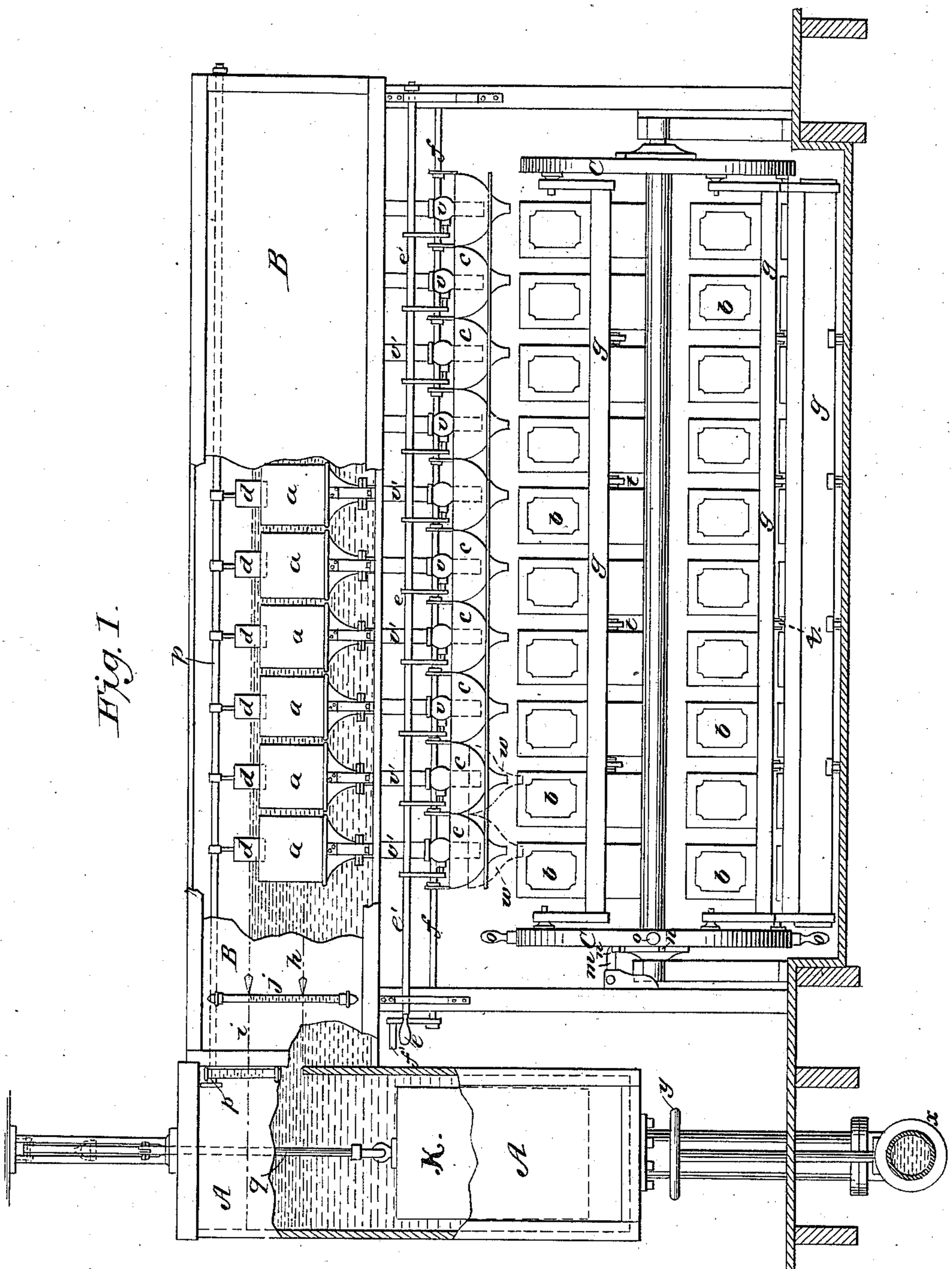
(No Model.) 2 Sheets—Sheet 1.

L. V. SONE.

FILLER.

No. 309,319. Patented Dec. 16, 1884.

Fig. 1.



