6.

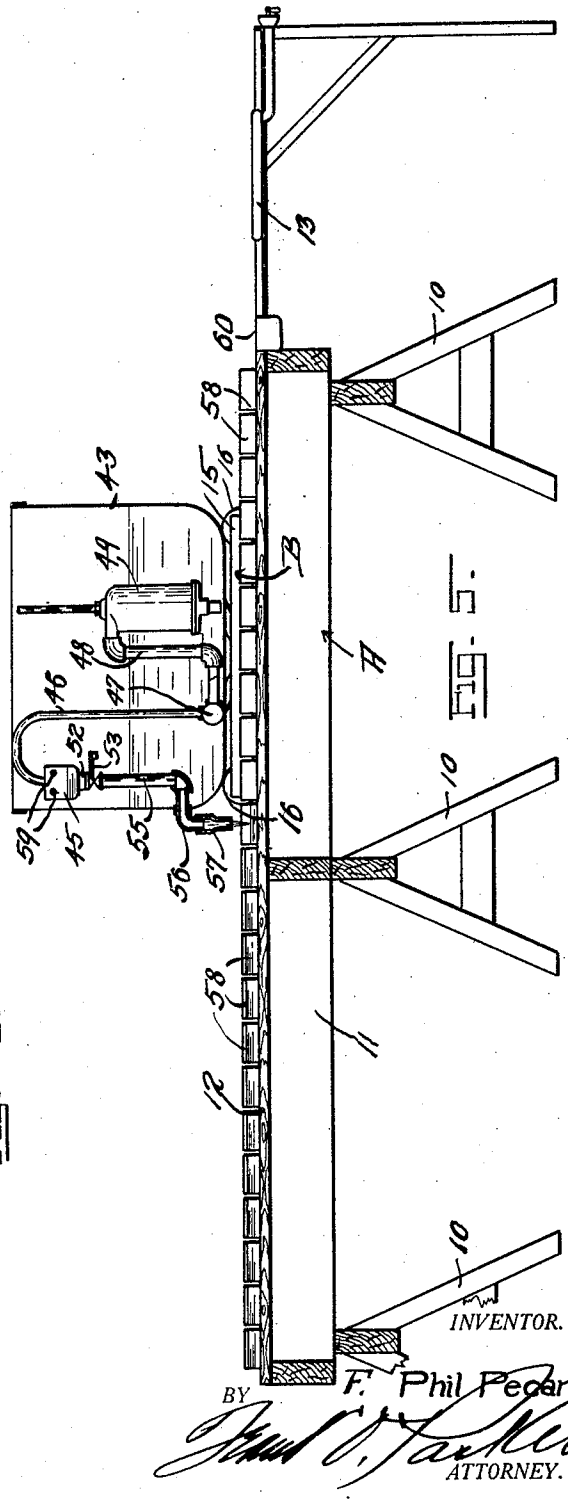


Fig. 5.

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Patented Dec. 17, 1929 1,740,032

UNITED STATES PATENT OFFICE

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RECEPTACLE-FILLING MACHINE

Application filed November 30, 1926. Serial No. 151,657.

The invention relates to a filling machine, and more especially to receptacle filling machines for liquids.

The primary object of the invention is the provision of a machine of this character, wherein a bank or banks for receptacles, such as cans or the like, can be successively filled with liquids, the latter being measured and delivered to rows of the receptacles, which are located upon a support, the liquid carrier being of novel form, so that the same can be moved throughout the length of said support, to bring said carrier to working position relative to the receptacles of the respective rows, the carrier being capable of vertical adjustment to accommodate it to stacks of the receptacles.

Another object of the invention is the provision of a machine of this character, wherein the carrier for the liquid is movably supported, so that it can be moved over a heater forming a continuation of the support for the receptacles to be filled, whereby the contents of said carrier can be conveniently heated to the degree required, the carrier being of novel form while the discharge of the liquid into the receptacles may be manually regulated, so that the latter can be properly filled, without liability of waste of the liquid.

A further object of the invention is the provision of a machine of this character, wherein the general assemblage thereof is novel in form, so as to require minimum labor and attendants for the filling of receptacles with liquid when placed in the machine.

A still further object of the invention is the provision of a machine of this character, which is comparatively simple in construction, thoroughly reliable and efficient in its operation, strong, durable, readily and easily operated with dispatch, and inexpensive to manufacture and install.

With these and other objects in view, the invention consists in the features of construction, combination and arrangement of parts, as will be hereinafter more fully described, illustrated in the accompanying drawings, which disclose the preferred embodiment of the invention, and pointed out in the claim hereunto appended.

In the accompanying drawings:

Figure 1, is a top plan view of a filling machine constructed in accordance with the invention.

Figure 2, is a side elevation thereof.

Figure 3, is one end elevation of the same.

Figure 4, is the other end elevation thereof.

Figure 5, is a sectional view taken on the line 5—5 of Figure 1.

Figure 6, is an enlarged sectional view taken on the line 6—6 of Figure 1.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

Referring to the drawings in detail, A, designates generally a support, which may be of any desirable type, while in this instance it comprises a plurality of tressels 10, more commonly termed "horses", supporting a bed frame 11, having a platform 12, the latter being of the required length and width. At one end of the platform is arranged a duplex heater 13, in this instance, being of the liquid or gas fuel type, although any other style of heater may be substituted.

Mounted at opposite longer edges of the platform 12, are angle tracks 14, these being continued to opposite sides of the heater 13, and upon which is adapted to travel a carrier, B, its details will be hereinafter more fully described.

