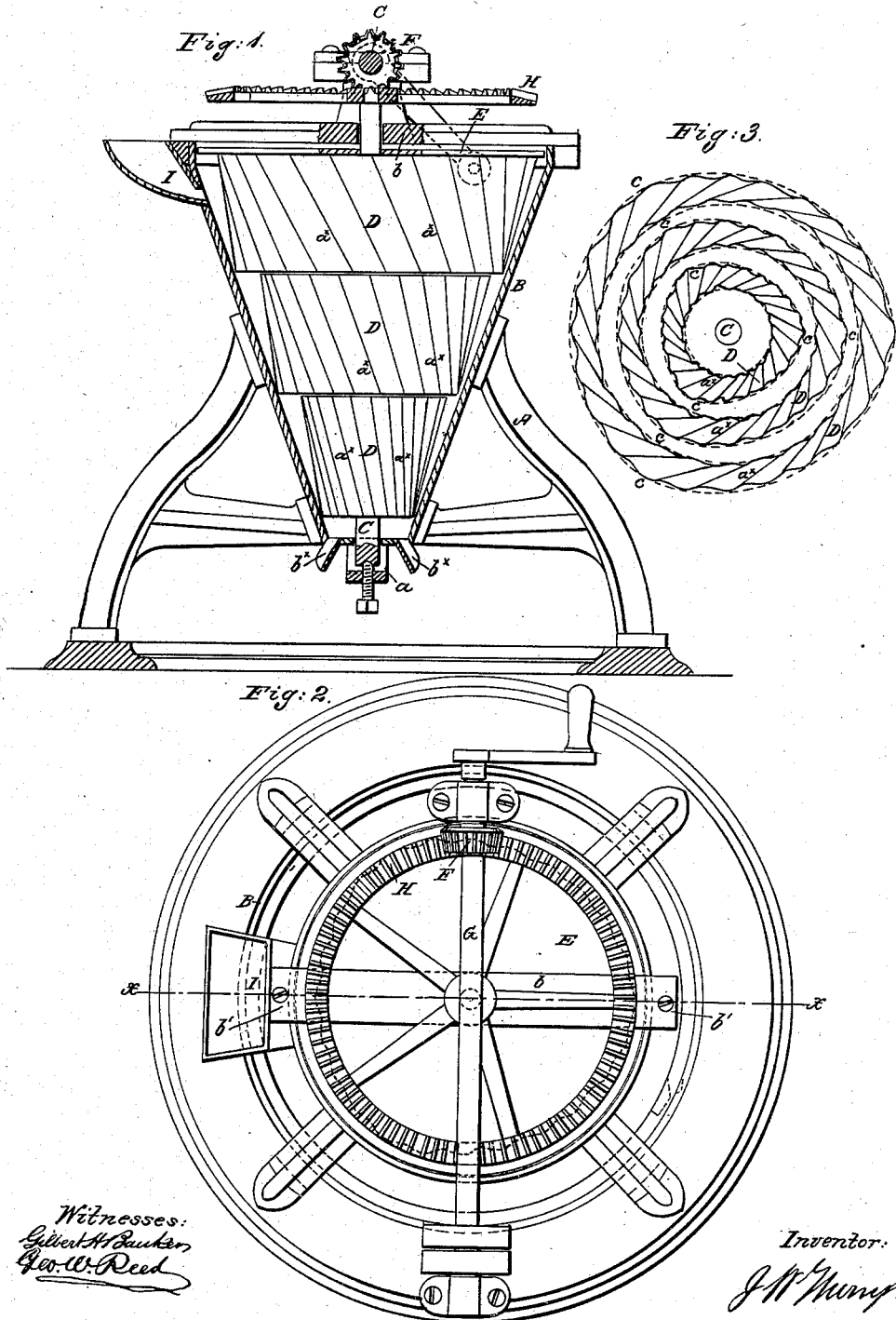


J. H. THOMPSON.

Grain Huller.

No. 48,326.

Patented June 20, 1865.



Witnesses:  
Gilbert H. Parker  
Geo. W. Reed

Inventor:  
J. H. Thompson

# UNITED STATES PATENT OFFICE.

JAMES H. THOMPSON, OF HOBOKEN, NEW JERSEY.

## IMPROVEMENT IN GRAIN-HULLERS.

Specification forming part of Letters Patent No. 48,326, dated June 20, 1865.

*To all whom it may concern:*

Be it known that I, JAMES H. THOMPSON, of Hoboken, in the county of Hudson and State of New Jersey, have invented a new and Improved Machine for Hulling Grain; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable any person skilled in the art to make and use the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a vertical central section of my invention, as indicated by the line *xx*, Fig. 2. Fig. 2 is a plan or top view of the same. Fig. 3 is a detached end view or inverted plan of the rotary huller pertaining to the same.

