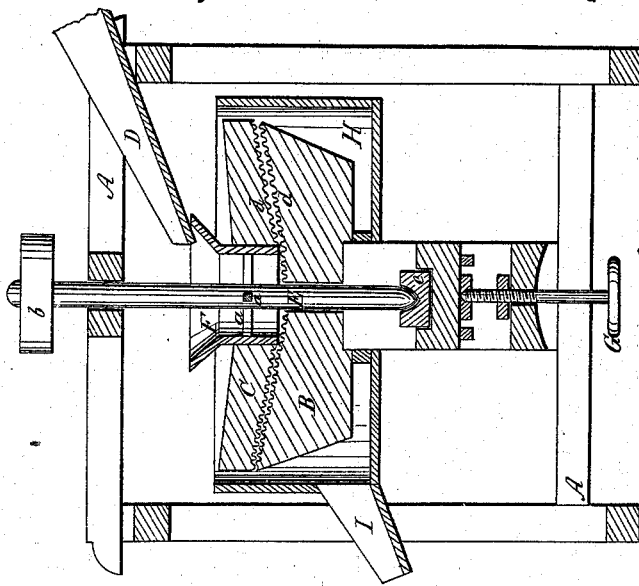


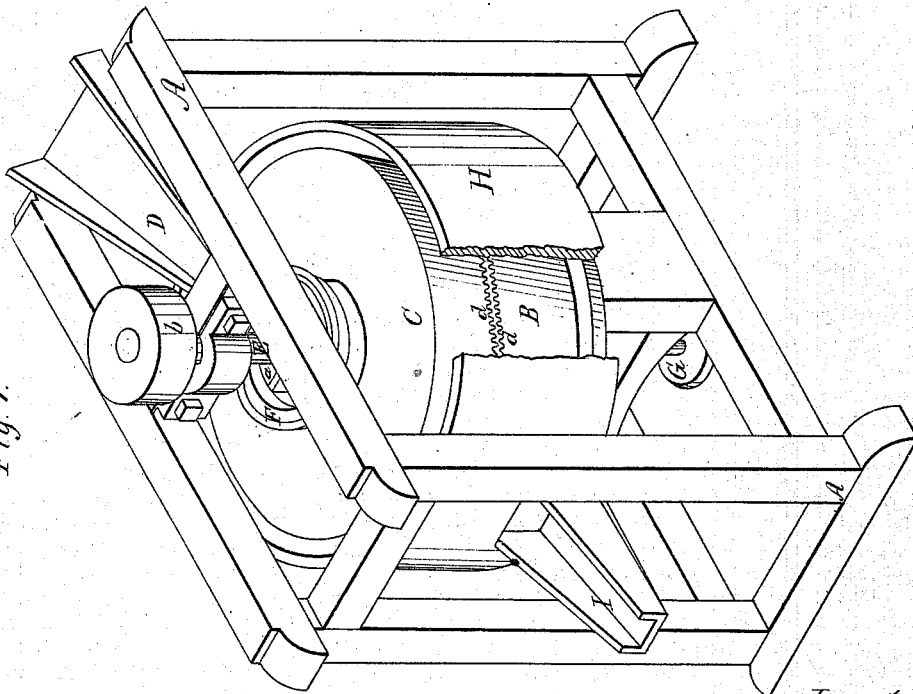
*J. F. Jones.*  
*Pulp Grinder.*

*N<sup>o</sup> 47,425. Patented Apr 25, 1865.*

*Fig. 2.*



*Fig. 1.*



*Witnesses,*  
*Jay Hoyatt*  
*R. F. Osgood*

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# UNITED STATES PATENT OFFICE.

JOHN F. JONES, OF ROCHESTER, NEW YORK.

## IMPROVEMENT IN MACHINES FOR GRINDING PAPER-PULP.

Specification forming part of Letters Patent No. 47,425, dated April 25, 1865.

*To all whom it may concern:*

Be it known that I, JOHN F. JONES, of Rochester, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in Machines for Grinding Paper-Pulp; 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 is a perspective view of my improved machine; Fig. 2, a central vertical section.

Like letters of reference indicate corresponding parts in all the figures.

My invention consists in the employment of two horizontal grinding-disks situated one above the other, similar to the millstones of a flouring-mill, the contiguous grinding-surfaces being of dishing form, or inclined upward from the center to the periphery, so as to retain the water better as it passes through, and thus keep the pulp from clogging, which effect would not be accomplished were the grinding-surfaces horizontal; also, in connection therewith, in the use of an inclosing-case having an inclined bottom that catches the reduced pulp and conducts it away.

As represented in the drawings, A is a suitable frame, in which is mounted a bed-disk, B, which is stationary. Above this is situated a revolving disk, C, having a central eye, F, into which the cut material for forming the pulp is fed from a spout, D, above. The revolving disk is secured, by arms *a a*, or other convenient means, rigidly to a spindle, E, which is driven by a pulley, *b*, or equivalent, at the top, and passes loosely down through the bed-disk B and a suitable stuffing-box beneath it, its lower end resting in a step, *c*, that is adjusted higher or lower, to separate the grinding-disks more or less, by means of a hand screw, G. The contiguous grinding-surfaces *d d* of the disks are formed into teeth, or are roughened in any desirable way; but instead of making these surfaces in horizontal planes, as is common in grinding-mills for other purposes, I make them of dishing form, or inclined upward from the center to the periphery, as clearly indicated in Fig. 2. Around the grinding-disks is situated an

inclosing-case, H, which receives the pulp after it has been ground and discharges it through an eduction-spout, I, on one side.

For the purpose of allowing the pulp to flow off easily, I prefer to make the bottom of the case somewhat inclined, the side on which the discharge spout I is situated being a little the lowest. The cut material, or "half-stuff," being fed in from the spout D, through the hollow eye F, passes between the dishing grinding-surfaces *d d* with a proper amount of water to make it flow, and when ground falls into the case H and escapes. By giving the grinding-surfaces the dishing form, instead of forming them in horizontal planes, I accomplish an important result, for I neutralize to a certain degree the centrifugal action of the upper disk, thereby preventing the too rapid escape of the water. In other words, the water and pulp have to rise upward to escape against their own gravity. In this manner I overcome the difficulty that would be experienced if the grinding-surfaces were in horizontal planes, for I dispense with an excessive amount of water to keep the pulp wet, and at the same time, by using enough, prevent any clogging or choking of the material. Were the grinding-surfaces made horizontal, the escape would be so rapid that much difficulty would be experienced from the causes above mentioned.

The inclosing-case H, by being of the inclined form described, insures a perfect discharge of the ground pulp, so as to prevent the same rising around the disks and interfering with their action.

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

The machine for grinding paper-pulp, having the grinding-surfaces *d d* made dishing or inclined upward from the center to the periphery, and used in connection with the case H, the whole arranged and operating substantially as and for the purpose herein set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JOHN F. JONES.

Witnesses:

R. F. OSGOOD,  
JAY HYATT.