

No. 669,188.

Patented Mar. 5, 1901.

W. STONEBRAKER.  
HOMINY MILL.

(Application filed June 24, 1899.)

(No Model.)

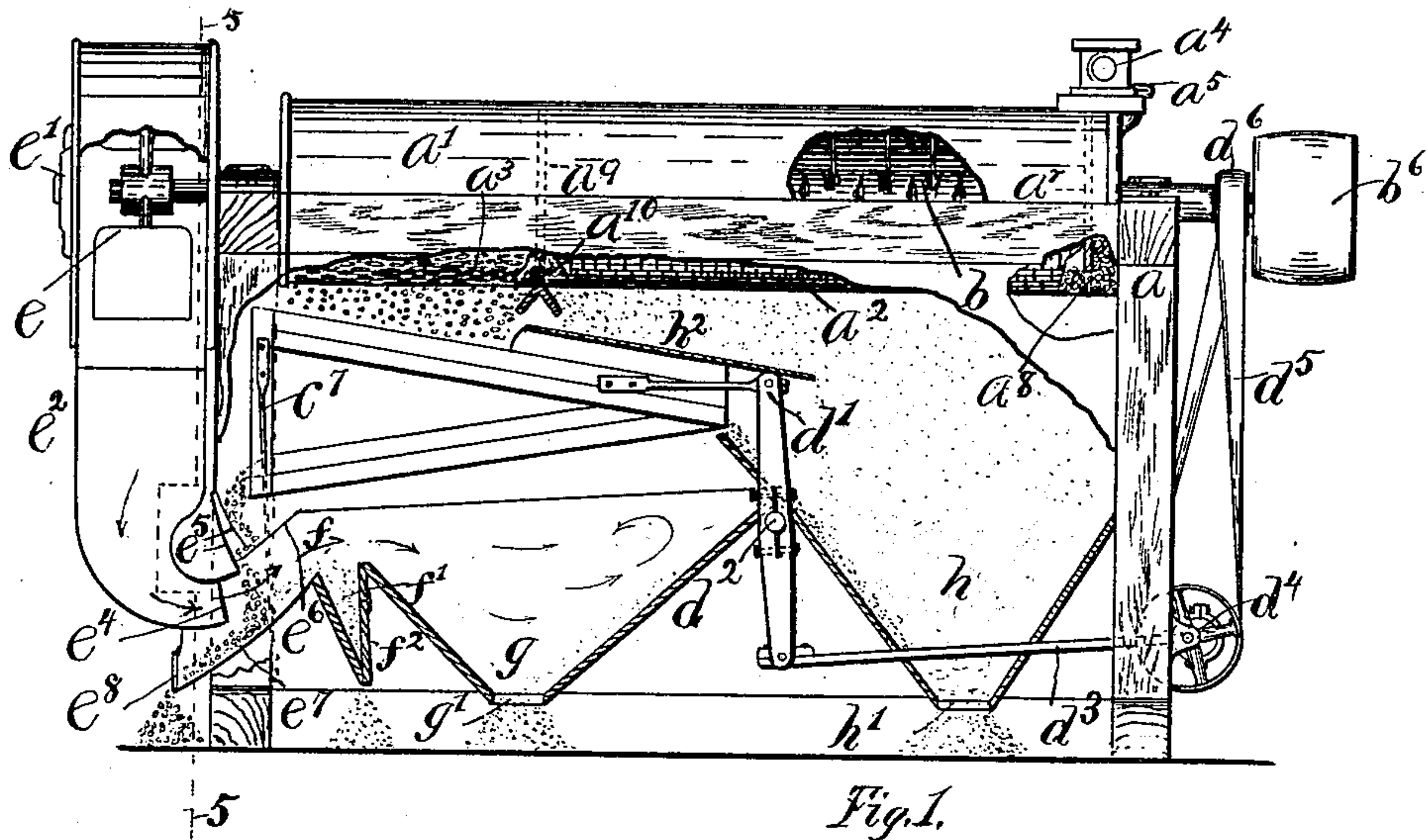


Fig. 1.

