

JAMES BRIDGE.

Improvement in Apparatus for Manufacture of Paper

Pulp from Wood.

No. 122,353.

Patented Jan. 2, 1872.

Fig. 1.

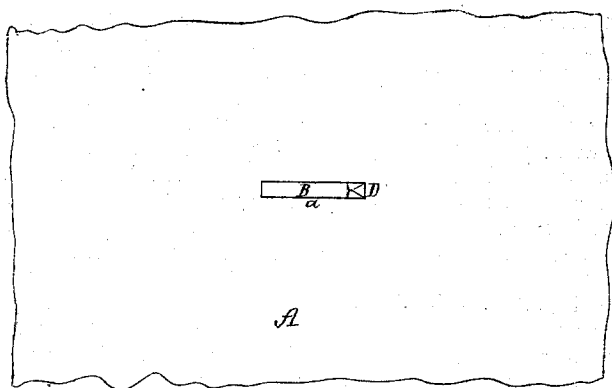
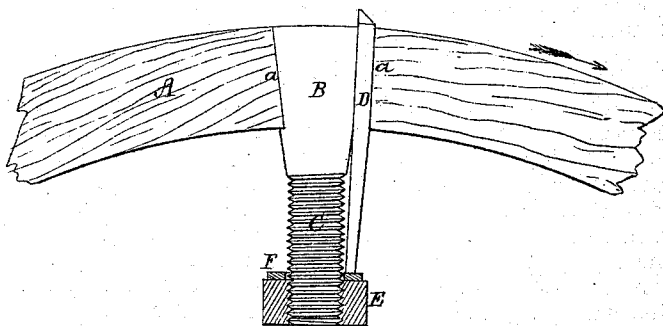


Fig. 2.



Witnesses.

S. N. Piper.

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UNITED STATES PATENT OFFICE.

JAMES BRIDGE, OF AUGUSTA, MAINE.

IMPROVEMENT IN APPARATUS FOR MANUFACTURE OF PAPER PULP FROM WOOD.

Specification forming part of Letters Patent No. 122,353, dated January 2, 1872.

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 Improvement in Mechanism for Reducing Wood or various other fibrous materials for being converted into pulp for the manufacture of paper; 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, and Fig. 2 a sectional view of part of the rasping-cylinder of a wood-reducing engine with my improvement, the engine, in its main features, being like that for which Letters Patent No. 113,488, dated April 11, 1871, have been granted to me.

My improvement is also useful on either flat or conical grinders, whether used with or without water, the tools being generally arranged in spiral or helical rows so as to cut in succession. The same or approximate results may be obtained by pyramidal teeth cast on the outer surface of a plate, cone, or cylinder.

In the drawing, A denotes the rim of the grinding or rasping cylinder, and *a* the tooth-socket thereof, which, in this instance, is a narrow wedge-shaped or pyramidal hole made through such rim, in manner as shown. A wedge, B, terminating in a male screw, C, is arranged in and through such tool-socket, and against the tool or cutter D disposed in the said socket, all being in manner as represented. The said cutter, where projecting beyond the external surface of the cylinder or carrier, is pyramidal or provided with a right-angled pyramidal point, as shown. That cutter face which makes a right angle with the outer surface of the cylinder is arranged back to the direction of motion of the cylinder while in operation, such direction being indicated in Fig. 2 by the arrow thereon. Such a formation and arrangement of the tool-point cause the tool while at work to slide on the wood, remove a small portion of it, and press or jam

the wood so that minute fibres readily separate from it. A nut, E, is screwed upon the screw-shank of the wedge, and either directly against the lower end of the shank of the cutter D or against an anti-friction disk, F, encompassing the screw of the shank, and interposed between the nut and the lower end of the cutter; all being as shown.

On "screwing up" the nut the cutter or tool will be advanced, and the wedge will be simultaneously drawn down in the socket so as to wedge or fasten the cutter therein. Further turning up of the nut will suffice to advance the cutter without materially drawing the wedge downward; any such movement of the wedge that may occur operating to tighten the cutter in the socket.

From the above it will be seen that the cutter is not only wedged firmly in the socket by the action of the wedge, the screw, and the nut, but is supported lengthwise and endwise thereby, or endwise particularly by the disk or nut, so as to prevent the cutter from being driven downward or toward the nut while in use; and, furthermore, that the nut and screw afford a ready means of advancing the cutter or tool as its necessary adjustment may require.

What, therefore, I claim as my invention or improvement in engines of the kind set forth, or in others analogous thereto, is—

The arrangement and combination, as specified and shown, of the wedge B, screw C, and nut E, or such and the anti-friction disk F with the rasping or cutting-tool D and the wedge-shaped socket *a* for holding the wedge and tool in the drum or cutter-carrier, the tool having a cutting-point, as described, or any other of proper shape.

I also claim the cutting-tool point formed substantially as described, and arranged in the cylinder or carrier in manner or with reference to its direction of revolution, as specified.

Witnesses:

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JAS. L. STODDARD.

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