(No Model.) 2 Sheets—Sheet 1.

F. H. RICHARDS.

REGULATOR FOR GRAIN WEIGHERS.

No. 434,723. Patented Aug. 19, 1890.

Fig. 1

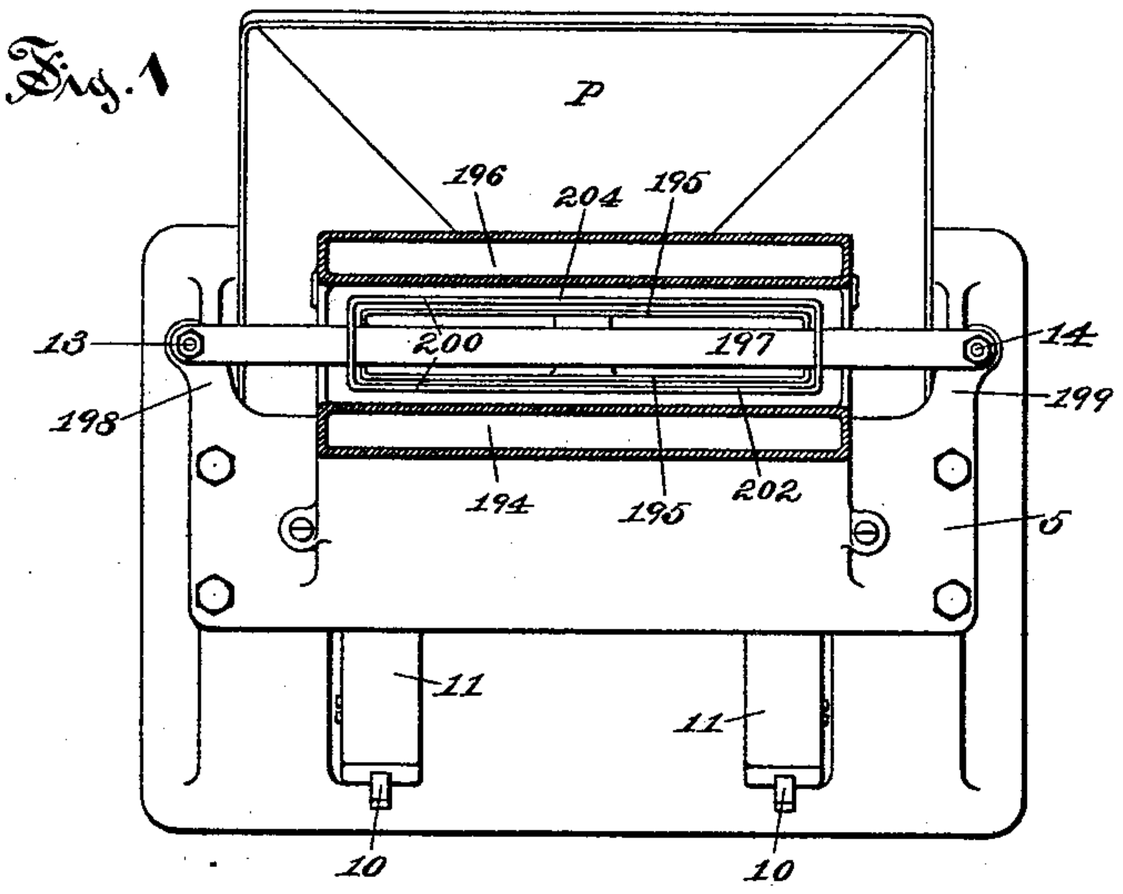
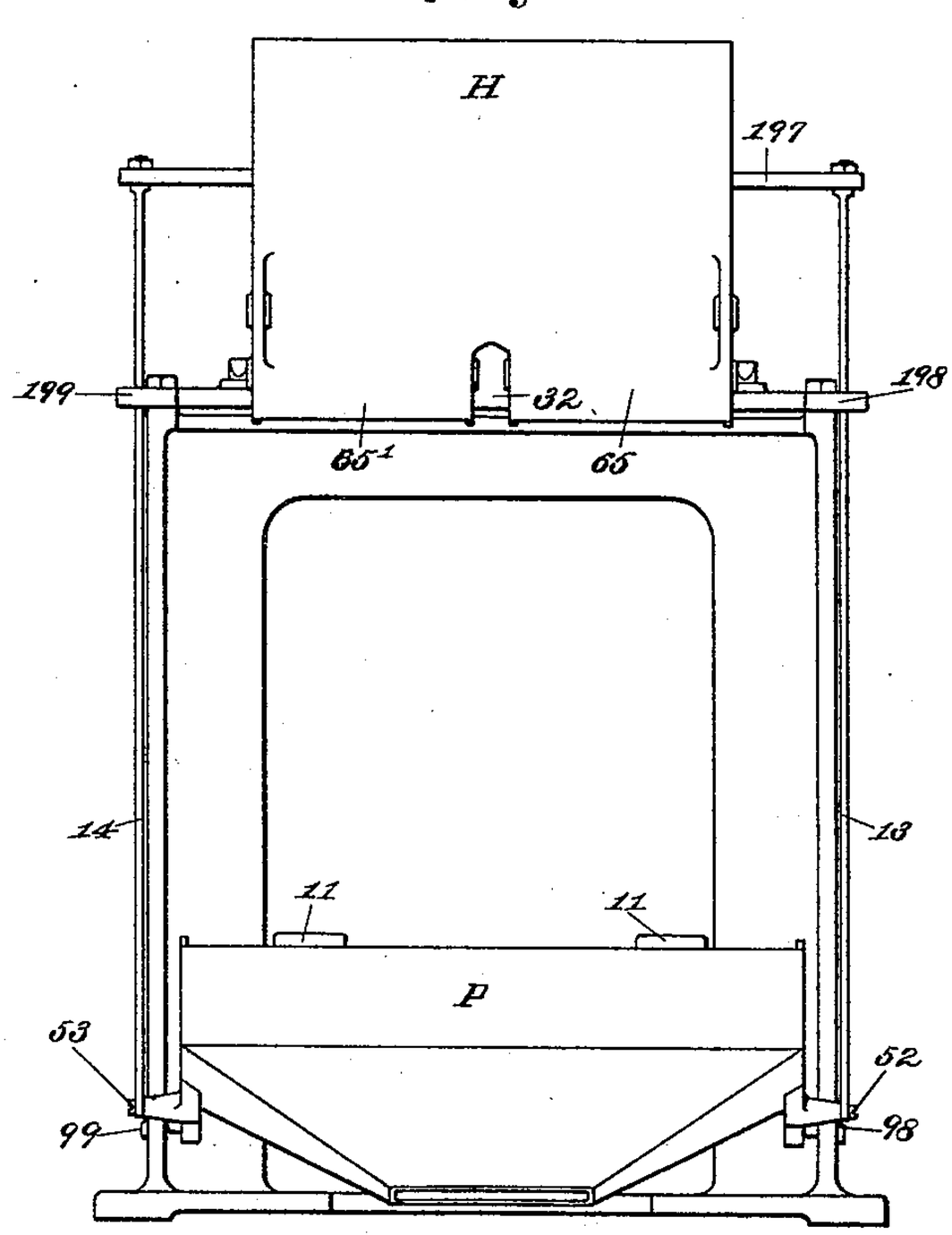


