

Aug. 11, 1931.

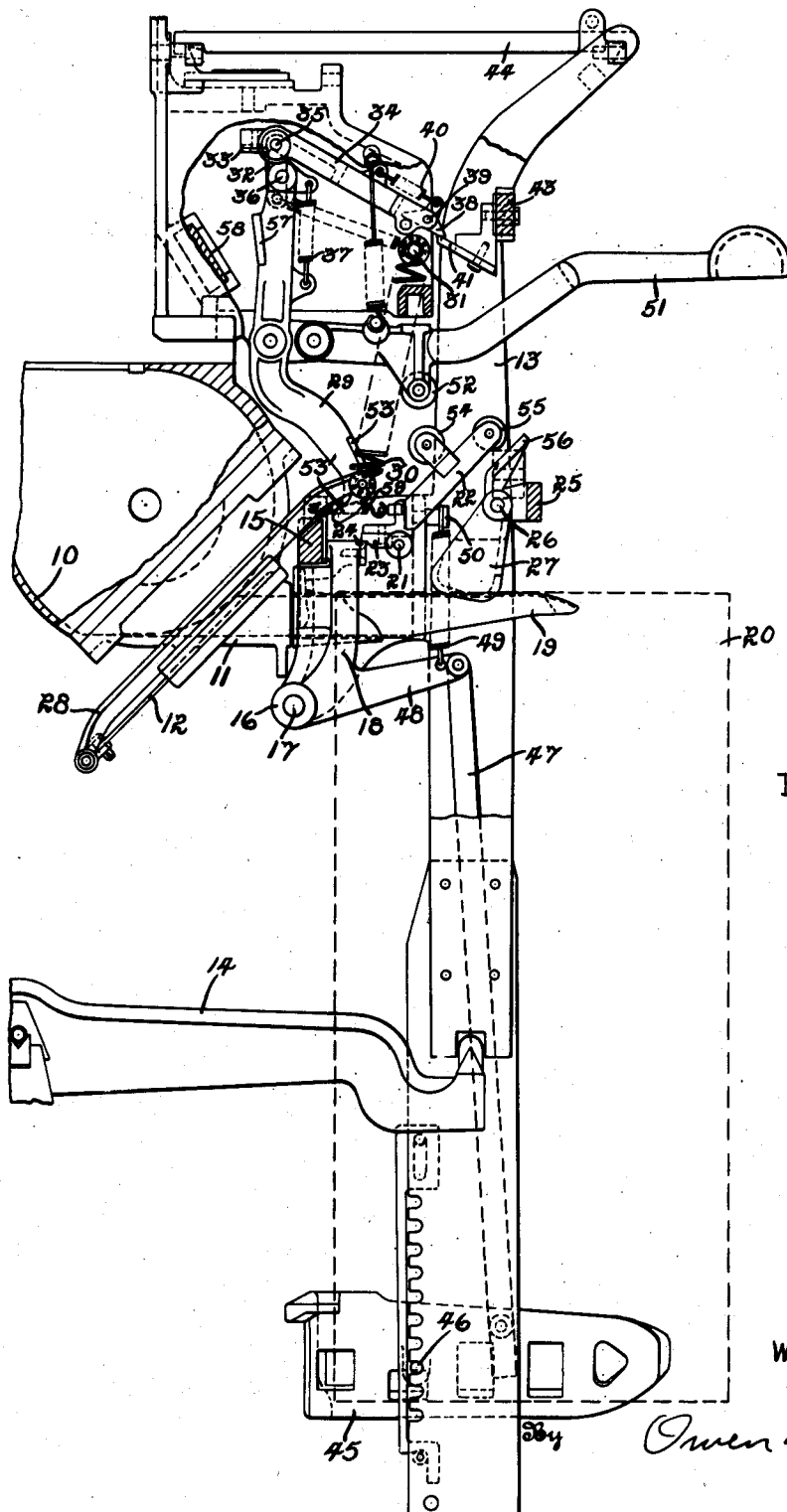
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1,818,095

