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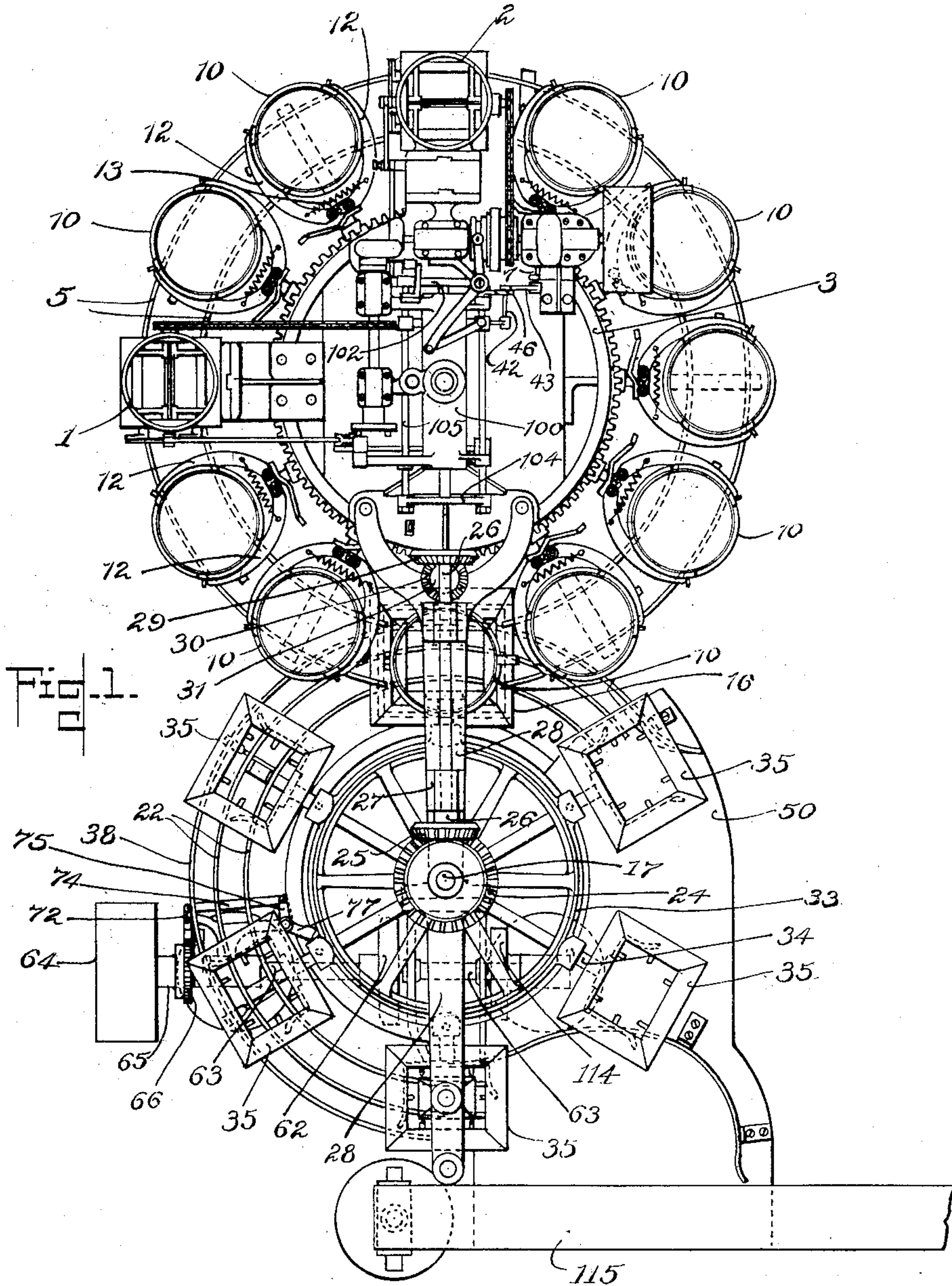
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W. H. DOBLE.  
WEIGHING AND PACKAGING MACHINE.

APPLICATION FILED JUNE 11, 1903.

NO MODEL.

