

F. A. CUSHMAN.
Stock-Grinders for Paper-Pulp.

No. 156,335.

Patented Oct. 27, 1874.

Fig. 1.

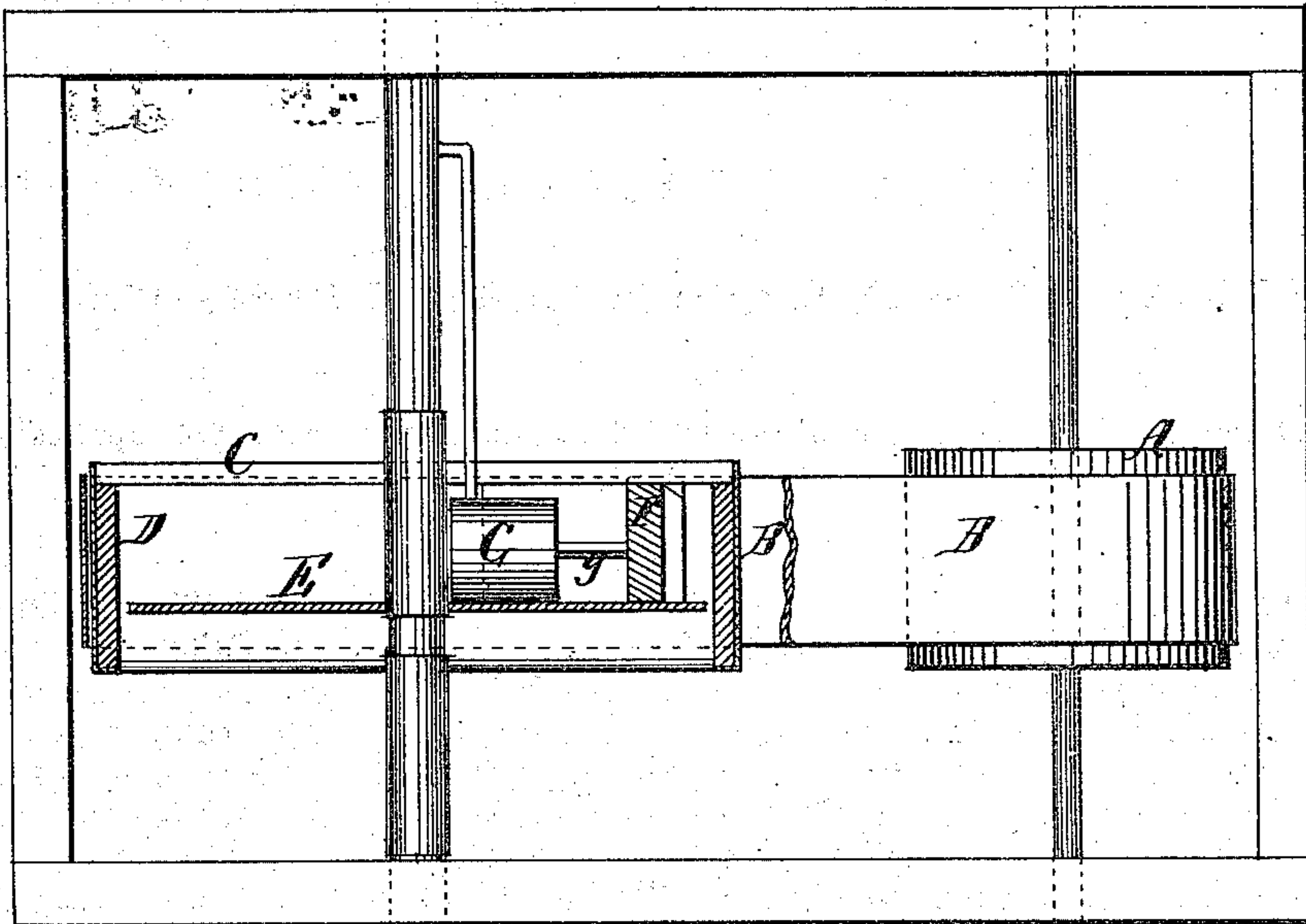
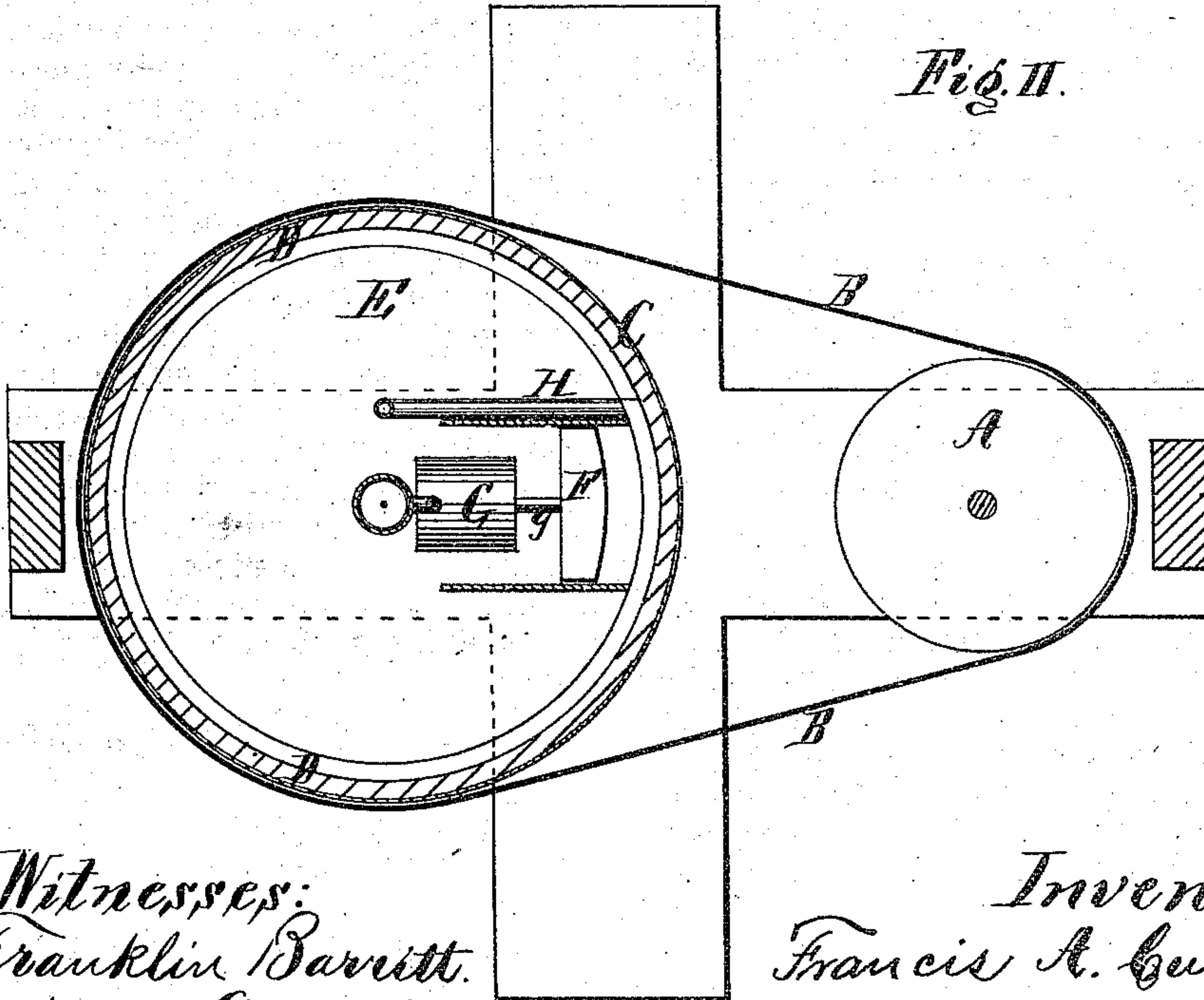


