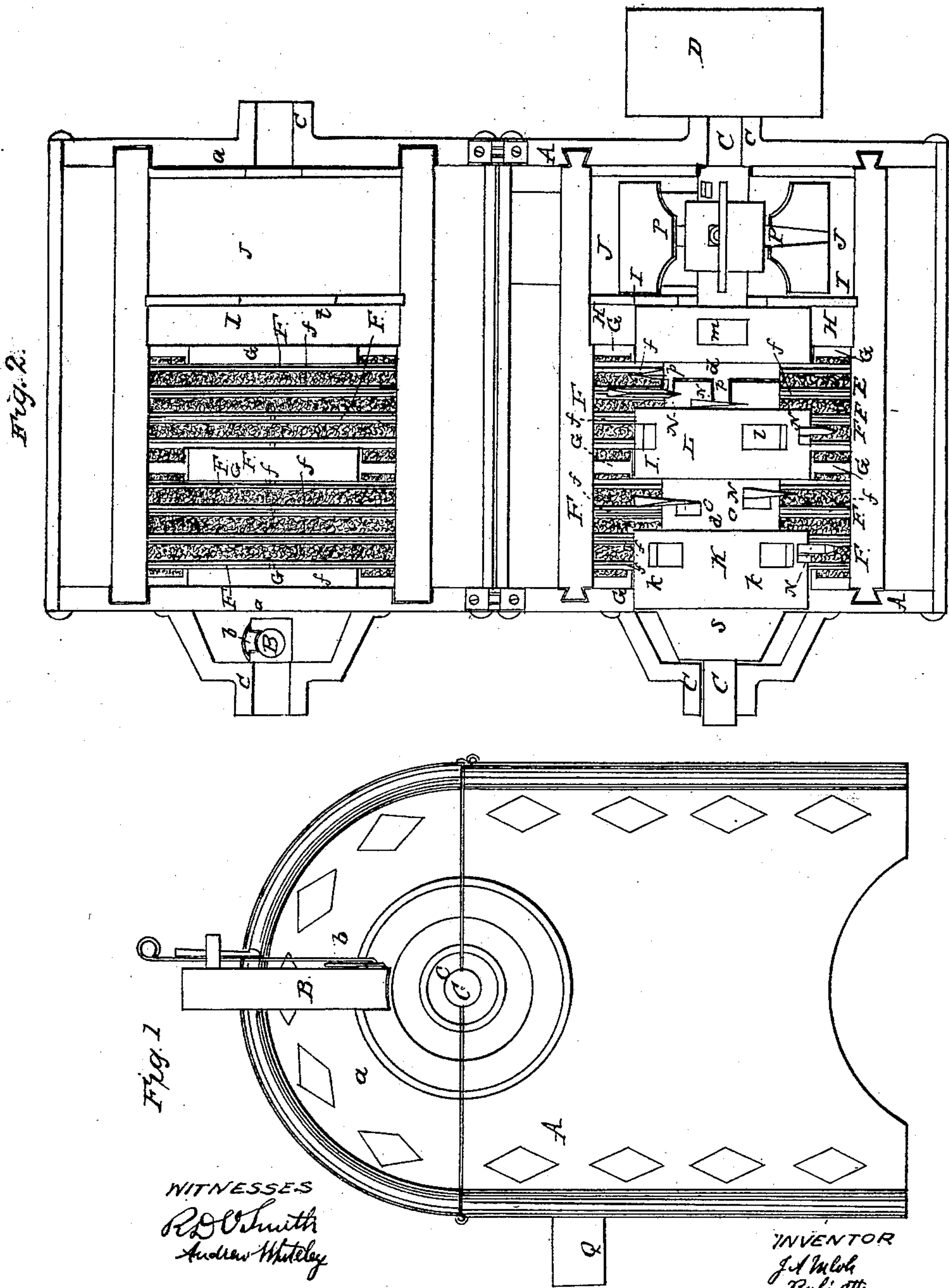


J. A. WELSH.  
Grain Hulling Machine.

No. 57,605.

Patented Aug. 28, 1866.

