(No Model.)

M. L. MOWRER.

HOMINY MILL.

No. 299,834. Patented June 3, 1884.

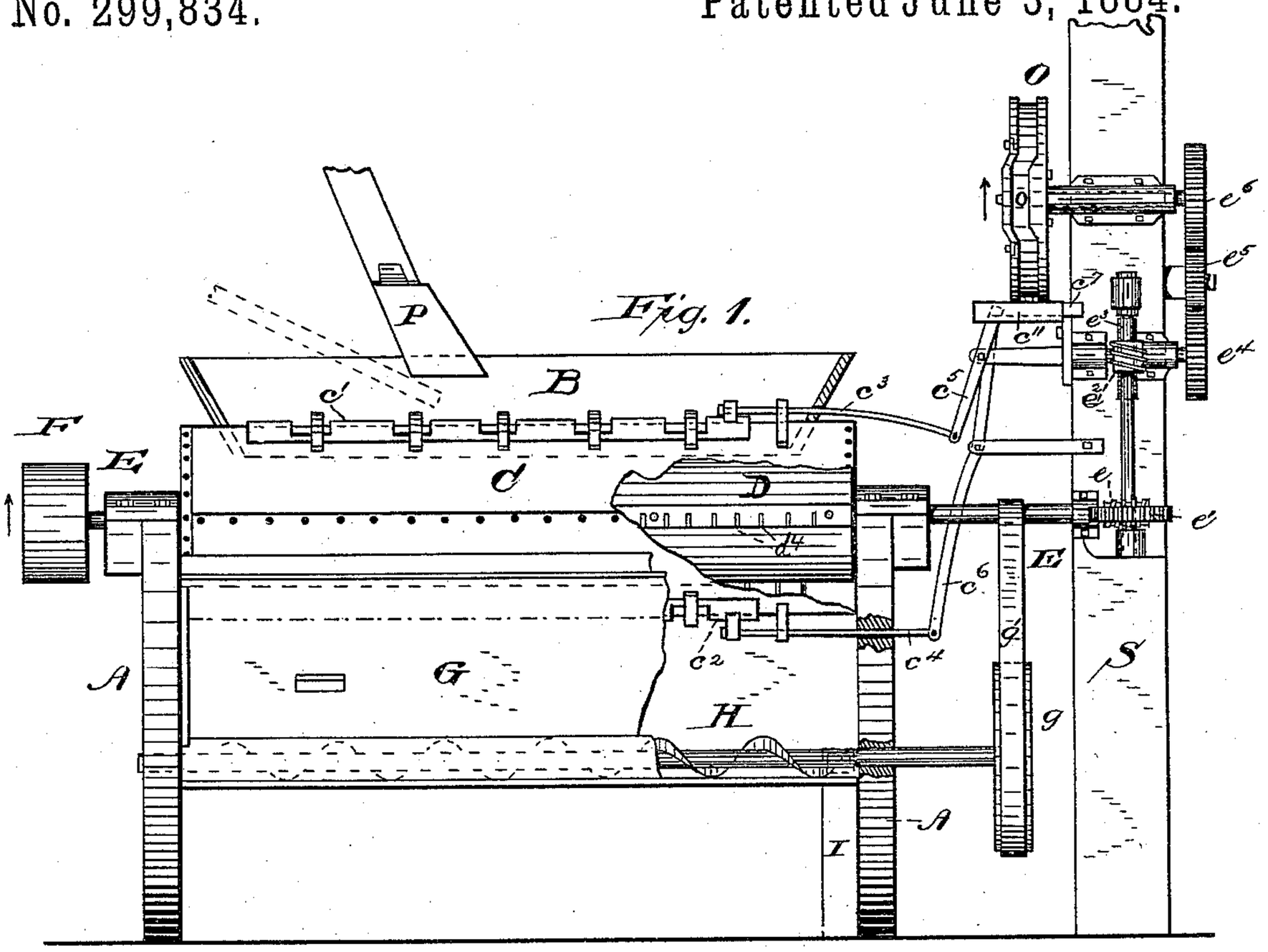

Fig. 1.