VALVE BAG FILLING MACHINE

Filed Oct. 29, 1929

3 Sheets-Sheet 1



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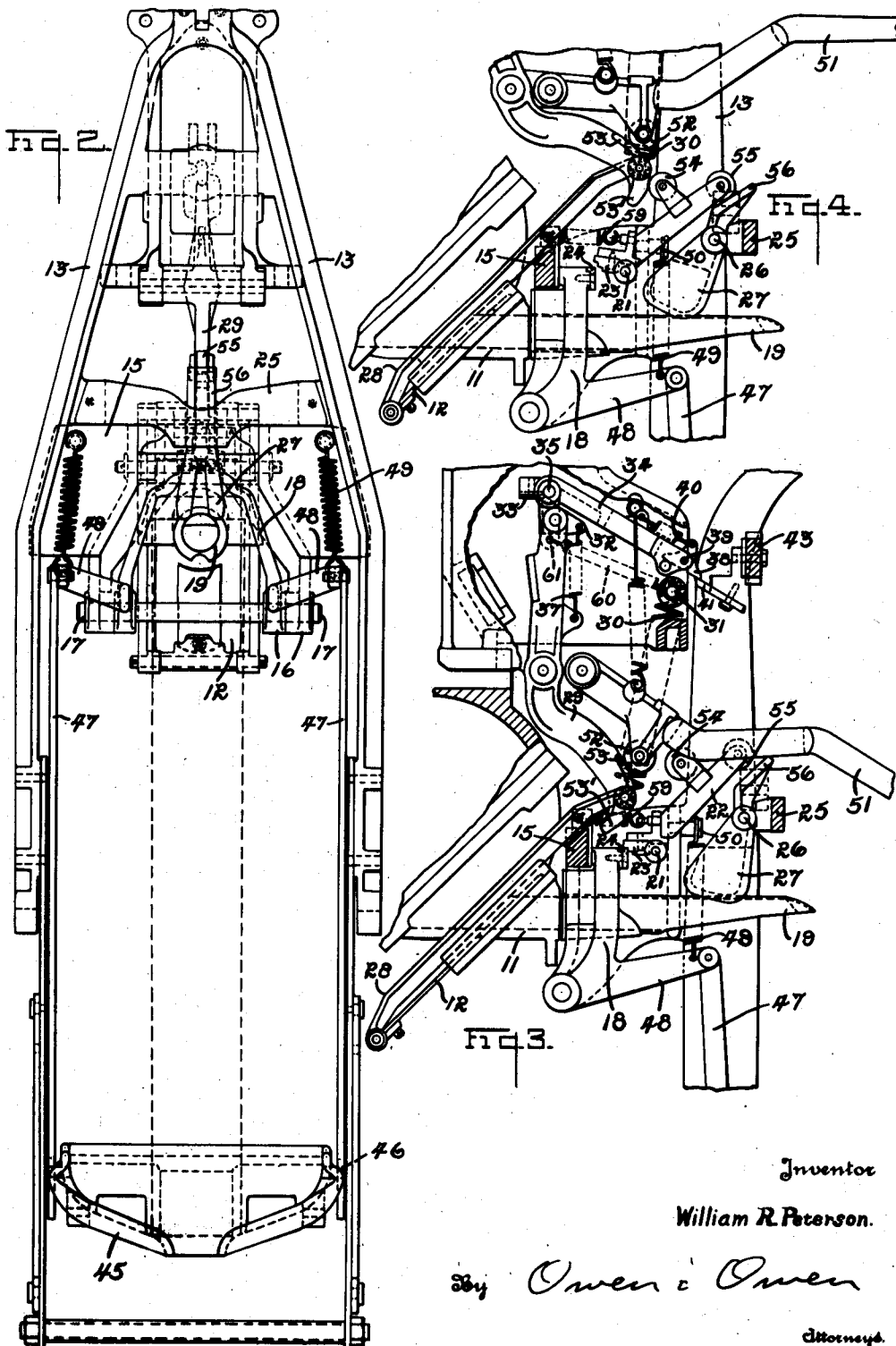
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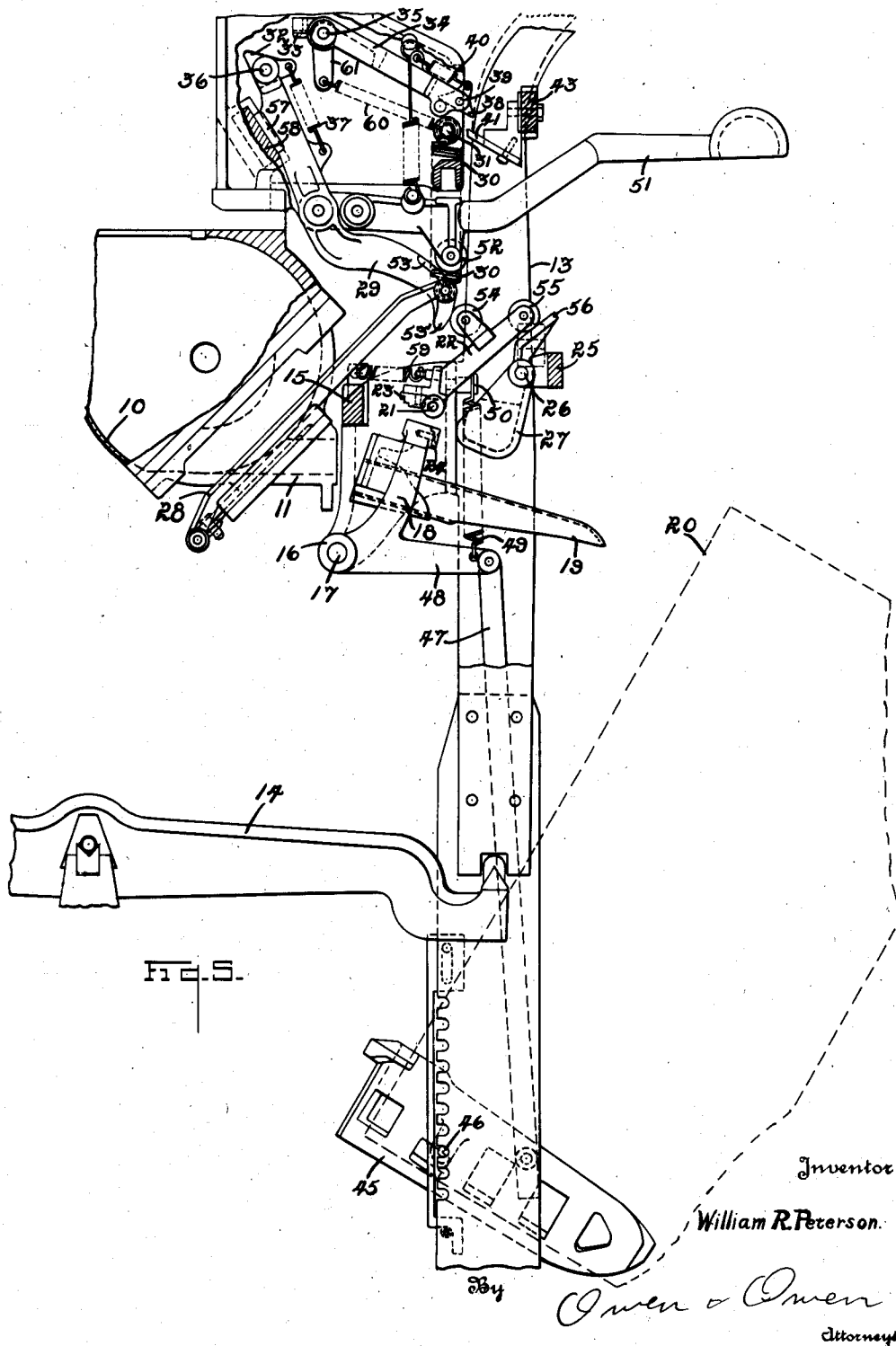
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UNITED STATES PATENT OFFICE

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VALVE BAG FILLING MACHINE

Application filed October 29, 1929. Serial No. 403,300.

