

O. W. STANFORD.

Grinding Mill.

No. 27,164.

Patented Feb 14, 1860.

Fig. 1.

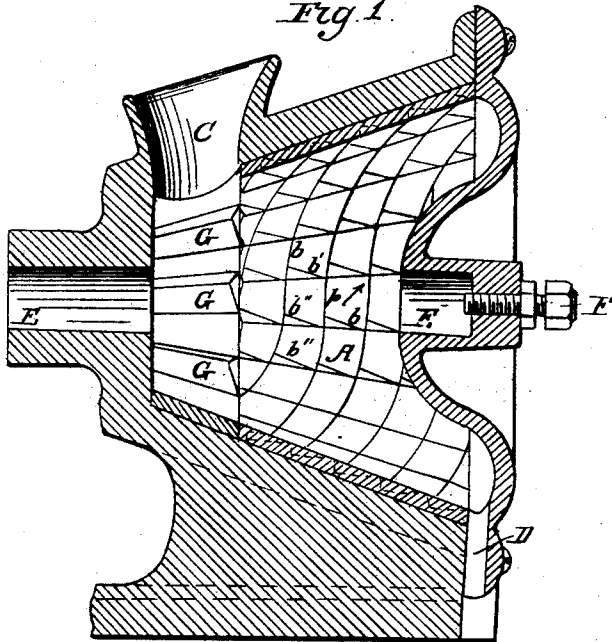
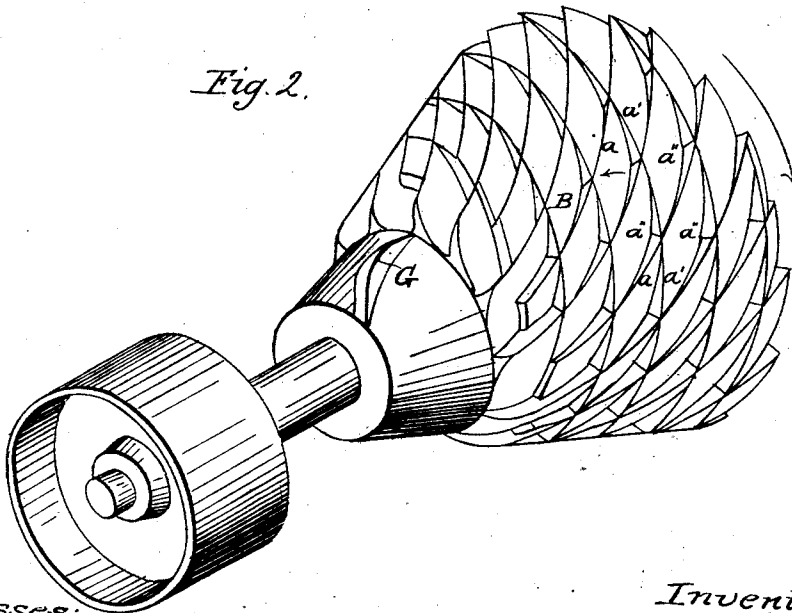


Fig. 2.



Witnesses:

Geo. H. Knapton
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UNITED STATES PATENT OFFICE.

OTIS W. STANFORD, OF CINCINNATI, OHIO.

GRINDING-MILL.

Specification of Letters Patent No. 27,164, dated February 14, 1860.

To all whom it may concern:

Be it known that I, OTIS W. STANFORD, of Cincinnati, Ohio, have invented a certain new and useful Improvement in Grinding-Mills; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification.

10 The invention relates to a combination of grinding surfaces composed of series of peculiarly formed quadrangular cavities which cavities shoal or feather diagonally and are bounded by spiral ridges—coincident with
15 a common conical or other flaring surface.

In the accompanying drawings Figure 1 is an axial section of the concave A. Fig. 2 is a perspective view of the bur B.

These parts in the present illustration consist of a male and female cone of a form preferred by me for many purposes, but the grinding surfaces may form any preferred angle with the axis of rotation.

C is the hopper. D the spout.

25 E are journal bearings.

F is a set screw to graduate the grinding action.

G are teeth placed at the narrow portions of the bur and concave respectively for
30 breaking an ear of corn.

a a' b b' are each a series of compound spiral ridges which are right hand on the

bur and left hand on the concave. The cavities *a'' b''* bounded by these ridges shoal or feather diagonally as indicated by red 35 arrows. The black arrow represents the direction of rotation of the bur. The bur revolving of course much faster than the food and the concave remaining stationary the relative motion of the food on these two 40 surfaces is as indicated by the red arrows, that is to say diagonally in the direction of their respective feathers.

It will be seen that the entire series of spirals tend to forward the food gradually 45 toward the place of exit and as the ridges are continuous in a spiral direction every particle is compelled to pass between the close portions of a number of successive grinding surfaces so that no "cutlins" or un- 50 ground portions can escape.

I claim as new and of my invention herein and desire to secure by Letters Patent—

The combination of grinding surfaces composed of spiral ridges separated by cavities which shoal or feather diagonally substantially as set forth. 55

In testimony of which invention, I hereunto set my hand.

OTIS W. STANFORD.

Witnesses:

GEO. H. KNIGHT,
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