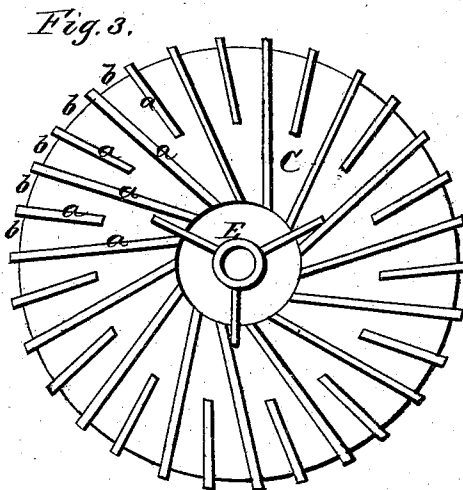
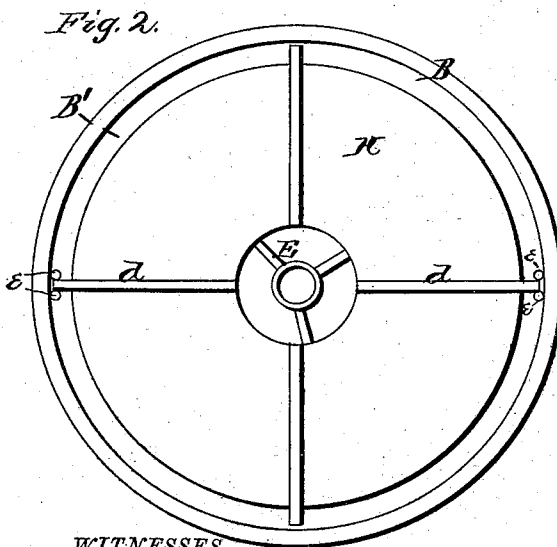
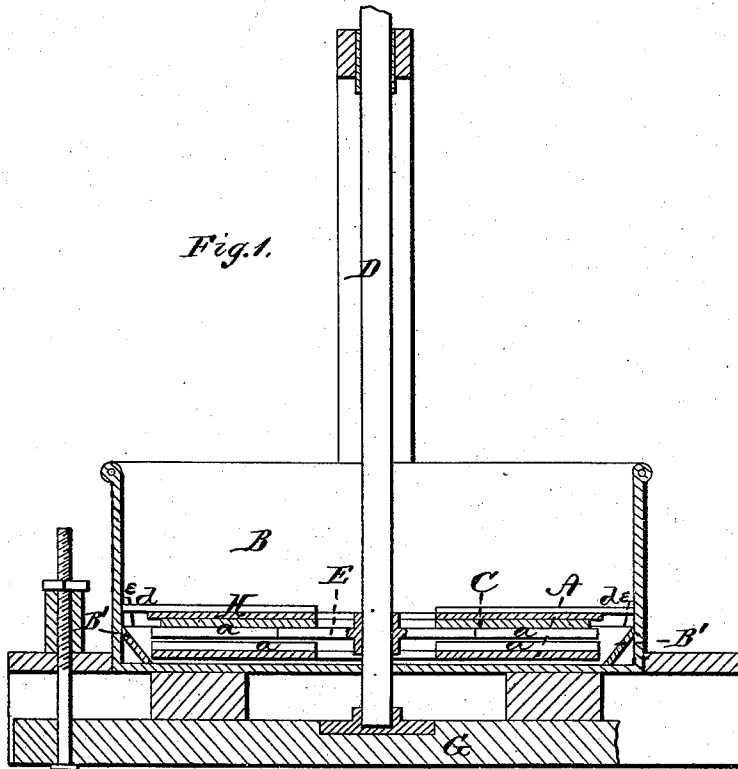


**J. BRIDGE,**  
**Wood-Grinders.**

No. 144,313.

Patented Nov. 4, 1873.



