G. B. GAINES.

HOMINY MILL.

No. 190,675. Patented May 15, 1877.

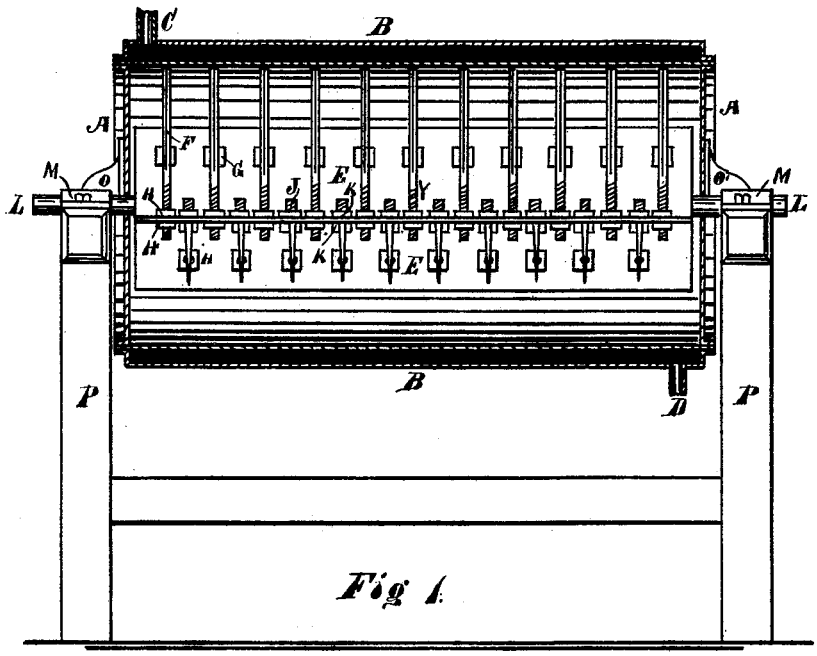

Fig 1.

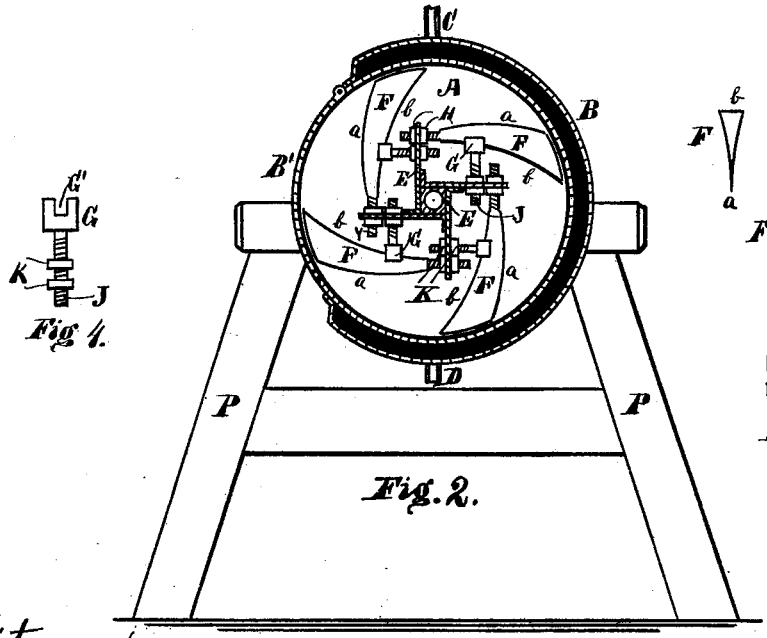

Fig. 2.

Fig 4.

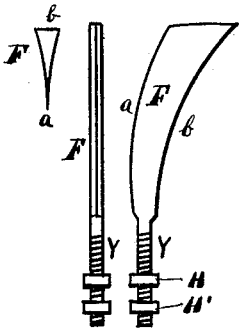

Fig 3.

Witnesses
E. C. Whitney
S. G. Irwin

Inventor
George B. Gaines
Per E. C. Whitney
his Atty.

UNITED STATES PATENT OFFICE.

GEORGE B. GAINES, OF INDIANAPOLIS, INDIANA, ASSIGNOR OF ONE-HALF HIS RIGHT TO JOHN E. SANDERS, OF SAME PLACE.

IMPROVEMENT IN HOMINY-MILLS.

Specification forming part of Letters Patent No. **190,675**, dated May 15, 1877; application filed March 20, 1876.

To all whom it may concern:

Be it known that I, GEORGE B. GAINES, of Indianapolis, county of Marion, State of Indiana, have invented a new and useful Hominy-Mill, with kiln-drying attachment, and improved beaters, of which the following is a description, reference being had to the accompanying drawings.

