

Case A.  
James Bridge's Machine for reducing wood for its conversion into  
Paper Pulp.

113488

Fig. 7.

PATENTED APR 11 1871

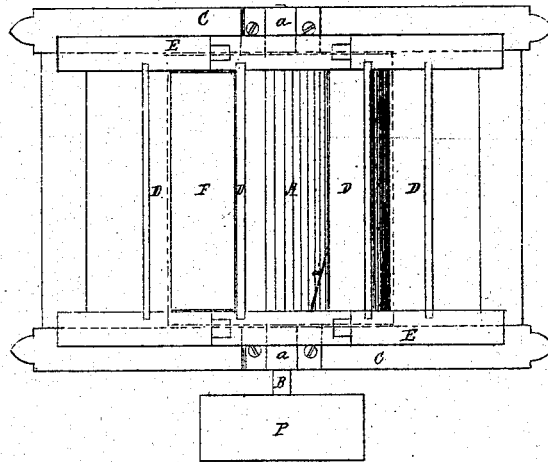


Fig. 8.

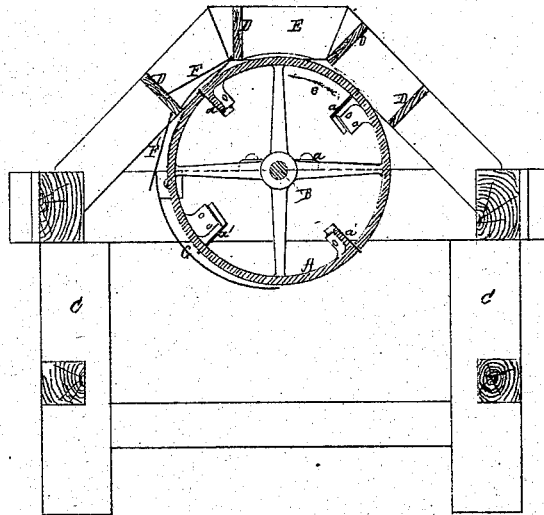
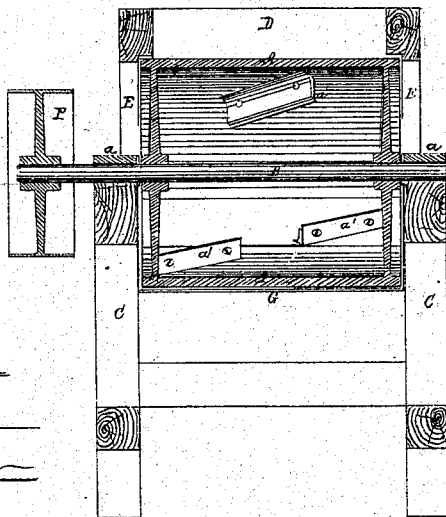


Fig. 9.



Witnesses

S. N. Piper

L. N. Möller

James Bridge

by his attorney

W. H. H. H.

# United States Patent Office.

JAMES BRIDGE, OF AUGUSTA, MAINE.

Letters Patent No. 113,488, dated April 11, 1871.

## IMPROVEMENT IN MACHINES FOR REDUCING WOOD FOR THE MANUFACTURE OF PAPER-PULP.

The Schedule referred to in these Letters Patent and making part of the same.

*To all persons to whom these presents may come:*

Be it known that I, JAMES BRIDGE, of Augusta, of the county of Kennebec and State of Maine, have invented a new and useful improved Machine for Reducing Wood for its Conversion into Paper-Pulp; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, of which—

Figure 1 is a top view;

Figure 2, a longitudinal section; and

Figure 3, a transverse section of such machine.

In such drawing—

A denotes a hollow drum or cylinder mounted concentrically on a shaft, B, having its journals supported in suitable boxes *a a* applied to a sustaining-frame, C.

A driving-pulley or wheel, P, fixed on the shaft serves, by means of an endless belt, to impart rotary motion to the shaft and cylinder.

Within the periphery of the drum there is arranged a series of rasping or disintegrating cutters or tools, *a*, which may be disposed either directly to or obliquely across the cylinder, they being fixed therein so as to project a short distance outwardly beyond its curved surface.

Furthermore, there are arranged about the upper half of the cylinder or drum a series of bars or thin blades, D, they being disposed with respect to each other and the drum in manner as represented, and held in place by two arches, trusses, or standards, E E, erected on the frame C or forming part thereof.

Shutters F F', pivoted at their upper corners to the standards E E, are disposed with respect to the front bars or blades D in manner as represented, the lowermost shutter closing down upon the upper edge of an apron, shrouding, or elastic chute, G, disposed under the drum in manner as represented.

This shrouding is to be a plate of metal fastened at or near its upper corners to the frame C, but free in other respects to spring toward or away from the curved surface of the drum. At its lower edge or part the elastic chute is to nearly touch the drum.

In using the machine one or more blocks of wood

are to be placed in the spaces between the peripheral bars that are unprovided with shutters, such block or blocks being allowed to rest sidewise against the cylinder, which may be supposed to be in revolution in a direction toward the shutters, as indicated in fig. 2 by the arrow *e*.

The tools of the cylinder or drum will rasp or remove from the block or blocks slivers or portions of them, which, by being carried forward underneath the lower edges of the peripheral bars, and also in the spaces between the cylinder and the shutters, will be more or less retained by the bars and shutters, and so as to be further reduced by the cutters or tools.

The wood, in passing between the elastic chute or apron and the cylinder, will be pressed up to the latter by the apron, and will be still further reduced in consequence thereof, it being finally discharged at the lower terminus of the apron.

The shutters admit of the accumulation of the slivers of wood in the spaces covered by such shutters, the slivers being more or less agitated and moved about within such spaces so as to be favorably acted on by the tools and the peripheral bars.

In the said machine I claim as my invention as follows, viz:

1. The disintegrating-drum A, made as described.
2. The rotary hollow disintegrating-drum A, and the peripheral bars or blades D, combined and arranged to operate substantially as and for the purpose as specified.
3. The hollow disintegrating-drum A, the series of peripheral bars D, and one or more shutters F F', combined and arranged as and so as to operate substantially as explained.
4. The rotary hollow disintegrating-drum A, the series of peripheral bars D, one or more shutters F, and the elastic chute G, arranged and combined in manner and so as to operate substantially as and for the purpose as hereinbefore specified.

JAMES BRIDGE.

Witnesses:

R. H. EDDY,

J. R. SNOW.