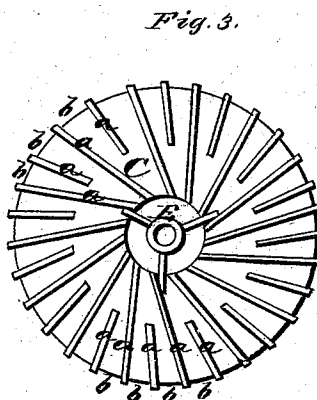
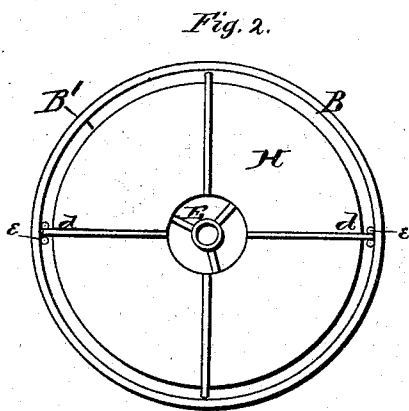
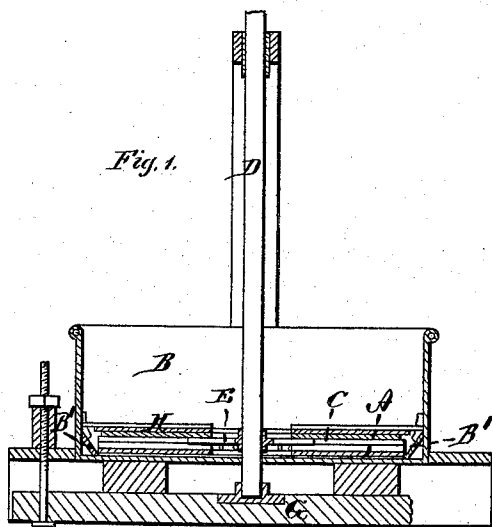
WITNESSES  
*Henry N. Miller* By  
*C. L. Carter*

INVENTOR  
*J. Bridge*  
*Charles Mason*  
Attorneys.

**J. BRIDGE.**  
**Wood-Grinders.**

No. 144,313.

Patented Nov. 4, 1873.



Witnesses:

*Henry N. Miller*  
*C. L. Everett*

Inventor.

*James Bridge,*  
*Per Alexander Mason*

Attorneys.

# UNITED STATES PATENT OFFICE.

JAMES BRIDGE, OF AUGUSTA, MAINE.

## IMPROVEMENT IN WOOD-GRINDERS.

Specification forming part of Letters Patent No. **144,313**, dated November 4, 1873; application filed May 10, 1873.

### *To all whom it may concern:*

Be it known that I, JAMES BRIDGE, of Augusta, in the county of Kennebec and State of Maine, have invented certain new and useful Improvements in Wood-Grinding Machines; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon.

My present invention is intended as an improvement upon the machine for a similar purpose for which Letters Patent No. 115,274 were granted to me May 30, 1871; and it consists in the construction and arrangement of the parts, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation referring to the annexed drawing, in which—

Figure 1 is a longitudinal vertical section of my improved machine; Fig. 2 is a plan view of the vat, and Fig. 3 is a view of the runner.

A represents a stationary millstone or circular plate placed in a surrounding vat or case, B, and has over it a movable circular metal plate, millstone, or runner, C. Both the plate A and runner C, or either of them, are provided with a series of plates, knives, or bars, *a a*, as shown in Fig. 3, cast upon or fastened to their opposite sides. In place of the bars *a a* channels may be cast or grooved in one or both of them, as desired. These knives, bars, or plates *a a*, or any number of them, are extended beyond the surface of the runner C, and approach the sides of the vat B, or a bank or bench, B', extending outward from its base, as shown in Fig. 1, leaving

spaces *b b* between said bars open at the top and serving as ducts through which the circulating material, mingled in water, projected outward by centrifugal force and striking the sides of the vat B, is thrown upward, and, falling upon a stationary plate, H, on top, flows toward the center and commences its circuit anew. The runner C is attached to a shaft, D, by means of a spider, E, the apertures between the arms of said spider serving as passages for the admission of the material to be disintegrated. Above the runner C is a circular plate, H, which covers its upper surface and has projections *d d* resting in grooves *e e* formed in the sides of the vat. As the runner C is lifted or depressed by the swing-beam G upon which the shaft D rests, the projections *d d* will move up and down in the grooves *e e*, and always prevent any rotary motion to the plate H.

The power for driving this machine may be applied in any of the ordinary ways now in use. So also any of the common methods for elevating and depressing the shaft, and for discharging the pulp when finished, may be used.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination of the rim or vat B, stones or plates A C, having knives or blades *a a* extending beyond the edges and forming channels *b b*, the circumferential inclined bench B', and the covering-plate H, all constructed and arranged substantially as and for the purposes herein set forth.

JAMES BRIDGE. [L. s.]

Witnesses:

G. A. CONY,  
R. W. BLACK.