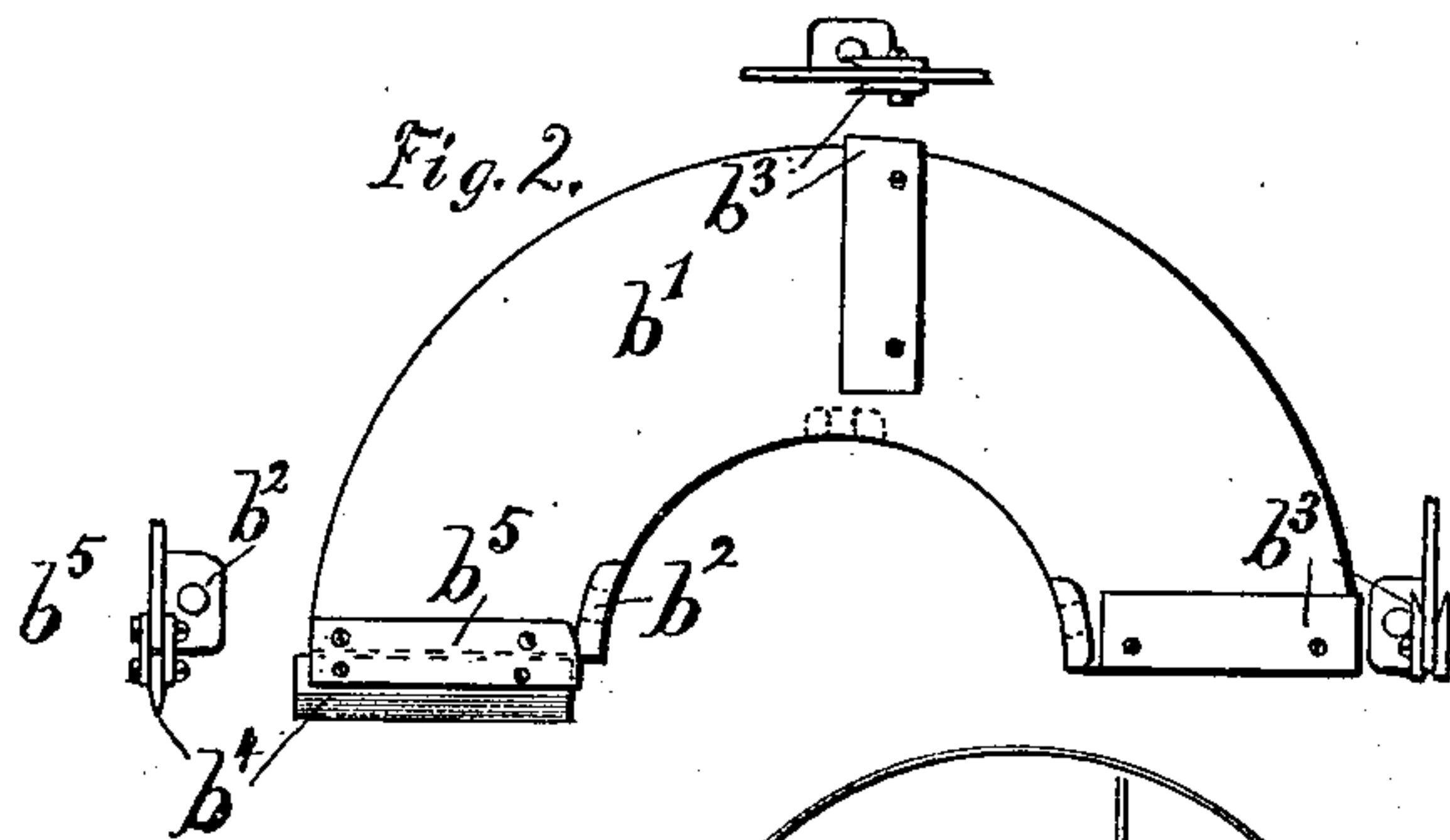


Fig. 2.

