

(Model.)

F. C. MASON.

APPARATUS FOR MEASURING AND WEIGHING GRAIN.

No. 272,729.

Patented Feb. 20, 1883.

Fig. 3.

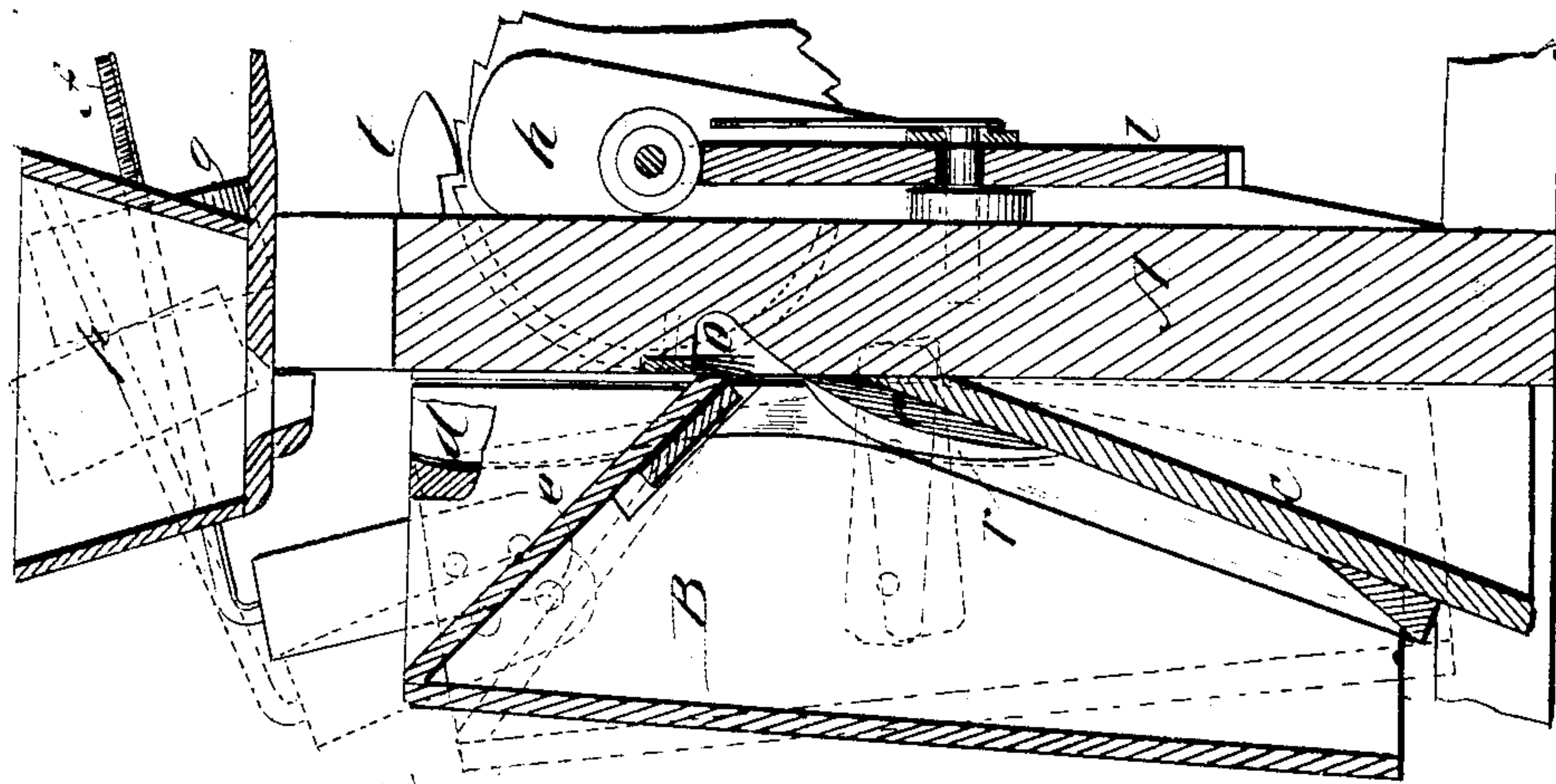


Fig. 2.

