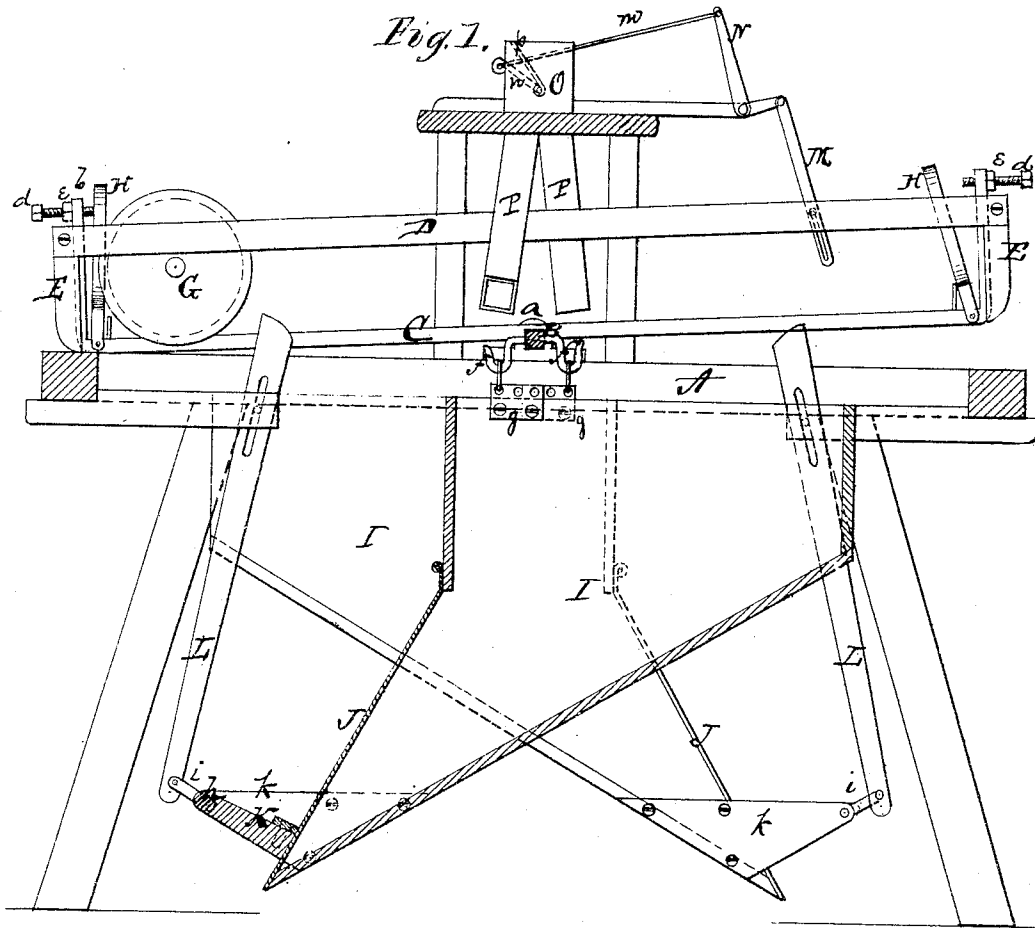


A. G. HAMACHER.

Improvement in Grain-Weighing Machines.

No. 129,222.

Patented July 16, 1872.



Witnesses
Jas. L. Ellis.
J. White

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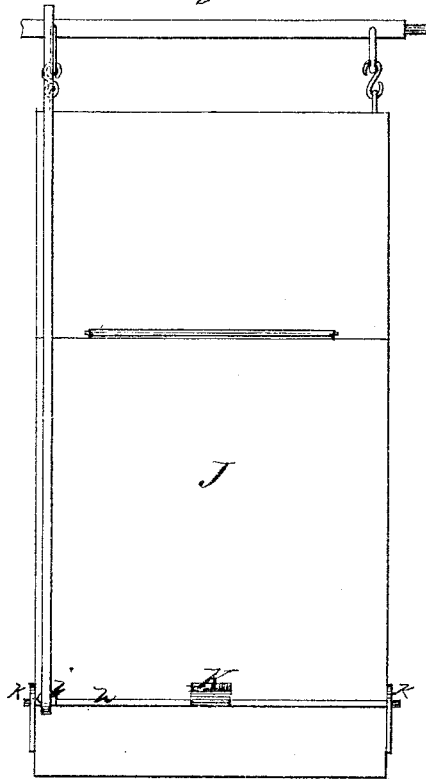
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Fig. 2.



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UNITED STATES PATENT OFFICE.

ABRAHAM G. HAMACHER, OF HARRISBURG, PENNSYLVANIA.

IMPROVEMENT IN GRAIN-WEIGHING MACHINES.

Specification forming part of Letters Patent No. 129,222, dated July 16, 1872.

SPECIFICATION.