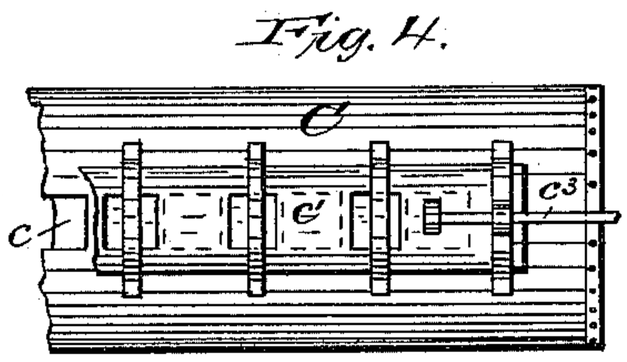

Fig. 4.

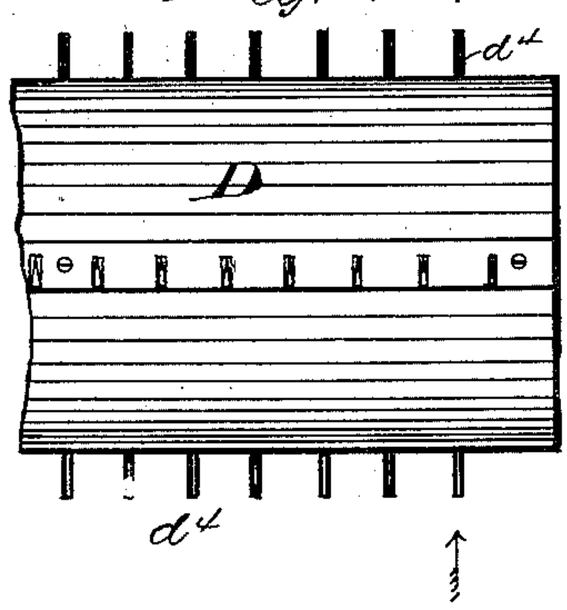

Fig. 5.

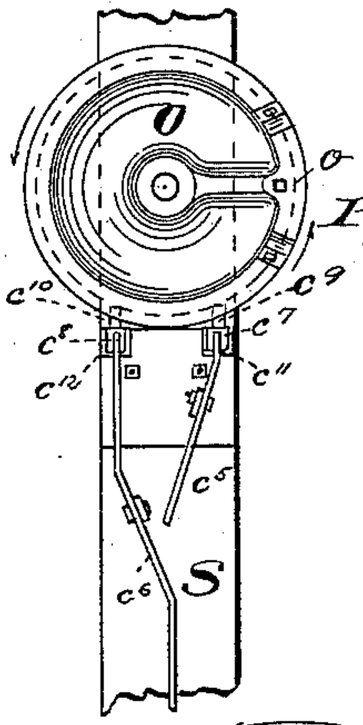

Fig. 3.

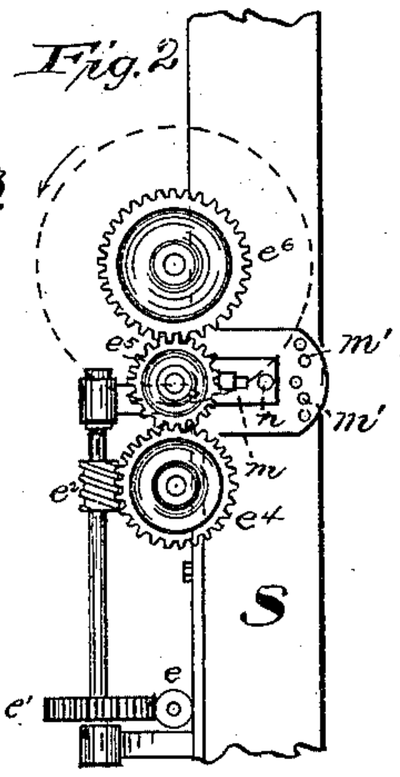

Fig. 2.

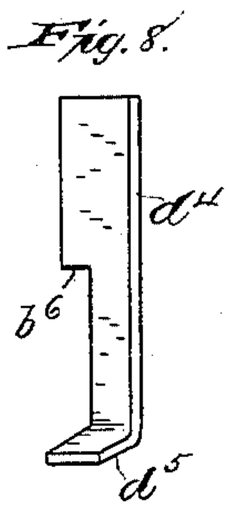

Fig. 8.