6 SHEETS—SHEET 1.



WITNESSES.  
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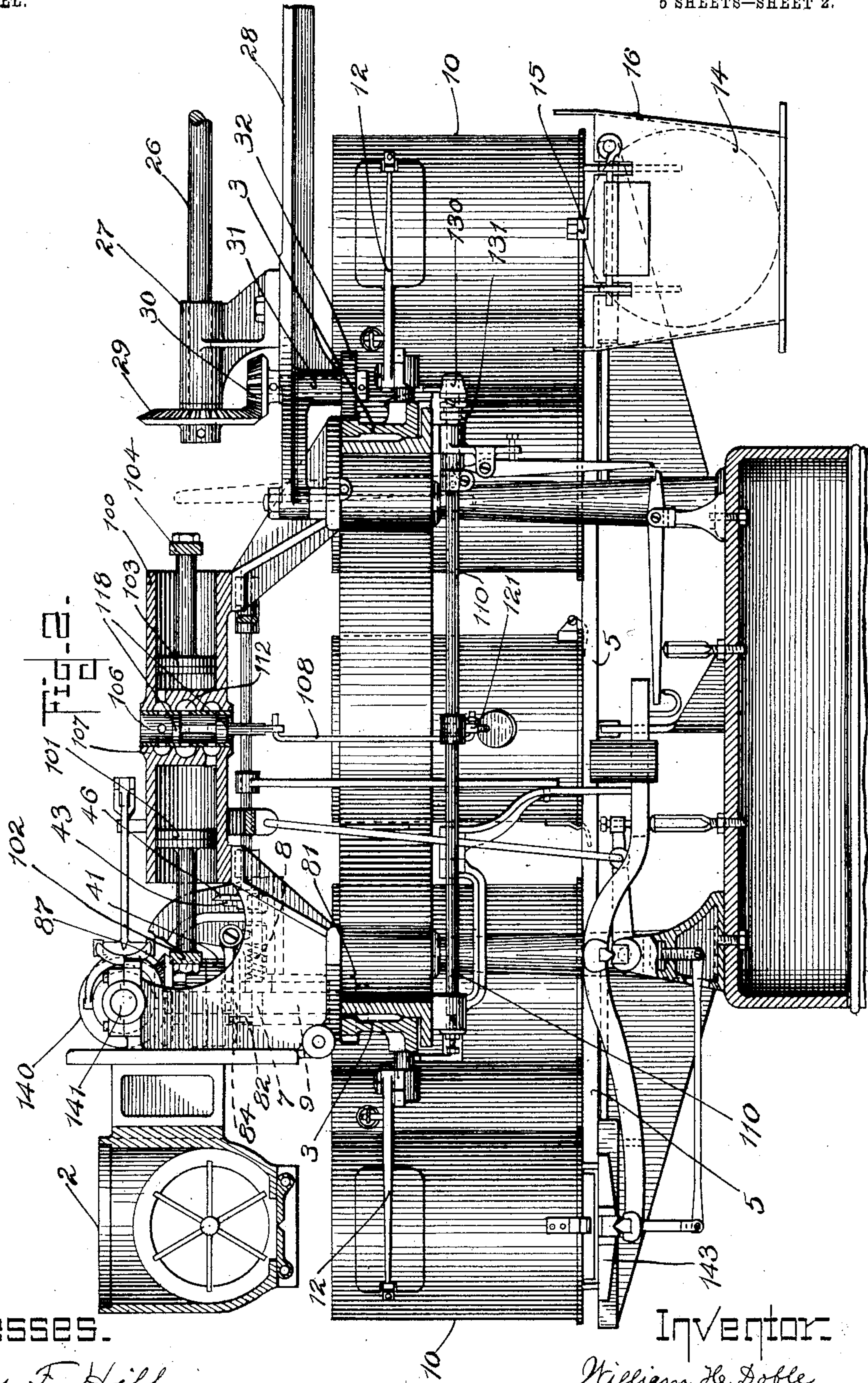
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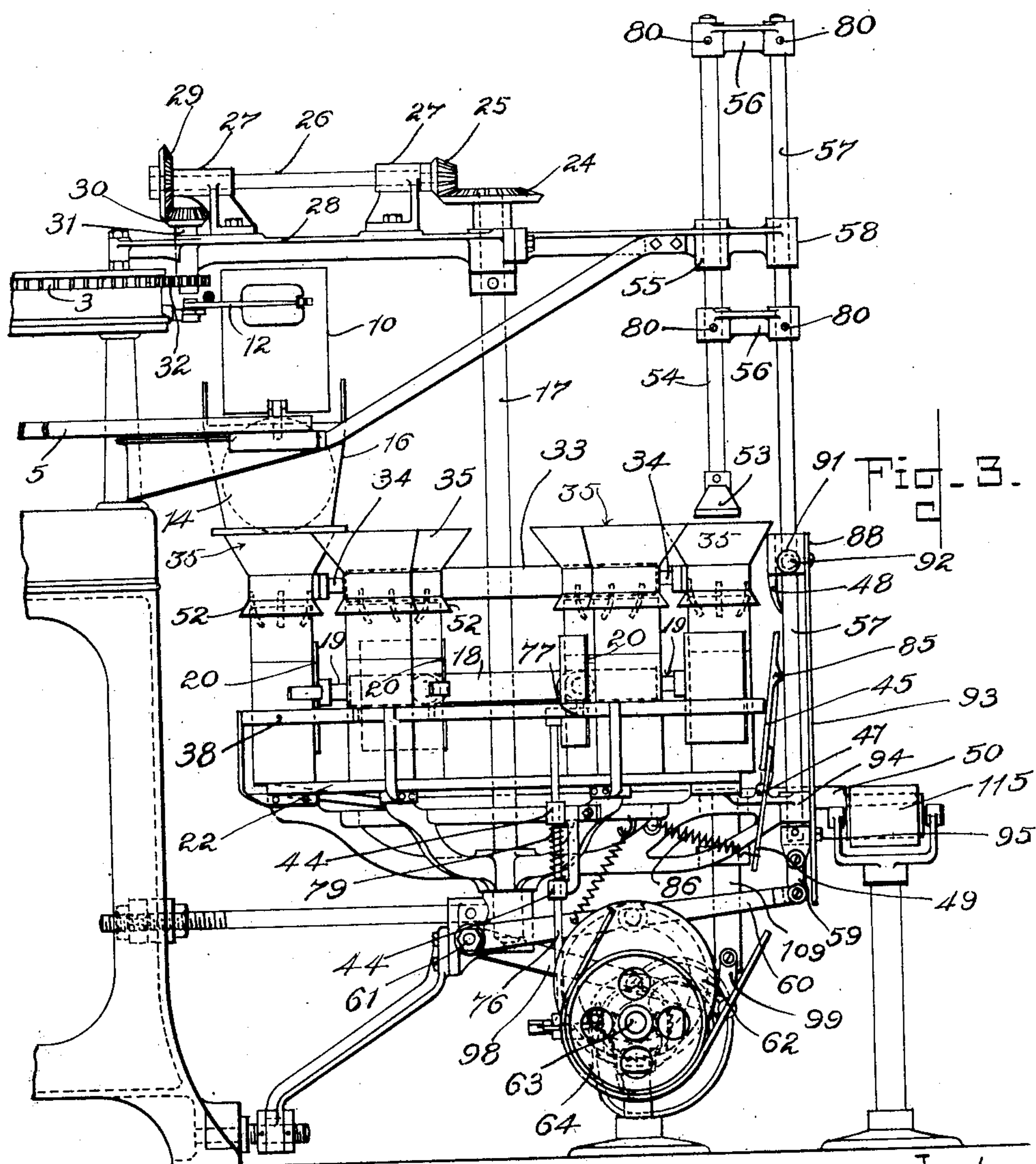
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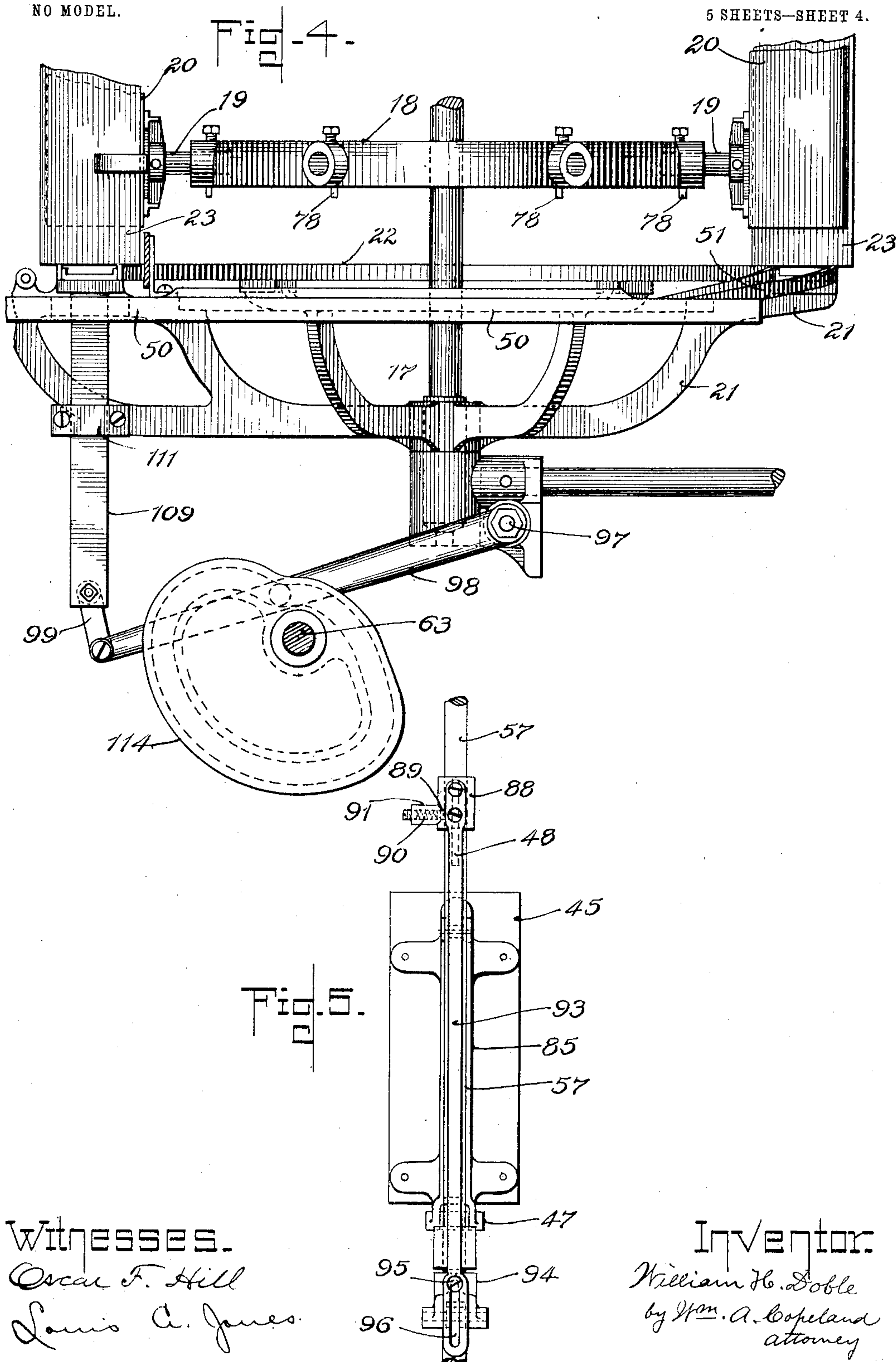
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5 SHEETS—SHEET 4.



