

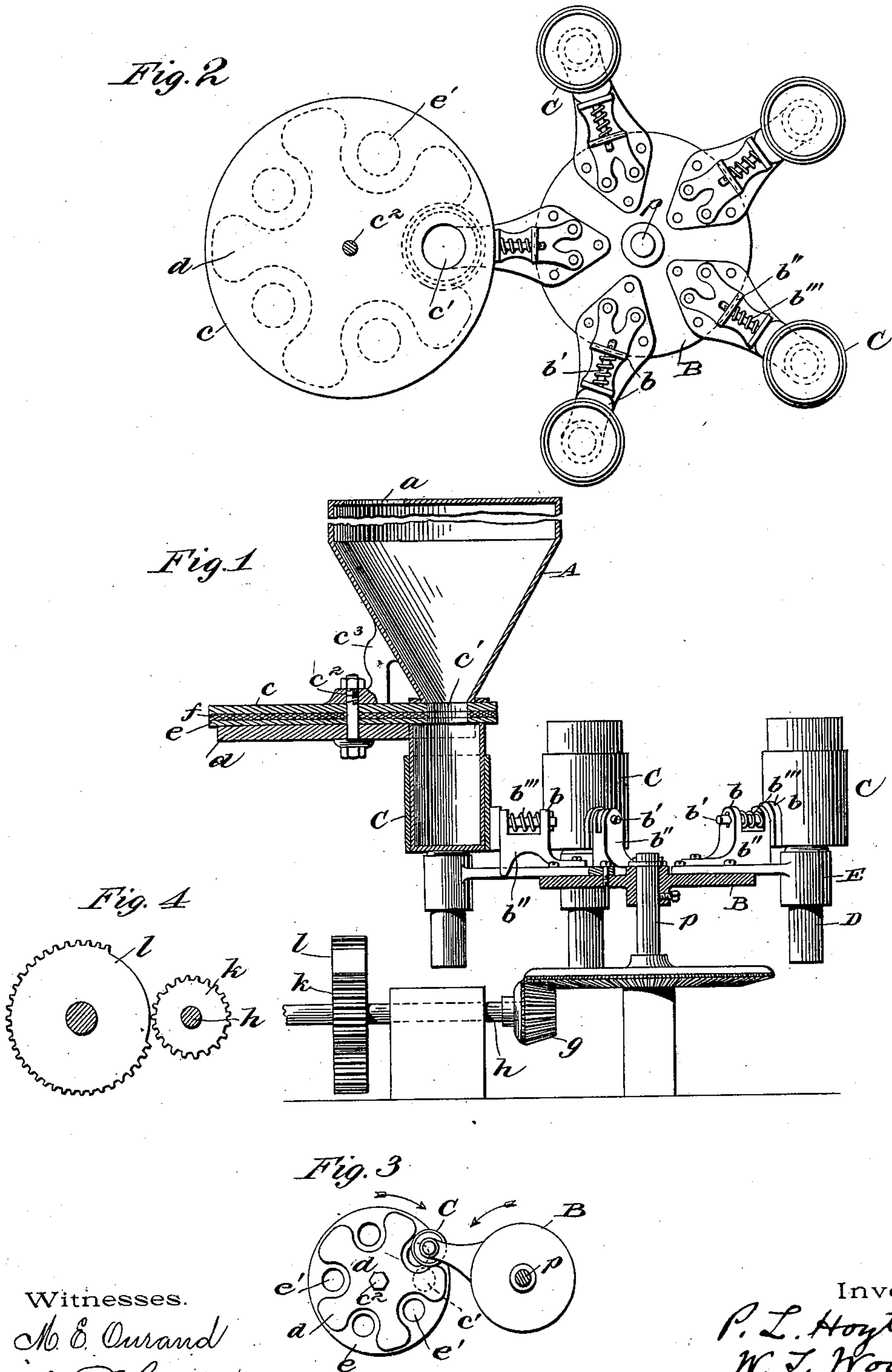
(No Model.)

P. L. HOYTE & W. T. WOOD.

MEASURING MECHANISM FOR BOX OR CAN FILLING MACHINES.

No. 602,330.

Patented Apr. 12, 1898.



Witnesses.

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MEASURING MECHANISM FOR BOX OR CAN FILLING MACHINES.

SPECIFICATION forming part of Letters Patent No. 602,330, dated April 12, 1898.

Application filed April 29, 1897. Serial No. 634,425. (No model.)