Witnesses:
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Window Hyde

Inventor:
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by H. S. Hoyt Jr.
his attorney.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

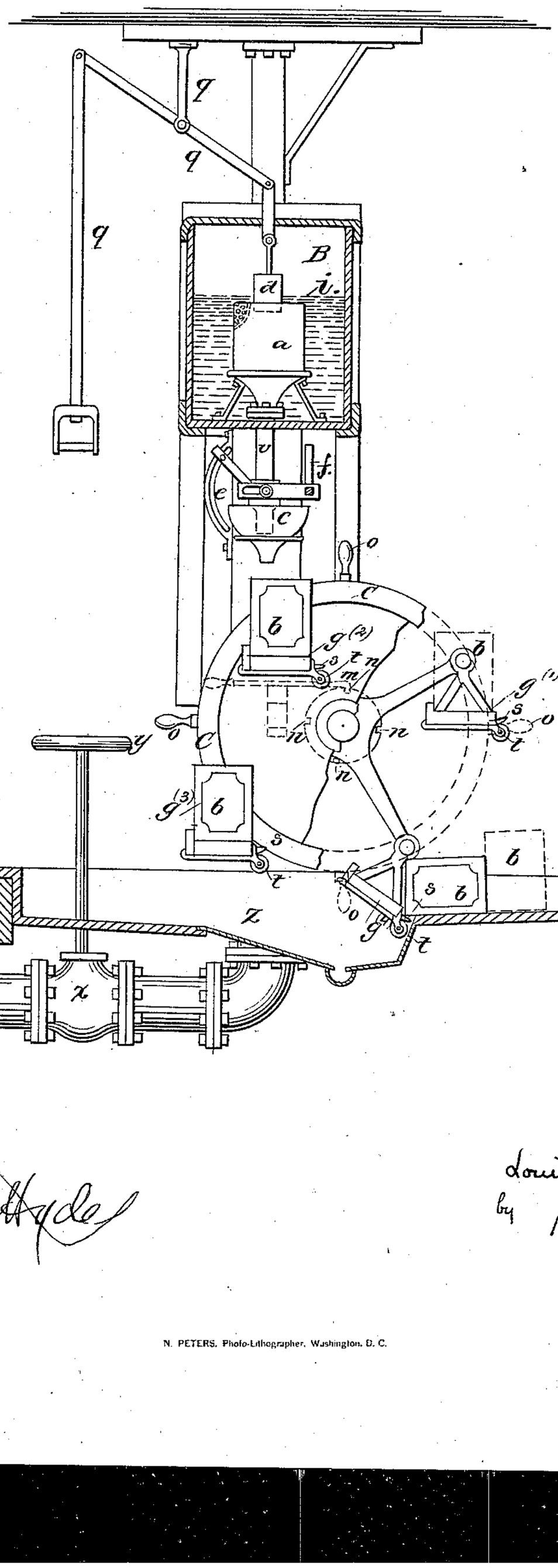
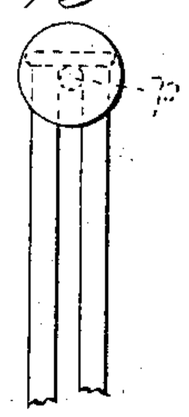


Fig. 3.



Witnesses:
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J. Hindon Hyde

Inventor:
Louis V. Sone.
by H. S. Hoyt Jr.
his attorney.

UNITED STATES PATENT OFFICE.

LOUIS V. SONE, OF NEW YORK, N. Y.

FILLER.

SPECIFICATION forming part of Letters Patent No. 309,319, dated December 16, 1884.

Application filed August 8, 1883. (No model.)

To all whom it may concern:

Be it known that I, LOUIS V. SONE, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented a new and useful Filler or Apparatus for Filling Cans, &c., of which the following is a specification.

My invention relates to an improvement in fillers; and the objects of my improvements are to fill cans, casks, or their equivalents with oil or other substances that will flow, to fill a large number at the same time, and to do other work connected therewith quickly and economically. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents a front view of my improvement. Fig. 2 represents a sectional view, and Fig. 3 is a front view showing the graduated scale and the binding-screw.

Similar letters refer to similar parts throughout the several views.

