

No. 819,274.

PATENTED MAY 1, 1906.

J. P. HAIGHT.
CAN FILLING MACHINE.
APPLICATION FILED JUNE 19, 1905.

3 SHEETS—SHEET 1.

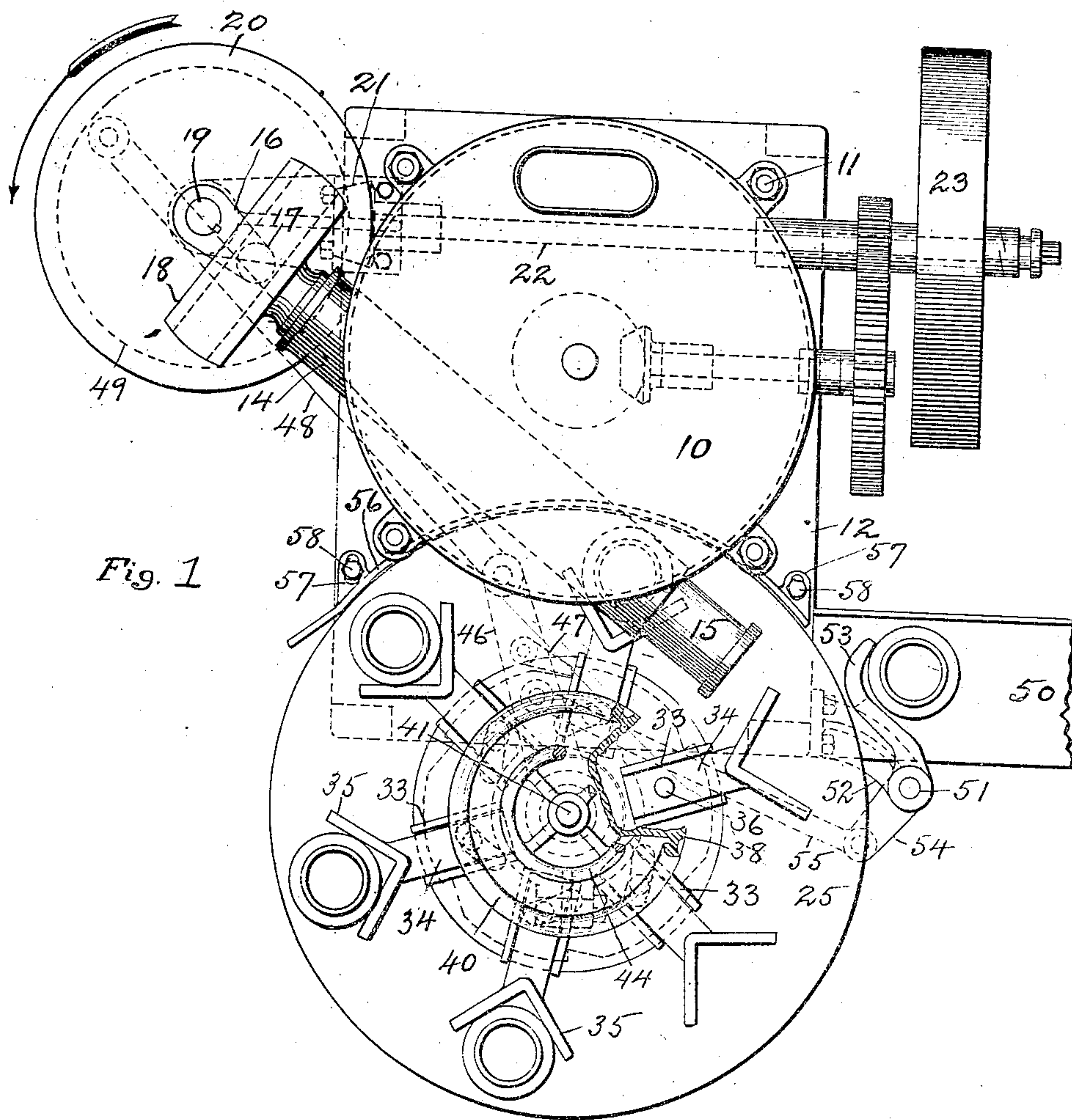


Fig. 1

WITNESSES:
Finis Mohr
Chas. Deering

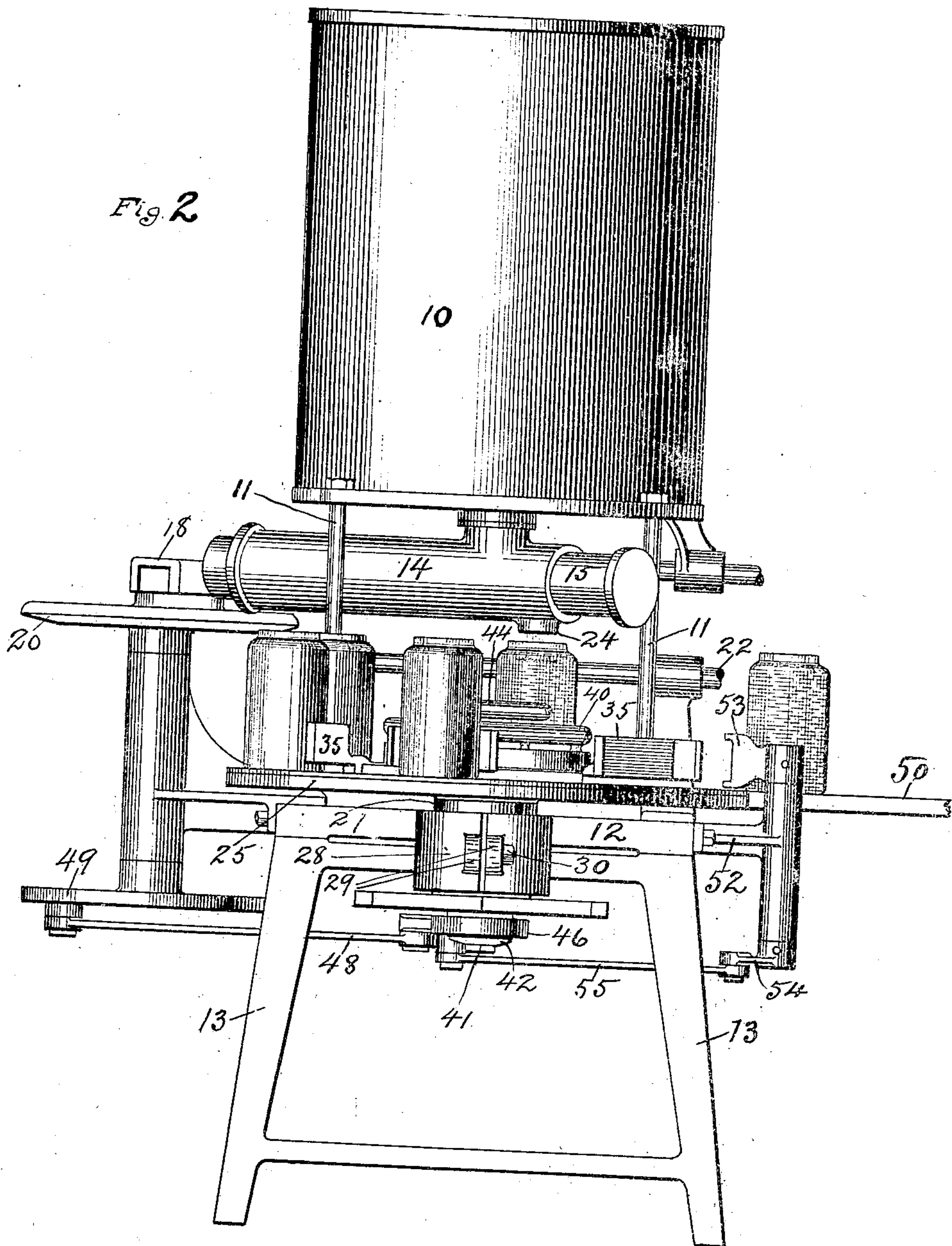