This application relates to a valve bag filling machine and more particularly to such a machine in which the bag support is automatically tilted to discharge the bag after the bag has received a sufficient charge. Details of the invention will appear as the description proceeds.

In the accompanying drawings forming a part of this application, Figure 1 is a side elevation of a portion of a machine embodying this invention, parts being broken away and parts being shown in section for purposes of illustration; Fig. 2 is a front elevation of a portion of the device shown in Fig. 1; Figs. 3, 4 and 5 are views of the tripping mechanism and related parts in different positions.

The apparatus shown is provided with a casing 10 from which a centrifugal propeller is adapted to discharge material through a discharge opening 11. A gate 12 closes the discharge opening between the filling of successive bags.

In front of casing 10 there is mounted a frame comprising side bars 13 mounted upon forks of a scale beam 14. A cross piece 15 between the side bars 13 is provided with ears 16 in which there is mounted a pivot pin 17. Upon this pivot pin there is a carrier 18 for a filling spout 19 which normally registers with discharge opening 11, and is adapted to enter a valve opening in a bag 20.

Cross bar 15 also carries pivot 21 upon which there is pivoted a latch 22 carrying a plate 23 adapted to engage a plate 24 on carrier 18 and maintain carrier 18 in horizontal position.

Cross bar 25 units the forward sides of bars 13 and carries a pivot 26 on which there is mounted a locking device 27 adapted to engage the top of bag 20 and hold it upon spout 19.

Connected to the lower end of gate 12 there is a frame 28 pivoted at its upper end to a lever 29. Spring 30 connects the lower end of the lever with a fixed pin 31 on the stationary frame of the apparatus and constantly tends to lift the gate frame and close the gate. The upper end of lever 29 carries a pivoted catch 32 adapted to engage a wear

plate 33 on a latch 34 pivoted to the fixed frame at 35. Catch 32 is pivoted at 36 on the end of lever 29 and is normally held in the position in which it is shown in Figure 1 by a spring 37. The outer end of latch 34 carries a catch 38 pivoted thereon at 39 and normally held in the position in which it is shown in Figure 1 by spring 40. When in this position catch 38 rests upon a wear plate 41 attached to a cross plate 43 mounted on the upper ends of bars 13.

The upper ends of bars 13 are united and are connected by a link 44 with the stationary frame so that bars 13 move upward and downward substantially vertically.

A support 45 for the bottom of the bag is pivoted at 46 on the lower ends of bars 13. Links 47 connect bottom support 45 with arms 48 extending forward from carrier 18. Springs 49 extend from arms 48 to pins 50 mounted on cross piece 15 and normally raise the bottom and spout to the position in which they are shown in Figure 1.

A handle 51 is pivoted to a fixed portion of the frame and carries a roller 52 adapted to engage a wear plate 53 on lever 29 and depress the lever and gate frame and thereby open the gate and permit material to be discharged into the bag.

On the end of lever 29 there is an ear 53 adapted to engage a roller 54 on member 22. Another roller 55 on the upper end of member 22 is adapted to engage an upper extension 56 on locking member 27 under certain conditions. Block 57 on lever 29 is adapted to engage a cushion block 58 mounted on the stationary frame in order to cushion the blow of the lever when the gate is closed.

The operation of the device is as follows. With a bag positioned on the filling device as shown in Figure 1, it will be seen that the gate is open and material will be discharged through passage 11 and spout 19 into the bag until the weight of the material in the bag is sufficient to cause oscillation of the scale beam, whereupon the bag and frame carrying it will be lowered until catch 38 slips off of wear plate 41. This allows wear plate 33 to rise sufficiently to release catch 32, whereupon spring 30 oscillates lever 29 and raises

frame 28 and gate 11, thereby shutting off the flow of material to the bag. When lever 29 is oscillated ear 53 engages roller 54 and swings member 22. As member 22 swings, roller 55 contacts upward extension 56 of locking device 27 and releases this locking device from the bag. At the same time plate 23 is lifted out of engagement with plate 24 so that carrier 18 is released. The position of the parts during the upward movement of ear 23 is indicated in Fig. 4.

