

No. 626,138.

Patented May 30, 1899.

S. W. BUTTERFIELD.  
LOG THAWING APPARATUS.

(Application filed Feb. 20, 1899.)

(No Model.)

FIG. 1.

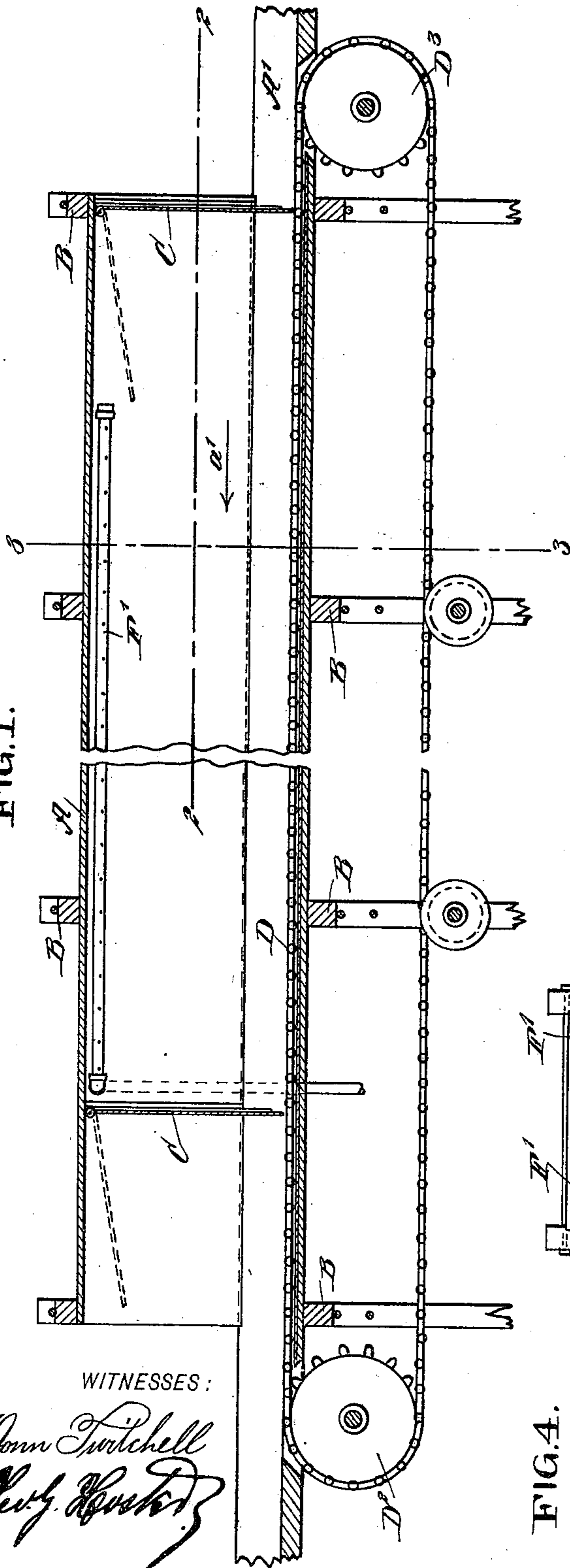


FIG. 2.