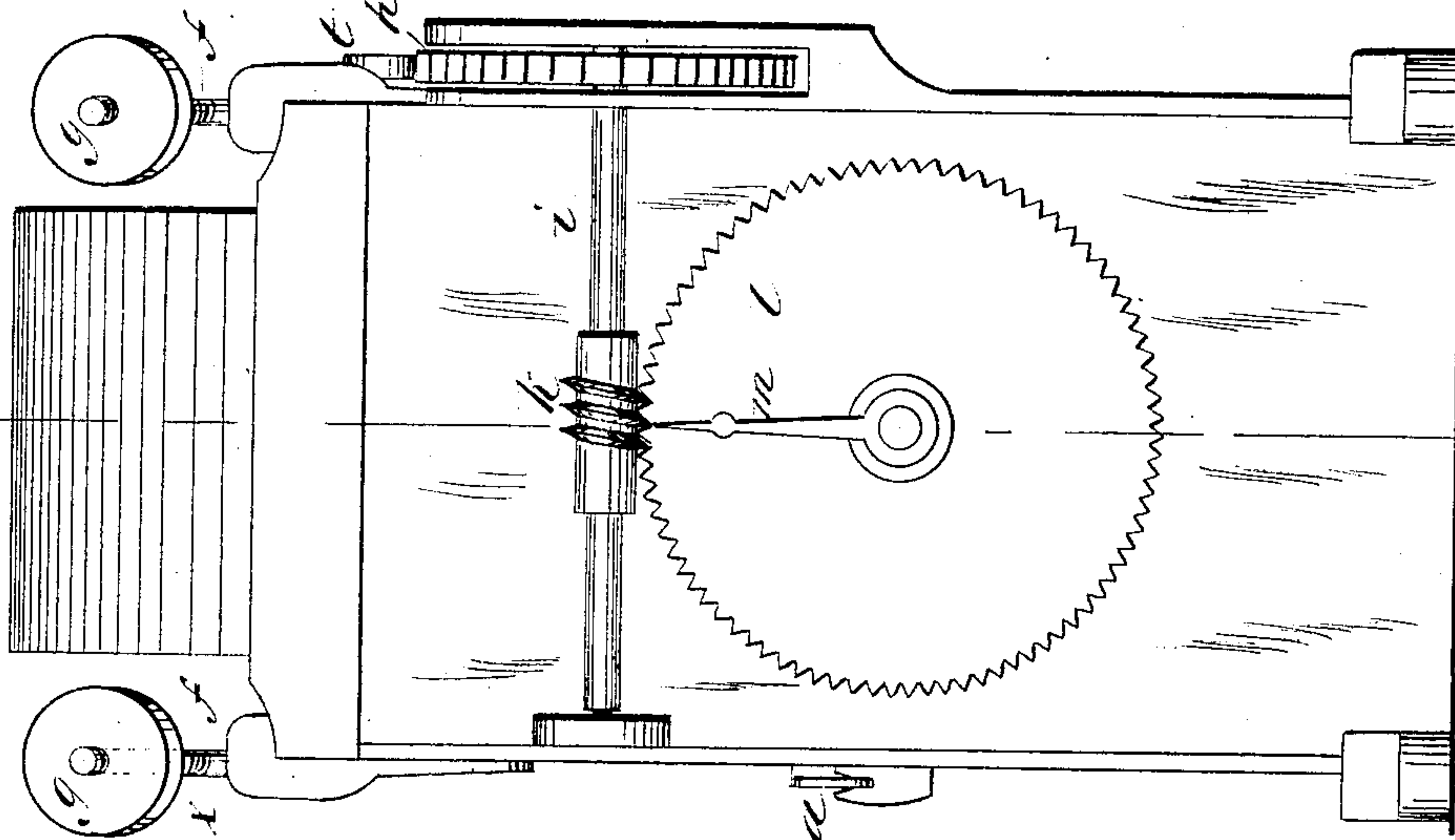
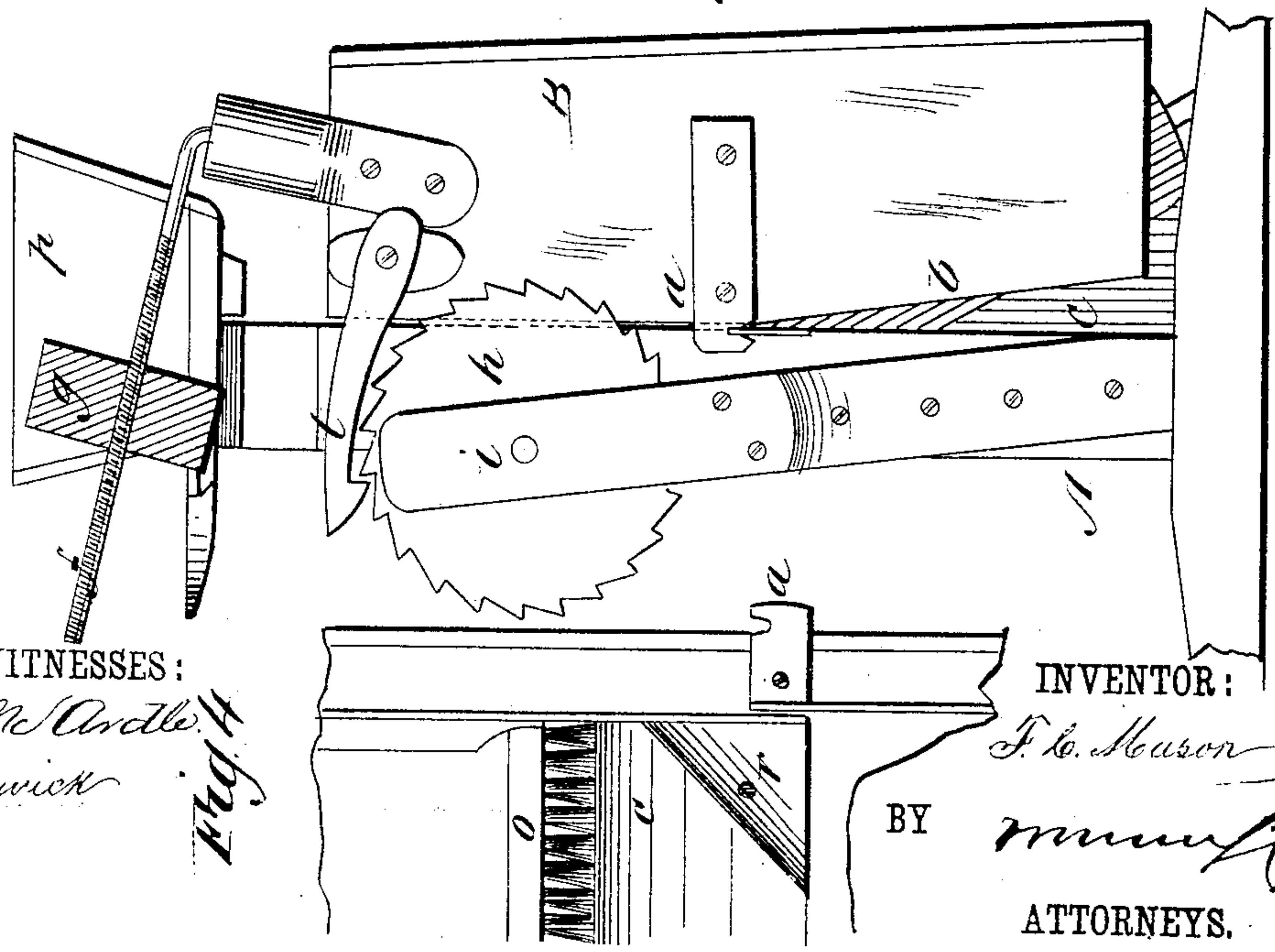