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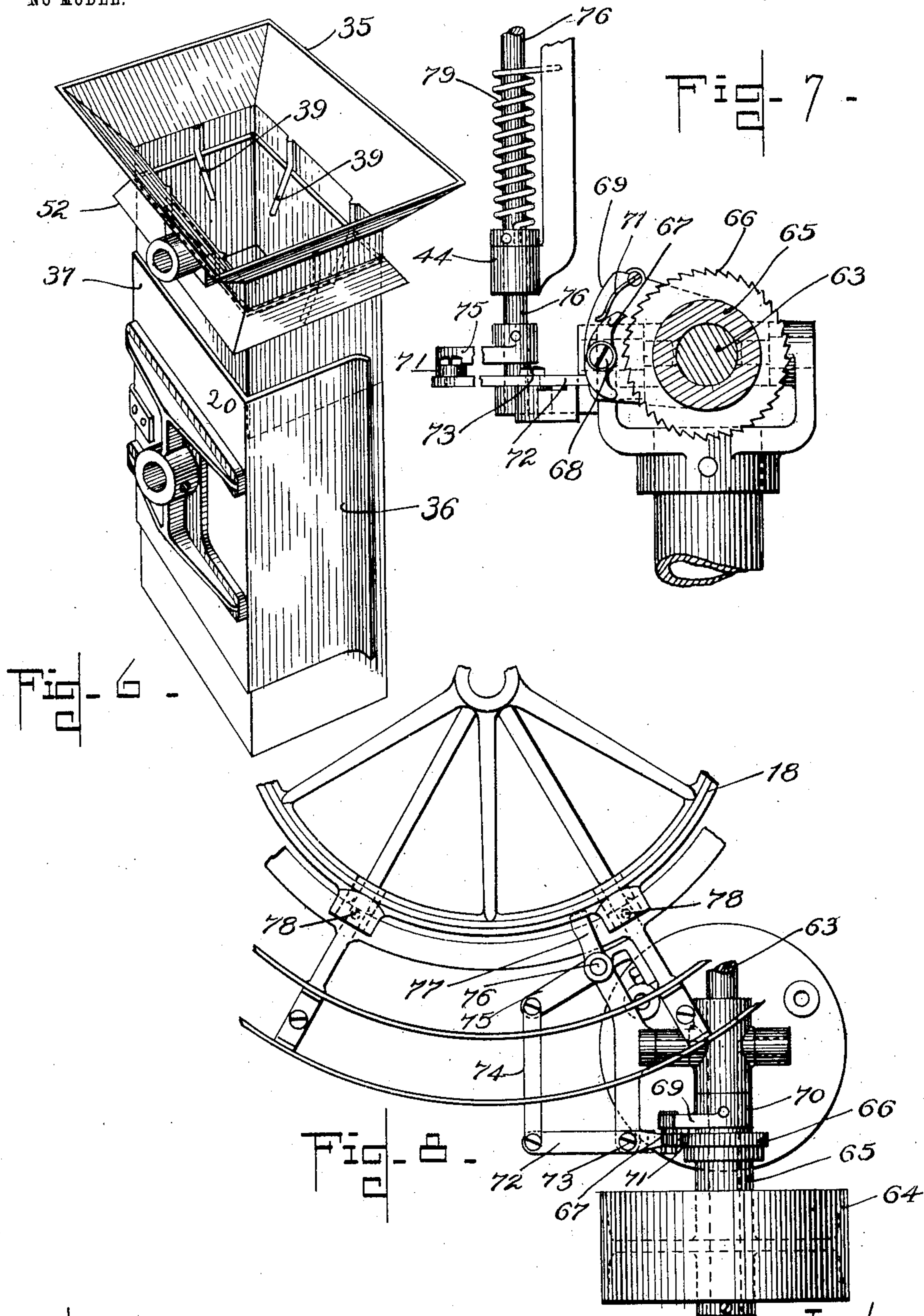
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NO MODEL.

