(No Model.) 2 Sheets—Sheet 1.

C. J. HARTLEY.

AUTOMATIC GRAIN WEIGHER.

No. 410,241. Patented Sept. 3, 1889.

Fig. 1.

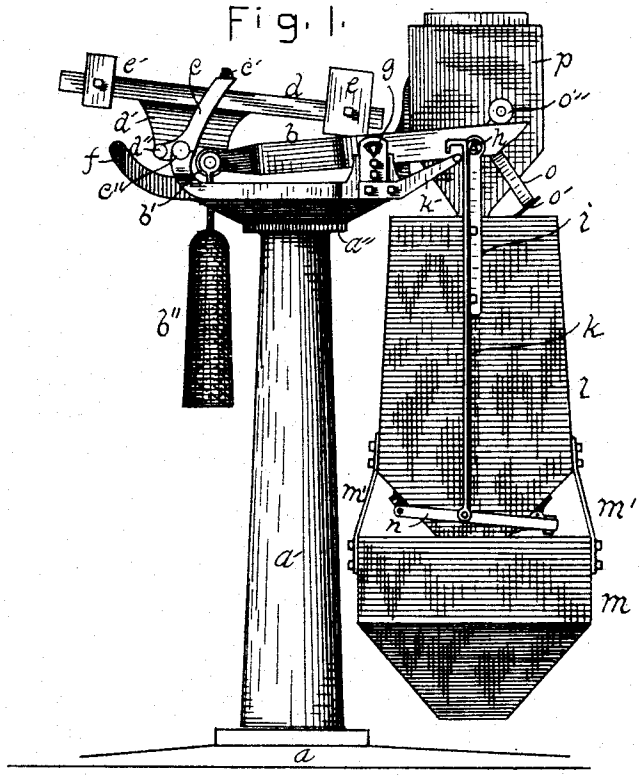
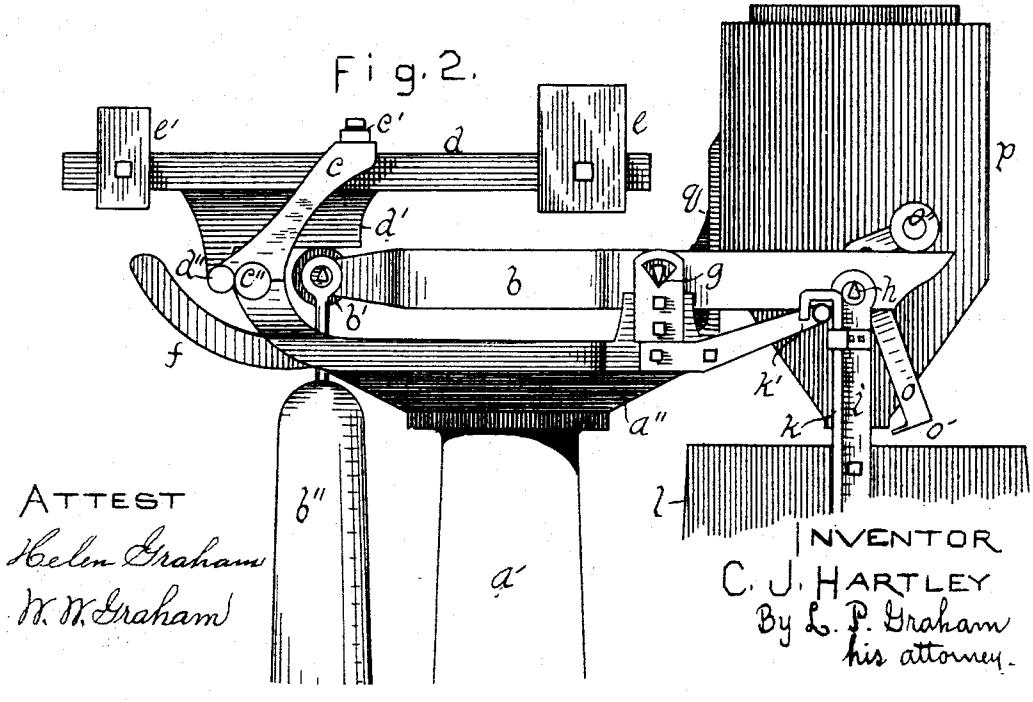


Fig. 2.



ATTEST

Helen Graham

W. W. Graham

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C. J. HARTLEY

By L. P. Graham

his attorney.

