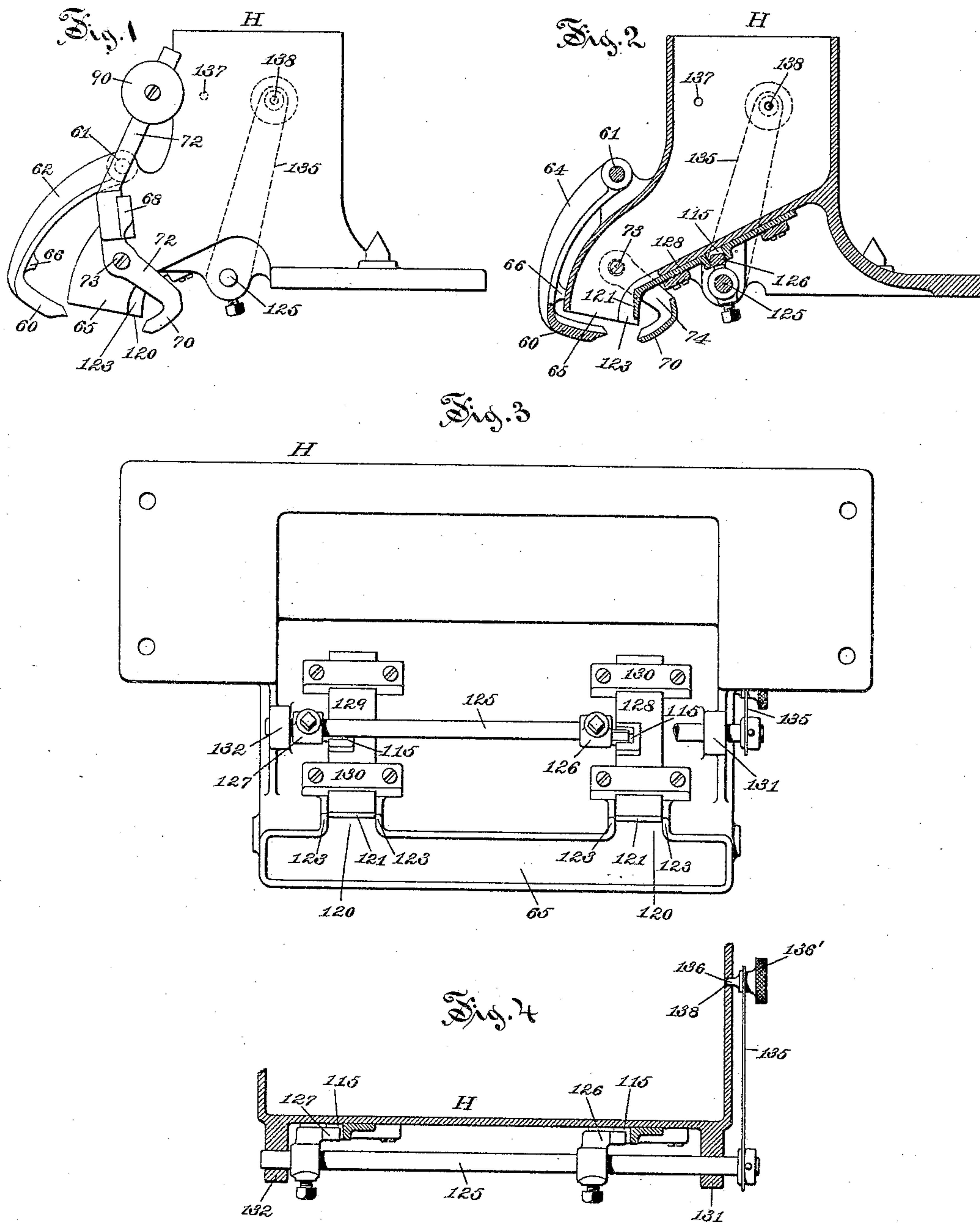


(No Model.)

C. H. COOLEY & F. H. RICHARDS.
GRAIN WEIGHER.

No. 442,861.

Patented Dec. 16, 1890.



Witnesses:

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UNITED STATES PATENT OFFICE.

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GRAIN-WEIGHER.

SPECIFICATION forming part of Letters Patent No. 442,861, dated December 16, 1890.

Original application filed February 11, 1890. Serial No. 339,967. Divided and this application filed July 14, 1890. Serial No. 358,660. (No model.)

To all whom it may concern:

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

This invention relates to automatic grain-weighers, and has for its object to furnish means for adjusting the supply-chute to regulate the quantity of "drip" for making up the completed load.

This application is a division of our prior application, Serial No. 339,967, filed February 11, 1890, to which reference may be had for a more particular description of the framework and mechanism generally.

In the drawings accompanying and forming a part of this specification, Figure 1 is a side view of the upper part of a grain-weigher embodying our present improvements. Fig. 2 is a vertical transverse section of the same, and is illustrative, also, of the operation of the improvements. Fig. 3 is a plan view of the under side of the supply-chute, together with the adjustable plates and the means for operating the same. Fig. 4 is a sectional front view, as seen from the left hand in Figs. 1 and 2, showing the construction of certain details of the mechanism.

Similar characters designate like parts in all the figures.

