

T. T. STRODE.
Grain Winnower.

2 Sheets—Sheet 1.

No. 8,763.

Patented Feb. 24, 1852.

Fig. 1.

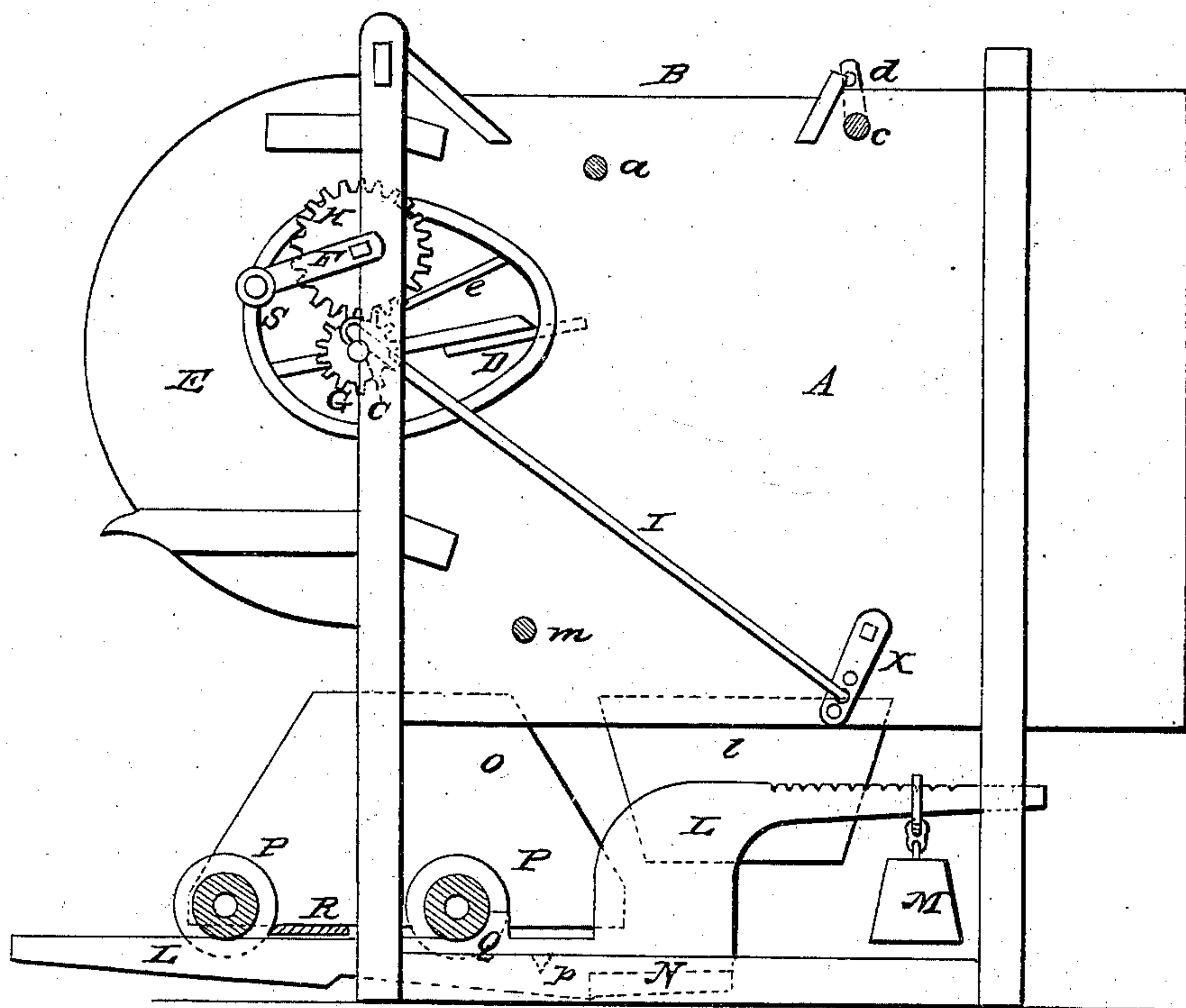
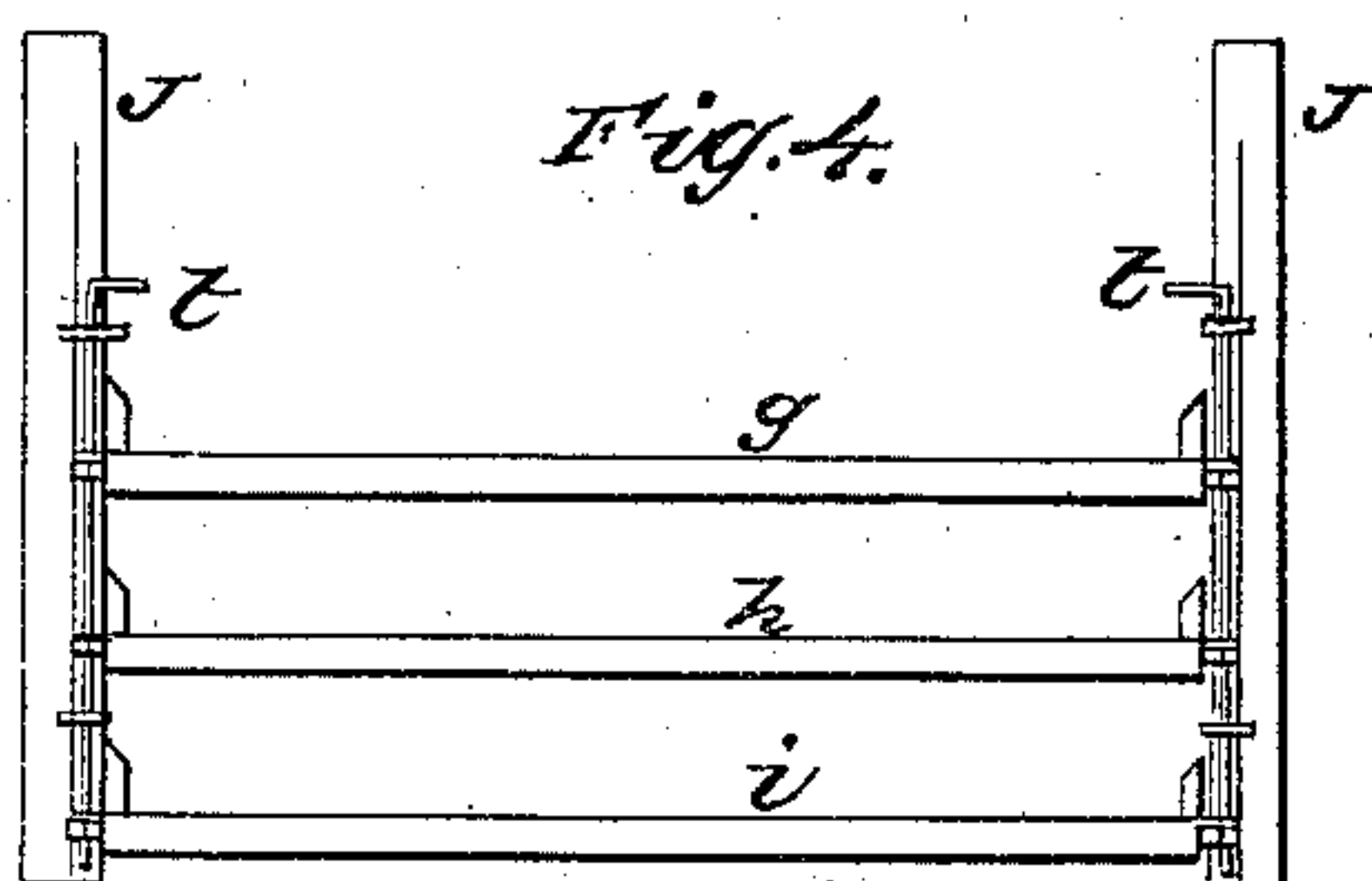


Fig. 4.



