W. AGER.

Rice Huller and Cleaner.

No. 18,176. Patented Sept. 15, 1857.

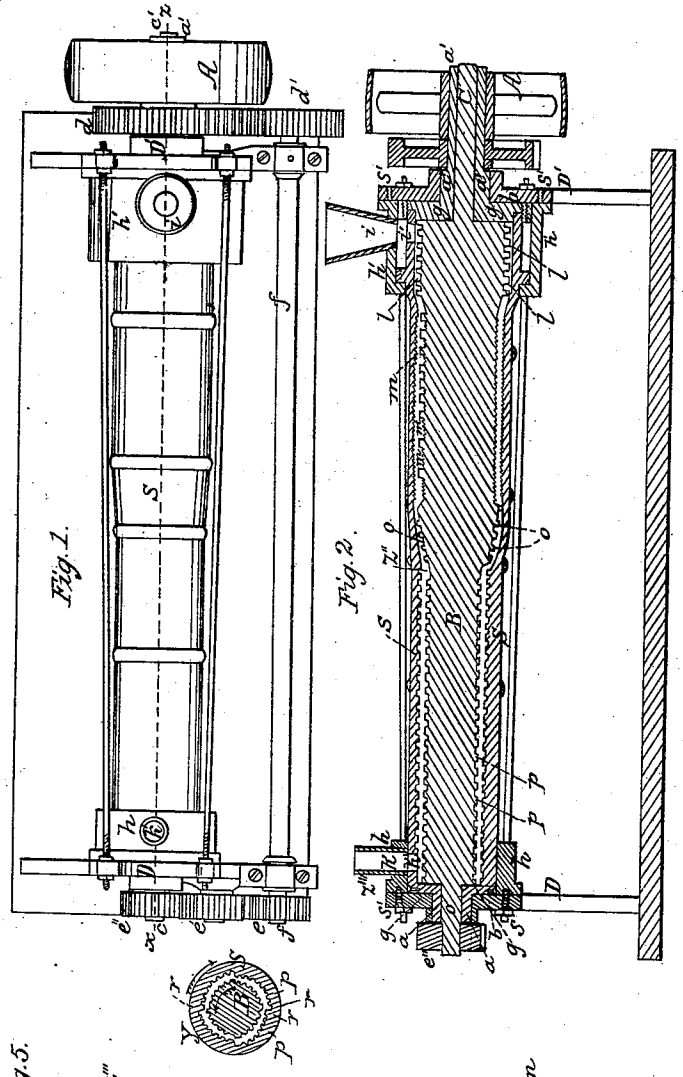


Fig. 1.

Fig. 2.

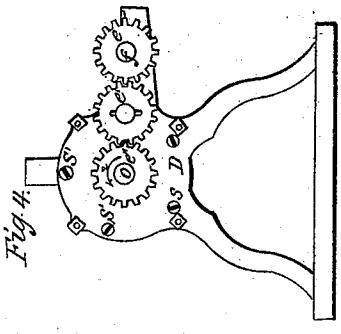


Fig. 4.

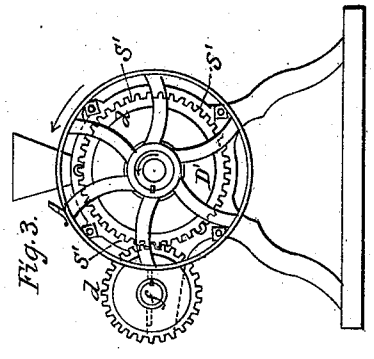


Fig. 3.

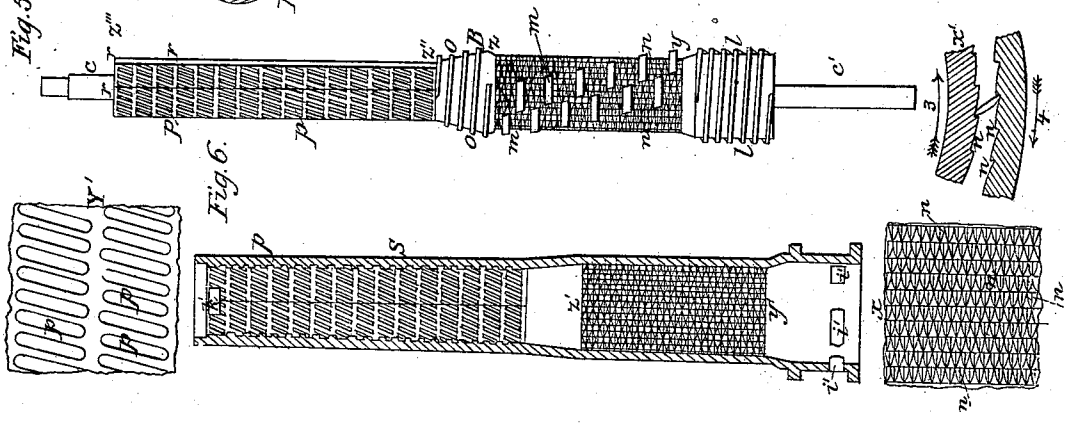


Fig. 5.