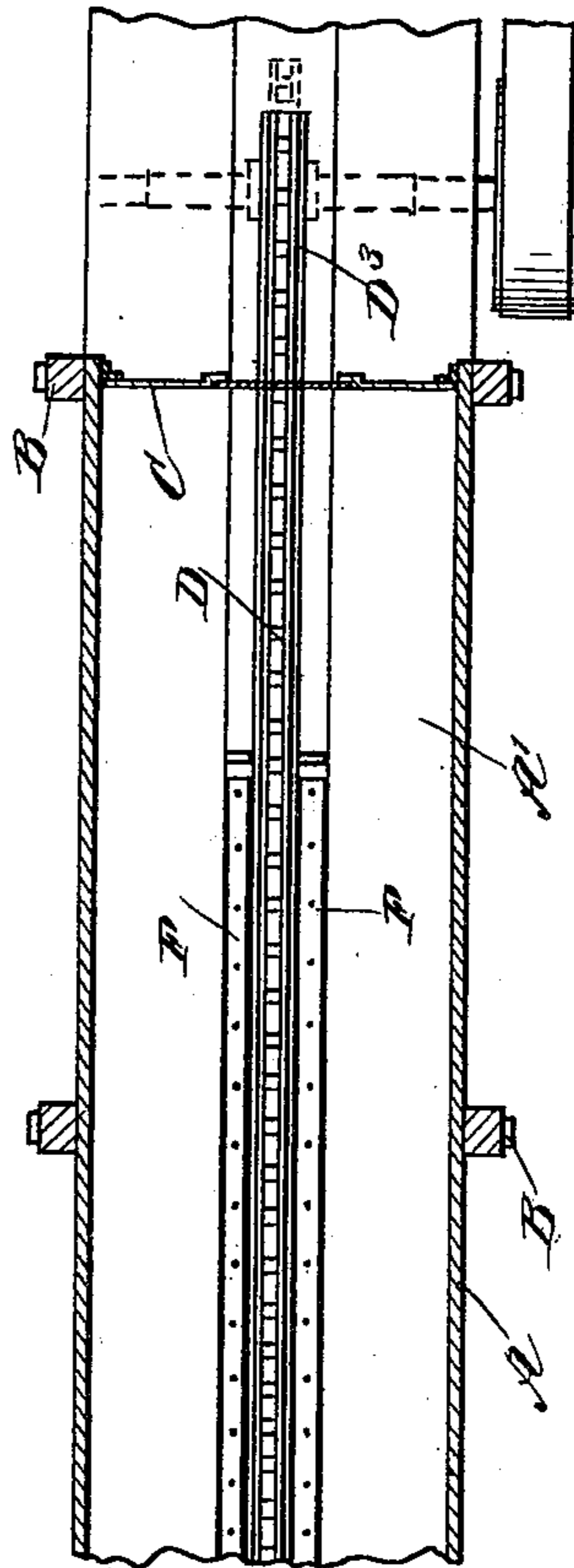


FIG. 3.

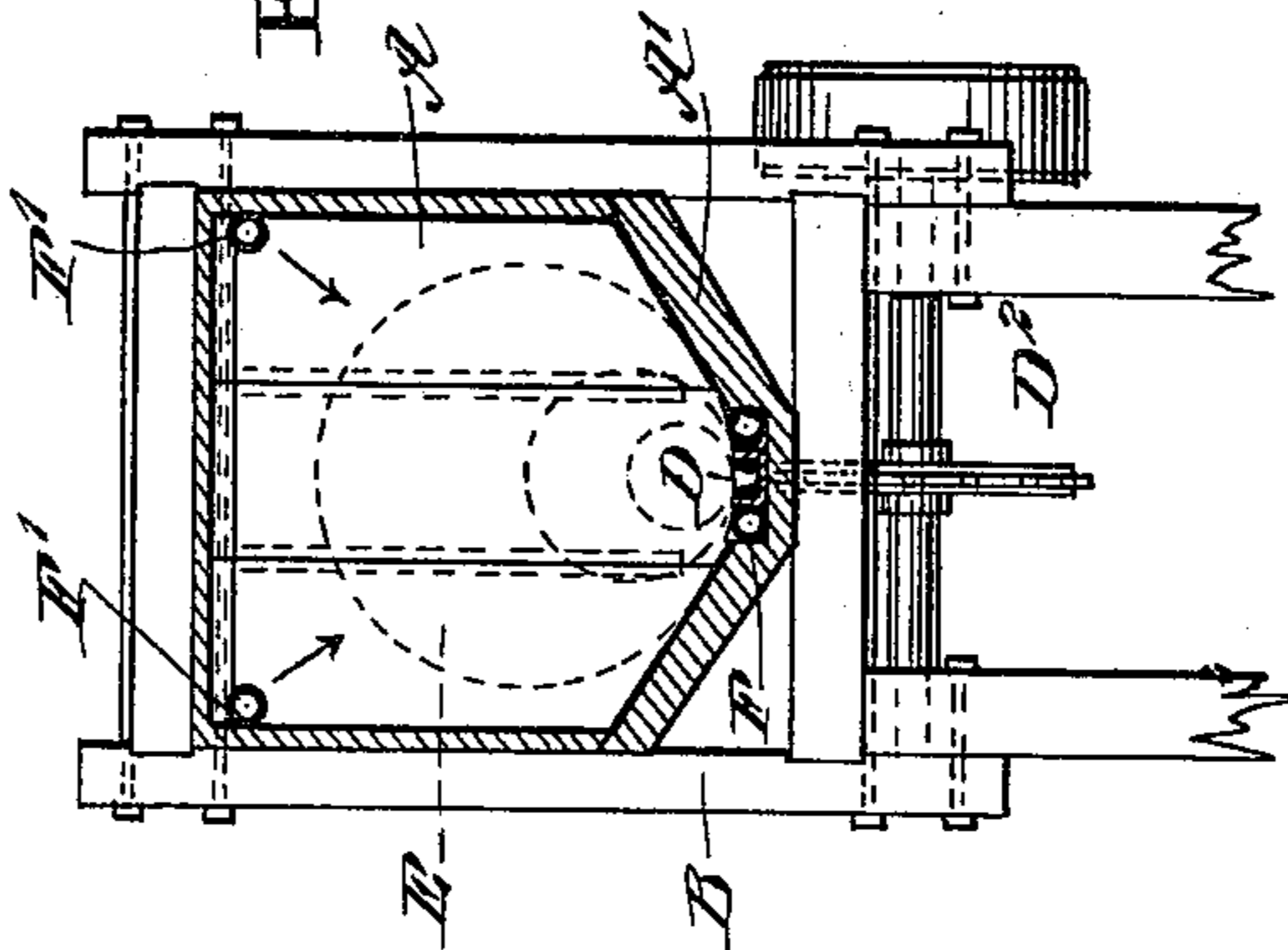


FIG. 4.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

SAMUEL W. BUTTERFIELD, OF THREE RIVERS, CANADA.