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Fig. 2.

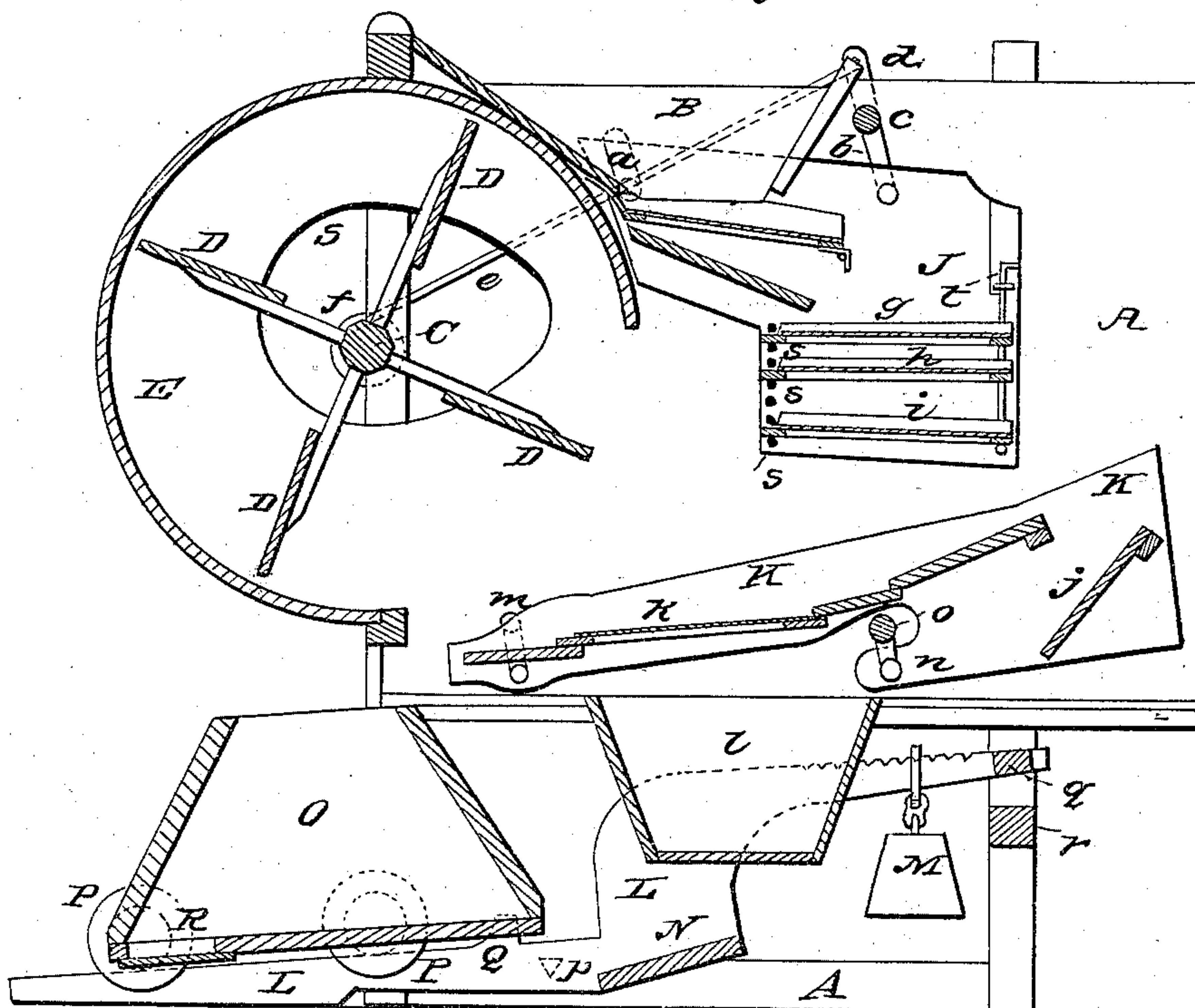
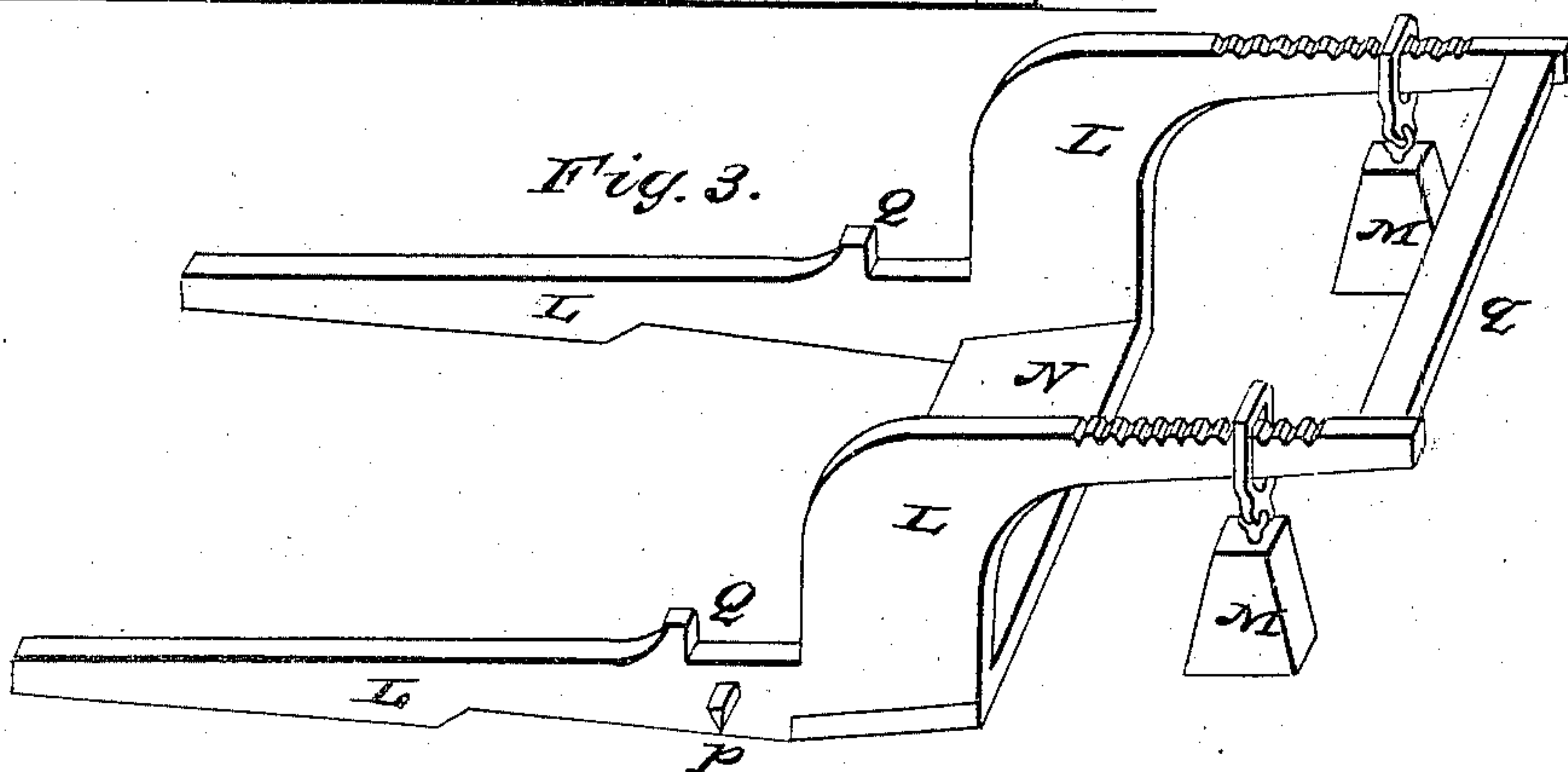