Fig. 1.



WITNESSES:

V. McArdle
C. Sedgwick

Fig. 4.

INVENTOR:

F. C. Mason

BY

M. H. Mason

ATTORNEYS.

UNITED STATES PATENT OFFICE.

FREEMAN C. MASON, OF RANSOM, MICHIGAN.

APPARATUS FOR MEASURING AND WEIGHING GRAIN.

SPECIFICATION forming part of Letters Patent No. 272,729, dated February 20, 1883.

Application filed November 6, 1882. (Model.)

To all whom it may concern:

Be it known that I, FREEMAN C. MASON, of Ransom, in the county of Hillsdale and State of Michigan, have invented a new and Improved
5 Apparatus for Measuring and Weighing Grain and other Materials, of which the following is a full, clear, and exact description.

The object of my invention is to provide for accurately weighing and measuring grain as
10 delivered from thrashing-machines. The apparatus which I employ is also adapted for use with flour, meal, seeds, or any other material which will flow freely in a stream, so that it can be weighed or measured.

15 Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of my improved
20 apparatus. Fig. 2 is another side view, showing the registering mechanism. Fig. 3 is a vertical section on line *xx*, Fig. 2. Fig. 4 is a detail view, showing a portion of the interior of the box.

25 A is a fixed standard or support rising from the floor, or it may represent a wall, to which the apparatus is attached.