My invention consists, first, of arranging the cylinder with a segmental steam-space around a portion of it, for the purpose of kiln-drying the broken particles of grain while they are being beaten; second, in the construction of the revolving beater-shaft; third, in the construction of the beater-knives; and, fourth, in the manner in which the beater-knives are secured and supported in an adjustable manner to the shaft.

Figure 1 represents a side elevation of my improved hominy-mill with the cover removed. Fig. 2 is a sectional end view of the same. Fig. 3 represents an end, edge, and side view of the beater-knives. Fig. 4 is a view of the supporting-stud of the beater-knives.

The great objects in hominy-mills is to beat and break the grain into small particles, to remove the cuticle and the germ, to polish the particles of grain, and to remove the dust, powdered germ, and bran, after which the hominy has to be kiln-dried before it is ready for the market. To accomplish the above results the hominy has to first pass the mill, and afterward has to be kiln-dried, in order to remove the dampness, and, passing through the mill, (if green corn is used,) it is almost impossible to polish the particles of grain, owing to the moisture contained therein, and the grain has a fuzzy appearance, all of which is remedied by my improved machine, and the grain is kiln-dried in its passage through the cylinder.

In the drawing, A represents the cylinder of the mill, which is mounted on the standards P P in a stationary manner by means of the bracket-supports O O′.

The cylinder A is cut away at one side to form an opening, to which is fitted a hinged door, B′, on opening which the cylinder can be instantly filled or quickly discharged, and extending round that part of the cylinder not occupied by the door is a jacket, B, arranged to leave a steam space or chamber between the jacket B and cylinder A, as shown. At the upper part of the steam-chamber B is inserted the induction steam-pipe C, and at the bottom of the steam-chamber B is the outlet-pipe D. By these arrangements I am enabled to keep live steam in the chamber, between the jacket B and cylinder A, for the purpose of drying the grain while it is being beaten in the cylinder, thus removing the moisture, and allowing the grain to be polished at the same time. I am also enabled to immediately discharge the chamber with little loss of heat by simply opening the door to a limited extent and rotating the shaft, the blades carrying the grain to the opening. The shaft L is mounted in suitable boxes M M on the frame P P, outside of the ends of the cylinder A, as shown in Fig. 1, and is provided with a pulley in the ordinary manner. The body of the shaft that is inside of the cylinder is square, and has four angle-iron wing-plates, E, of wrought-iron, firmly secured thereon by bolts or rivets, as shown in Fig. 1, and more fully in Fig. 2. These angle-iron wing-plates E have holes properly spaced to receive the beater-knives F and knife-braces G J, as shown in Fig. 1. The beater-knives F are of peculiar construction, as follows: The blade is hollow-ground, similar to a razor, with a sharp curved edge, *a*, and a broad curved back, *b*, and the shank of the knife is provided with a screw-thread, on which are two nut, H H′. The shanks of the knives are inserted in the holes drilled in the angle-iron wings E, and secured in their proper position, so that the outer end of the knives will just clear the inside of the cylinder A, as they revolve. The supporting-stud G J is formed with the head G, in which is a slot, G′, of sufficient width and depth to receive and hold fast the back of the beater-knives E, and the shank J is provided with a screw-thread, on which are the nuts K K, all arranged so as to be attached to the angle-iron wings E, and support the knives F, as shown in Fig. 2. The beater-knives F, being hollow ground, will keep sharp longer than if ground straight, and the hollow-ground sides, as the knives

revolve, tend to throw the grain violently to each side of the knives, and thus polish and beat the grain in a far superior manner than heretofore.

I do not claim, broadly, the combination of a jacket, and intervening space with the cylinder and its stirrers; but

I claim—

1. The cylinder A containing the stirrers F, having an opening at one side, and a door, B′, adapted thereto, and hinged at the upper edge, and provided at that part not occupied by the door with a steam-jacket, B, as set forth.

2. The beater-shaft composed of the square shaft L, and angle-iron wings E, arranged in the manner shown, for the purposes specified and described.

3. The beating-knife F, formed with a hollow-ground blade, sharp at the edge *a*, and broad at the back *b*, and with a shank, Y, which is provided with a screw-thread and nuts, H H, as shown, for the purposes set forth and described.

4. The stud G, formed with a groove, G′, in the head, and a screw-threaded shank, J, and nuts K K, in combination with the beater-knives F, and angle-iron wings E, for the purposes set forth and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEO. B. GAINES.

Witnesses:

E. O. FRINK,

E. C. WHITNEY.