Fig. 3.



UNITED STATES PATENT OFFICE.

THOMAS T. STRODE, OF COATESVILLE, PENNSYLVANIA.

GRAIN WINNOWER AND WEIGHER.

Specification of Letters Patent No. 8,763, dated February 24, 1852.

To all whom it may concern:

Be it known that I, THOMAS T. STRODE, of Coatesville, in the county of Chester and State of Pennsylvania, have invented a new and useful Improvement in the Machine for Winnowing and Weighing Grain; and I do hereby declare the following to be a full and clear description thereof, reference being had to the annexed drawings, making
10 part of this specification.

Figure 1 represents an elevation of the machine, the receiver being in a position to receive the grain from the winnowing machine. Fig. 2 is a vertical longitudinal
15 section of the machine, the receiver having been filled with grain and ready to be removed. Fig. 3 is a perspective view of the balance lever weigher. Fig. 4 is an end view of the shoe with its riddles.

20 The same letters of reference indicate the same parts on the above figures.

The nature of my invention and improvement consists in so combining a balance lever weigher with the lower portion of the
25 frame of the winnowing machine, that the grain may be received from the latter into a portable receiver, mounted upon the rear ends of said balance lever weigher, while the frontward projecting ends of the latter are graduated and furnished with adjustive
30 weights, indicating any desired number of pounds or bushels whereby the grain when cleaned is discharged into a receiver, weighed and conveyed into any convenient
35 place and discharged or bagged by attaching the receiver to any suitable hoisting apparatus for elevating it to any suitable height to allow the bag to be attached to the bottom thereof.

40 My improvement also consists in arranging beneath the ordinary riddles, a long oscillating shoe provided with a screen, whereby the grain is received from the upper shoe, screened and deposited into the
45 portable receiver of the balance lever weigher.

50 A, is the frame, B, is the hopper, C, is the fan shaft, D, are the fans, E, is the fan case, F, is the crank handle, and G, H, the gearing whereby the fans are rotated.

I, is a rod connecting the pinion G of the fan shaft C to a crank X, whereby the lower shoe is operated.

55 J, is the upper shoe suspended by two crank arms (a) at the rear to the frame A and by two downward projecting crank

arms b of a rock shaft c having its bearings in the frame; from one end of this rock shaft projects an upward arm d from which a rod e extends to and is attached eccentrically to a pulley f on the fan shaft C
60 whereby the upper shoe J, is operated. This shoe is provided with the desired number of riddles g, h, i, confined and adjusted as follows:

65 The rear ends of the riddles are supported between pins (s) and the ends of the side bars of said riddles fit against said pins (s) and thus prevent the riddles from moving rearward during the vibration of the shoe, and at the same time allow them to be
70 raised or lowered as seen in Fig. 2. The front ends of the riddles are supported by means of pins projecting therefrom into grooves formed in the sides of the shoe
75 whereby the front ends of the shoe may also be adjusted.

Two rods t t are secured vertically in eyes to the sides of the shoe, which serve to prevent the pins of the riddles from moving
80 out of the grooves and thus the riddles are confined and adjusted as required.

Beneath the upper shoe J, there is placed another shoe K extending from the front of the frame to directly above the portable
85 grain receiver of the weigher and provided with an inclined board j to direct the screenings from the shoe into a box below, and also provided near its center with a screen k to receive the grain from the upper shoe
90 and separate the cheat and cockle from the grain and allow the former to pass into a box l and the latter into the portable receiver mounted upon the rearward ends of the balance weigher. This shoe is suspended
95 by two crank arms m at the rear thereof and also by two arms (n) projecting from a rock shaft o having its bearings in the sides of the frame. Beneath the long shoe K is arranged a balance lever weigher L
100 suspended upon two pivots or knife edged bearings p, p, projecting from either side thereof into the side timbers of the frame A.

The rearward ends of the balance lever frame are elevated and extend to the front
105 of the frame and are connected by a bar q and graduated with holes or notches indicating bushels, pecks and pounds and furnished with weights M, whereby the balance lever frame may be adjusted to weigh any re-
110 quired quantity.