Fig. 2



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(No Model.) 2 Sheets—Sheet 2.

F. H. RICHARDS.

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Fig. 5

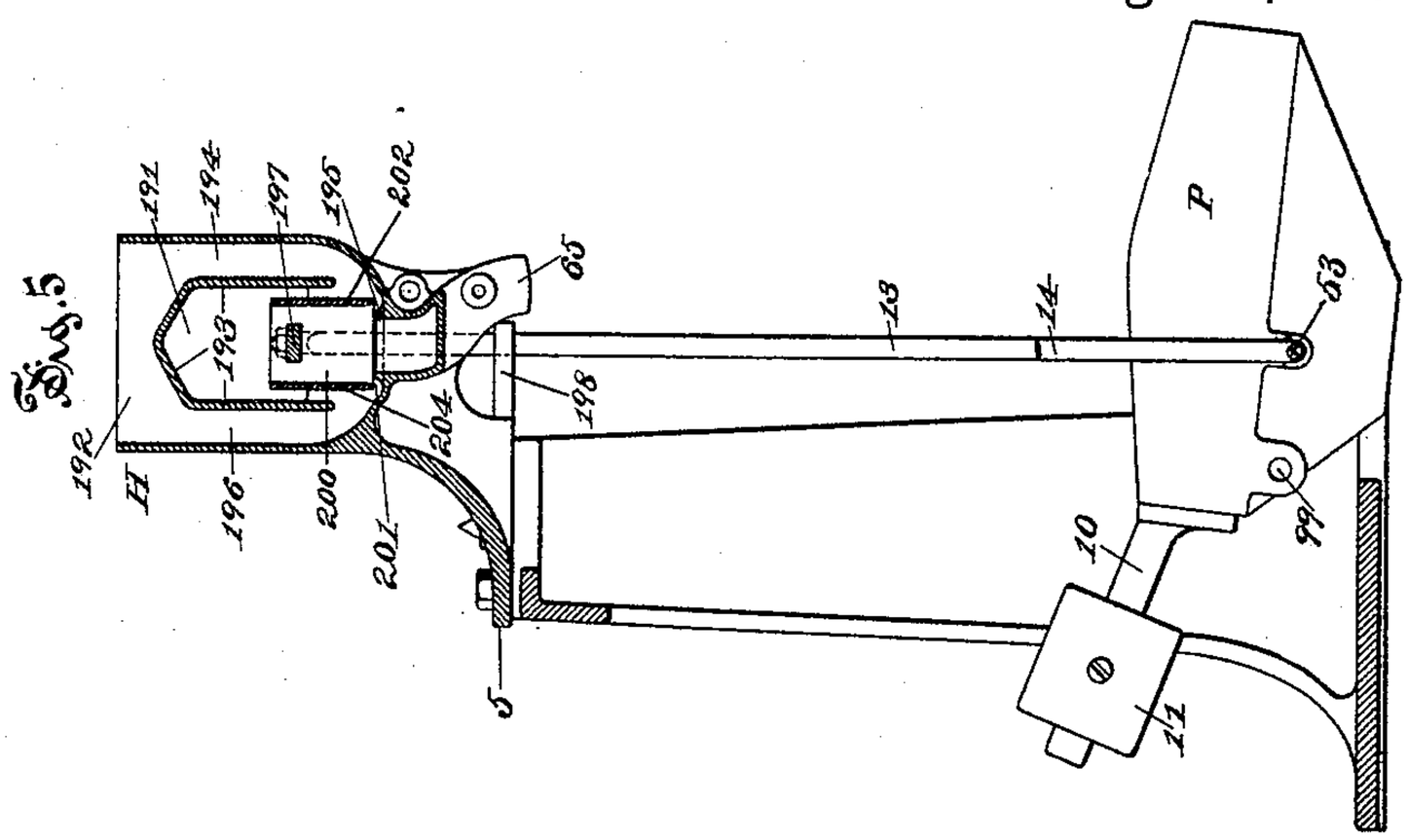


