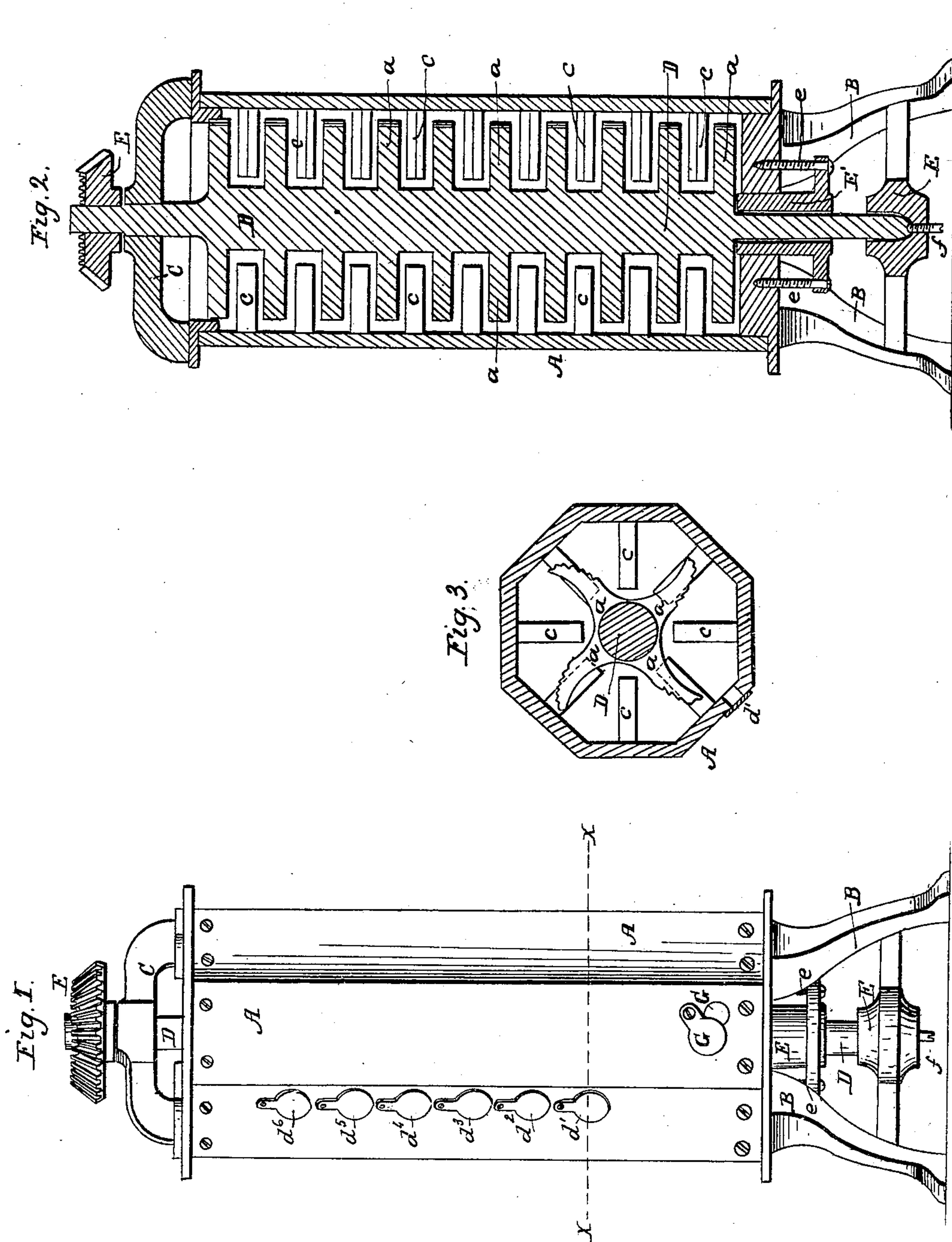


J. WEBER.
Hulling and Scouring Grain.

No. 16,764.

Patented March 3, 1857.



UNITED STATES PATENT OFFICE.

JOSEPH WEBER, OF BRAYSVILLE, INDIANA.

MACHINE FOR HULLING AND SCOURING WHEAT, &c.

Specification of Letters Patent No. 16,764, dated March 3, 1857.

To all whom it may concern:

Be it known that I, JOSEPH WEBER, of Braysville, county of Dearborn, in the State of Indiana, have invented a new and useful
5 Improvement in Machines for Hulling and Scouring Wheat, &c.; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing and to the let-
10 ters of reference marked thereon.

The nature of my invention consists in the hereinafter described construction and arrangement of parts of a machine for hull-
15 ing wheat and other grain and for scouring the same in its own dust; performing the operation without previously moistening the grain.

To enable others skilled in the art to make and use my invention I will proceed to de-
20 scribe its construction and operation.

In the accompanying drawing Figure 1, represents a side elevation, Fig. 2, a vertical section through the center, and Fig. 3, a
25 horizontal section at x, x , Fig. 1, of my machine; in which views—

A, represents the chamber or barrel, in which the grain is hulled and cleaned, is in the form of a polygon, it is formed of eight or more plain sides having arms inserted as
30 hereinafter described, and it is firmly secured to and supported by the legs B, B, &c. To the top of barrel A, is secured a cross head C, in which the shaft D, has a bearing; the lower end of said shaft is supported by
35 and runs in step E, which is adjustable in a vertical line by means of a set screw f , for purposes hereinafter described.