5 SHEETS—SHEET 5.



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# UNITED STATES PATENT OFFICE.

WILLIAM H. DOBLE, OF QUINCY, MASSACHUSETTS, ASSIGNOR TO PNEUMATIC SCALE CORPORATION, OF PORTLAND, MAINE, A CORPORATION OF MAINE.

## WEIGHING AND PACKAGING MACHINE.

SPECIFICATION forming part of Letters Patent No. 750,830, dated February 2, 1904.

Application filed June 11, 1903. Serial No. 160,969. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. DOBLE, a citizen of the United States, and a resident of Quincy, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Weighing and Packaging Machines, of which the following is a specification.

One feature of the invention relates to mechanism for pressing the material down into the packages.

Another feature relates to mechanism for sustaining and steadying the receptacle during the pressing operation.

The invention is especially intended for use in machines in which a predetermined weight or quantity of material is delivered into temporary receptacles and then removed and discharged into permanent receptacles in which the material is sold.

It is desirable to have the package as compact as possible, and there are some kinds of material—such, for instance, as rolled oats and other flaky cereals—which when first poured into the receptacle are very loose and occupy much more space than when pressed down.

The invention is not intended to be limited to use in machines where both preliminary and permanent receptacles are used; but when so used it is desirable to have an interdependence between the preliminary-receptacle-filling mechanism, the permanent-receptacle-filling mechanism, and the pressing mechanism, so that the several parts may work in coöperation and be timed to work in harmony with each other.

One object of the invention is to provide means by which unity of action between the several mechanisms shall be maintained.

The invention will now be fully described by reference to the accompanying drawings, and the novel features thereof will be particularly pointed out in the claims at the close of the specification.

In the drawings, Figure 1 is a plan view of a machine embodying the invention, showing the mechanism for delivering the material into temporary receptacles and weighing it,

mechanism for delivering it from the temporary receptacles to the permanent receptacles, and the mechanism by which the permanent-receptacle mechanism is controlled by the weighing mechanism. Fig. 2 is a side elevation viewed from the left of Fig. 1 and partly in section, on an enlarged scale, the rear part of the machine being broken away and some of the details omitted. Fig. 3 is a side elevation from the same side as Fig. 2 of the rear part of the machine, which was broken away in Fig. 2. Fig. 4 is a side elevation from the opposite side from Fig. 3, showing in detail the mechanism for actuating the guard for the front side of the package during the pressing operation. Fig. 5 is an elevation taken from the rear of the machine—that is, at the right of Fig. 2—showing the mechanism for actuating the cam which closes the side guard before the pressing operation. Fig. 6 is a detail perspective of one of the funnels and carton-carrier and carton engaged therewith. Fig. 7 is a detail of the clutch mechanism for connecting the presser mechanism with the driving mechanism. Fig. 8 is a plan of Fig. 7.

The weighing mechanism may be any suitable mechanism by which the determined quantity of material is first delivered into a temporary receptacle and then is discharged into the permanent receptacle and pressed down therein.

Mechanism is provided by which the presser mechanism is actuated by the driving mechanism of the weighing apparatus, so that there shall be an accurate timing of the several parts of the machine to work in harmony with each other.

The weighing mechanism will be but briefly described, as that of itself is not claimed in the present application.

The weighing-machine shown is of the double-hopper type, in which a part of the required quantity is delivered into the temporary receptacle through one hopper and the receptacle is then transferred to the scale, where the balance of the weight is given; but as the double-hopper arrangement has nothing



to do with the present invention the mechanism for feeding the preliminary supply through the first hopper 1 and transferring the partially-filled receptacle to the scale beneath the hopper 2 need not be described. The tipping of the scale actuates mechanism which shuts off the flow of material to the receptacle on the scale. The temporary receptacles 10 are successively conveyed by an intermittently-moving carrier and deposited upon the scale 143, and at the succeeding movement of the carrier after the receptacle has received its requisite load the carrier removes it from the scale and another receptacle is brought to the scale.