The supply-chute H (shown in end view in Fig. 1 and in inverted plan view in Fig. 3) is or may be the same as the part H shown and described in our said prior application. The reducing-valve 60 is carried at the front (at the left hand in Figs. 1 and 2) of said chute by a shaft or pivots 61, on which the reducing-valve arms 62 and 64 are supported, said valve being furnished with a suitable stop, as 66, to limit the closing movement thereof to a determined point. Said valve 60 closes under the outlet 65 of the chute H somewhat more than half the width thereof, as indicated in Fig. 2, wherein the reducing-valve is shown fully closed, and partially cutting off or "reducing" the flow of grain. The means

for actuating this valve are not shown in this application, being no part of this invention; but suitable means therefor are shown in said prior application. The edge or rearward side of the reducing-valve forms the front side or "wall" of all the drip-channels.

The cut-off valve 70 is carried by the arms 72 and 74, which are pivoted at 73 to the supply-chute H. As shown in the drawings, Fig. 1, the cut-off-valve arm 72 is continued above the pivot 73, and carries the cut-off cam 68 and some suitable weight, as 90. The means for actuating said valve 70, not being a part of our present invention, are not shown herein; but suitable means therefor are fully shown and described in our said prior application. The cut-off valve, as will be seen from the drawings, closes under the movable wall 121 hereinafter described, and coacts with the reducing-valve to entirely cut off the flow of grain.

At the lower end of the supply-chute and on the rear side of the discharge-outlet 65 openings are formed in the rear wall of said chute, which openings constitute drip-channels. Said openings (indicated by 120 in Fig. 3) are bounded at the ends by the end walls 123 and on the rearward side by the depending forward ends 121 of the slides 128 and 129, which slides are fitted to slide in the guides or straps 130, that are fixed by screws or other suitable means to the under side or floor of the supply-chute H, as well shown in the drawings. By sliding said walls 121 forward or backward toward or from the reducing-valve the area of the drip-channels 120 may be regulated as desired. For simultaneously and conveniently operating said slides or one or more of them, we provide a shaft or rod 125, which is carried in suitable bearings, as 131 and 132, formed on the chute H. Said shaft has fixed thereto arms, as 126 and 127, which engage with notches formed at 115 in said drip-adjusting slides 128 and 129, respectively, and which act as levers through which to move the said slides and walls. An arm 135 is shown fixed to said shaft outside of the chute H for actuating the shaft to move the slides. As shown in the drawings, said

arm 135 is a spring-arm and is provided with a knob 136' and with a detent-pin 136 for locking the slides by entering the holes, as 137 and 138, formed in the chute II and suit-
 5 ably located for holding the slides at the proper position for any particular kind of grain, it being supposed that, as shown in the drawings, the hole 137 is properly located for weighing wheat, while the hole 138 is so lo-
 10 cated for weighing corn. The required position of said holes for any particular size and kind of grain is readily determined experimentally. The slides 128 and 129 may be narrow, as shown in Fig. 3, or may be much
 15 wider, even to include the entire length of the rear wall of the spout, and may be formed in separate parts, as shown, or may be formed integral, as not herein shown, but as will be readily understood.

20 In operating our present improvements the operator has only to place on the grain-weigher weights suitable for the grain to be weighed, and then by means of the knob and spring-arm to withdraw the pin 136 and turn
 25 the shaft to bring the slides to the position properly corresponding to the kind of grain to be weighed, and to lock the slides in position by engaging said pin 136 with the proper pin-hole in the chute II. In practice we des-
 30 ignate said pin-holes by suitable lettering—as, for instance, by placing over each pin-hole the name of the kind of grain to be weighed when the spring-arm pin engages said hole.

35 Having thus described our invention, we claim—

1. In a grain-weigher, the combination, with the supply-chute and with the reducing-valve closing to a determined point under said
 40 chute, of a movable wall forming the rear wall of the chute at the lower end thereof and forming the rear wall of the drip-channel, said valve forming the front wall of the drip-channel, and said movable wall being mov-
 45 able laterally of the chute toward and from the edge of the valve for regulating the size of the drip-channel.

2. In a grain-weigher, the combination, with the supply-chute and with the reducing-valve
 50 closing under said chute to a determined point and forming the front wall of the drip-

channel, of a portion of the rear wall of said chute made laterally adjustable to vary the area of the drip-opening, a slide carrying said movable wall toward and from the edge of
 55 the valve, an arm connected, substantially as described, to actuate said slide for setting said wall at points suitable for different kinds or sizes of grain, and means, substantially as de-
 60 scribed, locking said arm in said positions respectively.

3. In a grain-weigher, the combination, with the supply-chute and with a cut-off valve therefor, of drip-adjusting slides arranged in series, a shaft operatively connected, sub-
 65 stantially as described, to actuate said slides, the spring-arm connected to said shaft and having a pin engaging holes located for setting said slides in positions for different sizes or kinds of grain.

4. In a grain-weigher, the combination of a supply-chute and a reducing-valve, said chute having one or more drip-channels 120 located between end walls and having be-
 75 tween each pair of end walls a movable rear wall, substantially as described, said valve forming the front side and said movable walls the rear side of the drip-channels.

5. In a grain-weigher, the combination, with a chute carrying a cut-off valve and having
 80 a drip-channel in one of the walls thereof, of the drip-adjusting slide carrying the movable wall of said channel, caps guiding said slide, and the shaft carrying an arm engaging said slide and having a shaft-actuating arm pro-
 85 vided with means for locking said shaft and slide in successive positions.

6. In a grain-weigher, the combination, with the supply-chute and with the reducing-valve closing under said chute from one side thereof
 90 to a determined point, of the movable wall at the lower end of said chute on the side thereof opposite to said reducing-valve, and a cut-off valve, substantially as described, closing un-
 95 der said movable wall and coacting with said reducing-valve to fully close the chute.

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