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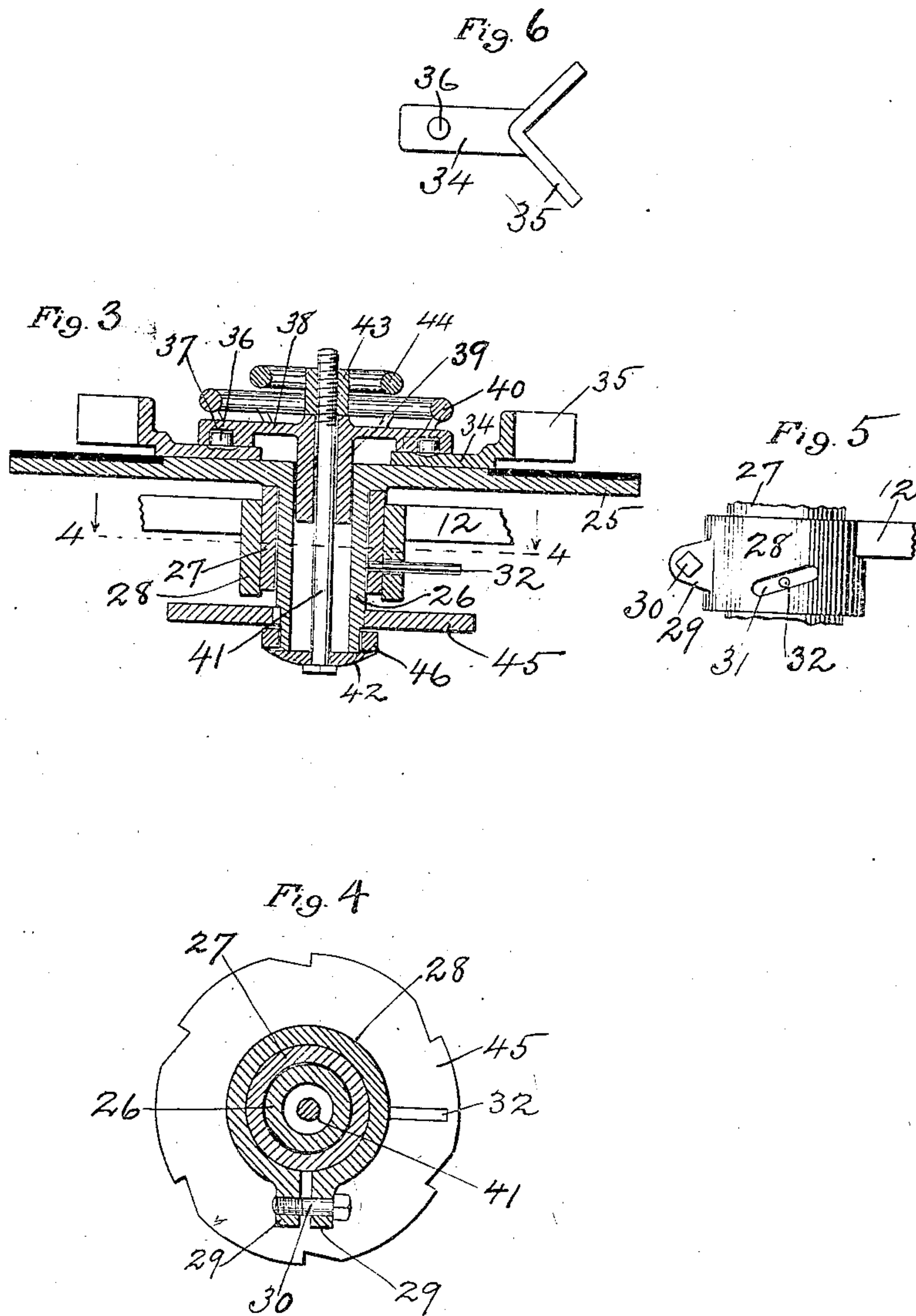
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