E', is a collar or sleeve, fitting around shaft D, and adjusted by means of screws
40 e, e , for the purpose of preventing the grain from getting into or passing through the lower bearing of the shaft. On the upper end of shaft D, is keyed the bevel gear F, which is driven by a pinion on a horizontal
45 shaft, receiving motion from any power which may be employed [in the establishment]. On shaft D, are arranged the peculiarly shaped flyers or arms a, a , equi-distant in four vertical lines making four in each
50 horizontal range; between each range and the next is a horizontal range of triangular or wedge shaped arms c, c , eight in number there being one projected from each side of the barrel A. Of the arms c, c , there are of
55 course eight vertical lines and as many horizontal ranges or sets as there are of the arms

a, a . The distance between the arms a, a , and c, c , is regulated at pleasure by means of the step and set screws f , for the purpose of accommodating the machine to different
60 sized grain. On the convex sides of arms a, a , are cut ratchet-like teeth extending about two thirds their length [best seen in Fig. 3].

d', d^2 , &c. are exits, or waste gates, through
65 which is discharged the superfluity of grain when a number of stones insufficient to take the whole contents of the chamber A are running.

G, is the final discharging or conductor
70 gate which is set to allow a flow of grain corresponding with the number of stones running and through which the grain passes to be conducted to the fans from thence to
75 the stones.

The grain is carried from its depot to the top of, and discharged into the barrel A, in the usual manner while the shaft D, with its arms a, a , is revolving at a suitable
80 velocity. The grain is carried to the top of the chamber by means of a common bucket elevator, [the depot being below, and the grain running from the machine down through a fan and thence down to the
85 stones] of which latter there are a number in the establishment sufficient to grind all the grain hulled and scoured by the herein-
before described machine or machines, the buckets or elevators which carry up the
90 grain run always at the same velocity, which velocity is sufficient to keep the hulling and scouring machine sufficiently full to enable it to feed all the stones but when it is not
95 desirable to run all the stones or some accident happens to one or more of them the discharge gate G, must be set to feed less grain to the stones, and as the elevator is running at the same velocity; or carrying
100 the same amount of grain per minute to the chamber, it is obvious that there must be another outlet, which we make by opening one of the waste gates d', d^2 , &c. It will be
readily seen that with one arrangement, a change in the velocity or speed of the ele-
105 vator is not necessary, [which change would require much additional machinery] and that even if that change could be effected as economically, as in our arrangement, it would be far less desirable, as there the
110 same power and wear of machinery would be expended and only a portion of the machine accomplishing any result, while with

our arrangement the machine is doing its required duty to the grain which it feeds the stones with and is at the same time partially hulling and scouring other grain which it returns to the depot, or repository.

The grain runs in at the center of the chamber A, and is rolled toward the periphery of said chamber from whence it is forced, by the pressure of the grain following, back toward the center, on top of the second range of arms $[a, a,]$ meanwhile being turned over and over and rubbed among its particles and by the arms $a, a,$ and $c, c,$ it is then rolled out by the next set and so on back to and forth from the center while it is moving in other directions. It will readily be seen that my form of machine peculiarly is adapted to accomplish the main object of all machines for the same purpose, viz: the continual revolutions of the grains in all directions and the creation of friction on all portions of their surfaces without breaking them; to illustrate this principle of my machine, I refer—1st. To the shape of the arms $a, a,$ they are radial curves, with ratchet like teeth on their convex faces moving from their cutters thus causing the grain to roll from the shaft D, toward the periphery of chamber A. 2nd. To the arms $c, c,$ being triangular in a vertical and right radial in a horizontal section and having the arms $a, a,$ square in a vertical and curved radial in a horizontal section, passing between them, thus rotating the grain on an axis nearly at right angles with the arms $c, c.$ 3rd. To the polygonal form of chamber A, causing the grain by striking its angular sides to revolve on a vertical axis. 4th. To the revolution of the flyers or arms $a, a,$ causing the grain to revolve on a horizontal axis. While during all these motions

the grains are descending, it is obvious that they receive great friction on all portions of their surfaces.

When one stone is running, the gate G, is set to feed a sufficient quantity and the waste gate $[d^3]$ is opened to keep a certain quantity and pressure in the chamber A, while the waste grain, which runs out at $(d^3,)$ passes back to the depot from whence it came.

When two stones are running the gate $[G,]$ is opened enough wider to feed them, the waste gate $[d^3]$ closed, and $[d^4]$ opened, thus the flow from and quantity of grain in the chamber A, is governed at pleasure.

I do not claim a polygonal surfaced drum or cleaning chamber having a roughened series of projections, or a roughened surface, for I am aware such have been used for many purposes, but

What I do claim as my invention and desire to secure by Letters Patent is—

1. The polygonal chamber A, when made substantially in the manner described so that the grain will be turned over and over during its descent through the chamber and be rubbed without being broken.

2. The curved and notched arms $a, a,$ in combination with the polygonal chamber A, when constructed as and used for the purpose herein described.

3. The combination and arrangement of the polygonal chamber A, curved and notched arms $a, a,$ and the smooth triangular arms $c, c,$ as and for the purposes, herein described.

JOSEPH WEBER.

Witnesses:

I. N. McINTIRE,
ARTHUR C. WATKINS.