J. C. SCHAFFER.

FEEDING DEVICE.

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1,270,332.

Patented June 25, 1918.

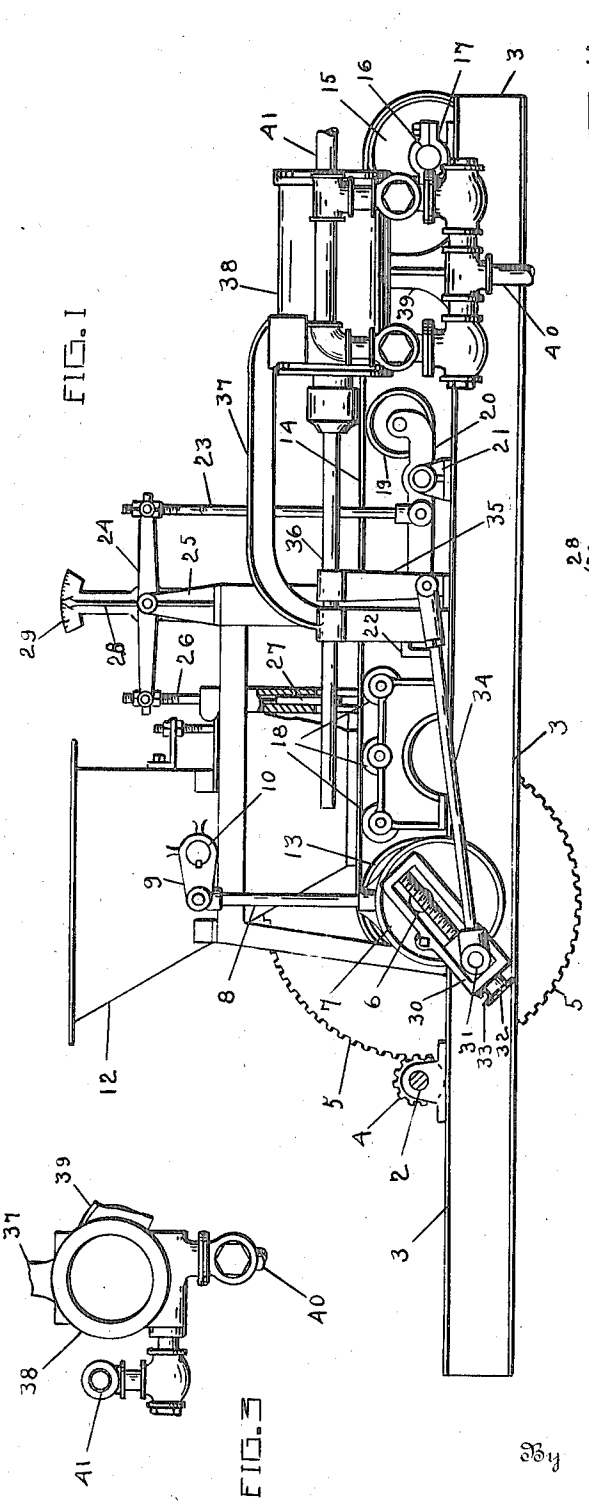


FIG. 1

FIG. 3

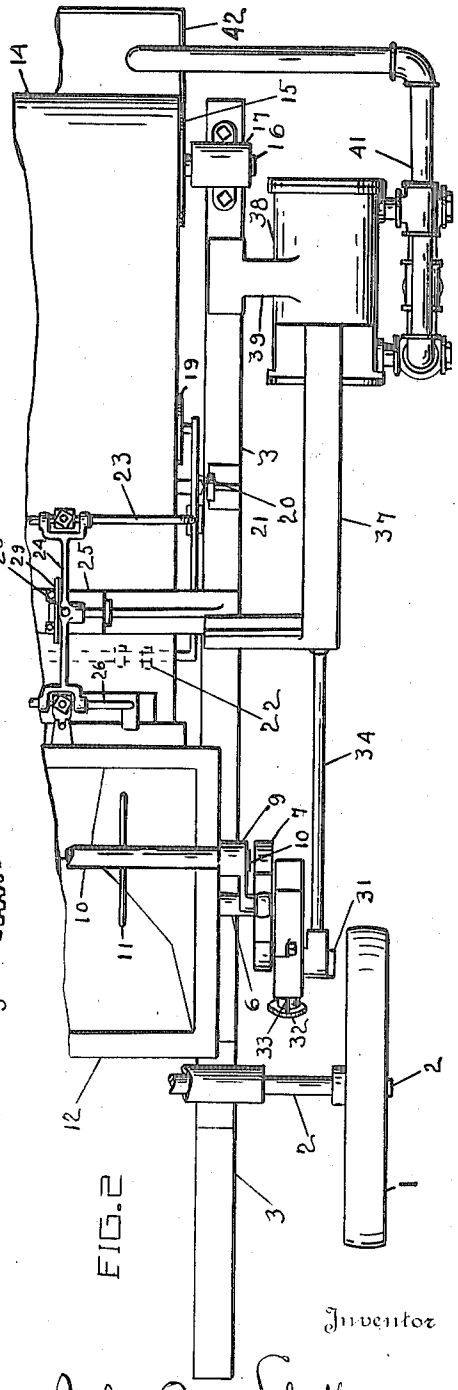


FIG. 2

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FEEDING DEVICE.