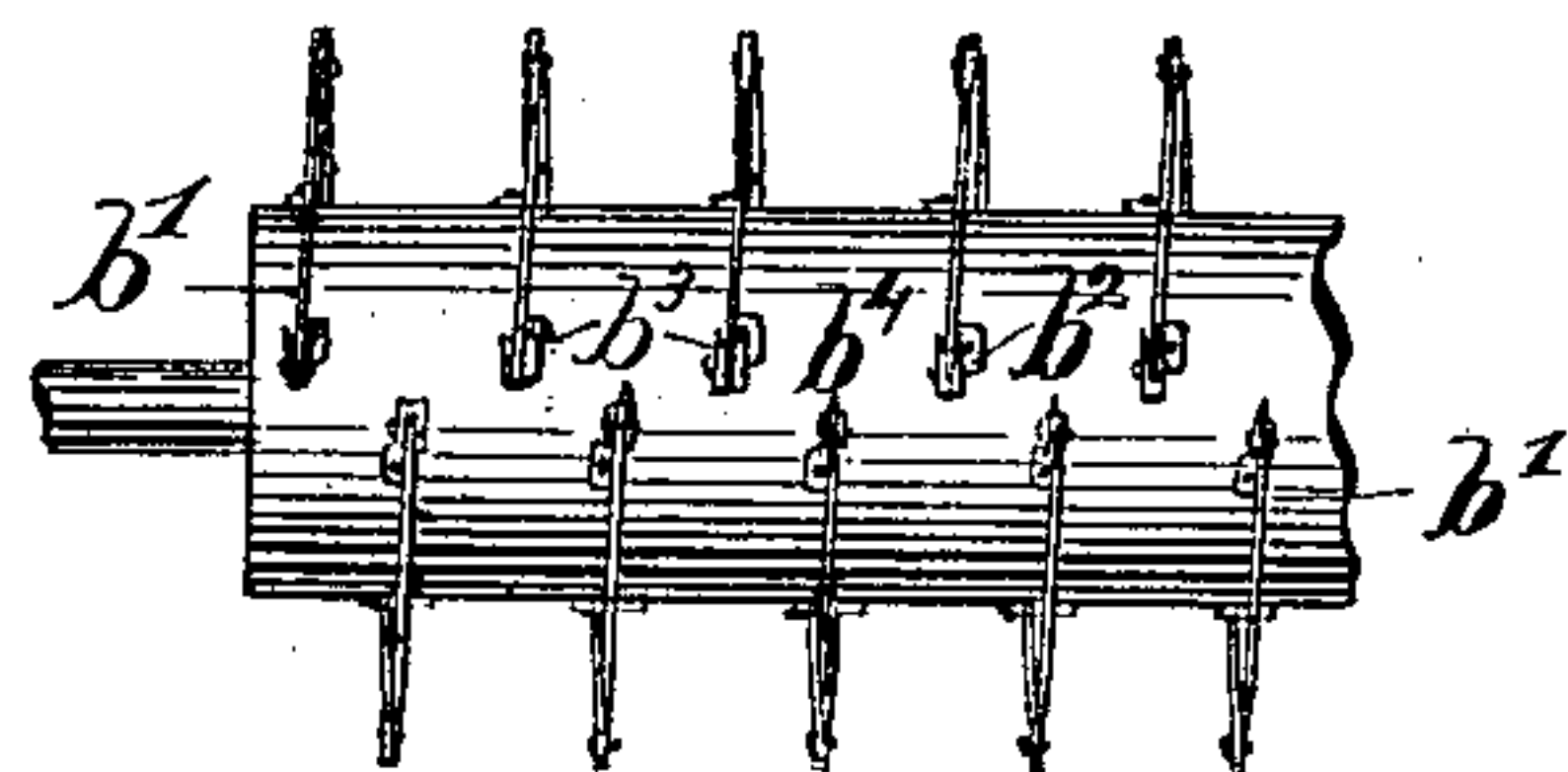


Fig. 3.