The carrier B, comprises a truck having channel side sills 15, each being fitted at opposite ends with peripherally grooved traction rollers 16, supported upon journals 17, adapted to roll upon the tracks 14. Above the truck is an elevating rack 18, having side channel beams 19, these being connected with the side sills 15, of said truck through the medium of toggle devices 20, each including pairs of upper and lower levers 21, and 22, respectively. The levers 21, are swingingly connected with the beams 19, by pivots 23, while the levers 22, which are of substantially inverted L-shape, are swingingly connected, by pivots 24, to the side sills 15, of the truck, the meeting ends of said pairs of levers being pivoted at 25 together.

At the points of the bights 26, of the lower levers 22, are swiveled internally threaded sleeves or collars 27, in which are engaged the reversely threaded end portions 28 and 29, respectively, of adjusting rods 30. These rods 30, at one end of the truck have fixed thereto in any suitable manner, preferably by means for jamb nuts 31, the sprocket wheels 32, each having trained thereover an endless sprocket chain 33, these latter chains being also trained over companion sprockets 34, carried by stud journals 35, supported in bearings 36, at the upper ends of hangers 37, rising from the hubs 38, of the lower sprocket wheels 32, these bearing hangers being held rigid in any suitable manner, and are formed at their lower ends with bearings 39, for the hubs 38, of said sprocket wheels 32.

On the stud journals 35, additional sprocket wheels 40, over which is trained an endless sprocket chain 41, so that when motion is imparted to one stud journal 35, the other will operate in unison, and in this manner the rods 30, will be actuated simultaneously with each other. There is provided a hand crank 42, which is adapted to be manually operated for actuating the rods 30, to cause the rack 18, to be automatically elevated or lowered as the occasion may require, with respect to the truck.

Upon the rack 18 is arranged a tank 43, the same being rigidly held by means of the cross braces 44, on opposite sides thereof and connected to said tank and beams 19, of said rack. Adapted to be held in the tank is a compound or compounds employed for making paste, which latter is heated by the heaters 13, when the tank 43 is shifted by the truck over the said heaters for melting to liquid consistency.

Arranged within the tank 43, near its open top is a transverse row of measuring cups 45, through the tops of which communicate substantially goose-neck shaped filling tubes 46, which rise from a header 47 located near the bottom of the tank 43, and this header has connection through a pipe 48, with a plunger type pump 49, suitably supported within said tank. The pump 49 is manually operated through the medium of a handle 50, pivotally supported in a bracket 51, carried by the tank 43, at one side thereof.

The cups 45, in their delivery or outlet nipples 52 are provided with suitable shut-off valves (not shown), these being formed with turning arms 53, common to and pivotally connected to an actuator 54, which projects exteriorly of the tank 43 and is manually operable at one side of the same, to control the flow of liquid from said cups 45, in the filling operation of the machine.

From the nipples 52, of the cups 45, extend delivery pipes 55, having the elbows 56, projecting outside of the tank 43, and fitted with discharge nozzles 57, which are directed downwardly in the path of rows of receptacles 58, for example cans, when placed upon the platform 12, for the filling of the same with liquid. It is to be understood that the receptacles 58, in rows can be stacked in superimposed relation to each other, this being effected when the lowermost rows have been filled with liquid, thereby varying the capacity of the machine for the filling operation of the same, as will be obvious in Figure 4 of the drawings.

The cups 45, each has formed therein near its top, overflow openings 59, so that at all times a predetermined quantity of liquid will be measured therein. The overflow of liquid is delivered back into the tank 43, as will be apparent.

Arranged at the heater end of the platform 12 is a drip pan 60, for receiving drippings from the nozzles 57, when the tank is over the heaters 13. The tank is moved by hand over the platform 12, as said truck forming the carrier B can be shifted upon the tracks 14 from one end to the other of said platform, as will be apparent.

The rack 18 is elevated the desired height with respect to the stack of cans 58, upon the platform 12, so that the tank 43 will clear said cans 58, to permit free movement of the carrier B, thereover for the successive filling of the cans in the operation of the machine.

The cups measure the liquid for the respective cans 58, and when filled the valves in said cups 45 are opened to allow the liquid therein to flow through the nozzles 57 into the cans 58 with which the latter register, so that these will be filled in a row at one time.

The foregoing operation is continued until the whole platform 12 is covered with filled cans 58, one layer deep. The tank 43 is then elevated to the height of another row of cans 58 superimposed upon the first layer of filled cans, these latter rows being increased as the superimposed cans are filled, and this operation is repeated until the cans 58 are a number of layers deep. The liquid in the cans 58 is allowed to cool and set before the cans are disturbed or removed from the machine.

From the foregoing it is thought that the construction and manner of operation of the machine will be clearly understood, and therefore, a more extended explanation has been omitted. However, it is to be understood that changes, variations and modifications may be made in the machine, as come properly within the scope of the appended claim, without departing from the spirit of the invention or sacrificing any of its advantages.

What is claimed is:

A machine for filling containers, comprising a support for receiving successive tiers of receptacles in longitudinal and transverse

rows, longitudinally extending tracks located on opposite sides of said support, a truck having wheels adapted to travel upon said tracks, a tank located above said truck and having a plurality of means for simultaneously filling transverse rows of receptacles, elevating mechanism for said tank located adjacent opposite sides of said truck, each elevating mechanism consisting of a pair of downwardly extending levers having their lower ends pivoted to said truck, a pair of reversely threaded nuts, pivotally mounted on the upper ends of said levers, rigid arms projecting from said first mentioned levers, a pair of upwardly extending levers having their upper ends pivotally joined to said tank and having their lower ends pivoted to said arms, a screw having reversely threaded portions cooperating with said nuts, and means for simultaneously operating both screws.

In testimony whereof I affix my signature.

FELIX PHIL PECARD.