In the form of machine illustrated the carrier consists of a rotatable ring 3, which is actuated by suitable mechanism to move at each interval through an arc sufficient to bring one of the receptacles 10 to the scale. Carried by arms projecting from the ring 3 are clamps, each consisting of a pair of pivoted fingers 12, which are held by a spring 13 in clamping embrace of the receptacles 10. The temporary receptacles 10 slide along on the track 5 as the ring 3 rotates. The said receptacles have a flap-valve 14 in the bottom, hinged at 15, which is normally kept closed by the rails of the track on which it slides, the hinge being on the advance side of the valve.

At the point where it is desired to discharge the material from the temporary receptacle into the permanent receptacle the track is broken, as shown in Fig. 1, so that as the receptacle rides off of the ends of the rails the valve 14 will drop down on its hinge and allow the contents to drop through a hopper 16 into one of the permanent receptacles beneath, as will be hereinafter described. The discharge place is so located that the receptacle will reach it just at the end of one of the periods of movement and the discharge will occur while another receptacle is being filled. When the receptacle moves onto the track again at the next advance of the carrier, the valve will drag up over the ends of the rails and again close the bottom of the receptacle. Gear-ring 3 is actuated by pinion 81 on upright shaft 9, which is connected with a driving-shaft 141 by a clutch 41 and miter-gears 87 and 140. Each time the pinion 81 makes one revolution the ring 3 moves through the arc necessary to bring one of the receptacles to the desired position.

Suitable mechanism is provided by which the clutch 41 is disengaged, so as to stop the pinion 81 at the end of each rotation. The mechanism by which this is done is not shown in detail, because it is not claimed herein. It is shown and fully described in Patent No. 716,007, dated December 16, 1902.

A reciprocable member opens and closes a valve to the scale-hopper 2. When the scale tips under the weight of the load in the receptacle 10, mechanism is actuated thereby

which causes the reciprocable member to move forward and close the scale-hopper valve. When the frame thus moves forward, a projection 42 on the side of the frame will by its engagement with wedge-arm 46 and engagement of arm 46 with arm 43, carried by a slide-rod 7, move said slide-rod forward, and the movement of said slide-rod will actuate mechanism to render operative the clutch 41, which connects driving-shaft 141 with pinion-shaft 9. Mechanism for doing this is fully shown and described in Patent No. 716,007, above mentioned. When the clutch connection is made, the gear-ring 3 is moved by said pinion until the clutch is disengaged.

Carried on shaft 9 is an eccentric-cam 84, which when said shaft has partially completed a revolution will, by its engagement with arm 82, projecting from slide-rod 7, turn said rod 7 on its axis far enough to turn arm 43 down out of engagement with wedge-arm 46, and spring 8, which is coiled around said rod and which was compressed when the rod 7 was pushed forward by the sliding frame, will expand and push said rod in the reverse direction, and thereby actuate mechanism to stop the pinion at the end of one revolution.

There are various ways in which the reciprocating frame may be actuated to open and close the scale-hopper valve. That shown in the drawings is fully described in Patent No. 716,007, previously mentioned herein.

In one end of cylinder 100 is a piston 101, whose stem is connected with the forward cross-head 102 of the reciprocating frame, and in the other end of said cylinder is a piston 103, whose stem is connected with cross-head 104. The two cross-heads are connected together by side rods 105, which slide through bearings fixed to the side of the cylinder 100, and, together with the pistons 101 and 103, compose what is herein referred to as the "reciprocating" frame. A perforated cylinder 106 passes crosswise through an air-chest 107 in cylinder 100 and forms a casing for a piston 118.

Compressed air or other fluid pressure is admitted from a source not shown in the drawings through chamber 112 into the piston-cylinder 106 between the disks of piston 118, and as the piston 118 rises and falls the pressure is admitted alternately through the ports leading into the opposite chambers of cylinder 100 and drives the piston 101 and 103, and thereby moves the reciprocating frame to close and open the scale-hopper valve.

Piston 118 is actuated by a rocker-shaft 110 through connecting-rod 108. Rocker-shaft 110 is turned by a weighted arm 121 in a direction to pull down piston 118 and close the scale-hopper valve, but is restrained by detent mechanism connected with the scale-beam from becoming operative until the detent is released. The tipping of the scale releases the detent and the reciprocating frame moves for-



ward, closing the scale-hopper valve and actuating the mechanism which turns the carrier-ring 3.

A spring (not shown) more powerful than weight 121 turns the rocker-shaft 110 in the reverse direction and lifts the piston 118, so as to move the reciprocating frame rearwardly and open the scale-hopper valve. This spring is operative, however, only when the two members of a clutch 130 131 on shaft 110 are brought into engagement. This engagement is effected by mechanism actuated by a projection on the carrier-ring 3. For more detailed illustration and description of the mechanism for actuating the weighing mechanism and movement of the carrier reference may be had to said Patent No. 716,007.

The mechanism for filling the permanent receptacles is as follows: Fixedly mounted on a rotary vertical shaft 17 is a wheel or ring 33, having radiating arms 34, to which are attached funnels 35. Fixedly mounted on said shaft 17 below the ring 33 is a wheel or carrier-ring 18, having radiating arms 19, to which are attached receptacle-supporters 20, corresponding with the funnels 35. Mounted on the frame 21 beneath the path of the receptacle-supporters is a track 22, concentric with the shaft 17, on which the permanent receptacles or cartons 23 are moved around by the supporters 20 when the shaft 17 revolves. The rings 18 and 33 are so adjusted with relation to the carrier 3 of the weighing mechanism and to the hopper 16 that the funnels 35 and receptacles 23 will move around beneath the hopper 16 to receive the material when discharged from the temporary receptacles. In order that the ring 18 may rotate in unison with the ring 3 and bring the permanent receptacles into proper position to receive the material, the same driving mechanism is made to control both rings. This may be accomplished as follows: On rotary shaft 17 is a bevel-gear 24, which engages with bevel-gear 25 on the horizontal rotary shaft 26, journaled in bearings 27, mounted on frame 28. Shaft 26 also carries a bevel-gear 29, which meshes with bevel-gear 30 on vertical shaft 31, which is journaled in bearings on the frame 28 and has a pinion 32, which meshes with carrier-ring 3. The funnels and permanent receptacle-holders and the speed of the shaft 17 is in such ratio to the speed of the carrier-ring 3 and to the number of temporary receptacles that one of the funnels and a permanent receptacle shall be brought beneath the discharge-hopper 16 in proper time to receive each discharge.