Fig. 4

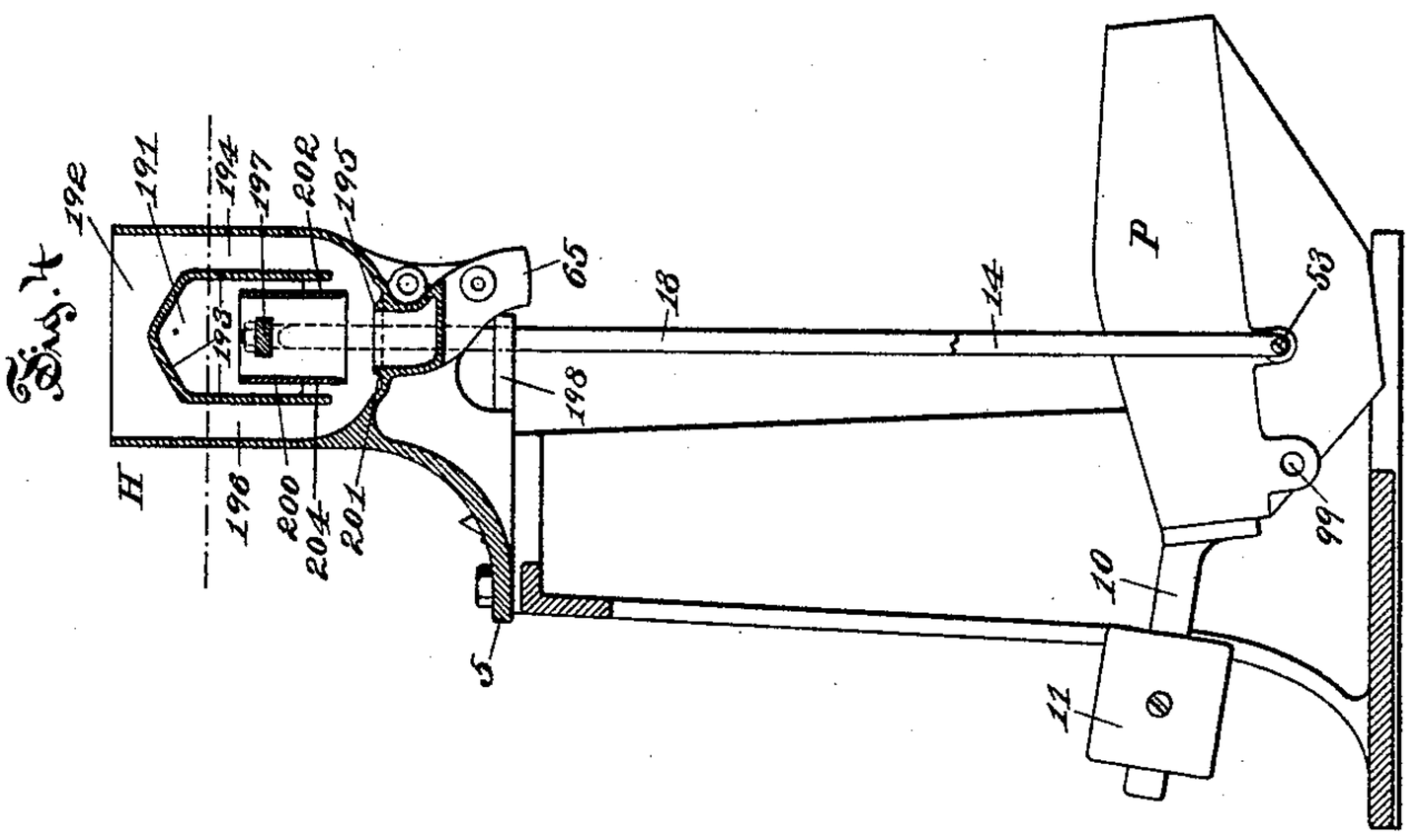
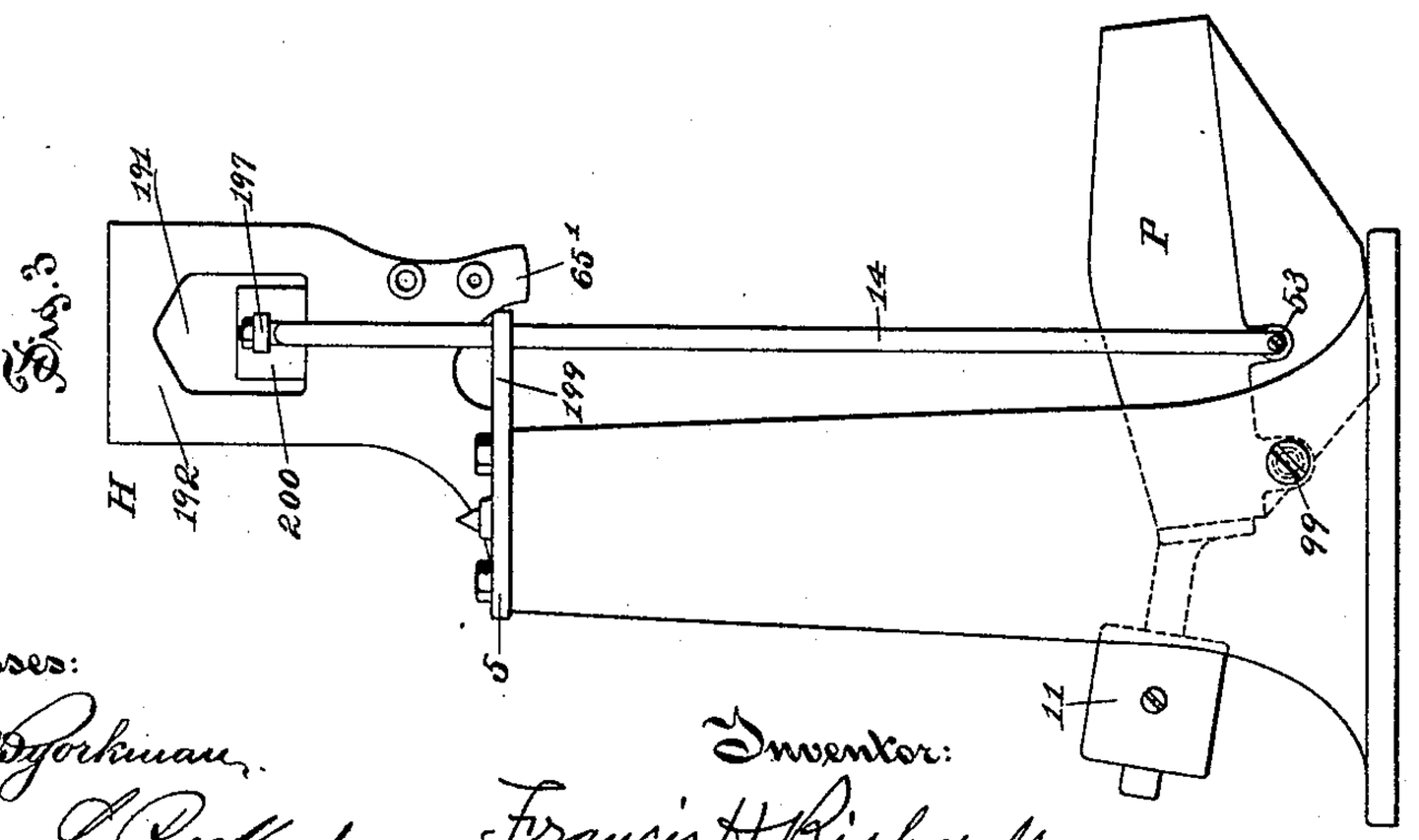


