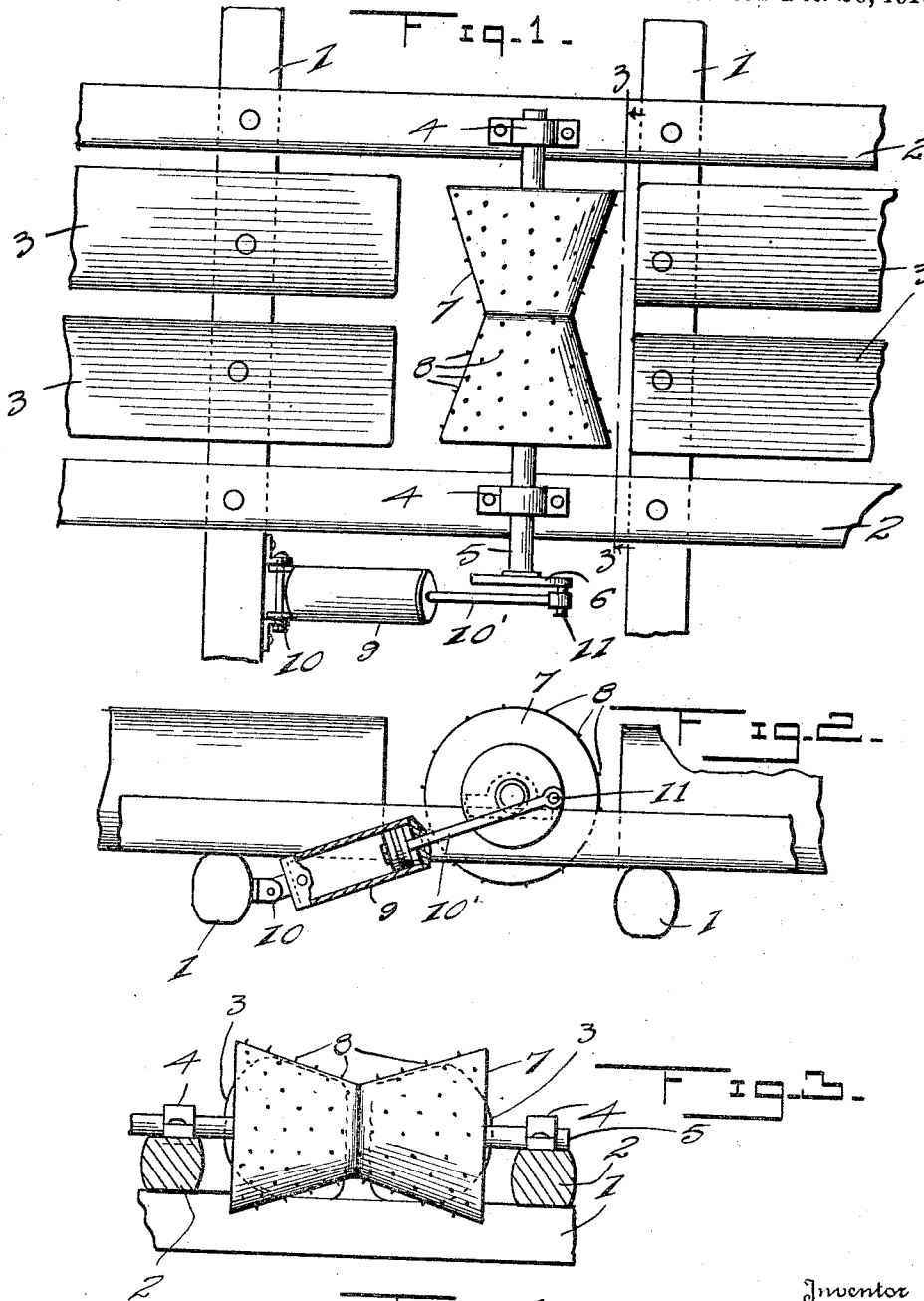


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 ROLLER AND ROLLER RETARDING DEVICE FOR LOG CHUTES.
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ROBERT J. HAMILTON, OF ENAVILLE, IDAHO.