The form of receptacle-supporters 20 shown in the drawings is specially adapted for cartons, and for convenience of description the term "cartons" when used hereinafter will be understood as applying to any permanent receptacle. The supporters are formed with two upright wings 36 37, Fig. 6, at right an-

gles to each other, one, 36, to engage the carton on the rear, so as to push it along on the track, and one, 37, to form a guard on the inside. The side rail 38 forms a guard on the outside, so that the carton is supported in its travel on all sides except the advance side. The cartons are fed onto a table 50, from which the supporters will take them one at a time and carry them up the incline 51 on the track to bring them up into close engagement with the funnels before reaching the hopper 16. The funnels 35 are so formed at the lower ends that they will extend down inside the open flaps of the upper end of the carton, so that there will be no overflow at the sides. In the form shown in the drawings the funnels are also provided with flaring wings 52, which extend down outside of the flaps as an additional protection, and with guide-fingers 39. When the material is delivered from the discharge-hopper 16, it will at first, if the carton be of the size adapted for the material when pressed down, not only fill the body of the carton, but will extend up between the upwardly-extending flaps and must be in some way crowded down into the carton, and the presser device already referred to is provided to accomplish this at one of the intervals of rest in the passage of the carton around the track before it is carried off at the end of the track. For cartons a press is better than a tapping mechanism.

The presser mechanism is as follows: A press-block 53 of suitable shape to fit the inside of a carton is mounted on a vertically-reciprocable rod 54, which is so positioned that when the carrier-rings stop the press-block will be directly over the middle one of the funnels and a filled carton will be beneath the funnel, having its flaps engaged therewith. Said rod 54 slides in a bearing 55 and is connected by cross-ties 56 56 with a slide-rod 57, which moves in bearings 58 and 94. The lower end of rod 57 is connected by a link 59 with one end of a lever 60, which at its other end is pivoted at 61 and which intermediate its ends is engaged by a cam 62, mounted on rotary shaft 63 to lower and raise the rods 54 and 57 and the press-block 53. It is desirable that the press-block should be actuated only while a carton is at rest and not while the carrier-ring is in motion. To this end mechanism is provided by which the moving carrier-ring 18 will cause the rotary shaft 63 to be thrown into and out of engagement with its driving mechanism. Loosely mounted on said shaft 63 is a driving-pulley 64. On the hub 65 of said pulley is fixed a ratchet-wheel 66. A dog 67 (see Fig. 7) is pivoted at 68 to an arm 69, which projects from a collar 70, fixed to shaft 63. When the toe of the dog engages with the ratchet, the shaft 63 will be turned. A spring 71 tends to throw the dog into such engagement and to hold it so engaged except when held out of engagement



by the stop-lever 72, which engages with the heel of the dog. Said stop-lever 72 is fulcrumed at 73 and is connected by a link 74 with a horizontal lever 75, fixed to the vertical rocker-shaft 76, which turns in bearings 44, fixed to the frame. On the upper end of rocker-shaft 76 is a laterally-projecting finger 77, which projects into the path of the pins 78, which project downwardly from the carrier-ring 18. (See Fig. 8.) Said pins are disposed at intervals corresponding to the spaces between the carton-carriers and at such positions that said finger 77 will engage one of said pins and turn the rocker-shaft 76, so as to disengage the stop 72 from dog 67 just as the carrier-rings come to a rest. Spring 71 will then throw the toe of the dog into engagement with ratchet 66 and cause shaft 63 to rotate. Pin 78 will ride off of finger 77 just before the ring stops, and spring 79 will immediately turn rocker-shaft 76 back again, bringing stop-lever 72 into position to engage the heel of the dog 67 and disengage the dog from the ratchet at the end of one revolution. (See Figs. 7 and 8.) The stop-lever will have remained disengaged, however, long enough for the shaft 63 to begin its rotation, so as to clear the heel of the dog before the stop is thrown back. The form of the cam 62 is such as to first lower and then elevate the press-block. The rod 54 can be adjusted by set-screws 80, which secure it to the cross-ties 56 to cause the press-block to descend just the right distance to press the material all into the carton.

While the material is being pressed into the carton, it is desirable that the carton shall be held steady and supported on all four sides, as well as at the bottom. The track should at this point have a plate for the bottom of the carton to rest upon instead of rails. It may be a part of the table 50. As already described, the wings 36 37 support the carton on the rear and on the inner side. Instead of the guard-rail 38 a hinged plate 45 forms the guard or wall for the outer side at this point. Said plate is hinged at its lower edge at 47, so that as it turns on its hinge it will move toward or from the carton. Carried on slide-rod 57 is a cam 48, which when the slide-rod moves down engages with the rib 85 on the back of said plate 45 and turns the plate inward toward the carton. When the slide-rod 57 rises again and the cam 48 rides above the plate 45, a spring 86, which is connected at one end with a tail 49, projecting down from the plate 45, and at its other end is connected with the frame, will turn the plate back on its hinge. It is not necessary to have the cam 48 move the same length of stroke as the rod 57, and preferably it should not move the same length. To this end the said cam 48 is attached to a sleeve 88, which is held to said rod 57 by a friction-washer 89, held against the rod 57 by a spring 90, held in a socket-arm 91, the tension of said spring being regu-

lated by a screw-plug 92. (See Fig. 5.) Behind the rod 57 is a slotted bar 93, the upper end of which is fixed to the said sleeve 88, and the lower end is secured to the fixed bearing 94 by a pin 95, which passes through an elongated slot 96 in said bar. The friction of the sleeve 88 on the rod 57 will cause the sleeve to move with said rod within the limits of said slot 96, and when the rod has moved either up or down the length of said slot the sleeve will then be held, while the rod continues to move.