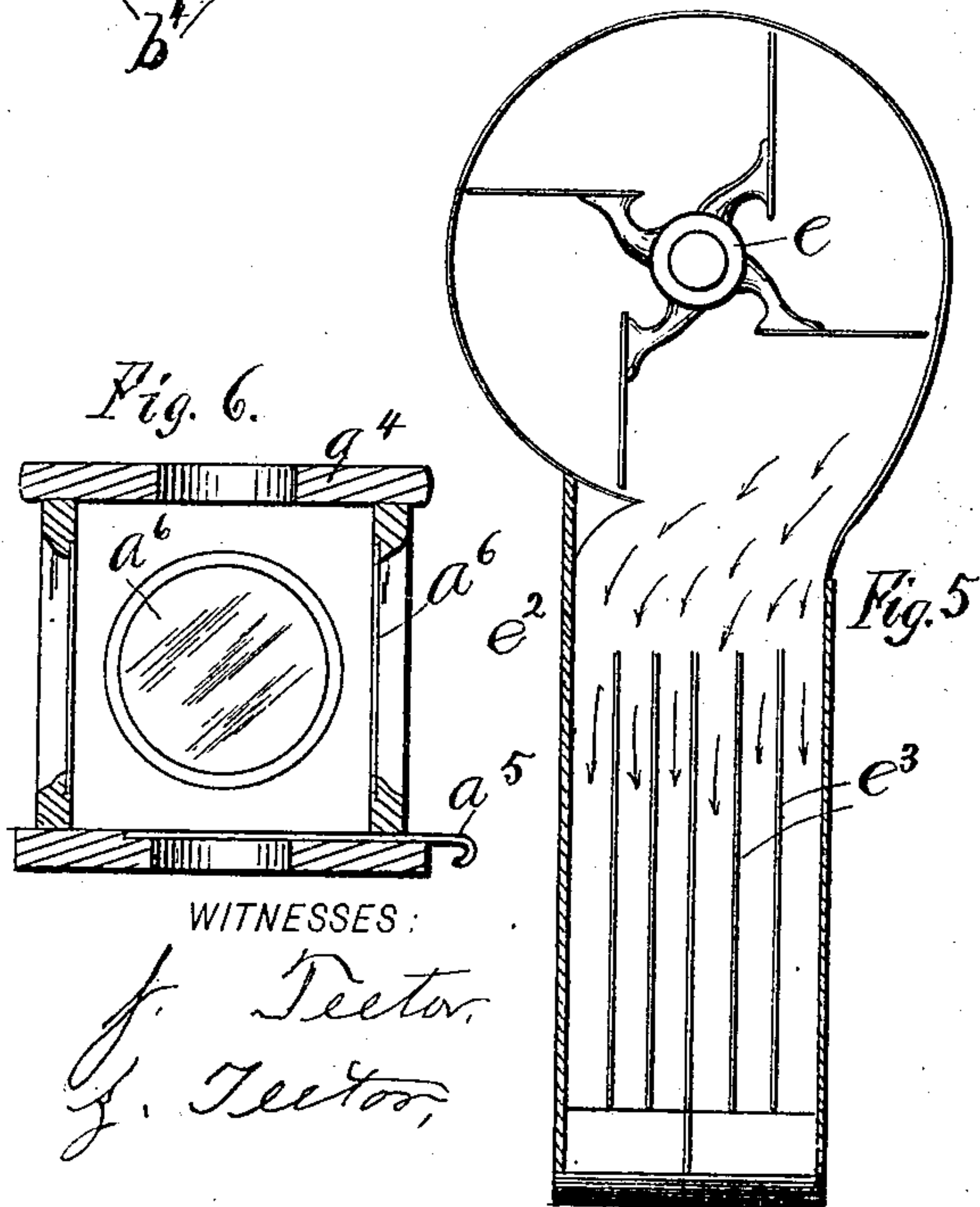


Fig. 4.