To all whom it may concern:

Be it known that we, PHIL L. HOYTE and WILLIAM T. WOOD, citizens of the United States, residing at Nashville, Davidson county, State of Tennessee, have invented certain new and useful Improvements in Measuring Mechanism for Box or Can Filling Machines, of which the following is a specification.

Our invention relates to machines for filling receptacles with powdered substances or other material, and more particularly to a measuring device for use in connection with such machines.

Our object is to provide a measuring device for machines of the character designated which will be positive and effective in operation, accurate in measuring the material delivered from the hopper, and which will, furthermore, be of simple construction and capable of being readily adapted to the type of can or box filling machines in which the cans or boxes are supported upon a rotary carrier operated intermittently to bring the said receptacles successively under the feed-hopper for filling—such, for example, as that described and claimed in our pending application for Letters Patent of the United States, Serial No. 621,510, filed February 1, 1897, although it is to be understood that the present invention is not confined in its application to this particular machine.

In our application above noted we have described and claimed a telescopic spout on the feed-hopper, in connection with a chamber divided into measuring-compartments by means of a vaned wheel, and in the operation of which the spout is raised and lowered by the elevation and depression of the receptacle, and the device of our present invention is designed to be readily substituted for such measuring mechanism, more particularly when it is necessary to fill the can or receptacle even with the top, the material being discharged in the present case directly into the can or receptacle instead of through a discharge-spout.

In the present case we have shown so much of a filling-machine as is necessary to illustrate the application of our measuring device thereto, the parts thus illustrated being simi-

lar to corresponding parts in our machine covered by the aforesaid application.

With the foregoing statement of our general object our invention consists in the novel construction and details thereof, as hereinafter described, and more particularly pointed out in the claims, with reference to the accompanying drawings, in which—

Figure 1 is a sectional elevation of our invention applied to a rotary-carrier machine. Fig. 2 is a top plan view thereof. Fig. 3 is a partial bottom plan view. Fig. 4 is a detail of driving-gear.

Referring now to the drawings, in which the same reference characters relate to the same parts in the several views, A designates the feed-hopper, into which the material is fed by a suitable chute or otherwise through an opening *a* in the top, and B is the rotary carrier, upon which are mounted the box or can holders C. These parts are preferably made as shown in our aforesaid application, the holders C being connected to the carrier B by hinge-joints *b*, consisting of pintles *b'*, extending from the holders and passing through brackets *b''*, secured to the frame of the carrier, the said holders being normally held upright by springs *b'''*, connecting the pintles and brackets. Such a connection permits of the boxes being turned when passing through the machine, if too tall, thus avoiding injury to the machine or box.

The boxes are seated in the holders upon plungers D, which are mounted in sockets E on the carrier B, which plungers in the present instance serve merely as a rest for said boxes and are shown here for the purpose only of illustrating the manner of substitution of the present form of measuring device for that described in our prior application.

The rotary carrier is mounted on a spindle *p*, which is intermittently operated through the bevel-gear *g* on a shaft *h*, which is driven by a spur-gear *k*, meshing with a mutilated gear *l*, driven from any suitable source of power.

The construction thus far described is not claimed herein, as it forms part of the subject-matter of the aforesaid application, and we will now proceed to describe in detail the invention claimed herein.

In our present invention *c* is a plate or disk having near its periphery an aperture *c'*, corresponding to and forming a continuation of the aperture in the bottom of the hopper and
 5 fixedly mounted upon the spindle *c²*, secured to a bracket *c³*, attached to the side of the hopper. Journaled upon said spindle, below the plate *c*, is a star-shaped wheel *d*, the peripheral indentations or recesses of which cor-
 10 respond in number to the number of box-holders on the carrier, which recesses are adapted to be engaged by the boxes as they are moved successively under the hopper by the intermittent operation of the rotary car-
 15 rier.

Confined between the plate *c* and the star-wheel *d* is a thin plate or disk *e* of metal or other suitable material, provided near its pe-
 20 riphery with perforations *e'*, likewise corresponding in number with the number of box-holders, the said perforations or apertures registering with the recesses or indentations of the star-wheel, to which star-wheel the said disk *e* is secured, so as to rotate therewith,
 25 below the hopper-discharge, the imperforate portion of the plate and wheel normally closing the hopper-discharge.