A represents a small tank connected with the large reservoir or source of supply, (not shown in the drawings,) in which the oil to be put into cans is stored.

B represents a small tank connected with A.

K represents a weight that is moved, by means of a lever or other device, up and down in A, and is made so as to leave space enough between it and the sides of A to allow the oil to pass.

q represents a lever or a device for raising and lowering the weight K in the tank A. In Fig. 1 is shown a bar or rope of *q*, attached to the top of K and running through the top of A, and which is connected with the lever and handle of *q*, (shown in Fig. 2,) by which the weight is worked.

x represents a pipe that connects the main reservoir with A.

y represents the handle of any suitable apparatus for controlling the flow through *x*.

a a represent measuring-cans set in B, that are open at the top and made to hold any given amount, and which have short pipes at their bases running down through B, with cocks near their lower ends.

v v represent pipes connected with *a a* and running through B.

b b represent the cans to be filled.

c c represent the funnels for filling the cans *b b* with the oil received through the pipes *v v* from the measures *a a*.

d d represent plungers for changing the amount *a a* will hold, and are attached to a rod in B.

e represents a crank governing cocks in the pipes *v v*, which cocks control the flow of the oil through the pipes.

f represents a crank by which the funnels *c c* are raised from and lowered into the openings in the cans *b b*.

v' v' represent valves in the pipes *v v*.

e' represents a rod to which the valves *v' v'* are attached.

f' represents a rod to which the funnels *c c* are attached.

w represents the positions of the funnels *c c* when lowered.

C C represent two large wheels on which are hung benches.

o o represent handles for turning the wheels C C.

g g g g represent benches hung on C C, intended to receive the cans *b b*, and so hung on C C as, by the swinging mechanism shown in the drawings, that the cans *b b*, when on them, will, unless interfered with, maintain the same upright position during revolutions of the wheels C C.

m represents a catch that, by means of slots in the hub of one of the wheels C, will hold the wheels C C steady while the cans *b b* are being filled, &c.

n n represent the slots—one for each bench—into which *m* catches.

j represents a gage for determining the height of the oil in B.

p represents a graduated screw at the end of the rod to which *d d* are attached, for raising the plungers *d d* from and lowering them into the measures *a a*, and graduated to show what amount of oil in *a a* the plungers *d d* are displacing.

h represents about the height of the oil in B when K is raised in A.

i represents about the height of the oil in B when K is lowered.

z represents a trough under the benches.

t t represents small wheels on *g g*, which catch on the side of the trough *z*, and tilt *g g* so that the cans *b b* fall off.

s s represent pins on *g g*, which, when *g g* are

tilted and the cans *b b* fall off, catch under the cans *b b*, there being one for each can, and turn them over.

In Fig. 1 parts of A and B are removed, to show their interiors.

In Fig. 2 the benches *g g g g* are represented in their positions when *m* is caught in one of the slots *n n*, and the positions of each row of cans on the benches are shown by one of the cans on each row, and are numbered for the purposes of description.

$g^{(1)}$ represents a bench in position to receive the cans to be filled.

$g^{(2)}$ represents the position of a bench with a row of cans in position to be filled.

$g^{(3)}$ represents a bench with a row of cans in a convenient position to have the openings of the cans closed.

$g^{(4)}$ represents a bench discharging its row of cans and about to turn them, so that if the cans leak at any place it may be discovered.

The wheels C C may be of solid pieces, or may be composed of arms. Both constructions are shown in Fig. 2.

