

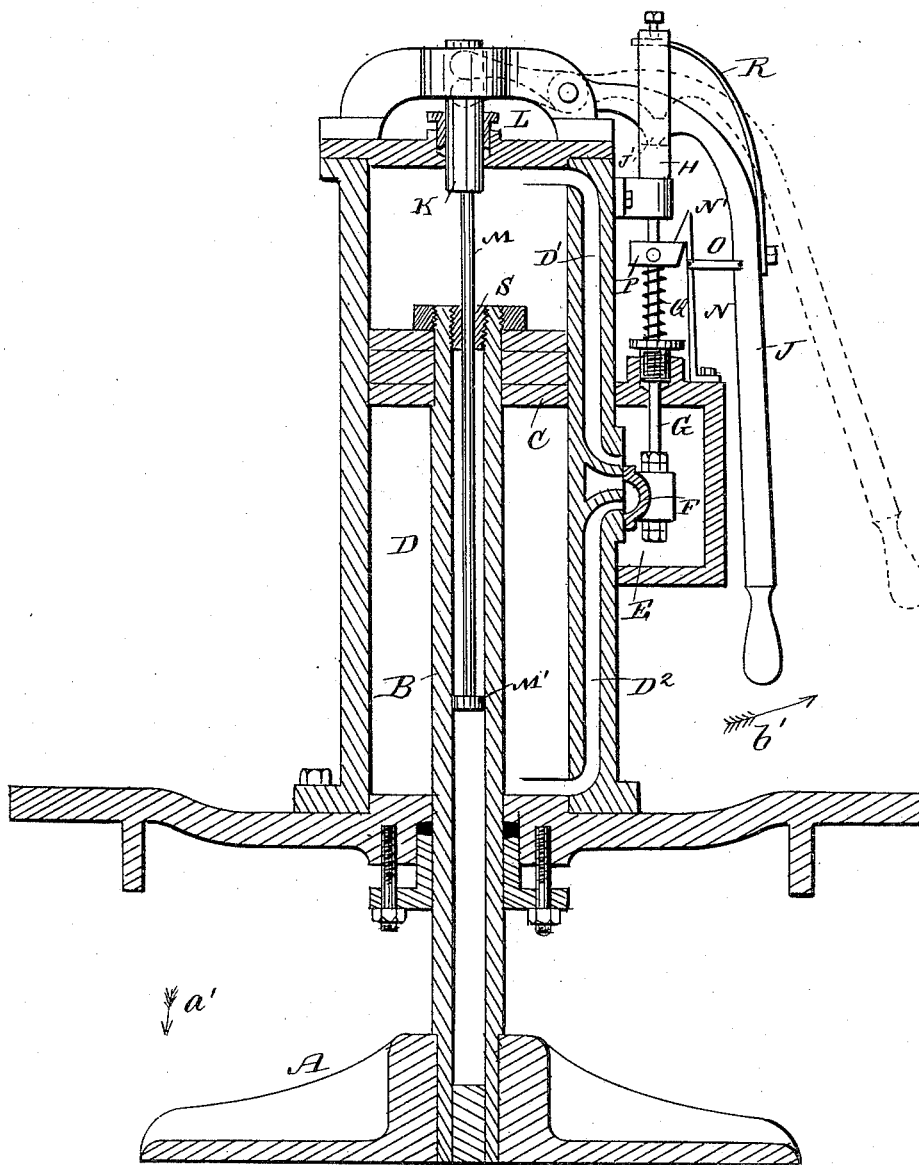
(No Model.)

W. CURTIS.

BLOCK PRESSER FOR PAPER PULP MILLS.

No. 342,073.

Patented May 18, 1886.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WARREN CURTIS, OF CORINTH, NEW YORK.

BLOCK-PRESSER FOR PAPER-PULP MILLS.

SPECIFICATION forming part of Letters Patent No. 342,073, dated May 18, 1886.

Application filed July 25, 1885. Serial No. 172,656. (No model.)

To all whom it may concern:

Be it known that I, WARREN CURTIS, of Corinth, in the county of Saratoga and State of New York, have invented a new and Improved Block-Presser for Paper-Pulp Mills, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved block-presser, which is so constructed that it is automatically stopped at the upper end of the stroke and reversed at the lower end, the operation of the machine being plainly indicated.

The invention consists in the combination, with a cylinder, of a piston in the same, a tubular piston-rod on the piston, a sliding rod in the tubular piston-rod, and a valve-gear operated from the said rod in the tubular piston-rod and hand-lever, all as will be fully set forth and described hereinafter.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which a longitudinal sectional elevation of my improved block-presser is shown.

The presser-head or plunger A is secured on the lower end of a piston-rod, B, having a piston, C, mounted on its opposite end, the said piston working in a cylinder, D, provided with the steam, water, or air channels D' D², leading from the ends of the cylinder to a valve-chest, E, at the middle of the length of the cylinder and containing the sliding valve F, connected to a rod, G, passing through a stuffing-box in one end of the valve-chest.