The disks *c* and *e* are preferably separated by a washer, consisting of a thin piece of felt
 30 *f* or other suitable material, attached to the upper disk for the purpose of keeping the plates or disks clean and free from the material passing to the boxes or cans and also to prevent friction and wear.

In operation as the box or can comes in con-
 35 tact with the star-wheel, as shown in Fig. 3, the said box causes the latter to rotate until one of the apertures *e'* registers with the aperture *c'* in the disk *c*, at which time the car-
 40 rier rests, during which period of rest the box is filled even with the top. The box is moved by the next movement of the carrier, rotating the star-wheel until one of the apertures *e'* is on each side of the aperture *c'*, the imperfo-
 45 rate portion of the plate *e* thus completely closing the outlet for the hopper and cutting off the supply of material and leaving the material in the box even with the top until
 50 operation above described is repeated and the filled box is moved away from the star-wheel.

It will be understood that the box-holders may be rigidly mounted on the carrier, so far as the present invention is concerned, and
 55 that our measuring device can be applied to any other form of intermittently-rotated car- rier.

Instead of the star-wheel it is obvious that the plate *e* may be provided with projections
 60 corresponding to the points of said wheel, the central portion of the wheel being thus omitted, without materially affecting the scope of our invention.

We claim as our invention—

65 1. In a machine for filling boxes, the combination of an intermittently-rotated carrier, box-holders on said carrier having boxes there-

in, and a feed-hopper having a discharge-
 opening in the bottom, of a plate provided
 with a series of holes near its periphery cor- 70
 responding in number to the number of box- holders and mounted to rotate under and in
 contact with the discharge of the hopper and
 in contact with the tops of the boxes, a star-
 wheel attached to the bottom of the plate hav- 75
 ing its recesses registering with the holes in the plate, and means for intermittently rotat-
 ing the carrier to cause the boxes to succes-
 sively engage the star-wheel, whereby the
 plate is turned to bring the holes successively 80
 in register with the discharge-opening in the hopper and with the boxes, substantially as described.

2. In a machine for filling boxes, the com-
 bination with an intermittently-rotated car- 85
 rier, box-holders on said carrier having boxes therein, and a feed-hopper having a discharge-
 opening in the bottom, of a plate fixedly
 mounted on one side of the hopper having an
 opening in its periphery registering with and 90
 forming a continuation of the discharge of the hopper, a plate or disk having a series of
 openings near its periphery and rotatably
 mounted below and in close proximity to said
 fixed plate, a star-wheel attached to the bot- 95
 tom of said rotating plate or disk with its recesses registering with the openings therein,
 and adapted to be engaged by the boxes in suc-
 cession as the latter are rotated by the car-
 rier to cause the said boxes to bring the per- 100
 forations in the rotary plate in register with the openings of the fixed plate and the box, substantially as described.

3. In a machine for filling boxes, &c., the
 combination with an intermittently-rotated 105
 carrier, box-holders on said carrier having boxes therein, and a feed-hopper having a
 discharge-opening in the bottom, of a disk
 mounted on said hopper below the discharge-
 opening and having a perforation near its pe- 110
 riphery registering with said discharge-open- ing, a plate journaled on the hopper below
 said fixed plate and having a series of perfo-
 rations near its periphery adapted to register
 with the perforation in the fixed plate, a 115
 washer of suitable material interposed between the two said plates, a star-wheel at-
 tached to the bottom of the rotating plate hav-
 ing its indentations or recesses registering
 with the perforations in said plate and adapt- 120
 ed to be engaged by the boxes, substantially as described.

4. In a machine for filling boxes, &c., the
 combination with an intermittently-rotated 125
 box-carrier, box-holders on said carrier hav- ing boxes therein, and a vertical feed-hopper
 having a discharge-opening in the bottom of
 a disk or plate provided with a series of open-
 ings near its periphery journaled on the side
 of the hopper so as to rotate under and in con- 130
 tact with the opening in the hopper, and nor-
 mally closing the said opening, of means car-
 ried by said plate adapted to be engaged by
 the boxes in succession for causing the plate

to rotate in contact with the tops of the boxes
and bring the openings successively in regis-
ter with the discharge-opening in the hopper
and with the boxes, whereby the said boxes
5 are caused to be filled even with the top with
material as the hopper-discharge is opened
and closed by said plate, substantially as de-
scribed.

In testimony whereof we have signed our
names to this specification in the presence of 10
two subscribing witnesses.

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WILLIAM T. WOOD.

Witnesses:

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