The manner of working my invention is as follows: The weight K is raised, and oil is admitted through the pipe *x* until the oil in the tanks A and B has reached about the line *h*—that is, a little below the tops of the measures *a a*. A row of cans, *b b*, is placed on a bench *g*, as shown at $g^{(1)}$, (reference now being had to Fig. 2, in which, as we have said, the positions of the row of cans on each bench during the turning of the wheels C C are shown by one of the cans on each bench.) The wheels C C are turned by the handle *o o* or other device until the row of cans to be filled and resting on a bench *g* are under the funnels *c c*, (shown at $g^{(2)}$ and in Fig. 1,) when the catch *m* will fall into a slot *n* and hold the benches in place. The weight K in the tank A is then lowered, when the oil will rise in the tanks A and B to the line *i*—that is, above the tops of the measures *a a*—and the measures will be flooded. The weight K is again raised, and the oil falls in the tank A and the tank B below the tops of the measures *a a*, leaving them filled. The funnels *c c* are lowered by means of the crank *f* until they enter the openings of the cans *b b*, taking the position shown by the dotted lines *w*, Fig. 1. The cocks in the pipes *v v* from the measures *a a* are then opened by means of the crank *e*, and all the oil in the measures *a a* runs through the pipes *v v*, through the funnels *c c*, into the cans *b b*, when each can *b* will be filled with the amount held by each one of the measures *a a*, for by the mechanism hereinafter described each measure *a* is made to hold the exact quantity or weight it is desired to put in each of the cans *b*. The funnels *c c* are then raised, the cocks in the pipes *v v* are closed by the crank *e*, the catch *m* is released from the slot *n*, and another quarter of a turn is made of the wheels C C, by which another row of empty cans *b b* is brought in position to be filled, as just described. When the second row of cans is in position to be filled, $g^{(2)}$, the cans of the first row filled are in the position shown at $g^{(3)}$, where they are conveniently held to have their openings closed by screwing a cap on, soldering, or otherwise. A third quarter of a turn of C C is made, a third row of cans is brought into position to be filled, $g^{(2)}$, the cans of the second row to have their openings closed, $g^{(3)}$, and the cans of the first row be moved around on their bench until the small wheels *t t* on the bench have struck the side of the trough *z* under the bench, the bench is tilted, and the cans tipped off, as shown at $g^{(4)}$. A fourth quarter of a turn of the wheels C C brings a fourth row of cans into position to be filled, the cans of the third row to have their openings closed conveniently, the second row in the position shown at $g^{(4)}$, and the first row of cans has been discharged from its bench and turned over by means of the pins *s s* catching under the bottoms of the cans, and are ready to be removed, and, having been turned over, any leakage would be discovered, while the bench *g* on which they rested is in the position shown at $g^{(1)}$, again ready to have another row of cans placed on it.

The measures are made to hold any desired amount by means of the plungers, which may be controlled by various means, one of which is what I designate as the "graduated screw" *p*, and that is what is sometimes called a "binding-screw," the nut of which moves alongside of a graduated scale. This graduated screw is a metal bar running into the tank through a vertical slit, in which it may be moved up or down. The bar in the tank is at a right angle to and is firmly connected with the rod to which the plungers are attached. The end of the bar outside the tank is threaded, and has a binding-nut working on it, by which the bar and the rod to which the plungers are attached are held in any desired place by screwing the nut tight against the outside of the tank. Fastened to the bar on the inside of the tank and close against its side is a piece of metal, leather, or rubber, which works up and down with the bar, and which is made of a proper shape and size to prevent the escape of any oil through the vertical slit in which the screw moves, and which acts against the inside of the tank when the binding-nut is turned to press against the outside. When the nut is raised or lowered, it is evident that the plungers will be raised or lowered in the measures. To the outside of the tank, and next to the vertical slit, is a graduated scale. The piece of metal, rubber, or leather attached to the bar inside the tank may in small machines be made of such size and shape as to give all the support required by the rod to which the plungers are attached; but in machines where more support is required the bar may run through the opposite side of the tank and move in a corresponding vertical slit, and have a corresponding piece of metal, rubber, or leather to prevent the escape of any oil, and have on the outside either a corresponding binding-nut, and, if desired, a

in the tank above and below the tops of the measuring-cans, substantially as and for the purposes described.

9. The combination of the wheels C C, the benches *g g*, hung on the wheels C C, the small wheels *t t*, and pins *s s* on the benches *g g*, the catch *m*, slots *n n*, and trough *z*, substantially as and for the purposes described.

