(No Model.)

A. GAMBLE.

ALMOND OR WALNUT HULLER.

No. 493,887. Patented Mar. 21, 1893.

Fig. 1

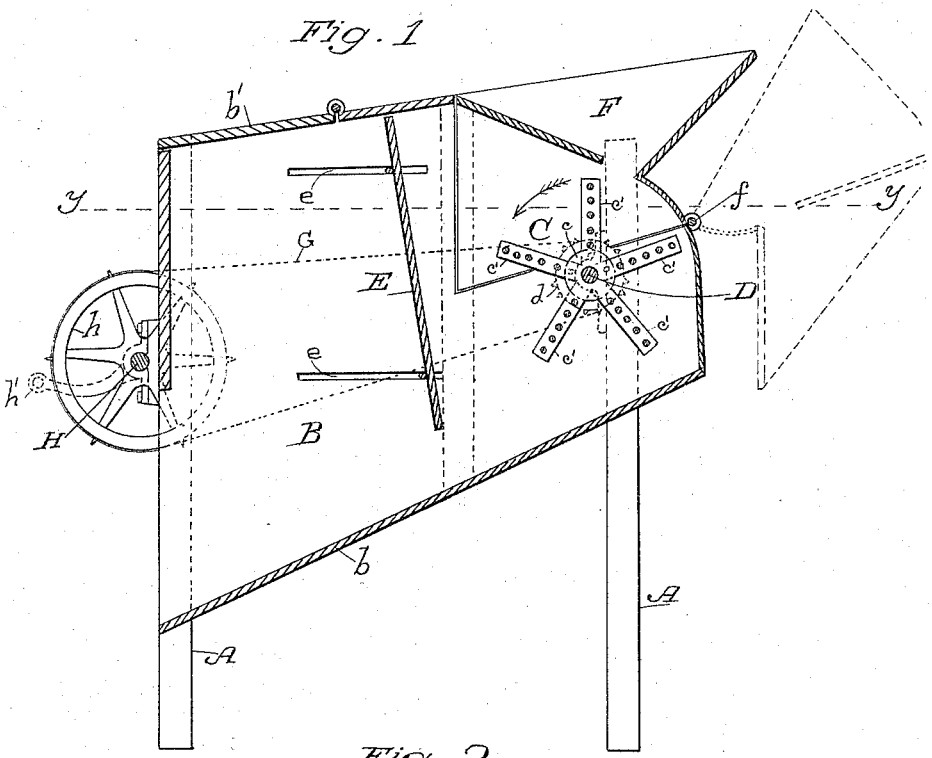


Fig. 2

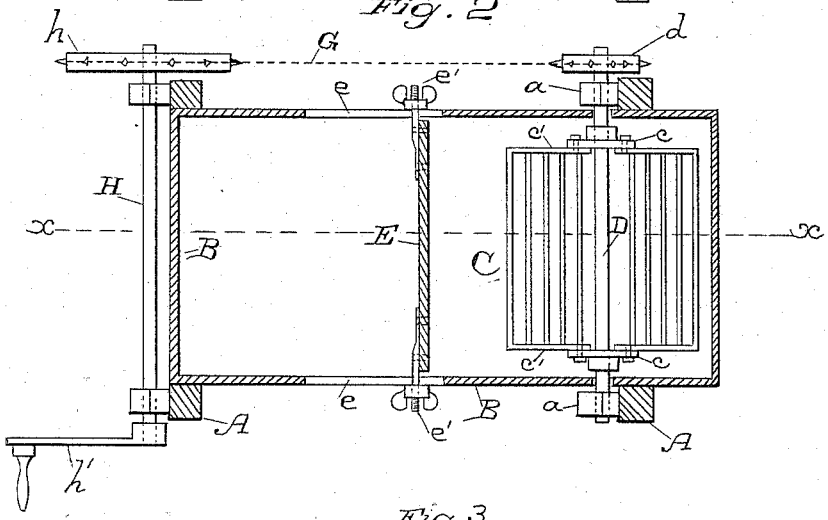
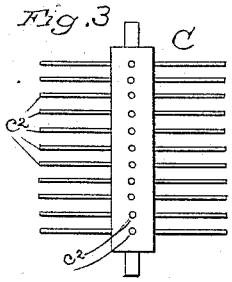


Fig. 3



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UNITED STATES PATENT OFFICE.

ANDREW GAMBLE, OF NORDHOFF, CALIFORNIA.

ALMOND OR WALNUT HULLER.

SPECIFICATION forming part of Letters Patent No. 493,887, dated March 21, 1893.

Application filed December 13, 1892. Serial No. 455,071. (No model.)

To all whom it may concern:

Be it known that I, ANDREW GAMBLE, a citizen of Great Britain, residing at Nordhoff, Ventura county, State of California, have invented an Improvement in Almond or Walnut Hullers; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the class of hulling machines especially adapted for removing the hulls of almonds or walnuts.