1,270,332. Specification of Letters Patent. Patented June 25, 1918.

Application filed April 26, 1915. Serial No. 24,175.

To all whom it may concern:

Be it known that I, JOHN C. SCHAFFER, a citizen of the United States of America, and resident of Tiffin, Seneca county, Ohio, have invented new and useful Feeding Devices, of which the following is a specification.

This invention relates to mechanism for delivering a liquid in determined quantity as to a determined quantity of another material.

This invention has utility when incorporated in mechanism for moistening material, as flour, clay, lime, etc., operating to supply determined weight of one as to determined volume of the other.

Referring to the drawings:

Figure 1 is a side elevation of an embodiment of the invention for handling say a determined weight of dry material as to a determined volume of liquid;

Fig. 2 is a fragmentary plan view of the device of Fig. 1; and

Fig. 3 is a fragmentary end elevation of the liquid delivery mechanism or pump.

The moistening device may be actuated by the driving pulley 1 mounted on the shaft 2 carried by the frame 3. Upon the end of the shaft 2 remote from the pulley 1 is the pinion 4 in mesh with the gear wheel 5 upon the driver or main shaft 6.

The shaft 6 carries the eccentric 7 remote from the gear wheel 5. The eccentric 7 is engaged by the connecting rod 8 extending to the crank 9 on the shaft 10 having the agitator arms 11, serving in the rocking of the shaft 10 to loosen material in the bin or hopper 12.

Mounted on the shaft 6 is the driving pulley 13 for the conveyer belt or way 14 extending about the idler pulley 15 mounted on the shaft 16 carried by the bearings 17 on the frame 3. The conveyer 14 forms the bottom for the hopper 12 and in this region is sustained by the idler rollers 18. Additional sustaining roller 19 for the belt 14 is provided and mounted on the lever 20 having the fulcrum bearing 21. This lever 20 may have mounted thereon, remote from the roller 19, counterweights 22 of such number and weight as may be desired for determining the flow weight of material along the belt 14, for there is connection from the lever 20 for automatically regulating the supply from the bin 12 to the belt 14. This is accomplished by the link 23 extending to the lever 24 mounted in the fulcrum bearing 25. This lever 24, as actuated by the lever 20, through the link 23 operates the rod 26 to raise or lower the slide or gate 27, thus determining the thickness of material from the bin 12 drawn therefrom by the belt 14 in its travel toward the pulley 15 to discharge thereover. The index pointer 28 fast with the lever 24 in its travel across the scale 29 discloses the position for counterbalancing the idler 19, as well as the fluctuations in belt loading which are automatically cared for by the mechanism herein by adjustment to any degree of refinement found desirable in practice. This degree of refinement in handling widely varying stocks, as from lumpy clay to hair plaster has without intermediate adjustment varied less than 1%.

Controlled for actuation from the driver 6 which drives the conveyer 14, is the liquid delivery mechanism. Mounted on the eccentric 7 of the shaft 6, is the plate 30 carrying the wrist pin 31 adjustable by the handwheel 32 held in set positions by the spring detent 33. Engaging the wrist pin 31 is the connecting rod 34 extending to the hanger arm 35 fast to the piston rod 36 movable in the bracket 37. The piston rod 36 extends into the pump cylinder 38 carried by the bracket 39 on the frame 3. The liquid or water supply line 40 for the pump provides the determined volume of material to be discharged through the line 41 from the pump into a determined weight of material simultaneously and continuously delivered to the vessel 42.

In the operation of the moistener device, material supplied in the bin 12 may have commingled therewith a liquid in determined volume ratio of the liquid as to weight of the material from the bin. This ratio may be maintained even should the driving speed of the conveyer change, for the pump 36, 38, is driven at a determined rate relatively to the travel of the conveyer by the driver 6 which is driving each.

The adjustments of the conveyer and pump may extend over a wide range relativly to each other and be effected with a most minute degree of refinement. The regulation of the loading of the conveyer is determined by the weights 22 on the lever 20, while adjustment of the wrist pin 31 may vary the piston rod travel from a maximum in the cylinder 38 to zero. This

insures exact regulation of the liquid supply as to the conveyer handled material, and the liquid is delivered only during the running of the conveyer.

What is claimed and it is desired to secure by Letters Patent is:

1. Mechanism for mixing a plurality of substances in given proportions comprising a belt conveyer, means for operating the same, a device for feeding one substance to be mixed and having adjustable operating connections with said conveyer operating means, a supply hopper having adjustable discharge means for feeding another substance to be mixed, and automatic weighing means coacting with the conveyer to regulate the charge of the latter mentioned substance supplied to the conveyer relatively to the adjustment of the first named feeding device.

2. Mechanism for mixing a plurality of substances in given proportions comprising a belt conveyer, means for operating the same, a liquid measuring device for feeding one substance to be mixed and having adjustable operating connections with said conveyer operating means, a supply hopper having adjustable discharge means for feeding another substance to be mixed, and adjustable weighing means disposed to sustain a portion of the traveling belt conveyer and extending to operate the adjustable discharge means from the hopper to regulate the charge of the latter mentioned substance supplied to the conveyer relatively to the adjustment of the liquid measuring device.

In witness whereof I affix my signature.

JOHN C. SCHAFFER.