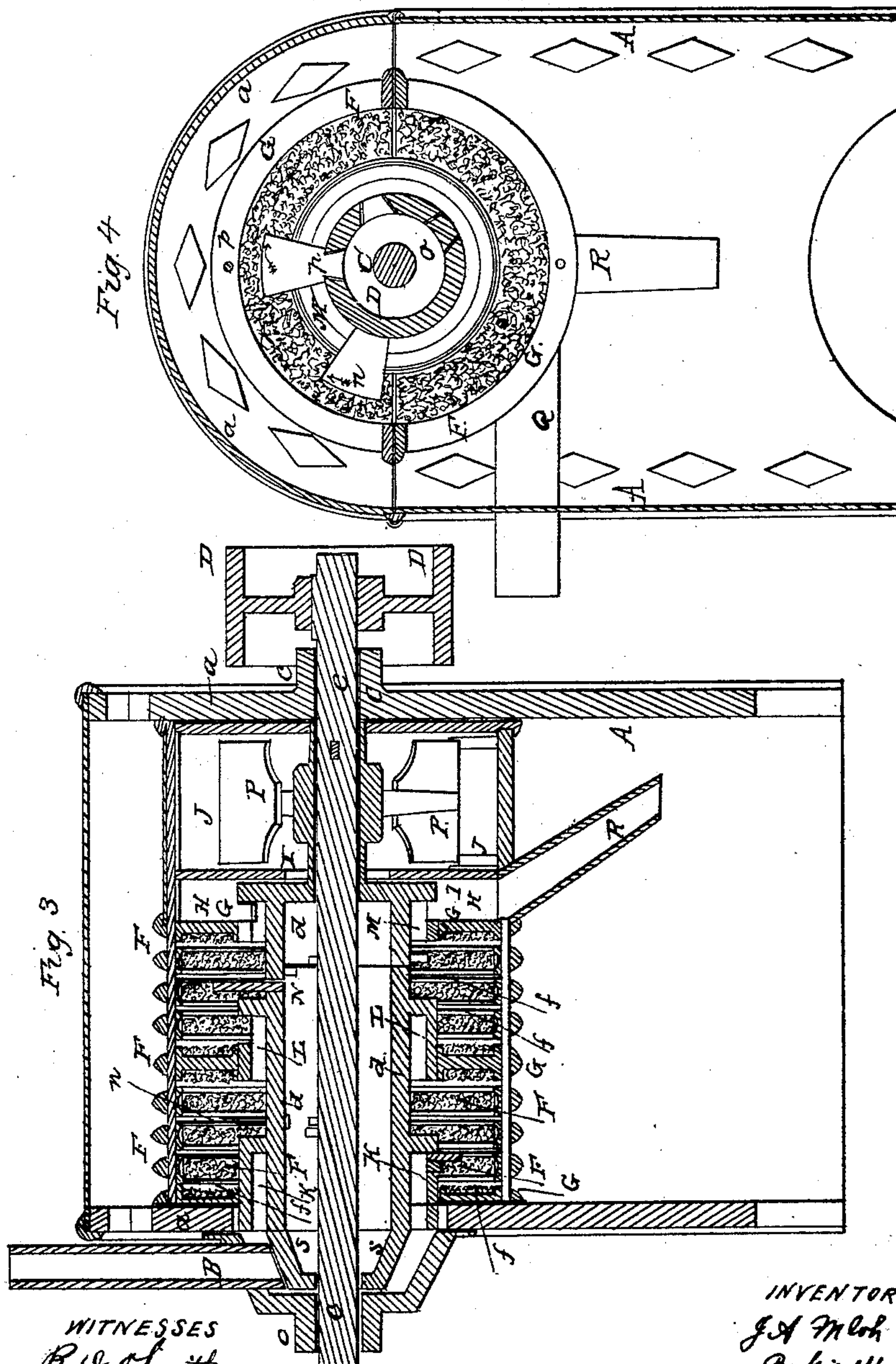


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## Grain Hulling Machine.

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WITNESSES  
R. D. Smith  
Andrew Whitely

INVENTOR  
J. A. M. Loh  
By his atty  
J. S. M. Loh



# UNITED STATES PATENT OFFICE.

J. A. WELSH, OF XENIA, OHIO.

## IMPROVEMENT IN GRAIN-HULLING MACHINES.

Specification forming part of Letters Patent No. 57,605, dated August 28, 1866.