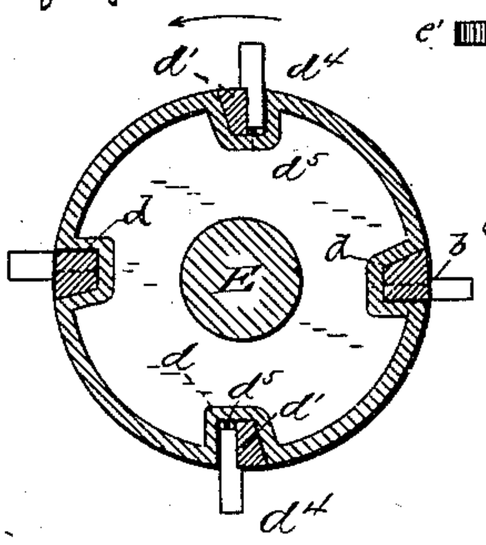

Fig. 6.

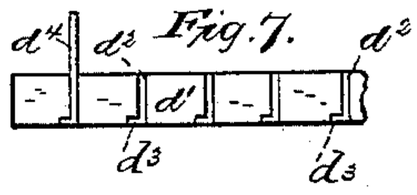

Fig. 7.

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UNITED STATES PATENT OFFICE.

MARTIN L. MOWRER, OF NEWARK, NEW JERSEY.

HOMINY-MILL.

SPECIFICATION forming part of Letters Patent No. 299,834, dated June 3, 1884.

Application filed January 22, 1884. (No model.)

To all whom it may concern:

Be it known that I, MARTIN L. MOWRER, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Hominy-Mills; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in machines employed in the manufacture of hominy, known as "hominy-mills," and is intended to increase the working capacity and efficiency thereof and improve the quality of the product, as will be hereinafter set forth.

The invention consists in the construction and combinations of the various parts of the machine, substantially as illustrated in the drawings, and described and claimed hereinafter.

Referring to the accompanying drawings, Figure 1 is a side elevation, partly broken away, of a machine showing the relation of the several parts of my invention. Fig. 2 is a front elevation of a portion of the gearing. Fig. 3 is a similar view of the grooved wheel, &c. Fig. 4 is a top view of outside or receiving cylinder. Fig. 5 is a top view of the knife-cylinder. Fig. 6 is a vertical section through line *x* of Fig. 5. Fig. 7 is a side elevation of a portion of the slotted knife-bar. Fig. 8 is a perspective view of a knife enlarged.

The preferred construction of my hominy-mill is shown in the drawings, in which—

A is the frame-work thereof; B, a hopper arranged on the top of the metallic receiving cylinder or shell C, within which revolves the knife-cylinder D, actuated by a shaft, E, passing therethrough, said shaft being provided with a pulley, F, on one end. The receiving-cylinder may be partially inclosed, the boards G, extending down below the same, forming a chamber adapted to receive and hold the charge of corn after it has been sufficiently treated in the cylinder, said chamber being preferably triangular, tapering toward the bottom, where a worm-shaft, H, is arranged, turning in bearings in the frame-work and rotated by the pulley *g*, connected with the driving-shaft E by the belt *g'*, the worm serving to propel or throw the contents of the chamber into a conducting-tube, I. The upper and lower sides of the receiving-cylinder C are provided with openings *c*, at suitable distances apart, which are covered and uncovered by sliding plates c' c^2, provided with openings corresponding to those in the cylinder, said plates moving in suitable guides. The top plate, c', has secured thereto a rod, c^3, passing through the end of the hopper and pivoted to a lever, c^5, which is pivoted to an arm secured to the upright S, the upper end of the lever c^5 being pivotally attached to a sliding bar or piece, c^7, which is provided with a pin, c^9, said sliding bar moving in the grooved piece c^{11}, which is suitably secured to the upright. The bottom sliding plate, c^2, is connected with a similar rod, lever, sliding bar, pin, and grooved piece, lettered, respectively, c^4 c^6 c^8 c^{10} c^{12}, as shown in Figs. 1 and 3, the lever c^6 being longer than lever c^5, as indicated in Fig. 1.

O is a grooved wheel or cam, which is rotated by the power of the driving-shaft E, transmitted through the gearing e e' e^2 e^3 e^4 e^5 e^6, Figs. 1 and 2, arranged on and secured to the upright S. The groove in the wheel O is diverted from the normal plane thereof at a certain part of the periphery, as *o*, Fig. 1, the amount of which may be increased or diminished, according to extent of sliding motion desired in the plates c' and c^2. The pins c^9 and c^{10} extend up into the groove in the wheel O, and as the wheel revolves and the diverted part of the groove engages with said pins it causes the pins and the sliding pieces c^7 and c^8 to move longitudinally in the grooved pieces c^{11} and c^{12}, which, operating through the levers and rods above described, move the sliding plates c' and c^2, closing and unclosing the openings in the cylinder C. I prefer to employ worm instead of bevel gearing in changing the plane of the rotary motion, as being better adapted to transmit the rapid motion necessary in operating the mill. Within the receiving-cylinder is arranged the knife-cylinder D, through which the shaft E passes, and to which it is secured, revolving therewith, said cylinder being provided with grooves *d*, extending its en-