Similar letters of reference indicate corresponding parts in the several figures.

This invention consists in the employment or use of a rotary huller composed of one or more frustums of cones placed or arranged within a conical shell and corrugated or fluted and otherwise constructed, as herein set forth, whereby the hulls or cuticles may be removed from grain very expeditiously and without breaking or crushing the same, as attrition produced by the rubbing of the grains in contact with each other is depended upon for performing the work, and not the direct contact of moving surfaces with the grains—such as corrugated plates and the like, hitherto employed.

The invention is applicable to the hulling of various kinds of grain, such as, coffee, rice, &c.

A represents a framing, which may be constructed of either wood or metal and of any proper form to support the working parts of the machine.

B is a case of cast-iron, and of conical form, placed in an inverted position in the framing A, as shown in Fig. 1, and C is a shaft which passes vertically and centrally through the case B, and has its lower end stepped at *a*, said step being secured to the lower end of the case B. The upper part of the shaft C has its bearings in a cross-bar, *b*, which extends centrally across the upper end of the case and has its ends attached to the same by screws *b'*. On this shaft C there are placed and secured, by keys or otherwise, one or more frustums of cones, D. Three of them are represented in the drawings and varying in size, the upper one being the larg-

est, the next one below somewhat smaller, and the lowest one still smaller, as shown clearly in Fig. 1. The lower end of each part or frustum D is near the inner surface of the case B, a space being allowed between of sufficient width to admit of the passage of a single grain all around the lower end of each part or frustum D. At the upper end of each part or frustum D there is a much wider space to admit of several grains being side by side, as will be seen by referring to Fig. 1. The lower end of each part or frustum D is circular and concentric with the case B, but their upper parts do not form a perfect circle. Each has three prominences or projections, *e*, at its upper end, as clearly shown in Fig. 3, and these prominences gradually loose themselves as they proceed downward and are entirely lost at the bottom of each part D. Each part D is fluted spirally, as shown at *a\** in Fig. 1, and to the upper surface of the upper part, D, there is attached a circular plate, E, which fits snugly in the upper part of the case B, but is allowed to rotate within. The three parts or frustums D form a huller, which is driven by means of a bevel-pinion, F, on a horizontal shaft, G, on the upper part of the framing A, and a bevel-wheel, H, on the upper part of the shaft C, into which the pinion F gears. The shaft G may be driven by any convenient power.

I is a feed-spout, which leads from a hopper containing the grain to be hulled into the upper part of the case B.

As the huller is rotated it performs two functions, to wit: It feeds downward by means of the spiral fluted projections *a\**; and it serves to move the kernels or grains one past the other, keeping the same in motion, and removing the hulls therefrom by the attrition caused by the contact of one grain with another. The kernels or grains as they pass down are gradually restricted in space until they reach the lower end of the upper part or frustum, D, of the huller, where the width of the space is about equal to the thickness of an individual kernel or grain. Thus the kernels or grains are subjected to a consecutive number of operations corresponding to the number of the parts or frustums D, and the prominences or projections *e* on said parts communicate an intermittent pressure to the kernels or grains, preventing them from having a circular mo-

tion with the huller; and causing them to be rubbed one against the other in the most efficient manner to remove the hulls or cuticles. The hulled grain is discharged through spouts or openings *b*\* at the bottom of the case, and these openings may be provided with gates to regulate the discharge, and thereby subject the grain to the action of the huller for a greater or less period of time, as circumstances may require.

I do not confine myself to the spiral flutes, for longitudinal or other ones may be used, as the grain will have a tendency to settle in the case by its own gravity, and the flutes, whether spiral or otherwise, will have a tendency to move the grain within the case; but I prefer the spiral flutes, as the assistance to the downward feed is an advantage.

The advantages of this machine are as follows: In consequence of the grain being held in masses between the two cones and the casing, while at the same time it is being forced

down by the form of the inner cylinder into a continued diminishing space until it is delivered at the bottom, the inventor is enabled to give it more pressure than in any other machine, which gives the advantage of not only being certain of thoroughly cleaning the grains, but at the same time gives them all the luster necessary, which is done by no other machine, there always being a second machine for this purpose. I also claim to do more work than any other machine.

Having thus described my invention, what I claim as new is—

The combination of the inverted fluted conic frustum D, conical case B, and lateral projections or prominences *c c c*, all constructed and arranged and operating substantially as specified.

J. H. THOMPSON.

Witnesses:

GILBERT H. BANKER,  
GEO. W. REED.