B is an oscillating box, open at its top, bottom, and at one side, and hung at about its
30 mid-length, by pivot-arms *a a*, to the support A. At its open side, next the support A, the edges of the box are cut away or beveled, as shown at *b*, so as to give space for a rocking movement of the box upon the pivots *a*. The sides
35 of the box, at its lower end, lap the sides of an inclined board or portion, *c*, of the support A, and at its upper end the sides of the box are grooved to fit on each side tongues *d d*, that project from the support A, this construction
40 insuring closure of the sides of the box in any position to which it may be moved. At its upper end the box is fitted with an inclined board, *e*, the lower edge of which, closing against the support A, acts as a valve, and also serves to
45 form a small compartment in the upper part of the box, the post A serving as one side of the compartment. The face of the support A is fitted with a line of bristles, *o*, against which the lower edge of the inclined board *e* comes
50 in contact. This is used with grain to insure tight closing in case any of the grain is caught

at the lower edge of the board, the kernels in that case being pressed into the bristles; but with seeds or fine material these bristles will not be required.

55 *f f* are arms attached upon the box B, provided with weights *g*, adjustable on the arms by means of screws. The arms *f* are bent in the direction to support the weights at or near a line drawn vertically through the pivots *a*,
60 and so as to close the lower edge of the box against the support A, and by adjustment of the weights the leverage is varied, so that more or less material will be required in the box to overcome the weight. At one side of the
65 box, in a suitable support, is a ratchet-wheel, *h*, that is engaged by a pawl, *t*, hung on the side of the box B, and upon the shaft *i* of the wheel is a worm, *k*, which engages the wheel
70 *l*. This wheel *l* is upon a fixed stud carrying a pointer, *m*, and the face of the wheel is to be marked with numbers, so that the pointer shall indicate the movement. Each division or space
75 upon the wheel is to show the movement of the ratchet-wheel *h* the length of one tooth by the rocking movement of the box B. Above the box is fitted a hopper, *p*, having an outlet for discharging the material into the box; but a
80 spout or other suitable device may be used in place of the hopper.

In operation, the hopper *p* being supplied with grain or other material, the material runs into the upper part of the box B, and is retained by the board or valve *e* until the weight of the accumulated material is sufficient to overcome the weights *g* and rock the box B on its
85 pivots *a*. This movement, by carrying the valve *e* away from the support A, allows the grain to pass to the lower part of the box, and at the same time, the lower edges of the box
90 closing against the incline *c*, the material is caught and retained. The box is held in this position by the weight, which by the movement above described has been carried to the opposite side of the pivot-center of the box,
95 and is thus held until sufficient grain accumulates to overcome the weights, when the box is again rocked and moved back to its first position, the grain being thereby finally discharged. These alternate movements of the
100 box, acting through the pawl and ratchet-wheel, cause rotation of the index-wheel *l*, and,

the amount or weight of the grain at each discharge being a uniform and known quantity, the total amount of grain or other material passing through the machine can readily be
 5 determined. The inclined board *c* is provided with guides *r*, which conduct the falling grain to the center at the bottom, so that it is caused to fall and accumulate evenly.

I do not limit myself to the details of construction exactly as shown and described, as they may be varied within the scope of my invention. In place of using bristles, rubber or other soft material may be used for the upper valve. The apparatus may be used for meas-
 15 uring grain from thrashing-machines or elevators, and otherwise for grain and other materials.

Having thus described my invention, what I claim as new, and desire to secure by Letters
 20 Patent, is—

1. The automatic grain weighing or measuring apparatus consisting of a weighted receptacle hung on pivots, and provided with a partition board or valve forming an upper com-
 25 partment, in which the grain is first received, and from which it is discharged to the lower compartment, that is closed by the oscillating movement of the box, caused by the weight of the grain, substantially as shown and de-
 30 scribed.

2. In a grain-weighing apparatus, the pivoted box *B*, the board or valve *c*, the inclined board *c*, and weighted arms *f*, combined with the support *A*, substantially as shown and described, for operation as set forth. 35

3. In a grain weigher or measurer, the inclined bottom *e* and the two sides thereof, arranged on a pivoted support, in combination with the fixed standard *A*, and a weighted arm adapted to hold said parts to the standard by
 40 a certain pressure, whereby said parts will separate from the standard and allow the grain to escape at the bottom of said incline *e* as soon as the weight of the grain exceeds said pressure. 45

4. The combination, with the pivoted box *B*, open at the bottom, as well as at one side, and the fixed standard *A*, of the inclined board *c*, having the sides *r*, whereby there may be formed a grain holding receptacle which sepa-
 50 rates at the bottom to discharge the weighed or measured grain.

5. In grain-weighing apparatus, the tongues *d*, in combination with the grooved box *B* and support *A*, substantially as and for the pur-
 55 pose set forth.

FREEMAN C. MASON.

Witnesses:

ORRIN M. BARRE,
 ISAAC OWEN.