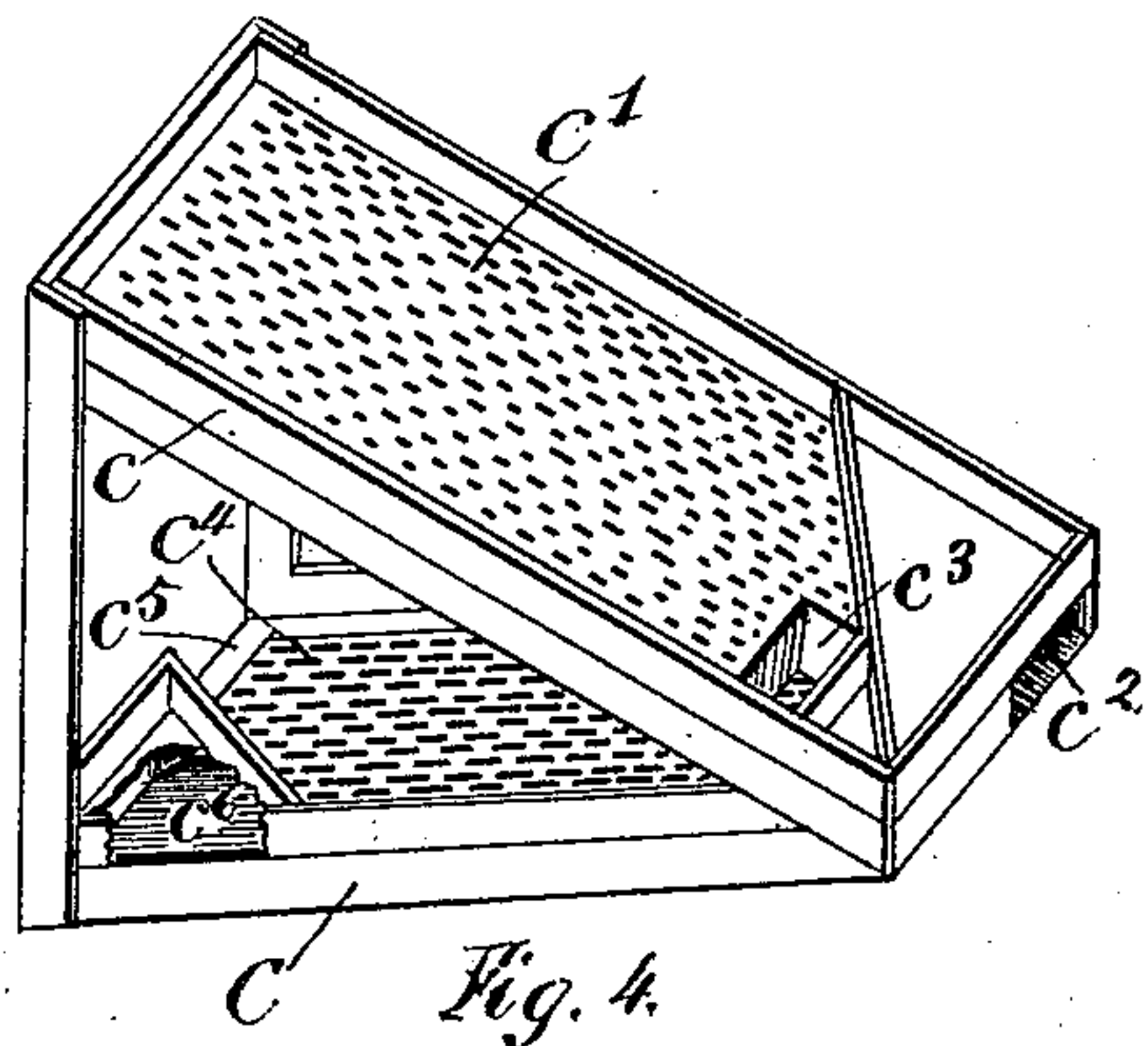


Fig. 5.

WITNESSES:

J. Teeter,  
J. Teeter,

INVENTOR

William Stonebraker

BY

Abd. L. Teeter  
ATTORNEY.



# UNITED STATES PATENT OFFICE.

WILLIAM STONEBRAKER, OF HAGERSTOWN, INDIANA.

## HOMINY-MILL.

SPECIFICATION forming part of Letters Patent No. 669,188, dated March 5, 1901.

Application filed June 24, 1899. Serial No. 721,798. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM STONEBRAKER, a citizen of the United States, residing at Hagerstown, in the county of Wayne and State of Indiana, have invented new and useful Improvements in Hominy-Mills, of which the following is a specification.

My invention has for its objects, first, provision for readily and economically renewing or sharpening the degerminating and decortivating members of the cylinder; second, means for dividing and applying air-currents to the products discharged from certain parts of the separating-sieves, and, third, the continuous feed and gradual reduction and working of the stock from the feed end to the discharge end of the hulling and degerminating cylinder, which guarantees a regular and even absorption of power, so that the machine runs extremely steady as compared with other hominy-mills.

A further object is the separating and grading of its products.

My invention is more fully described and pointed out in the following specification and claims and shown in the drawings, in which—

Figure 1 is a front elevation of my invention with certain parts broken away to show the interior construction. Fig. 2 is an enlarged detail side view with broken edge views of one of the spiral decortivating and degerminating flights, which are in semicircular form. Fig. 3 is a side elevation of the decortivating-cylinder, showing the disposition of said flights. Fig. 4 is an enlarged detail perspective view of the vibrating riddle adapted to aid in grading the product coming from the decortivating or hulling chamber. Fig. 5 is a sectional view of the fan-chamber on line 5 5 looking in the direction of the arrow. Fig. 6 is the feed-chamber.

