

No. 711,680.

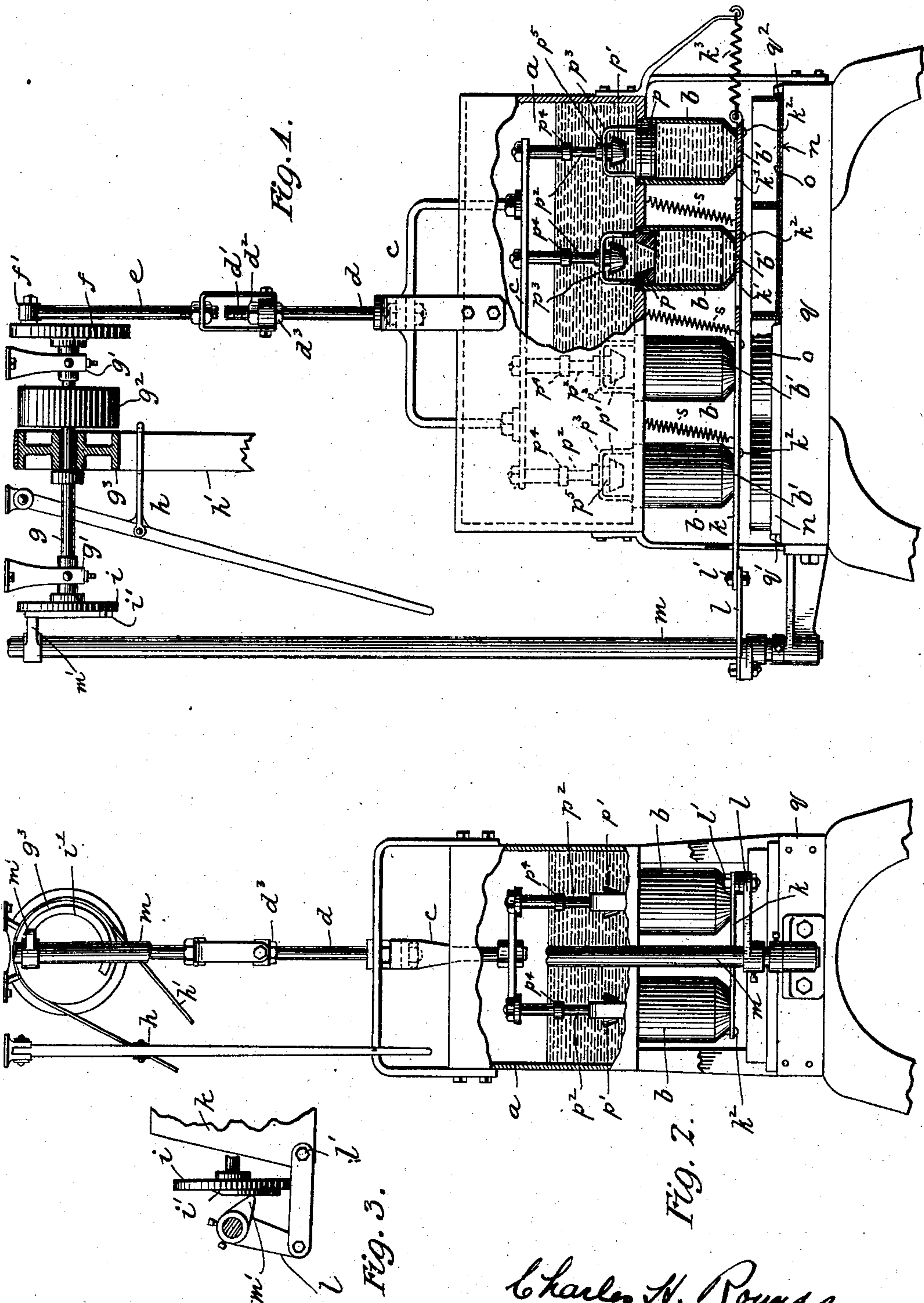
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C. H. ROUNDS.

MACHINE FOR FILLING RECEPTACLES.