Fig. II.



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UNITED STATES PATENT OFFICE.

FRANCIS A. CUSHMAN, OF LEBANON, NEW HAMPSHIRE.

IMPROVEMENT IN STOCK-GRINDERS FOR PAPER-PULP.

Specification forming part of Letters Patent No. **156,335**, dated October 27, 1874; application filed October 1, 1874.

To all whom it may concern:

Be it known that I, FRANCIS A. CUSHMAN, of Lebanon, in the county of Grafton and State of New Hampshire, have invented a new and useful Improvement in Pulp-Machines; and I hereby declare the following to be a full and clear description thereof, which will enable others to make and use my improved machines.

The nature of this invention consists in the employment of a wheel or drum, a portion of the rim of which is filled with a rough material, such as quartz, emery, or corundum, and which said filling is made to revolve against a block of wood that is to be reduced to pulp, for the manufacture of paper or other like purpose.

The block of wood to be operated upon is placed on a disk or bed within the revolving drum, and is pushed up against the revolving surface by means of a hydraulic piston.

The invention will be readily understood by reference to the accompanying drawings, of which Figure I is a sectional elevation of the improved machine, and Fig. II is a sectional plan of the same.

The driving-pulley A, by means of the belt B, revolves the drum C, a portion of the interior surface of which is filled with a plastic composition, in which either emery, quartz, or corundum forms the principal component part, and the asperities of the material thus formed in the drum act upon the contiguous surface of the wood to be reduced to pulp, as will be

hereinafter explained. The filling D, constructed as above, is filled into the interior surface of C, as described, and, consequently, as C is revolved, the surrounding rim will hold the material of D in its proper position in the rim as it is revolved, and prevent its destruction by the centrifugal action of the drum. Within the drum C is a stationary disk or table, E, on which the block of wood F is placed, so as to be operated upon, with its surface resting against the interior surface of D. A hydraulic cylinder, G, has its piston operated upon by either a force-pump or a column of water in a stand-pipe; but I prefer the latter as being the more simple and inexpensive. The piston-rod *g* presses against the block F, and pushes it hard up to the rough surface of the revolving filling D. The pipe H supplies water to the contacting surfaces of D and F, for the purpose of preventing the surface of D from glazing as it revolves against F.

Having described my invention, I claim—

The arrangement of the compound drum C D, the supporting-table E, and the hydraulic cylinder G, with its piston-rod *g* acting upon the block F, to hold the block in contact with the revolving surface of D, as described and set forth.

FRANCIS A. CUSHMAN.

Witnesses:

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570 words.