In the reference-letters here employed, *a* represents the frame, of any suitable construction or form.

*a'* is a cylindrical casing extending the entire length of the operating-cylinder at its upper half, and sections *a*<sup>2</sup> and *a*<sup>3</sup> form the lower half of said casing and are suitably perforated, the former, *a*<sup>2</sup>, with smaller perforations, permitting the discharge of the smaller reductions of hulls and germs, the latter, *a*<sup>3</sup>, having perforations of suitable size and extent

through which to discharge the entire larger and remaining product consisting of the larger hulled grain, the said casing forming the hulling-chamber within which the degerminating and decortivating cylinder *b* is rotated.

*a*<sup>4</sup> is the feed-chamber, provided with a slide *a*<sup>5</sup>, by which the amount of feed admitted to the reduction-chamber is adjusted.

*a*<sup>6</sup> represents openings protected by panes of glass, through which the passing grain may be seen flowing to the hulling-chamber.

*a*<sup>7</sup> is a division-plate forming a chamber by which the grain is conducted to the lower part of the reduction-chamber, where is a small opening *a*<sup>8</sup> through said plate admitting the grain only at bottom of said reduction-chamber, whereby excessive packing is prevented, so that the grain being treated is not unduly heated and injured. As the grain naturally flows through said opening *a*<sup>8</sup>, it comes in contact with the flights of said cylinder and is conveyed thereby through said chamber. At *a*<sup>9</sup> is also a division-plate provided with an opening *a*<sup>10</sup> at lower point and retards the product from passing too rapidly or irregularly from the division of fine perforations to that of the larger, whereby an even reduction of the stock is maintained.

The hulling-cylinder *b* is provided its entire length with a series of semicircular reduction blades or flights *b'*, having in this case lugs *b*<sup>2</sup>, by which they are fastened to the cylinder *b*. Said flights are placed in a slightly-spiral position, so that they tend to convey the material being operated upon away from the feed end and toward the discharge end at *a*<sup>3</sup>. The flight *b'* is provided with a number of beveled knife-edged plates *b*<sup>3</sup>, which are secured, preferably, in pairs to opposite sides of said flights by small bolts and having their sharp edges placed outward and forward toward the direction of motion, as shown, so that in motion they will have the effect of removing the hull and the germs from the grain being acted upon.

At the forward end of flights *b* I have provided knife-edged blades *b*<sup>4</sup>, which are adapted especially for the degerminating of the grain, the flights being so fixed on the cylinder *b* that those on one side of the cylinder are placed about midway between those on



the opposite side, so that the knife-edges on each flight may cut through a new stratum of material, whereby the best possible action on the stock is secured. The blades or plates  $b^3$  and  $b^4$  all being detachable they may readily be removed and sharpened when worn and may also be made double-edged, so as to be reversible, and thus can also be readily duplicated, whereby my mill may be renewed at small expense and in a short time to its original efficiency when dulled from service.

$c$  is a shaking-riddle case, being provided with two riddles in this case, the upper at  $c'$ , which separates the product dropping upon it from the reduction-case at  $a^3$ , separating therefrom the finer reductions or meal which, falling on a bottom immediately beneath said riddle, is discharged at  $c^2$  and in this instance into the chamber  $h$ , into which also falls the product from casing  $a^2$ . The larger or coarser part of the product flowing on the riddle  $c'$  is conducted by proper guide-boards to and flows through the opening  $c^3$ , falling into the lower riddle  $c^4$ , whereby another separation is made, the larger product being the hominy passing over latter said sieve through discharge  $c^5$ , while the finer product, passing through said riddle  $c^4$ , falling on bottom next below this sieve, is by proper guide-boards conducted to discharge  $c^6$ , which is on opposite side from said discharge  $c^4$ , and is conducted in separate streams, falling upon suitable aprons provided therefor.

