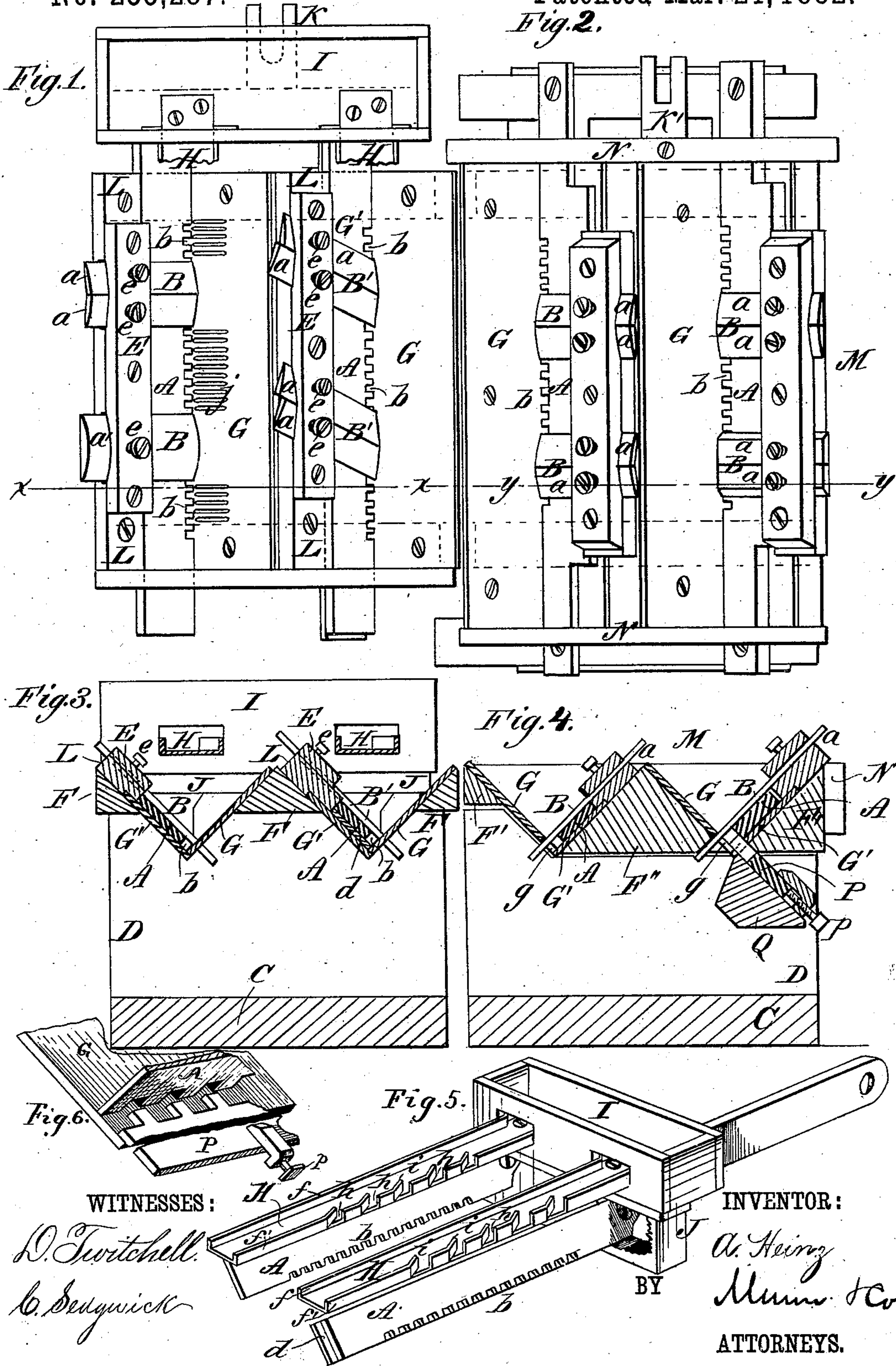


(No Model.)

A. HEINZ.
OATMEAL MACHINE.

No. 255,287.

Patented Mar. 21, 1882.



UNITED STATES PATENT OFFICE.