JAMES P. HAIGHT, OF HOOPESTON, ILLINOIS, ASSIGNOR TO SPRAGUE
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CAN-FILLING MACHINE.

No. 819,274.

Specification of Letters Patent.

Registered May 1, 1906.

Application filed June 19, 1905. Serial No. 265,966.

To all whom it may concern:

Be it known that I, JAMES P. HAIGHT, a citizen of the United States, residing at Hoopeston, in the county of Vermilion and State of Illinois, have invented certain new and useful Improvements in Can-Filling Machines, of which the following is a specification.

My invention relates to machines for filling cans, jars, and similar receptacles with food and other products, such as corn, tomatoes, beans, and the like.

My improvements relate more particularly to that class of machines wherein the cans or jars to be filled are mounted on a rotary carrier serving to bring the cans successively beneath the charging-opening in the under side of a receptacle containing the material or goods to be filled into the cans.

The principal object of my invention is to readily adapt a machine of this character to the handling of cans of varying sizes, and this object I accomplish partly through the provision of novel guides for positioning the cans on the carrier, which guides are rendered readily adjustable in a direction radially of the carrier, so as to insure identical axial positioning of different-sized cans with relation to the carrier and the discharge-orifice of the filling mechanism and partly through the provision of means for vertically adjusting the guide of the rotary carrier, so as to accommodate cans of varying heights.

My invention in an approved mechanical form is illustrated in the accompanying drawings, wherein—

Figure 1 is a top plan view of the complete machine. Fig. 2 is a side elevational view of the same, with parts of the driving mechanism omitted for the sake of clearness. Fig. 3 is a detail vertical sectional view of the adjustable can-guides and their clamping devices. Fig. 4 is a detail view in cross-section on the line 4 4 of Fig. 3. Fig. 5 is a fragmentary side elevational detail of the lower portion of Fig. 3, and Fig. 6 is a detail plan view of one of the adjustable can-guides.

Referring to the drawings, 10 designates a tank in which the goods to be canned are received, said receptacle being mounted on posts 11, in turn mounted upon a suitable platform or table 12, supported on legs 13. In the bottom of the receptacle 10 is a dis-

charge-opening, that communicates with a cylinder 14, containing a ported sleeve 15 and a plunger (not shown) working in said sleeve and operated by a crank-arm 16, having a pin 17, playing in a cross-head 18 on the end of said plunger, said crank-arm 16 being fast on a vertical shaft 19, to which latter is splined a bevel-gear 20, driven by a bevel-pinion 21 on a driving-shaft 22, operated by a pulley 23. The cylinder 14 has on its lower side a delivery-nozzle 24, located directly above the path of travel of the cans or jars to be filled. The cylinder 14 and its contained parts are identical with the mechanism shown in Letters Patent to H. R. Stickney, No. 523,553, July 24, 1894, to which reference may be had for a complete disclosure.

Referring now to those parts of the machine with which my present improvements are concerned, 25 designates a rotary carrier in the nature of a circular plate, which has a central hub in the form of a depending sleeve 26, Fig. 3. Surrounding the hub 26 is a short bearing-sleeve or bushing 27, on the upper end of which the carrier-plate 25 rests, said short sleeve being in turn supported by means of a split ring or collar 28, secured to or integral with the platform 12 and provided with apertured ears 29 and a clamping-bolt 30. The collar 28 has formed therein an oblique slot 31, Fig. 5, through which extends a pin 32, fast on the short sleeve 27. By reason of this construction the carrier-disk 25 may be raised or lowered to accommodate cans of varying heights by simply loosening the bolt 30 and moving the pin 32 in one direction or the other through the cam-slot 31 and subsequently tightening the bolt 30.

On the upper surface of the plate 25 are formed a series of radially-disposed slide-ways 33, in which are mounted the shanks 34 of a series of vertical V-shaped can-guides 35, Fig. 6. The shanks 34 are each provided on their upper sides with short pins 36, which latter engage cam-slots 37, formed in the under side of a disk 38, said disk having a central depending hub 39, Fig. 3, and a superposed ring or hand-wheel 40, by which it is readily manipulated. The hub 39 enters the hollow hub 26 of the carrier and receives a clamping-bolt 41, the lower headed end of which latter engages a washer 42, seated

against the lower end of the hub 26, while its upper end is threaded and receives a clamping-nut 43, operated by a ring or hand-wheel 44. By loosening the nut 43 the cam-disk 38 may be turned in either direction to thereby adjust the can-guides inwardly or outwardly to exactly the required extent; which guides may be then secured rigidly in adjusted position by tightening up the nut 43.

Keyed on the lower end of the hub 26 is a ratchet-plate 45, that is intermittently rotated by means of an arm 46, rotatably mounted on the lower end of the hub 26 beneath the ratchet-plate, said arm carrying a pawl 47, Fig. 1, engaging the teeth of said ratchet-plate and itself being actuated by a pitman 48, connected at one end to the outer end of said arm and at its other end to the under side of a disk 49, fast on the lower end of shaft 19.