*To all whom it may concern:*

Be it known that I, J. A. WELSH, of Xenia, in the county of Greene and State of Ohio, have invented an Improved Hominy-Machine; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification—

Figure 1 being an end view of the machine; Fig. 2, a top view thereof, the cover or top being turned back; Fig. 3, a central longitudinal vertical section of the machine; Fig. 4, a transverse vertical section thereof.

Like letters designate corresponding parts in all the figures.

A rectangular case, A, with a semi-cylindrical top, *a*, is a suitable form for the machine. A central driving-shaft, C, extends longitudinally through it, being provided with bearings *c c*, one of which projects considerably from the main case to furnish room for the insertion of a vertical receptacle or feeding-tube, B, substantially as represented. At the other end of the shaft the driving-pulley D is attached.

Around the shaft C, at the working end, is a drum, *d*, which terminates in a truncated conical portion, *s*, Fig. 3, in the projecting bearing *c*, where the corn is fed in through the tube B, which closes down over said conical part of the drum, except on one side, where the grains of corn are admitted. This feeding-aperture is regulated in size by a gate, *b*, so as to feed in the corn at any desired rate. From this feeding-tube the corn, by the centrifugal action of the drum *d*, is thrown inward into the open end of a transferring-cylinder or cup, K, which is closed at the inner end, but has apertures *k k* through its periphery, by which a passage is furnished for the corn to gradually find its way by centrifugal action into the first beating-chamber, past the first partition G, which has an aperture through it just large enough only for the transferring-cylinder K to turn in. In this first chamber are sharp-edged beaters N N, projecting radially both from the transferring-cylinder K and drum portion *d*. Around the periphery of the chamber are grates F F, with narrow spaces between them for the discharge of any flour-dust or fine particles of the hull produced by the operation of the beaters N N.

After the corn has been partially hulled and reduced in the first chamber it is transmitted through the next partition G into a second beating-chamber by means of another transferring-cylinder, L, precisely similar to the one, K, already described. In this second chamber there is a similar arrangement of sharp-edged beaters N N and grates F F for the further reduction of the grains of corn. Thence the reduced particles of corn or hominy are passed through a succeeding partition, G, by another transferring-cylinder, M, of similar construction to those already described, and turning closely in the said partition. The hominy is here received in a narrow discharging-chamber, H, whence it descends through a delivering-spout, R, below. Beyond this discharging-chamber H is a chamber, J, in which a fan, P, revolves, drawing the air from the discharging-chamber through an aperture, *t*, in the partition I, which separates the two chambers.

Since the other parts of the machine are quite close, the air is drawn by the fan up through the delivering-spout R among the discharging hominy and in the direction opposite to the motion thereof, and thus the hominy is thoroughly winnowed. The hulls and other impurities drawn away by the fan P are discharged through a peripheral spout, Q, substantially as shown in the drawings.

The grates F F are of peculiar construction. They are made of wrought-iron, and comparatively slender and light, and are recessed in their inner periphery or surface, in which some rough or gritty and hard composition, such as sharp sand, cemented on, is secured, there being only a small margin, *f f*, at each inner edge to protect the composition surface. This applied rough surface is very effective in action, and as fast as it wears away it can readily and cheaply be replaced. The sides of the partitions G G are also similarly covered with a hard rough composition of any suitable material.

The beaters N N, I mostly make of malleable iron, and then, when roughened or rasped, they are case-hardened. Their outer ends, *n n*, slope inward somewhat toward their forward sharpened edges, as indicated in Fig. 4. By this shape they are found to work more efficiently, since the wedge-acting ends do as

much execution as any other part of their surface.

The beaters are secured in the periphery of the drum *d* and transferring-cylinders K L M by shanks *p p*, Fig. 4, of dovetail form, driven into apertures in said drum and cylinders, either entered from the ends thereof or from side apertures large enough for their admission, and then secured in place by wedges or keys *o o*, substantially as represented.

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

1. The combination of the feeding-tube B and the conical end or part *s* of the drum *d*, or

its equivalent, the amount fed in being regulated by a gate, *b*, substantially as and for the purpose herein specified.

2. The transferring-cylinders K L M, constructed and operating substantially as and for the purpose herein set forth.

The above specification of my improved hominy-mill and grain-huller signed by me this 20th day of February, 1866.

J. A. WELSH.

Witnesses:

J. E. HAWES,

R. PARTINGTON.