$e$  is a fan supported and driven by the shaft of cylinder  $b$ , extending through and carried by an ordinary journal-box provided therefor, an ordinary casing provided for said fan and a relief-opening and slide  $e'$ , and an air-blast tube  $e^2$ , extending downwardly and being divided into a number of divisions  $e^3$ , adapted to break up eddies of current which would otherwise result, by means of which said divisions I maintain even and steady currents of air in each duct, said divisions extending around the bend in said air-tube  $e^2$  to the point  $e^4$ , where it is directed into and through the falling streams of hominy coming from riddle  $c^4$  discharged, respectively, from discharges  $c^5$  the coarser and  $c^6$  the finer grades which, falling on the aprons  $e^5$  and  $e^6$  successively back and forth, are brought or spread out into even streams and falling then evenly through the steady blast of air-currents, whereby a separation of the coarse hulls or bran and finer meal which may have clung to the stock or found its way this far are separated therefrom, the coarser reductions dropping on the inclined bottom  $e^7$ , provided therefor, and being discharged at valves  $e^8$ , the division of the two grades of material to this point of final discharge from the machine, the lighter portions of the reduction separated by said air-currents being carried over a ridge through the passage  $f$ , the heavier portion of this product falling naturally in the pocket  $f'$  and the lighter being carried on into the settling-

chamber  $g$ , said heavier materials being discharged through the gravity-valve  $f^2$  and the lighter through similar valve  $g'$ . All the product coming from the first reductions passing through the perforations in  $a^2$  falls into chamber  $h$  and is discharged at  $h'$ , the apron  $h^2$  catching part of the product from  $a^2$  being attached to the riddle-case and operated with it discharges such part of this product also into the chamber  $h$ . Said riddle-case being hung at one end on spring blades or hangers  $c^7$  and at the other at  $d'$ , attached to the rocking lever  $d$ , which is a lever of the first class, having its pivotal point at  $d^2$  at the sides of the casing and having at lower end a connecting-rod  $d^3$ , attached thereto, and a crank or eccentric connection, as in this case, to an eccentric  $d^4$ , provided with a belt-pulley and a belt  $d^5$ , transmitting motion from a belt-pulley at  $d^6$  on the shaft of cylinder  $b$ , also being provided with a belt-pulley  $b^6$ , by which the entire machine is driven.

I would have it understood that I do not hold myself to the exact arrangement and construction here shown, as a number of changes may be resorted to without departing from the spirit of my invention, and I hold myself at liberty to make such alterations as fall within the scope of my invention.

What I have shown and claim as my invention, and desire to secure by Letters Patent, is—

1. In a hominy-mill the combination with a rotating cylinder, a series of semicircular flights attached spirally thereto, detachable knife-edged plates secured to both sides of said flights, a knife-edged blade or plate detachably secured to forward end of said flights, a cylinder-casing within which said cylinder is adapted to revolve, suitable perforations in lower half of said casing adapted to permit of the graded and continuous discharge of the entire product and means for the admission and regulation of a continuous feed to said hominy-mill.

2. In a hominy-mill, the combination with a rotating cylinder, a series of semicircular flights attached spirally thereto, detachable knife-edged blades or plates secured to both sides of said flights; a knife-edged blade or plate detachably secured to forward end of said flights, a cylinder-casing within which said cylinder revolves, graduated perforations in lower half of said casing, the finer perforations being at the feed end of casing and the coarser at opposite end thereof, providing a graded and continuous discharge of products of reduction therefrom, a riddle, or sets of riddles, adapted to separate said products of reduction, some of which flow directly to suitable bins provided therefor, and some through a suitable aspiration-chamber where they are subjected to suitable currents of air, a fan, providing said air-currents, and means providing a regular and continuous feed as set forth.



3. In a hominy-mill the combination with  
a rotating cylinder, a series of semicircular  
flights attached thereto, detachable knife-  
edged plates secured to both sides of said  
5 flights, a knife-edged blade or plate detach-  
ably secured to forward end of said flights, a  
cylindrical casing within which said cylinder  
is adapted to revolve and suitable perfora-  
tions in the lower half of said casing adapted

to permit the discharge of the entire prod- ro  
uct, substantially as set forth.

In testimony that I claim the foregoing I  
have hereunto subscribed my name in the  
presence of two witnesses.

WILLIAM STONEBRAKER.

Witnesses:

W. D. HINDMAN,

B. F. JEWETT.