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

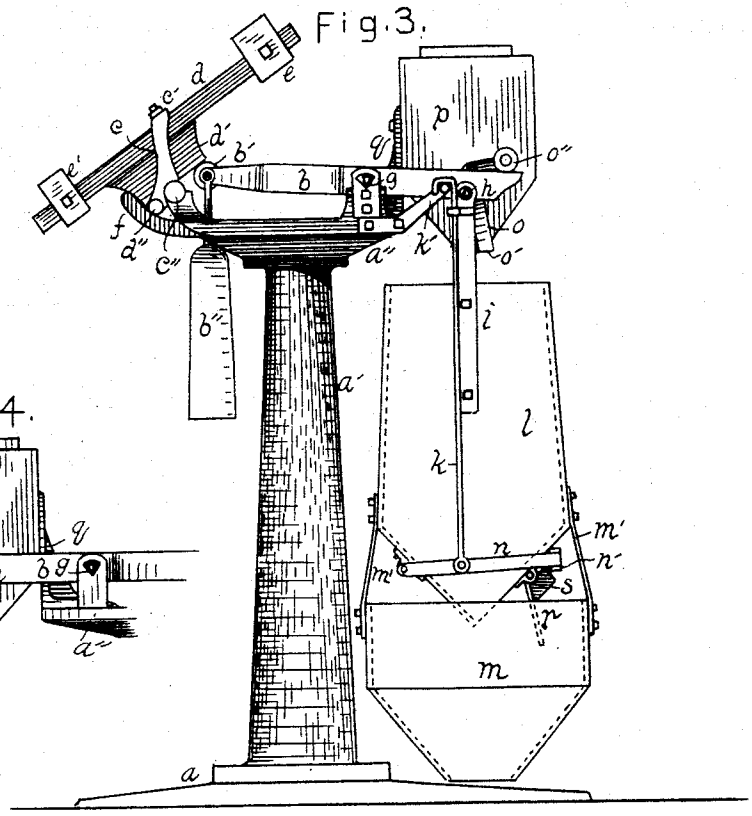


Fig. 4.

Fig. 5.

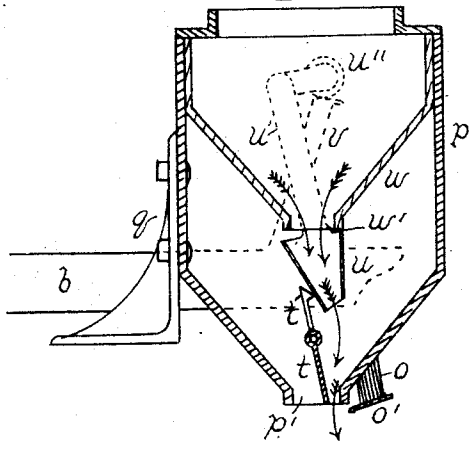
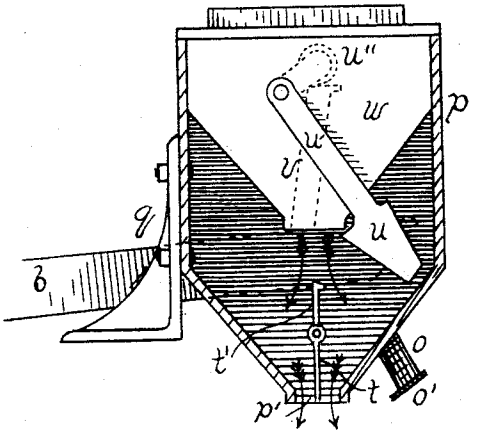


Fig. 6.



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UNITED STATES PATENT OFFICE.

CHARLES J. HARTLEY, OF DECATUR, ILLINOIS, ASSIGNOR OF TWO-THIRDS TO JOHN K. WARREN AND BRADFORD K. DURFEE, OF SAME PLACE.

AUTOMATIC GRAIN-WEIGHER.

SPECIFICATION forming part of Letters Patent No. 410,241, dated September 3, 1889.

Application filed January 30, 1889. Serial No. 298,041. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. HARTLEY, of the city of Decatur, county of Macon, and State of Illinois, have invented certain new and useful Improvements in Automatic Weighers, of which the following is a specification.

My invention is designed for use in mills and other places where perfect accuracy is desirable; and it consists in the details of construction and combinations of parts hereinafter set forth and claimed.

In the drawings accompanying and forming a part of this specification, Figure 1 shows my device in side elevation as it appears while the weighing-receptacle is receiving a full flow of grain from the hopper. Fig. 2 is a side view of the upper portion of the device, showing the parts as they appear when the weighing-receptacle is nearly filled and the flow of grain is diminished. Fig. 3 shows the device with the hopper closed and the discharge-door of the receptacle opened. Fig. 4 is an elevation of the opposite side of the hopper and termination of the scale-beam. Fig. 5 is a vertical section through both compartments of the hopper, showing the arrangement of parts therein when the weigher is in the position shown in Fig. 2. Fig. 6 is a vertical section through the outer or lower compartment of the hopper, showing the internal arrangement of parts as they appear when the weigher is in the position shown in Fig. 1.