At one side of the platform 12, opposite the periphery of the carrier 25, is a discharge-guide 50, above which is mounted on the upper end of a vertical shaft 51, supported on a bracket 52, a curved ejector-arm 53, which, as shown in Fig. 2, is longitudinally slotted, so as to play freely over the guides 35 without interference therewith. This arm is oscillated from the arm 46 by means of a crank-arm 54 on the lower end of shaft 51, Fig. 2, and a connecting-rod 55.

On the table 12 opposite that portion of the periphery of the carrier overlying said table is mounted a curved guide 56, Fig. 1, adapted to prevent the possible displacement of the cans from the carrier during the filling operation as well as to cooperate with the guides 35 in properly centering the cans beneath the discharge-aperture 24. For this purpose this guide is adjustably mounted by means of slotted feet 57, engaged by clamping-bolts 58.

The manner in which the parts of the machine are adjusted to accommodate different diameters and heights of cans has already been described. It remains to briefly set forth the general operation of the machine, which is as follows: The tank 10 having been filled and the machine started in operation, the empty cans are fed into the carrier 25 either by hand or by any suitable feeding-in mechanism (not shown) and are received and engaged by the several guides 35, whereby they are suitably spaced to correspond to the successive intermittent movements of the carrier. With each movement of the carrier one of the empty cans is brought directly under the discharge-opening 24, the plunger of which forces a charge of the goods previously received by suction from the tank 10 into the can. On the next intermittent movement the filled can is carried to a point opposite the discharge-way 50, the ejector-arm 53 being at the same time retracted to a position behind said can, and the next empty can is

brought forward into filling position. On the next forward movement of the carrier can No. 1 is ejected, can No. 2 is advanced to discharging position, and can No. 3 is advanced to filling position, and so on. When the machine is to be operated with a different size of cans, it is necessary only to manipulate the hand-wheels 44 and 40, the clamping-bolt 30, and the pin 32 to effect both the radial adjustment of the guides 35 and the vertical adjustment of the carrier. All of these adjusting means being readily accessible, such adjustment may be quickly and easily performed.

It is to be understood that the particular form, construction, and relative arrangement of the various elements, as hereinabove described and shown in the drawings, are not of the essence of the invention and may be varied and modified by those skilled in the art without affecting the substance of the invention or sacrificing any of the advantages thereof. Hence the invention is not limited to the particular mechanism herein disclosed except to the extent indicated in specific claims.

I claim—

1. In a filling-machine of the class described, the combination with a delivery-nozzle and a rotary can-carrier disposed therebeneath, of radially-movable can-guides mounted on said carrier and provided with projections, an angularly-movable disk having cam-slots engaging said projections, and means for clamping said disk in any position of angular adjustment, substantially as described.

2. In a filling-machine of the class described, the combination with a delivery-nozzle and a rotary can-carrier disposed therebeneath, of radial slideways formed on said carrier, can-guides having shanks movable in said slideways, pins on said shanks, an angularly-movable disk overlying said shanks and having cam-slots engaging said projections, and means for clamping said disk in any position of angular adjustment, substantially as described.

3. In a filling-machine of the class described, the combination with a delivery-nozzle and a rotary can-carrier disposed therebeneath, of radial slideways formed on said carrier, can-guides having shanks movable in said slideways, pins on said shanks, an angularly-movable disk overlying said shanks, said disk having cam-slots formed in its under side engaging said projections and a hand-wheel on its upper side for turning the same, a clamping-bolt passed through said disk, and a nut engaging said bolt, substantially as described.

4. In a filling-machine of the class described, the combination with a delivery-nozzle, of a rotary can-carrier disposed therebeneath, said can-carrier having a depending hub, a stationary split ring having an in-

clined slot formed therein, a bearing-sleeve carried by said ring and constituting a bushing for the hub of said carrier, said bearing-sleeve having a pin projecting through the slot of said ring whereby said bearing-sleeve is vertically adjusted relatively to said ring, and means for imparting rotary movement to said carrier, substantially as described.

5. In a filling-machine of the class described, the combination with a delivery-nozzle, of a rotary can-carrier disposed therebeneath, a pivoted ejector-arm movable across

the periphery of said carrier, a ratchet-disk on the hub of said carrier, an oscillating arm carrying a pawl actuating said ratchet-disk, an actuating-arm on the pivotal shaft of said ejector-arm, and a link connecting the latter and said oscillating arm whereby the former is actuated from the latter, substantially as described.

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Witnesses:

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