tire length, as many as may be necessary or desirable, one side of said grooves being straight, the other being preferably beveled. Fitting and bolted within each groove is a bar, d', having slots d^2 in the side thereof, at suitable distances apart, and recesses d^3 in the bottom, the knives d^4 being held in the slots and recesses when the bar is bolted within the grooves. The knives d^4 are formed, preferably, as shown in Fig. 8, each having a lug, d^5, on the side at the bottom, the blade of the knife being wider than the lower part or shank, forming a shoulder, b^6. The knives are arranged in the slots in the bars d', the lugs d^5 fitting into the recesses d^3 on the under sides of the bars, which, when securely bolted in place, hold the knives firmly in position. The slots in one bar on the cylinder alternate or come between those in another bar, so that the knives alternate around the cylinder, thereby increasing its cutting capacity. This construction and arrangement of the knife-cylinder greatly simplifies the removal and adjustment of the knives, as is evident.

In operating the machine, the corn is fed from the tube P into the hopper, and as the portion o of the grooved wheel engages with the pin c^8, acting through the mechanism above described, it slides the plate c^2 on the bottom of the cylinder, uncovering the openings therein, and permits the contents of the cylinder to fall into the chamber beneath, and as the pin c^8 leaves the part o the plate c^2 slides back, covering the openings. As the pin c^8 leaves the part o at one end, the other end of said part engages with the pin c^9, uncovering the openings in the top of the cylinder and permitting the corn in the hopper to run into the same, the plate closing the openings as the pin c^9 leaves the part o of the cam. The time for holding the charge in the cylinder may be lengthened or shortened by increasing or diminishing the size and speed of the cam. In order to change the speed of the cam, I may substitute for the gear-wheels e^4 and e^6 others of any desired size. The idler gear-wheel e^5, being arranged upon the slotted plate m, provided with a pin, n, Fig. 2, is capable of adjustment in relation to the varying sizes of the gear-wheels e^4 and e^6, the adjustment being effected by changing the pin n to any one of the holes m' in a plate on the upright S as desirable. By this construction the charge of corn is automatically fed to and discharged from the cylinder C and knife-cylinder D.

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

1. In combination, a cam or grooved wheel, O, the grooved piece c^{12}, sliding piece c^8, provided with a pin, c^{10}, lever c^6, rod c^4, sliding plate c^2, and a cylinder, C, having openings therein, as set forth.

2. In combination, a cam or grooved wheel, O, the grooved piece c^{11}, sliding piece c^7, provided with a pin, c^9, lever c^5, rod c^3, sliding plate c', and a cylinder, C, having openings therein, as set forth.

3. In combination, a cam or grooved wheel, O, said groove being diverted from the normal plane thereof at a certain part of the periphery, as o, sliding pieces having projections moving in the groove in said cam, sliding plates c' and c^2, and means for connecting said sliding pieces and plates, substantially as set forth.

4. In combination, in a hominy-mill, a perforated receiving-cylinder, perforated sliding plates adapted to cover and uncover said perforations in the receiving-cylinder, a knife-cylinder arranged within said receiving-cylinder upon a driving-shaft, levers c^5 c^6, sliding pieces c^7 c^8, provided with pins c^9 c^{10}, a cam, and mechanism, substantially as described, whereby the motion of the driving-shaft is communicated to said cam, for the purpose set forth.

5. In combination, in a hominy-mill, a grooved wheel, O, the groove therein being diverted from the normal plane thereof at a certain portion of the periphery, as o, the gear-wheels e^4 e^6, the slotted plate m, provided with holes therein, and an adjustable gear-wheel, all the said parts arranged and operating substantially as set forth.

6. In combination, a cylinder having longitudinal grooves, as d, therein, bars having slots in the sides thereof, and recesses d^3 in their bottoms, said bars being adapted to fit in said longitudinal grooves, and knives d^4, provided with lugs d^5, said knives being adapted to fit the slots and recesses in said bars, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 10th day of January, 1884.

MARTIN L. MOWRER.

Witnesses:

OLIVER DRAKE,

F. F. CAMPBELL.