To all whom it may concern:

Be it known that I, ABRAHAM G. HAMACHER, of Harrisburg, in the county of Dauphin and State of Pennsylvania, have invented certain new and useful Improvements in Grain-Weighing Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon which form a part of this specification.

The nature of my invention consists in the construction and arrangement of a "self-operating grain-weigher," as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a longitudinal section of my invention; and Fig. 2 is an end view of one of the hoppers of the same.

A represents the main frame of my machine, across the center of which, in suitable boxes *a a*, is placed a rocking-shaft, B. The ends of this shaft where they pass through the boxes *a a* are Λ -shaped on the under side like a scale-beam, to facilitate its turning or rocking at the proper moment. On the shaft B, in the center and at right angles with it, is firmly secured a beam, C, which extends equal distance on both sides of the shaft. To each end of the beam C is secured a small upright standard, E, and the upper ends of said standards are connected on each side by a bar, D, running parallel with the beam. G represents the weight, made in the shape of a pulley, grooved circumferentially so as to fit the beam C. This weight moves back and forth on the beam between the bars D D for guides, and the axle of the weight comes directly under said bars. In each of the standards E is secured an upright metallic bar, *b*, through the upper end of which is passed a set-screw, *d*, with jam-nut *e*. This set-screw bears against the upper end of a bar, H, the lower end of which is forked, straddling, and pivoted to the beam C, while the upper end passes between and above the bars D D. The bar H, resting against the set-screw *d*, forms the stop for the

weight, and by means of said set-screw and jam-nut the machine is set so as to tip at the desired weight. On each side of the beam C, from the sides of the shaft B, project two arms or hooks, *f f*, the hooks on one side of the beam projecting in opposite direction from those on the other side. Upon the arms or hooks *f f* on each side of the beam is suspended a hopper, I, of the peculiar construction shown in the drawing, which are provided with adjusting-plates *g g*, said plates being for the purpose of keeping the hoppers perfectly balanced. The front side of each hopper forms the door J, hinged at its upper end and held closed by a weighted arm, K, bearing against the same on the outer side. This weighted arm is attached to a shaft or bar, *h*, pivoted in arms *k k* extending from the sides of the hopper, and from the inner end of said shaft or bar *h* a short arm, *i*, extends in the opposite direction. To the outer end of the arm *i* is pivoted a bar, L, which is slotted for a suitable distance, and held to the frame A by means of a headed screw passing through said slot so that said bar may be allowed to move up and down. Near one end of one of the bars D is attached the lower slotted end of an arm, M, the upper end of which is attached to the short arm of an L-shaped lever, N, which is pivoted at its angle to a bar extending from a frame, A', arranged in the center on top of the main frame A. The long arm of the lever N is, by a rod, *m*, connected with a crank, *n*, formed upon one of the journals, to a valve, *p*, arranged within a spout, O. From this spout below the valve two branch spouts, P P, lead, one to and above each hopper. These spouts and valve are so arranged that when the valve is turned in one direction all the grain must go through one of the branch spouts, and when turned in the other direction it must go through the other.

The operation of my machine is as follows: The weight having been regulated, as desired, the grain from the elevator or other place is allowed to pass into the spout O and through one of the branch spouts P into the hopper belonging to the same. Just before the desired amount of grain has come into the hopper the end of the beam C having the weight G commences to rise, and immediately after the beam has passed the level or horizontal

line the weight will roll to the other end of the beam; but just as the weight passes the center of the beam the screw holding the arm M to the bar D will reach the upper or lower end of the slot in said arm, and, consequently, raise or lower the same, which has the effect to instantaneously change the valve *p*, shutting off the grain from the filled hopper and directing it into the empty one. As the weight *G* passes on to the opposite end of the beam *C*, from where it started, it strikes and depresses the bar *L* at that end of the beam which raises the weighted arm *K* from the door *J* of the filled hopper. The grain then, almost in an instant, is dropped out of the same, and the arm *K* drops back again in position to hold the door closed. As soon as the other hopper is filled, or the desired amount comes into the same, the weight moves back again, operating in the same manner.

I am aware that a weight rolling back and forth on a beam is not new, and I do therefore not claim such as my invention.

But what I claim, and desire to secure by Letters Patent, is—

1. The slotted arm *M*, lever *N*, rod *m*, and crank *n* in combination with the tilting beam *C* and valve *p*, all arranged as shown and described.

2. The weighted arm *K*, shaft *h*, arm *i*, and slotted bar *L* in combination with doors *J J* and rolling weight or pulley *G*, all arranged as and for the purpose set forth.

3. The rocking shaft *B*, provided with hooks *ff*, in combination with adjusting-plates *g g* and hoppers *I I*, all arranged to operate as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

ABRAHAM G. HAMACHER.

Witnesses:

T. C. CONNOLLY,
F. A. LEHMANN.