Fig. 6.

N. PETERS. Photo-Lithographer. Washington. D. C.

UNITED STATES PATENT OFFICE.

WILSON AGER, OF RHORSBURG, PENNSYLVANIA.

MACHINE FOR HULLING RICE.

Specification of Letters Patent No. 18,176, dated September 15, 1857.

To all whom it may concern:

Be it known that I, WILSON AGER, of Rhorsburg, in the county of Columbia and State of Pennsylvania, have invented a new and useful Improvement in Hulling Rice; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawing, forming part of this specification, in which—

Figure 1 is a top view of the machine, by which the operation is effected. Fig. 2, is a vertical section on line *x x*. Fig. 3 is an elevation of driving wheel end of machine. Fig. 4 is an elevation of the opposite end showing pinions for rotating the bur. Fig. 5, is a view of the bur, removed from the shell. Fig. 6 is a view showing interior of shell.

Similar characters of reference in the several figures denote the same part.

The object of my invention is the removal of the husk from the paddy or rough rice. Before describing the means I employ to effect that end, I will refer briefly to the structure of the grain to be operated upon. The husk of the paddy is attached to the grain at one extremity only, and can readily be separated therefrom, by pressure in direction of the length of the grain. In fact this is the easiest way to effect the separation.

The nature of my invention consists in effecting the hulling by a shell and bur rotating in opposite directions and so dressed and constructed that the grain shall be turned at right angles to the axis of the said shell and bur on coming between them, and each grain be made to receive a pressure in direction of its length, sufficient to separate the husk, the details of construction and operation being as hereinafter set forth.

In the drawing *s* is the shell, supported by hollow shafts *a a'*, in bearings *b b'*, and rotated in direction of arrow 1, by power applied to wheel A, secured on hollow shaft *a'*.

B is the bur having spindles *c c'* at its extremities, passing through hollow shafts *a a'* and rotated in direction of arrow 2, by reason of cog wheel connection *d d'*, between shafts *a'* and *f*; and pinion connection *e e' e''* between shaft *f* and spindle *c*. The hollow shafts *a a'* are upon heads *g*, *g'*, secured in the ends of the concave S, as shown in Fig. 2.

The shell *s* is incased in bands *h h'* at its extremities, as shown in Figs 1 and 2. On band *h'* is the feed hopper *i*, communicating with the surface of the bur by openings *i* in the shell (Figs. 2 and 6). Band *h* has a discharge pipe *k*; outlets *k'* in the shell permitting the passage of the grain. These bands are secured to the supports D D' by screws *s'*, and the shell rotates freely within them.

The bur B, is formed with a spiral flange *l* occupying the portion beneath the band *h'*, for conveying the paddy to the hulling portion of the machine. This hulling portion is cylindrical and is represented in Fig. 5 by the part of the bur between *y* and *z*. Its surface has a dress consisting of a system of indentations *n* having their greatest depth at the base and reaching the surface at the point. The hulling portion of the shell shown between *y'* and *z'* Fig. 6 has the same dress, arranged in inverse order. This dress is shown at X and X', where X represents a portion of the hulling shell of full size, and X' a portion of shell and bur of full size, revolving in opposite directions as indicated by the arrows 3 and 4, and showing the reverse position of the indentations.

Upon the hulling cylinder is the double series of deflecting blocks *m*, arranged spirally, as shown in Fig. 5, the action of which will be hereinafter set forth. From *z z''* of the bur B, is a spiral flange *o* which conveys the grain and husk to the cleaning portion of the machine.

The operation of hulling is as follows:— The paddy is fed by hopper *i*, as shell and bur are rotated in the opposite directions, indicated by arrows 1 and 2. On passing through the openings *i'* of the shell, the rice encounters the spiral flange *l*, and is conveyed by it to the space between the hulling portions of shell and bur. The paddy on entering this space will encounter some one of the deflecting blocks *m* which will turn the grain across the axis of the bur, and in so doing cause one end of the grain to enter a cavity *n* in the shell, as the other is caught by one of the cavities *n* in the bur, as shown at X'. The rotation of shell and bur as shown by arrows causes a pressure in direction of the length of the grain, effecting the separation of the husk as before stated. The grain and husk then pass onward to the spiral flange *o* which conveys them to the cleaner.

What I claim as new and of my own invention, and desire to secure by Letters Patent, is—

Removing the rice husk by pressure in direction of the length of the grain, effected by the action of a shell and bur dressed and operating substantially as set forth.

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

WILSON AGER.

Witnesses:
GEO. PATTEN,
JOHN S. HOLLINGSHEAD.