## LOG-THAWING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 626,138, dated May 30, 1899.

Application filed February 20, 1899. Serial No. 706,157. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL W. BUTTERFIELD, a citizen of the United States, residing in Three Rivers, in the Province of Quebec and Dominion of Canada, have invented a new and Improved Log-Thawing Apparatus, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved thawing apparatus, more especially designed for thawing logs to be used for making paper-pulp, the apparatus being very simple and durable in construction, arranged to permit of handling a large number of logs in an economical manner, and to insure a thorough thawing of the logs to permit of conveniently removing the bark therefrom without unduly dulling or otherwise injuring the tools used for the purpose.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

A practical embodiment of my invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a sectional side elevation of the apparatus. Fig. 2 is a sectional plan view of part of the same on the line 2 2 in Fig. 1. Fig. 3 is a transverse section of the same on the line 3 3 in Fig. 1, and Fig. 4 is a transverse section of a modified form of the improvement.

The improved thawing apparatus is provided with a box A, made a suitable length and of a cross-section to permit the ready passage of logs through the box in a longitudinal direction. The box A is supported on a suitable framework B, and its ends are provided with self-closing doors C, preferably hinged at their upper ends to the upper portion of the box, as is plainly indicated in Figs. 1 and 3, so that the doors can swing open when pressed on by a log moving into or out of the box and remain open until the log has passed into or out of the box. As soon as the log has passed, the door by its own weight will swing back to its closed position to retain the heat within

the box. The bottom A' of the box is preferably made hopper-shaped, as plainly indicated in Fig. 3, and in a recess in said bottom A' is arranged one run of a carrier-chain D or other suitable conveyer adapted to carry the logs E through the box in the direction of the arrow a'. The ends of the carrier or conveyer extend beyond the ends of the box, and the logs to be treated are fed or moved upon the conveyer by any suitable means, the logs extending in a longitudinal direction, so as to pass through the box while in this position. When a log passes to the entrance of the box, it abuts with its end against the door C to swing the same open, the door closing again after the log has passed into the box. While the log is moving through the box it is subjected to the action of jets of steam issuing from pipes F, placed in the recess in the bottom A' of the box on the sides of the run of the carrier-chain, and similar pipes F' direct jets of steam from the upper corners of the box, both sets of pipes being arranged longitudinally in the box, as is plainly shown in the drawings. The pipes are perforated at suitable intervals, so that the log during its passage through the box is subjected to the several jets of steam from the bottom, as well as from the top, so that the bark is readily thawed out, the log finally leaving the box in a thawed-out condition to permit of conveniently removing the bark from the log previously to using the wood for making paper-pulp by any of the well-known methods.

If desired, the logs cut to certain lengths may be passed in a transverse position through the box, as shown in the modified form in Fig. 4, the bottom A<sup>2</sup> of the box being flat instead of hopper-shaped and having two rows of conveyer-chains D' for carrying the log through the box.

As shown in Fig. 1, the conveyer-chain D passes over suitable sprocket-wheels D<sup>2</sup> D<sup>3</sup>, connected by belt or other means with suitable machinery for giving the desired travel to the carrier-chain. It is understood, however, that other suitable means may be employed for carrying the logs through the box A.

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

1. A log-thawing apparatus, comprising a casing of a length and size to permit the passage of logs therethrough, a conveyer in the bottom of the casing for carrying the logs through the casing, said conveyer having its ends extending beyond the ends of the casing, apertured steam-pipes in the casing for delivering jets of steam upon the logs as they pass through the casing, and self-closing doors at the ends of said casing, substantially as described.

2. A log-thawing apparatus, comprising a casing having a recessed bottom and provided with a self-closing door at each end, an endless carrier traveling in the recess of the bottom of the casing, and perforated steam-pipes

arranged in the recessed bottom of the casing and in the upper part thereof, substantially as described.

3. A log-thawing apparatus, consisting of casing having a hopper-shaped bottom, the central portion of which is recessed, and provided with hinged self-closing doors at its ends, an endless carrier-chain extending through the casing and having one of its runs arranged in the recess of the bottom, and perforated steam-pipes arranged in the upper and lower part of the casing, the pipes in the lower part being in the recess of the bottom of said casing, substantially as herein shown and described.

SAMUEL W. BUTTERFIELD.

Witnesses:

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