ANTON HEINZ, OF MUSCATINE, IOWA.

OATMEAL-MACHINE.

SPECIFICATION forming part of Letters Patent No. 255,287, dated March 21, 1882.

Application filed December 7, 1881. (No model.)

To all whom it may concern:

Be it known that I, ANTON HEINZ, of Muscatine, in the county of Muscatine and State of Iowa, have invented a new and Improved
5 Oatmeal-Machine, of which the following is a full, clear, and exact description.

In my machine the oats enter a trough-like receptacle, one side of which is formed by a plate, which may be stationary or movable,
10 having recesses or passages for reception of the oats and discharge of the same. In connection with such plate I employ knives for cutting the grain, which knives may be movable or stationary, (being movable the plate is
15 stationary, or vice versa.) The size or grade of the product is regulated by providing interchangeable plates having large and small recesses, or providing suitable adjustable means for increasing and diminishing the size of the
20 recesses.

The invention further consists of the details of construction and the combination and arrangement of the cutting parts of the machine and of the means for feeding the grain to the
25 machine, all as hereinafter more fully described.

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

Figure 1 is a plan view of one form of my invention, a portion of the feeding mechanism being broken away to better show the construction. Fig. 2 is a plan view of another
35 form of my invention, the feeding mechanism being entirely removed. Fig. 3 is a sectional elevation taken on the line *xx* of Fig. 1. Fig. 4 is a sectional elevation taken on the line *yy* of Fig. 2. Fig. 5 is a perspective view of the
40 recessed plates with the feeding mechanism as used in the construction shown in Figs. 1 and 3. Fig. 6 is a detail perspective view, showing the relation of plate *P* for regulating the discharge.

The machines will ordinarily be constructed and operated in pairs—that is, with two plates having recesses and with sets of knives to correspond—and I have shown in the drawings the machines made in that way; but the machines may be made with a single plate and a
50 single set of knives, or with more than two plates and two sets of knives, if desired, the

other parts of the machine of course being duplicated accordingly.

In the drawings, *A* represents the plates, 55 which are formed with the notches or recesses *b*, and *B B'* represent the knives. In all cases the knives will be placed contiguous to the plates *A*, and the sets of knives and the plates will be held at a greater or less angle or inclination in the frame of the machine, as may be
60 found most effectual.

The main frame of the machine is composed of the bottom or base board, *C*, the side boards, *D D*, and, in the construction shown in Figs. 65 1 and 3, of the triangular cross-pieces *F F*. These triangular cross-pieces carry or are faced with the inclined plates *G G'*, which come together at their lower edges, forming a trough-shaped receptacle for the reception of the grain
70 from the troughs or conduits *H H*, which lead from the hopper or supply-box *I*. The recessed plates *A* are placed against the inclined plates *G'*, which form backs for the recessed plates and close the rear of recesses *b*. 75

In the construction shown in Figs. 1 and 3 the knives *B B'* are held stationary in the main frame, over and contiguous to the recessed plates *A*, by means of the clamp-plates *E*, supporting-plates *L*, and the set-screws *ee*, and the
80 recessed plates are attached at one end upon the yoke *J*, upon which the hopper or supply-box *I* is secured, and are adapted to be reciprocated longitudinally between the knives and the inclined plates *G'* by suitable power ap- 85 plied to the head or connection *K*, attached to the outside of the yoke. For instance, the power may be applied through the medium of a pitman, Fig. 5, attached to the reciprocating piston of a steam-engine, or to the crank of a shaft 90 operated by the same. The oats placed in the hopper *I* tend by their own gravity and the reciprocating motion of the hopper and troughs *H H* to find a level, or, in other words, to escape from the hopper and flow along the
95 troughs, from which they discharge through the side openings, *h*, into the troughs below. In some instances the knives will be held at right angles to the plates *A*, as shown at *B*, while in others they will be diagonal thereto, as
100 shown at *B'*, and in all cases the lower ends of the knives will pass through the inclined plates *G*, so that the narrow slots or openings *g* (shown in Fig. 4) will be formed under the knives for

the passage of the meal as it is cut by the knives, and in some instances the knives will be formed of the two parts *a a* held back to back, while in others the knives will be made solid or single and sharpened on both edges, as shown at *a'* in Fig. 1.