To the upper end of the rod G is secured a strap or loop, H, through which the lever J passes, which is pivoted to the top of the cylinder, and has a projection, J', which can act on the bottom part of the loop H. The upper free end of the lever J is passed through a longitudinal slot in a short cylindrical piece, K, mounted to slide in the direction of its length through a stuffing-box, L, in the end of the cylinder. To the piece K a rod, M, is secured, which passes into the bore of the piston-rod B, which is tubular. A stop-nut, S, is screwed in the upper end of the piston-rod B, and through the said nut the rod M passes. A spring, N, having a beveled hook, N', on its end, is secured on the steam-chest and connected by a link, O, with the lever J. A block, P, having one end beveled, is secured

on the rod G, and between the said block and the top of the stuffing-box a spiral spring, Q, surrounds the rod G and pushes the same upward. A curved spring-strip, R, is secured on the lever J, and its free end acts on the loop H and assists in pulling the rod G upward and throwing the valve over its center.

The operation is as follows: For example, when the parts are in the position shown, the water, steam, or compressed air passes from the chest E through the channel D', and, acting on the top of the piston C, forces the same and the presser-head A downward—that is, in the direction of the arrow a'—until the head A is at the end of its stroke. By this time the stop-nut S in the upper end of the tubular piston strikes the small head, M', on the lower end of the rod M, and the said rod is moved downward, and as it acts on the upper end of the lever J the lower end of said lever is swung outward—that is, in the direction of the arrow b'—whereby the hook N' is pulled by the lever J off the block P, and the springs R and Q force the rod G upward, whereby the lever J is swung farther in the direction of the arrow b', and into the position shown in dotted lines, whereby the valve F is so shifted that the compressed air, steam, or water can pass through the channel D² to the bottom of the cylinder and force the piston upward until the said piston strikes the piece K, thereby swinging the lever J in the inverse direction of the arrow b' sufficiently to move the valve F so far as to close both channels D' D², whereby the machine is stopped. A fresh block is placed under the presser-head A, and the lever J is moved by hand in the inverse direction of the arrow b', whereby the rod G is forced downward and the valve F shifted to permit steam, air, or water to pass to the top of the cylinder, as shown in the drawings. By the above movement of the lever J the rod G and the block P on the same have been moved downward to such an extent that the head of the spring N can catch on the block P.

If desired, the lever J can be pivoted to the end of the rod G and to the cylinder part K and the springs dispensed with. With this construction the piston will stop automatically at both ends of the stroke and the machine must be started each time the piston has completed its stroke. In this construction, as

well as in the construction shown, the lever J serves as an indicator to show the exact position of the piston—that is, whether the piston is going up or down. This indicator-rod is necessary, as all the parts of the machine are inclosed and cannot be seen while operating.

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

- 10 1. The combination, with a cylinder, of a piston, a tubular piston-rod, and a rod sliding in the tubular piston, and valve-operating gear operated by the rod in the piston-rod, substantially as herein shown and described.
- 15 2. The combination, with a cylinder, of a piston in the same, a tubular piston-rod on the piston, a rod sliding in the tubular piston-rod, a lever pivoted on the cylinder, a valve connected with the lever, which lever is also
20 connected with the rod in the tubular piston-rod, substantially as herein shown and described.
- 25 3. The combination, with the cylinder D, of the piston C, the tubular piston-rod B, the rod M in the same, the cylindrical piece K on the upper end of the rod M, the pivoted lever J, having its upper end connected in a suitable manner with the piece K, and a valve connected with the lever J, substantially as
30 herein shown and described.
4. The combination, with a cylinder, of a

piston in the same, a tubular piston-rod connected with the piston, a sliding rod in the tubular piston-rod, a pivoted lever connected with the sliding rod in the piston-rod, a rod 35 pivoted to the lever and connected with the valve on the cylinder, and springs acting on the said valve-rod, substantially as herein shown and described.

5. The combination, with the cylinder D, of 40 the piston C, the tubular piston-rod B, the rod M in the same, the lever J, the rod G, connected with the same, the valve F on the rod G, the block P on the said rod, the springs Q and R, acting on the rod G, the spring-catch 45 N, connected with the lever J, substantially as herein shown and described.

6. The combination, with the cylinder D, of the piston C, the tubular piston-rod B, the rod M in the same, the piece K on the upper 50 end of the rod M, the head M' in the lower end of the rod M, the stop-nut S in the upper end of the piston-rod, the lever J, the rod G, connected with the same, the valve F on the rod G, a spring acting on the rod G, and a 55 latch for holding the rod, which latch is operated from the lever J, substantially as herein shown and described.

WARREN CURTIS.

Witnesses:

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