After the bag is discharged, springs 49 return the carrier and bottom support to the position in which it is shown in Figs. 1 to 4. While in the position in which the device is shown in Fig. 4, another bag is placed upon the filling spout and thereafter handle 51 is depressed, as indicated in Fig. 3. When the handle is thus depressed, member 22 is swung to the position in which it is shown in Figure 3 by spring 59 so that the spout and bottom support are held in horizontal position until again released by the downward movement of the bag.

A spring 60 connected to an ear 61 on the latch 34 and to pin 31 on the frame overcomes the weight of the outer end of the latch member and normally raises this member slightly higher than the position in which it is shown in Figures 1 and 3 to the position in which it is shown in Figure 5. When the lower end of lever 29 is depressed, spring 37 allows catch 32 to yield as it moves to the right past wear plate 33, but when handle 51 is released the movement to the left of the upper end of lever 29 is stopped by the engagement of catch 32 with plate 33 and therefore the gate remains open until released once more in the manner described above.

While one embodiment of the invention has been described in detail, it will be understood that variations may be made within the scope of the appended claims.

What is claimed is:

1. In a device for filling valve bags, a spout adapted to enter the valve of a bag, a clamp adapted to lock the valve upon the spout, pivotal means upon which the spout is mounted, and a latch adapted normally to maintain the spout in horizontal position, said latch being adapted to engage and release said clamp when the latch is moved to release the spout.

2. In a device for filling valve bags, a spout adapted to enter the valve of a bag, a clamp adapted to lock the valve upon the spout, pivotal means upon which the spout is mounted, a latch adapted normally to maintain the spout in horizontal position, said latch being adapted to engage and release said clamp when the latch is moved to release the spout, a gate adapted to control the flow of material through said spout, a weighing device, means for automatically closing the gate in response to the weighing

device, and means connected with the closing means for the gate for moving said latch in releasing direction.

3. Apparatus for filling valve bags comprising discharge means having a discharge orifice, a gate for controlling the orifice, means to open and close the gate, a spout adapted to enter the valve of the bag and pivoted adjacent said orifice, a spring adapted to raise said spout normally to approximately horizontal position, a latch normally holding said spout in horizontal position, and means connected with said gate for releasing the latch when the gate is closed.

4. Apparatus for filling valve bags comprising discharge means having a discharge orifice, a gate for controlling the orifice, spring means tending constantly to close the gate and power means for opening the gate, a spout adapted to enter the valve of the bag and pivoted adjacent said orifice, a spring adapted to raise said spout normally to approximately horizontal position, a latch normally holding said spout in horizontal position, and means connected with said gate for releasing the latch when the gate is closed.

5. Apparatus for filling valve bags comprising discharge means having a discharge orifice, a gate for controlling the orifice, means to open and close the gate, a spout adapted to enter the valve of the bag and pivoted adjacent said orifice, a spring adapted to raise said spout normally to approximately horizontal position, a latch normally holding said spout in horizontal position, means connected with said gate for releasing the latch when the gate is closed, a bottom support for the bag pivoted at one side thereof, and a link connecting the bottom support with the filling spout whereby the spout and support tilt together.

In testimony whereof I have hereunto signed my name to this specification.

WILLIAM R. PETERSON.

DISCLAIMER

1,818,095.—*William R. Peterson*, Chicago, Ill. VALVE BAG FILLING MACHINE. Patent dated August 11, 1931. Disclaimer filed July 31, 1933, by the patentee, assignee, *St. Regis Paper Company*, assenting and confirming.

Hereby enters this disclaimer to the word "power" in claim 4 in the said Letters Patent.

[*Official Gazette August 29, 1933.*]