In the construction shown in Figs. 2 and 4, instead of the knives being held stationary, the recessed plates *A* are held stationary in the main frame, while the plates *G* and *G'* and the knives are adapted to be reciprocated by suitable power applied to the head or connection *K'* of the sliding or reciprocating frame *M*, to which the plates *G* and *G'* and the knives are attached. This sliding or reciprocating frame *M* is composed of the side triangular cross-pieces, *F' F'*, the central triangular strip, *F''*, and the tie-bars *N N* at the ends of the frame. The plates *G* and *G'* are placed upon the triangular cross-pieces *F'* and *F''* so as to form the trough-shaped receptacle for the grain, the same as in the construction shown in Figs. 1 and 3.

The preferred means for regulating the machine for producing a finer or coarser product is shown clearly in Fig. 4, consisting of the adjustable plate *P*, placed upon the inclined cross-piece *Q*, which plate is formed with as many teeth as there are recesses in the plates *A*, which, when the plate is used, take the place of that portion of the plates *G'* immediately below the recesses and form the back or bottom of the recesses. This plate is adjustable upon the block *Q* by means of the screws *p p*, so that the depth of the recesses may be increased or diminished by moving the plate to produce the grade of meal desired. The machine may be regulated in this respect by other means—as, for instance, by having several recessed plates made with the back plates, *d*, as shown in Figs. 3 and 5. In such case a series of interchangeable recessed plates of different thicknesses may be employed, so that the recesses of different depths may be provided; and still other means might be devised; but the plan first described is the preferred plan, as it is easily operated and can be set with great accuracy.

The troughs *H H*, which lead from the hopper or supply-box *I*, are preferably formed of strips of sheet metal struck up at the edges to form the flanges *f f'*. The flanges *f'* are cut in several places from the edge down to the bend and a short distance along the bend, and the pieces of metal thus separated from the main sheet are bent inward, as shown in Fig. 5, forming the passages *h* and the guides *i*, which cause the grain to pass out of the troughs at various places and to be evenly distributed in the trough-shaped receptacles below.

In operation the kernels of oats or other grain, after dropping from the troughs of the hopper, find their way to the recesses in plates

A, in which they will drop endwise, the recesses being too narrow to receive them except in that way. The kernels will be held in these recesses, so that when the knives are brought against them, or they are carried against the knives by the movement of the recessed plates, they will be cut just at the point where they protrude above the recesses. The portion of the kernels cut off by the knives and left in the recesses after passing the edges of the knives will be dropped through the slots or narrow passages *g* into a proper receptacle below the plates. This operation will be repeated with each reciprocation of the knives or the recessed plates until the whole of the grain supplied to the hopper shall have been cut into meal.

To facilitate the ending of the kernels into the recesses, the inner faces of the inclined plates *G* may be formed with the grooves or gutters *j* between the knives, as shown in Fig. 1.

In case two knives placed back to back are used the knives may be beveled to form the sharp edge of the knife upon only one side, or they may be beveled upon both sides to form the edge, as desired.

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

1. The combination, with two plates, *G G'*, arranged at an angle to each other, thus forming a trough, one of them having recesses or openings for passage of the meal as it is cut, of the recessed plates *A* and one or more knives, which are placed substantially at right angles and contiguous to said recessed plates *A*, substantially as set forth, to operate as specified.

2. The sliding frame, formed of the triangular cross-pieces *F' F'* and *F''*, inclined plates *G* and *G'*, and the knives, in combination with the stationary recessed plates *A*, substantially as and for the purposes set forth.

3. The recessed plates *A* and the knives, in combination with means, substantially as described, for diminishing and increasing the size of the recesses, as and for the purposes set forth.

4. The recessed plates *A*, and inclined plates *G* and *G'*, in combination with the toothed adjustable plate *P*, substantially as and for the the purposes described.

5. The hopper *I*, having the troughs *H H*, formed with the passages *h* and guides *i*, said hopper and troughs communicating and being adapted to reciprocate together, in combination with the inclined plates *G* and *G'*, recessed plate *A*, and the knives, substantially as and for the purposes described.

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Witnesses:

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