The column a' stands on base a, and supports bed-plate a''. The scale-beam b pivots at g on upward extensions from the bed-plate, and has the roller b' and weight b''. The weight-beam d has the subvening portion d', that rests on the roller and pivots at d'' in frame c. Frame c extends over the weight-beam, has adjusting-screw c', and is pivoted at c'' in bearings on the bed-plate. Weights e and e' are adjustably secured to opposite ends of the weight-beam. Hopper p is supported from the bed-plate by bracket q. The scale-beam embraces the hopper and supports at h the straps i, from which the weighing-receptacle depends. The discharging-hopper m is suspended from the weighing-receptacle l by straps m' m'. Door r tends to hang open, as shown in Fig. 3, and it has a block s, against which the weighted end n' of arm n bears to hold the door closed, as shown in Fig. 1. Rod k connects with arm n, and has a curved upper termination adapted to engage projection k' of the bed-plate. The hopper has on opposite sides arms o, that carry the cut-off o' for the hopper p. On one side of the hopper a crank-extension o'' of an arm o carries a roller that rests on the scale-beam and partakes of the motion thereof. Inside the hopper is the primary compartment w, having the contracted outlet w'. Arms u' carry the spout u. On one side of the hopper (see Fig. 4) crank-arm u'' swings in connection with an arm u', as indicated by dotted lines in Figs. 5 and 6. On the scale-beam is rigid arm v, that actuates the crank-arm u'' and shifts the spout. A swinging partition t hangs normally in the center of the contracted outlet p' of hopper p, and has the trip-arm t' upwardly extending.

With the device in the position shown in Fig. 1 the spout u is held to one side of the outlet of compartment w, and the partition t hangs pendent, as shown in Fig. 6, thus permitting the grain or other measurable commodity to flow freely through the hopper, as indicated by the arrows in said figure. When the receptacle is filled with nearly the required weight, the weight-arm swings on pivot d'' to the position shown in Fig. 2, where it is in contact with frame c. The pivot c'' of frame c is nearer roller b than is pivot d'', and consequently the weight e is given greater leverage and the descent of the receptacle is temporarily checked. At this juncture the spout has swung to the position shown in Fig. 5, the partition t has been forced to one side by contact of the spout with trip-arm t', and the flow is diminished to some extent by the contracted outlet of the spout, and to a greater extent by the diminished space between the diverted partition and a side of the hopper-outlet. The grain is now directed, as indicated by arrows in Fig. 5, and fed to the receptacle in a small stream of constant size until the required weight has accumulated, when a further descent of the receptacle permits cut-off o' to instantaneously close the already-diminished outlet, and immediately thereafter the block s passes from contact

with weight n' and permits door r to swing open. The grain is discharged into the hopper m and there retained some little time, with the result that the door does not close until the receptacle is entirely empty, and the receptacle rises slowly, permitting the weight-beam to fall gently to its normal position. The weight b'' balances the weighing-receptacle. The weight e' balances the weight-beam, and so weight e may be adjusted according to a customary set of gradations on the weight-beam, with the assurance that the result will be in accurate conformity with such adjustment.

I claim as new and desire to secure by Letters Patent—

1. An automatic weigher comprising a scale-beam, a weighing-receptacle supported from an end of the scale-beam, and a weight-beam acting on the opposite end of the scale-beam and having two fulcrums at different distances from said end, as and for the purpose set forth.

2. An automatic weigher comprising a weighing-receptacle supported from an end of a scale-beam, a weight-beam acting on the opposite end of the scale-beam and having two fulcrums at different distances from said end, a supply-hopper, and a partial closure for the hopper adapted to operate at the time the weight-beam shifts from one fulcrum to the other, as and for the purpose set forth.

3. In automatic weighers, in combination, the scale-beam b, the weighing-receptacle l, dependent from the scale-beam, the weight-beam d, fulcrumed in frame c and resting on the scale-beam, and frame c, embracing the weight-beam and pivoting on the permanent pivot c'', as and for the purpose set forth.

4. In automatic weighers, in combination, hopper p, having contracted outlet p', compartment w, having contracted outlet w', spout u, adapted to swing under outlet w', and swinging partition t in outlet p', having arm t' presented to the spout, as and for the purpose set forth.

In testimony whereof I sign my name in the presence of two subscribing witnesses.

CHARLES J. HARTLEY.

Attest:

JOHN K. WARREN,

BRADFORD K. DURFEE.