10. The combination, in a wheels C C and the benches *g* wheels C C, substantially as a poses described.

LOUI

Witnesses:
H. S. HOYT, Jr.,
GEO. H. BUDLONG.

cale, or simply a head which will
the outside of the tank when the
is tightened, and which may be
ng or lowering the plungers. The
od to which the plungers are at-
site to the end on which the gradu-
s shown in Fig. 1 may be operated
ıe well-known ways, that the rod
sed and lowered evenly through-
re length; but I prefer to have
crews at each end, so as to secure
ıcy. The scale may be graduated
on or previous experiments, as by
ıeasures with oil, which should be
d the largest quantity of oil it is
ed to put in a can by the machine,
ımount is known, and then lower-
ıgers until there has been an over-
ach measure of, say, one gallon.
hen made on the scale opposite to
-nut, which mark will then indi-
ıen the nut of the screw is oppo-
ch measure holds one gallon less
before. By similar experiments
s may be determined on the scale
of the capacity of the measures
ıt of the screw is opposite to them.
hould be graduated according to
ɔe made of the filler, as many sub-
sold by weight, as often oil is. In
the scale may be graduated by
ıents described, excepting that the
ıe oil which each measure will hold
rmined, and then the oil as it over-
ghed instead of measured.
awings, A and B are connected by
alf of the height of B. In many
etter to have the entire end of B
; but it is only required that the
sufficiently large to allow a rapid
atever substance is being passed
The trough *z* also catches any of the
hat is being passed through the
scapes by leakage, &c.
ks, small barrels, &c., may be filled
provement, and the number of
ached to the wheels C C may be
uit the size of the article it is de-
a slot, *n*, having been made for

wish to limit myself to the method
he wheels C C, or to the single de-
nd *n* for holding the wheels, or to
under the filler for catching the
or for the purpose of controlling
's *d d* to the graduated screw *p*, or
q; nor do I wish to limit my im-
to any particular sizes, for they
structed for any capacity, for any
cans that is desired; nor to the
e tanks, as they may be closed or
their tops, and may be square or

ılly described my invention, what I
aim and secure by Letters Patent

ɔmbination of the tank A, containing a weight, K, and connected with a tank, B, the tank B, containing plungers *d d*, attached to a rod controlled by a graduated screw, *p*, and the measuring-cans *a a*, each having a pipe, *v v*, having a valve at their lower ends, and running through the tank B and ending over the funnels *c c*, the cranks *f* and *e*, the funnels *c c*, the wheels C C, the benches *g g*, hung on the wheels C C, the small wheels *t t*, and pins *s s* on benches *g g*, the catch *m*, slots *n n*, and trough *z*, substantially as and for the purposes described.

2. The combination of the tank A, containing a weight, K, and connected with a tank, B, the tank B, containing plungers *d d*, attached to a rod controlled by a graduated screw, *p*, and the measures *a a*, having pipes *v v*, having a valve at their lower ends, and running through the tank B into the funnels *c c*, the cranks *f* and *e*, and the funnels *c c*, substantially as and for the purposes described.

3. The combination of the tank B, containing plungers *d d*, attached to a rod controlled by graduated screw *p*, and the measures *a a*, having pipes *v v*, having a valve at their lower ends, and running through the tank B into the funnels *c c*, the cranks *f* and *e*, the funnels *c c*, the wheels C C, the benches *g g*, hung on the wheels C C, and the small wheels *t t*, pins *s s* on benches *g g*, and the trough *z*, substantially as and for the purposes described.

4. The combination of the tank B, containing plungers *d d*, attached to a rod controlled by graduated screw *p*, and the measures *a a*, having pipes *v v*, having a valve at their lower ends, and running through the tank B into the funnels *c c*, the cranks *f* and *e*, and the funnels *c c*, substantially as and for the purposes described.

5. The combination, in a filler, of a tank containing a weight, a second tank containing measuring-cans, the measuring-cans being provided with outlets from the second tank, and plungers *d d*, having a suitable mechanism for raising and lowering them, as described, substantially as and for the purposes described.

6. The combination, in a filler, of a tank containing a weight, and a second tank containing measuring-cans, the measuring-cans being provided with outlets from the second tank, substantially as and for the purposes described.

7. The combination, in a filler, of a tank, a second tank containing measuring-cans, the measuring-cans being provided with outlets from the second tank, and mechanism, substantially as described, for raising and lowering the substance in both tanks, substantially as and for the purposes described.

8. The combination, in a filler, of a tank containing measuring-cans, the measuring-cans being provided with outlets from the tank, and mechanism, substantially as described, for raising and lowering the substance