The support for the front of the carton consists of a knife or plate 109, which is raised up in front of the carton and then is drawn down out of the way after the pressing. (See Figs. 3 and 4.) It is described as follows: Pivoted at 97 to the frame is a lever 98, whose other end is connected by a link 99 with a vertically-reciprocable knife 109, which passes up through a guide 111 and through an opening in the table 50 in the path of the carton, and when it rises it will come up directly in front of the carton when in position for pressing. The lever 98 is actuated by a cam 114 on shaft 63 to raise and lower the said knife 109, said shaft being the same as that which carries the cam 62, which actuates the press. The form of cam 114 is such as to give a dwell to the knife 109 both at the top and bottom of its stroke. The cartons are removed from the table 50 by a belt 115 or by any other suitable means.

What I claim is—

1. In a package-filling machine, a rotatable receptacle-carrier, a rotatable funnel-carrier above said receptacle-carrier on the same axis, a series of funnels fixed to and carried by said funnel-carrier and movable only in a horizontal plane, mechanism which intermittently moves both of said carriers synchronously with each other, a vertically-movable press above one of the stopping-places in the path of movement of said funnels, and mechanism which moves said press down into said funnel and out again, substantially as described.

2. In a package-filling machine, a rotatable receptacle-holder, funnels located above said holder and in alinement with the receptacles when in position on the said holder, a funnel-carrier which moves said funnels in a horizontal plane only and synchronously with said receptacles and in continued alinement therewith, mechanism for delivering material through said funnels into receptacles on the holder, a vertically-reciprocable press, mechanism which transfers the filled package and its funnel beneath the press, mechanism which raises the press and mechanism which controls the descent of the press and causes it to enter the funnel and press the material into the receptacle, substantially as described.

3. In a package-filling machine, a receptacle-carrier, a funnel-carrier above said receptacle-carrier, a series of funnels carried by said fun-



nel-carrier, mechanism which moves both of said carriers synchronously with each other, a vertically-movable press above one of the stopping-places in the path of movement of said funnels, mechanism which raises and lowers said press, mechanism controlling the press-actuating mechanism, and mechanism actuated by one of the moving carriers to set in motion the press-actuating mechanism, substantially as described.

4. In a package-filling machine, a receptacle-carrier, a funnel-carrier above said receptacle-carrier, a series of funnels carried by said funnel-carrier, mechanism which moves both of said carriers synchronously with each other, a vertically-movable press above one of the stopping-places in the path of movement of said funnels, a rotatable shaft and mechanism actuated thereby to raise and lower the said press, a driving-shaft and a clutch adapted to connect it with said press-actuating shaft, and mechanism actuated by one of the moving carriers to throw the clutch to operatively connect the said driving-shaft and said press-actuating shaft, substantially as described.

5. In a package-filling machine, a rotatable receptacle-carrier, a rotatable funnel-carrier above said receptacle-carrier on the same axis therewith, an intermittently-rotating shaft which drives said carriers in a horizontal plane only and synchronously with each other, a series of funnels carried by said funnel-carrier and moved in a horizontal plane only and in continued alinement with the receptacles, a vertically-movable press above one of the stopping-places in the path of movement of said funnels, a rotatable shaft, reciprocating mechanism connected with said press and actuated by said rotating shaft which raises said press and controls the descent thereof, substantially as described.

6. In a package-filling machine, a rotatable receptacle-carrier, a rotatable funnel-carrier above said receptacle-carrier on the same axis therewith, an intermittently-rotating shaft which drives said carriers synchronously with each other, a series of funnels carried by said funnel-carrier, a vertically-movable press above one of the stopping-places in the path of movement of said funnels, a rotatable press-actuating shaft, a cam carried thereby, mechanism connected with said press and actuated by said cam which raises said press and controls the descent thereof, a driving-wheel, a clutch connection between said driving-wheel and said cam-shaft, mechanism, actuated by the movement of one of the carriers to move said clutch to operatively connect said cam-shaft and driving-wheel and thereby cause the reciprocation of the press, and mechanism which disengages said clutch, substantially as described.

7. In a package-filling machine, a rotatable receptacle-carrier, an intermittently-rotating shaft which drives said carrier, a vertically-

movable press above one of the stopping-places in the path of movement of the receptacles, a rotatable press-actuating shaft, a cam carried thereby, mechanism connected with said press and actuated by said cam which raises said press and controls the descent thereof, a driving-wheel loose on said cam-shaft, a ratchet-wheel fast to said driving-wheel, a dog carried by said cam-shaft, a stop-lever which normally engages said dog and holds it out of engagement with said ratchet, mechanism connected with said stop-lever which is engaged by the movement of one of said carriers to trip said stop-lever from the dog, a spring which throws said dog into engagement with said ratchet when the stop-lever is released and allows the cam-shaft to be rotated, and a spring which throws the stop-lever again into position to trip the said dog and stop the rotation of the cam-shaft at the end of each rotation.

8. In a package-filling machine, a movable receptacle-carrier, a track for the receptacles, guides which move with the carrier and push the receptacles along on the track, said guides having wings which support the receptacles at the rear and on one side, mechanism which moves the receptacle-carrier intermittently, a press which is movable vertically in alinement with one of the stopping-places of the receptacles on said carrier, a movable guard which is actuated by the descent of the press to move into position to form a guard for another side of the receptacle beneath the press, substantially as described.