(Application filed Apr. 22, 1902.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

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MACHINE FOR FILLING RECEPTACLES.

SPECIFICATION forming part of Letters Patent No. 711,680, dated October 21, 1902.

Application filed April 22, 1902. Serial No. 104,142. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. ROUNDS, a citizen of the United States, residing at Passaic, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Machines for Filling Receptacles, of which the following is a specification.

My improvement relates to machines for filling receptacles with fluid and semifluid substances; and the object of my invention is to provide a machine of simple construction whereby several receptacles may be filled simultaneously and quickly. I attain this object by the device shown in the accompanying drawings, in which—

Figure 1 is a front view of the machine, partly in section. Fig. 2 is an end view of the machine, parts being removed. Fig. 3 is a top view of the cam and cam-bars.

Similar letters refer to similar parts throughout the several views.

a is a tank or hopper, in the bottom of which I attach the cylindrical fillers *b b b b*, having mouths *b' b'*. In each of these cylindrical fillers *b b b b* I place a plunger provided with an annular valve-seat *p*, preferably of rubber, valve-plug *p'*, valve-stem *p²*, and cross-head *p³*. The valve-stem *p²* moves vertically in a circular opening in the cross-head *p³*. The valve-stems *p² p² p² p²* are prevented from being drawn upward through this opening in the cross-head *p³* by the shoulder *p⁴*. The valve-stems *p² p² p² p²* are connected at their upper ends to a cross-head or yoke *c*, by means of which they are caused to move in unison. To the yoke *c* I attach a driving-rod *d* in any suitable manner. The upper end *d'* of this driving-rod *d* is screw-threaded, and the nuts *d²* and *d³* are provided, whereby the length of the rod *d* may be increased or diminished, as desired.

A pitman *e* is attached to the driving-rod *d* in the usual well-known manner. The upper end of the pitman *e* is attached to a wrist *f'* upon a driving-wheel *f*, keyed upon the shaft *g*. The shaft *g* is journaled in suitable hangers *g' g'*. A driving-pulley *g²* and loose pulley *g³* are also provided upon the shaft *g* in the usual well-known manner. A belt-shifting device *h* of the usual form is also pro-

vided. Upon the shaft *g* is also placed a wheel *i*, provided upon its face with a cam *i'*. Below the cylindrical fillers *b b b b* is placed a closely-fitting sliding cut-off *k*, provided with apertures *k' k'* of approximately the same size as the mouths *b' b'* of the cylindrical filler *b*. Guide-bolts *k² k² k²* in slots in the cut-off *k* are provided. I hold the sliding cut-off *k* closely against the mouths *b' b'* of the cylindrical filler *b* by springs *s s s*, one end of each of which springs I attach to the tank *a* and the other end to the sliding cut-off *k*; but any other means may be provided for this purpose as desired. A spring *k³* upon one end of the sliding cut-off *k* holds it in such position that the mouths *b' b'* of the cylindrical fillers are normally open. An arm *l*, keyed to the vertical shaft *m*, is attached to the sliding cut-off *k* by the bolt *l'*. The cam *i'* upon the wheel *i* is provided to engage the arm *m'* upon the vertical shaft *m*. A table *q* is provided below the fillers *b b b b*, having guides *q' q²* on either side.

The operation of the device is as follows: The empty cans *o o* are placed in the tray *n*, which is passed between the guides *q'* and *q²* on the table *q* under the mouths of the cylindrical fillers *b b b b*. The tank *a* having been filled with the substance which it is desired to deposit in the cans, the shaft *g* is caused to rotate by the belt *h'* and pulley *g²*, causing the crank-wheel *f* to revolve, forcing the plungers, by means of the pitman *e* and driving-rod *d*, to descend. It will be seen that when the valve-plugs *p' p' p' p'* are fitted within their respective seats *p p p p* by the descent of the valve-stems *p² p² p² p²* the shoulders *p⁴ p⁴ p⁴ p⁴* on the valve-stems *p² p² p² p²* will engage the cross-heads *p³ p³ p³ p³* and cause the plungers to descend, forcing the substance in the fillers *b b b b* through the mouths *b' b' b' b'* of the fillers *b b b b* and the sliding cut-off *k* into the cans *o o o o* on the table *q*, the apertures *k' k'* in the sliding cut-off *k* being normally held by the spring *k³* at the openings *b' b'* in the filling-cylinders *b b b b*. When the plungers have descended the full distance, the shaft *g*, continuing to revolve, will cause the cam *i'* upon the wheel *i* to engage the projecting arm *m'* upon the vertical shaft *m*, and as the arm *m'*