It consists in the novel construction, arrangement and combination of parts of the machine which I shall hereinafter fully describe and specifically point out in the claims.

The object of my invention is to provide a simple, effective and rapidly operating machine for hulling almonds or walnuts.

Referring to the accompanying drawings for a more complete explanation of my invention,—Figure 1 is a longitudinal vertical section of my machine, on the line *x*—*x* of Fig. 2. Fig. 2 is a horizontal section on the line *y*—*y* of Fig. 1. Fig. 3 is a view of a modified form of cylinder C.

A is the frame in which is supported a casing B, the bottom *b* of which is on an incline as shown. In one end of this casing is the cylinder C mounted upon a shaft D journaled in suitable bearings *a* on the frame. The cylinder consists of end flanges *c* to which are bolted radial arms *c'* in suitable number. These arms may be in different shapes, the preferable form being an open frame-work, as shown in Fig. 2, made up of end bars and spaced horizontal parallel bars.

Another form is shown in Fig. 3 consisting of radial arms c^2 of a springy nature.

Within the casing B is a wall, here represented by a board E, which is located opposite the cylinder and at a suitable distance therefrom, said distance being regulated by so mounting the board in the casing that it can be moved backward or forward, this movement being accomplished in any suitable way, as by the guides *e*, in which the board is adapted to slide, and the set screws *e'* for holding it where adjusted. This board terminates short of the inclined bottom *b* of the casing, so that a passage is provided under it for the discharge of the nuts.

F is a feed hopper located over and slightly back of the cylinder C. The frame of this hopper is hinged to the casing B at the point *f* whereby said hopper may be thrown backwardly to expose and afford access to the cylinder when necessary.

In the top of the casing B is a hinged lid *b'* which affords access to the interior of the casing. Any suitable power may be applied to rotate the cylinder. I have here shown on the end of the cylinder shaft D a sprocket-wheel *d* from which an endless chain G extends to a sprocket-wheel *h* on a shaft H having a crank *h'* or other power for turning it. The rotation of the cylinder is in the direction of the arrow.

The operation of the machine is as follows:—The unhulled nuts are supplied to the hopper and by it are fed down upon the rapidly rotating cylinder. They are caught by the arms of the cylinder, and are hurled or thrown forcibly forward against the wall E. The force with which the nuts strike against the wall is sufficient to cause them to rebound into the path of rotation of the beater arms of the cylinder, and while still in flight they are struck by said arms and the hulls are broken and disengaged from the nuts, both nuts and hulls then falling down upon the inclined bottom *b* of the casing, and passing under the wall E, are discharged into a suitable receptacle. The nuts are not injured by the blows of the beater arms as they are then in the air, and the blow delivered, while sufficient to break and disengage the hull, is not enough, under the circumstances, to injure the nuts as would be the case if they were struck by the arms while resting on some solid foundation.

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

1. A nut-hulling machine, consisting of a casing, a rotating cylinder therein, with arms adapted to receive and throw the unhulled nuts forwardly, a wall within said casing opposite to the cylinder and adapted to receive and cause the rebound of the nuts into the path of rotation of the cylinder arms whereby they are struck by said arms and their hulls broken and disengaged, and a hopper for feeding the nuts to the cylinder, substantially as herein described.

2. A nut-hulling machine, consisting of a casing, a rotating cylinder therein with arms adapted to receive and throw the unhulled nuts forwardly, a hopper for feeding the nuts to said cylinder, and a board within the casing opposite to and movable toward or from the cylinder, said board being adapted to receive and cause the nuts to rebound into the path of the cylinder arms whereby they are struck and their hulls broken and disengaged, substantially as herein described.

3. A nut-hulling machine, consisting of a casing having an inclined bottom, a rotating cylinder provided with arms and mounted within the casing at the upper end of its inclined bottom, a hopper for supplying the nuts to the cylinder and a wall within the casing opposite to the cylinder, said wall terminating short of the inclined bottom of the casing whereby a discharge passage is provided under it, substantially as herein described.

4. A nut-hulling machine, consisting of the casing having the inclined bottom, a rotating cylinder with arms mounted within the casing at the upper end of the inclined bottom, the hopper above the cylinder and hinged to the casing whereby it may be thrown backwardly to expose the cylinder, and the board within the casing opposite to the cylinder and terminating short of the inclined bottom whereby a discharge passage is formed under it, substantially as herein described.

5. A nut hulling machine consisting of a casing having slots in its sides rotating cylinder journaled in said casing, and provided with arms, an unperforated wall adjustably secured in said casing by set screws projecting through the aforesaid slots, said wall located opposite the cylinder to receive and cause the rebound of the nuts into the path of rotation of the arms whereby they are struck by said arms and their hulls broken and disengaged, substantially as herein described.

In witness whereof I have hereunto set my hand.

ANDREW GAMBLE.

Witnesses:
JOHN PINKERTON,
B. W. GALLY.