9. In a package-filling machine, mechanism for delivering material into receptacles, a press, mechanism for moving the filled receptacles to a position beneath the press, mechanism for actuating the press, and a movable guard actuated by the descending press to move into engagement with the receptacle beneath the press, substantially as described.

10. In a package-filling machine, a receptacle-holder, a movable receptacle-guard, a vertically-reciprocable press, and a vertically-sliding member which carries said press, and in its descent moves said guard into position to support a receptacle on the holder beneath said press, substantially as described.

11. In a package-filling machine, a receptacle-holder, a movable receptacle-guard, a vertically-reciprocable press, a vertically-sliding member which carries said press, a cam on said sliding member which in its descent moves said guard into position to support a receptacle on the holder beneath said press, and mechanism which when the said sliding member and cam are moved upward out of engagement with the said guard will move the guard away from the receptacle, substantially as described.

12. In a package-filling machine, a receptacle-holder, a movable receptacle-guard, a vertically-reciprocable press, a vertically-sliding member which carries said press, a cam on said



sliding member which in its descent moves said guard into position to support a receptacle on the holder beneath said press, said cam being movable on said sliding member, mechanism which normally holds said cam fast to said sliding member, and a stop which engages said cam and limits the extent of movement thereof less than the range of movement of the said sliding member, substantially as described.

13. In a packaging-machine, a rotatable receptacle-carrier, a track for the receptacles, mechanism which moves the said carrier intermittently, a press which is movable vertically in alinement with one of the stopping-places of the receptacles on said carrier, a vertically-reciprocable guard which moves into and out of a position in front of the advance side of the receptacle beneath the press, and mechanism for actuating said guard, substantially as described.

14. In a packaging-machine, a rotatable receptacle-carrier, a track for the receptacles, guides which move with the carrier and push the receptacles around on the track, mechanism which moves said carrier intermittently, a press which is movable vertically in alinement with one of the stopping-places of the receptacles on said carrier, a guard which moves into and out of a position in front of the advance side of the receptacle beneath the press, and mechanism controlled by the movement of the carrier to move said guard into and out of operative position, substantially as described.

15. In a packaging-machine, a rotatable receptacle-carrier, a track for the receptacles, guides which move with the carrier and push the receptacles around on the track, mechanism which moves said carrier intermittently, a press which is movable vertically in alinement with one of the stopping-places of the receptacles on said carrier, a guard which moves into and out of a position in front of the advance side of the receptacle beneath the press, a rotatable shaft, a cam carried thereby which raises said press and allows it to drop, a second cam carried thereby which moves said guard into and out of position in front of said receptacle, driving mechanism for said cam-shaft, mechanism actuated by the movement of said carrier to operatively connect said driving mechanism with said cam-shaft and mechanism which disengages said driving mechanism from operative connection with said shaft at the end of each rotation thereof, substantially as described.

16. In a packaging-machine, a rotatable receptacle-carrier, a track for the receptacles, guides which move with said carrier and push the receptacles around on the track, mechanism which moves said carrier intermittently, a press which is movable vertically in alinement with one of the stopping-places of the receptacles on said carrier, a movable guard

at one side of the said stopping-place, mechanism actuated by the moving carrier which elevates the press and then allows it to descend, mechanism actuated by the descent of the press to turn said side guard toward the receptacle, a guard which is movable into and out of a position directly in front of the receptacle beneath the press, driving mechanism common to both the press and the front guard which actuates them in such relative times that the front and side guards will both be moved into operative position before the press is applied to the material in the receptacle, and will both be moved out of operative position after the press is lifted, substantially as described.

17. In a packaging-machine, an intermittently-movable receptacle-carrier, a vertically-reciprocating press which moves in alinement with one of the stopping-places of the receptacles, a movable guard for the advance side of the receptacle in front of the line of movement of the press and a movable guard for the outer side of the receptacle, and cooperating mechanisms which control the movements of the said guards and press, substantially as described.

18. In a package-filling machine, a rotatable receptacle-carrier, a rotatable funnel-carrier above said receptacle-carrier on the same axis therewith, a series of funnels carried by said funnel-carrier above the path of movement of the receptacles, and guides on said funnels which engage the flaps of cartons and guide the cartons onto the lower ends of funnels, substantially as described.

19. In combination, weighing mechanism, mechanism for delivering a predetermined weight of material successively into temporary receptacles, mechanism for removing the filled receptacles from the place of filling and weighing to a place of discharge, mechanism for emptying the filled temporary receptacles, a carrier for permanent receptacles, a funnel-carrier above said second receptacle-carrier having a series of funnels, mechanism for moving said funnel-carrier and permanent-receptacle carrier, both of said carriers being so positioned that the movement will bring them both beneath the place of discharge from the temporary receptacles, driving mechanism common to both said permanent-receptacle carrier and funnel-carrier and connecting mechanism by which the temporary-receptacle carrier controls the movement of the permanent-receptacle carrier and funnel-carrier, and a press which is controlled by the movement of the permanent-receptacle carrier to enter the funnels and press the material into the permanent receptacles, substantially as described.

20. In combination, weighing mechanism, mechanism for delivering a predetermined weight of material into temporary receptacles, mechanism for removing the filled receptacles



from the place of filling and weighing to a  
place of discharge, mechanism for emptying  
the temporary receptacles, a carrier for per-  
manent receptacles, a funnel-carrier above  
5 said permanent-receptacle carrier having a se-  
ries of funnels, mechanism for moving said  
funnel-carrier so as to bring the funnels suc-  
cessively beneath the place of discharge from  
the temporary receptacles, a press, and coöp-  
10 erating mechanisms which control the move-  
ment of the carriers and the press and cause

them to move independently and cause the  
press to enter the funnels and press the mate-  
rial into the permanent receptacles, substan-  
tially as described.

In testimony whereof I have affixed my sig-  
nature in presence of two witnesses.

WILLIAM H. DOBLE.

Witnesses:

WILLIAM A. COPELAND,  
ROBERT WALLACE.