Fig. 3



Witnesses:
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Inventor:
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UNITED STATES PATENT OFFICE.

FRANCIS H. RICHARDS, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE PRATT & WHITNEY COMPANY, OF SAME PLACE.

REGULATOR FOR GRAIN-WEIGHERS.

SPECIFICATION forming part of Letters Patent No. 434,723, dated August 19, 1890.

Application filed March 21, 1890. Serial No. 344,717. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS H. RICHARDS, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Regulators for Grain-Weighers, of which the following is a specification.

This invention relates to regulators for automatic grain-weighers, the object being to control or "regulate" the operation of the grain-weigher by means of the accumulation of the discharged grain.

In the drawings accompanying and forming a part of this specification, Figure 1 is a plan view of the frame-work of a grain-weigher having thereon my improved regulator apparatus. Fig. 2 is a front elevation of the machine. Fig. 3 is a left-hand side elevation of the same. Figs. 4 and 5 are sectional side views illustrative of the operation of my improved regulator.

Similar characters designate like parts in all the figures.

The regulator apparatus herein shown and described is also shown in my application, Serial No. 342,657, filed March 4, 1890, where it is used in connection with a complete automatic grain-weigher, and such parts of the said machine as are shown herein are designated by the same reference characters.

The regulator-hopper P is pivoted at 98 and 99 to the frame-work, and is furnished with one or more weighted arms, as 10 10, having thereon suitable counter-weights, as 11 11. Said regulator P, acting through the rods 13 and 14, pivoted thereto at 52 and 53, operates the regulator valve or "gate" 200. The lower ends on the rods 13 and 14 are pivotally attached to the hopper, and at their upper ends they are secured to the valve-bar 197. As a means for guiding the regulator-gate, the said rods pass through mortises in the projecting arms 198 and 199 of the top plate 5, said arms acting as guides for the said rods. The supply-chute H is shown of a form and construction suitable for using the regulator herein described and claimed. The upper portion of the said chute has the openings 191 formed in the end walls 192 thereof, said openings being surrounded at top and at the two sides thereof by the walls 193. The said walls 193 extend from side to side longitudinally of the chute, connecting the said end walls 192 and dividing the said chute centrally and forming the side passages 194 and 196. A rim or flange 195 is formed around the top of the outlet of the chute, the groove or depression 201 being thus formed in the chute around said flange. The lower portion of the outlet of the chute is shown divided into two parts, forming the separate outlets 65 and 65′, as and for the purposes described in my said application; but that feature is not material to my present invention. The bar 197 extends from side to side through the opening 191 in the supply-chute H and carries thereon the box-shaped valve or gate 200, which gate is open at the bottom and, preferably, also at the top, as shown. On the lowering of the hopper the rods 13 and 14 draw down the said regulator-valve 200 from its position in Fig. 4 to its position in Fig. 5, thereby bringing the valve-edges close down around the rim or flange 195, so that the lower edges thereof sink to the groove 201, thus cutting off the flow of grain from said chute into the discharge-spout 65 thereof. The grain, following down in the chute H through the two passage-ways 194 196, comes against the blades 202 and 204 of the valve 200, respectively, from opposite directions, so that said valve is balanced as to the lateral pressures and is not resisted in its vertical movement by said pressures. The chute H being open at the ends, as at 191, free access is given to the said valve or gate for removing obstructions and for assembling or disassembling the parts. By means of the construction and arrangement set forth the balanced gate 200 cuts off the flow of grain from a single passage or discharge spout for delivering grain from the passage-ways to a single grain-bucket.

The "regulator" P herein shown is supposed to be the same regulator which is described and claimed in the application of C. H. Cooley and F. H. Richards, Serial No. 340,284, filed February 13, 1890; but other well-known regulators operated by the discharged grain, if suitably connected to actu-

ate the said valve, may in some cases be employed.

Having thus described my invention, I claim—

1. In a regulator apparatus for grain-weighers, the combination, with the supply-chute having one discharge-passage and two supply-passages leading downward and meeting at the discharge-passage below an open space protected by walls on the sides and top thereof, of the valve 200, consisting of vertical walls surrounding said discharge-passage and constructed to move freely within said walls, the regulator, and connections, substantially as described, from said regulator to said valve, the connection being made with the valve through openings at the sides of the supply-chute between said walls.

2. In a regulator apparatus for grain-weighers, the combination, substantially as shown, with a regulator and with the chute H, having the discharge-spout 65 and the supply-passages 194 and 196, leading to said discharge-passages, of the walls 193 between said passages 194 and 196 and inclosing the space 191, which space extends through the sides of the chute H, forming said openings between said supply-passages, and the valve 200, consisting of walls inclosing the upper end of said discharge-passage and having the carrier-bar extending outward from the chute through said side openings, said carrier-bar being connected with the regulator.

3. In a regulator apparatus for grain-weighers, the combination, with the grain-weigher frame-work carrying a regulator, substantially as described, of a chute carried on said frame-work and having the passages 194 and 196, leading to the discharge-spout, the walls 193, between said passages and inclosing the space for the regulator-valve, and the regulator-valve 200, consisting of walls inclosing the upper end of said discharge-spout and carried by a bar extending through said space within the walls 193, guides, as 198 and 199, on the frame-work, and connections from the regulator through said guides and carrying the valve on the upper ends thereof.

FRANCIS H. RICHARDS.

Witnesses:

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