is forced out the vertical shaft *m* will turn, causing the arm *l*, attached to the cut-off *k*, to draw the apertures *k' k'* in the sliding cut-off *k* away from the mouths *b' b'* of the filling-cylinders *b b b b*, thus closing the filling-cylinders. The shaft *g* and crank-wheel *f* continuing to revolve, the pitman *e* will be raised, drawing with it the driving-rod *d*, which, being attached to the valve-stems *p² p² p²*, will raise the valve-plugs *p' p' p' p'*. The shoulders *p⁵ p⁵* will engage the cross-heads *p³ p³*, respectively, and raise the plungers. The valves being open, the substance in the tank or hopper *a* will be drawn down into the fillers *b b b b*, when the operation of discharging the fillers into the cans will be repeated, as before. The filled cans will be removed and empty cans placed under the fillers *b b b b* at each operation by the operator, either by hand or in any other desired manner.

I have shown two rows of four fillers each; but as many fillers may be used as may be desired.

25 The tank or hopper *a* may be filled by hand or through a pipe or in any desired manner.

The quantity of the substance which it is desired to discharge into the cans may be regulated by the nuts *d² d³* on the end of the driving-rod *d*.

30 Having thus described my invention, what I claim is—

1. In a device of the character described, the combination of a hopper, a filler attached to and opening into such hopper and provided with a mouth, a plunger within the filler, such plunger consisting of a valve-seat, a cross-head above such valve-seat and attached thereto, a valve-plug, a valve-stem attached thereto, such valve-stem being provided with a shoulder below such cross-head and engaging therewith when the valve-stem is raised, a driving-wheel, a connecting medium between such valve-stem and driving-wheel, means for rotating the driving-wheel, a wheel attached to such rotating means, a projecting cam carried by such wheel, a vertical shaft, two arms upon such vertical shaft one of such arms lying in the plane of such projecting cam, and the other arm attached to a bar provided with an aperture such bar being below the mouth of the filler and means

for holding such bar normally in one position, substantially as shown and described.

2. In a device of the character described, the combination of a hopper, a filler attached to and opening into such hopper and provided with a mouth, a plunger within the filler such plunger consisting of a valve-seat, a cross-head above such valve-seat and attached thereto, a valve-plug, a valve-stem attached thereto, such valve-stem being provided with a shoulder below such cross-head and engaging therewith when the valve-stem is raised, a driving-wheel, a connecting medium between such valve-stem and driving-wheel, means between the valve-plug and driving-wheel for varying the length of such connecting medium, means for rotating the driving-wheel, a wheel attached to such rotating means, a projecting cam carried by such wheel, a vertical shaft, two arms upon such vertical shaft one of such arms lying in the plane of such projecting cam, and the other arm attached to a bar provided with an aperture, such bar being below the mouth of the filler and means for holding such bar normally in one position, substantially as shown and described.

3. In a device of the character described, the combination of a cylindrical filler provided with a mouth, a plunger in such filler, such plunger consisting of a valve-seat, a cross-head above the valve-seat and attached thereto, a valve-plug and a valve-stem attached thereto, such valve-stem being provided with a shoulder below the cross-head and engaging therewith when the valve-stem is raised, means for alternately raising and lowering such valve-stem and the parts engaging therewith, a cut-off at the mouth of the filler, a connecting medium between the plunger and the cut-off for closing the mouth of the filler as the plunger is raised, and for opening the mouth of the filler as the plunger is depressed, substantially as shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES H. ROUNDS.

Witnesses:

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