The front end of the balance lever frame

is supported by a transverse timber *r* Fig. 2 of the frame A.

The balance lever frame is braced and connected by a horizontal transverse bar N.

5 The rearward ends of the balance lever frame extend beyond the frame A and from ways L, tapering nearly to a point upon which is placed the receiver O, resting upon four flanged rollers P, whereby the said receiver O is rendered portable and moved on 10 to the ways of the balance lever frame and removed therefrom after the grain shall have been weighed.

The ways upon which the receiver is 15 mounted are furnished with stops Q Q to arrest the receiver when being adjusted thereon.

The inner pair of flanged wheels P are arranged near the center of the receiver so 20 as to be near the fulcrum of the weighing beams, while the other pair of wheels are mounted at the rear end of the receiver, whereby the latter is made to balance the weighing beams when empty and properly 25 adjusted thereon. The portable receiver O is provided with a slide door or gate R in the bottom thereof which is turned horizontally to open and close an aperture or opening in the bottom of the receiver through 30 which the grain when weighed is discharged.

The openings S of the fan case are made somewhat after the form of an egg, whereby a large supply of air is obtained at the point 35 where the paddles act freely thereon and send it through the riddles and whereby the fans are relieved from the back pressure of compressed air which usually accumulates in the rear part of the fan case when the 40 openings are circular.

The operation of the weigher is as follows: The portable receiver having been run on to the ways L as far as the stops Q Q and retained in its proper position by the 45 flanges of said rollers fitting against the insides of the ways, and the weights adjusted on the graduated arms of the weigher to weigh the desired number of bushels as may be indicated by scales or otherwise so 50 that the frontward ends of the graduated arms of the lever frame will rest upon the transverse beam *r* of the frame, and the receiver with its ways elevated as shown in Fig. 1. The grain as it is cleaned from its 55 impurities, passes from the upper shoe J on to the lower oscillating shoe K, and from thence delivered by its oscillating motion over the end of said shoe into the grain receiver, while the cheat and cockle falls 60 through the screen *k* into a box Z. When the required number of bushels of wheat shall

have been delivered into the receiver, the ends of the weighing beams upon which the receiver rests will be caused to preponderate and form inclined planes and allow the receiver to pass from the ways and the balance 65 frame again to assume its proper position and an empty receiver placed upon the ways in the manner above described. In this manner the grain is cleaned by the winnowing machine, weighed by the balance lever 70 weigher and conveyed and discharged in any convenient place by opening the slide door or gate R of the latter. The receiver may be made in any convenient form and 75 size to receive the desired number of bushels of grain. This winnowing machine is not increased in height by the addition of the balance lever weigher, as the horizontal position of the lower shoe gives ample room 80 for the arrangement of said weigher beneath the same. A shallow box may be placed beneath the end of the shoe K at the bottom of the frame for the purpose of catching the grain that falls from the shoe during the 85 interval of removing the filled receiver and replacing an empty one. I however contemplate arranging a valve or hinged door at the bottom of the fan case in such a manner as to prevent the discharge of the grain 90 from the end of the shoe during the interval of removing the filled receiver and replacing an empty one, and not interrupt the vibration of the lower shoe.

Having thus described my improvement 95 in the combined weighing and winnowing machine, what I claim therein as new and desire to secure by Letters Patent, is:

1. Combining a balance lever weigher with the lower portion of the winnowing 100 machine whereby the grain when cleaned is weighed and removed therefrom by a portable receiver as described and represented.

2. I also claim constructing the balance lever weigher as represented and mounting 105 the same upon pivots or knife edge bearings *p* whereby its rearward projecting ends L are made to serve as ways or inclined planes upon which is mounted a portable receiver O so as to balance the weigher, while its 110 frontward ends are graduated and furnished with weights M by which the number of bushels weighed at each time may be indicated as described.

In testimony whereof I have hereunto 115 signed my name before two subscribing witnesses.

THOMAS T. STRODE.

Witnesses:

A. E. H. JOHNSON,
WM. M. SMITH.