ROLLER AND ROLLER-RETARDING DEVICE FOR LOG-CHUTES.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ROBERT J. HAMILTON, a citizen of the United States, residing at Enaville, in the county of Shoshone and State of Idaho, have invented certain new and useful Improvements in Rollers and Roller-Retarding Devices for Log-Chutes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in log chutes and has for its primary object the provision of horizontal portions of chutes of this character, with spaced rollers to facilitate the handling of logs over such portions.

A further object of the invention is the provision of means adapted to control the speed of travel of logs on downwardly inclined portions of the chute, said means comprising a roller extending across the chute and rotated by the logs, and means adapted to retard the rotation of the rollers.

A still further object of the invention is the provision of a double cone-shaped roller provided with studs on the periphery thereof adapted to engage and bite into the logs while passing over the roller.

A still further object of this invention is a retarding device comprising a cylinder hingedly secured to the chute having a pressure relief mounted thereon and a piston slidably mounted in said cylinder and adapted to be eccentrically connected to the shaft for retarding the movement of the logs over the incline of the chute.

A still further object of this invention is the provision of the device of the character described, which is of few parts, and can be easily and quickly manufactured and sold at a comparatively low cost, wherein it is described, claimed, and illustrated in the accompanying drawing, in which:—

Figure 1 is a top plan view of this invention illustrating the application of it to a log chute. Fig. 2 is a side elevation illustrating the retarding mechanism, partly in section. Fig. 3 is a sectional end view taken on the line 3—3 of Fig. 1, illustrating in dotted lines the cutaway board of the log chute in respect to the height of the cylinder, and Fig. 4 is a sectional view of a portion of the cylinder illustrating an air regulating screw.

In the drawings 1 designates the cross ties, 2 the outer boards and 3 the inner boards which are provided with their upper faces inclined downwardly and inwardly and that go to construct a log chute of the well known type. And, in applying this invention the intermediate boards are cut away forming a space to receive the rollers which will be hereinafter described.

Secured by suitable means to the outer boards 2, adjacent the opening of the intermediate boards 3 are bearings 4. A shaft 5 extending transversely of the opening of the chute and journaled within the bearings 4 is provided with a fly wheel 6 mounted on one end thereof. A double cone-shaped roller 7 is mounted on the shaft 5 and provided with a plurality of studs 8 on the periphery thereof adapted to engage and bite into the logs as they pass thereover. The upper side of the roller extends in a plane above the upper face of the boards 2 to form a retarding means when engaged by a log.

A retarding device consisting of a cylinder 9 hingedly secured as at 10, to one of the ties 1 and provided with a piston 10' reciprocally mounted therein, which is in turn pivotally connected to a pin 11 formed extensively of the fly wheel 6. An internally screw threaded board 12 formed on the cylinder 9 at the bottom thereon, and adapted to receive a regulating screw 13, which is provided with a squared head 14. Formed on the screw 13 is a slot 15 extending from the inner end to a point midway of the length of the screw 13 providing means for regulating the pressure within the cylinder 9.

It will be seen from the foregoing description that a device has been provided capable of retarding the speed of logs as they travel along the inclined portions of the log chute, wherein the logs will engage the double cone-shaped roller 7 and will rotate said roller in the direction of the travel of the logs.

The suddenness in which the logs engage the roller 7 is met by the resistance of the pressure of air within the cylinder 9 against the piston 10 and will allow the roller 7 to rotate in the direction of the movement of the log according to the pressure of air from the cylinder 9 through the slot 15 of the regulating screw 13, which was previously drawn in on the upstroke of the piston 10, thus retarding the speed of the movement

of the log down the inclined portions of the chute according to the pressure or resistance occurring in the cylinder 9. The pressure or resistance may be regulated in the cylinder 9 as desired by screwing the regulating screw 13 in and out of the cylinder 9 by a suitable tool.

When it is desired to employ this invention on the horizontal portion of the log chute, the regulating screw 13 is removed from the cylinder 9 doing away with the pressure within the cylinder 9 and providing a device capable of being used as a roller to overcome the friction occurring between the log and the chute when it is necessary to haul the logs over such portions of the chute.

Having thus described my invention, what I claim is:—

20 1. In combination, a log chute having cross ties, outer boards and inner boards provided with a cut-away portion to form an opening, of a transversely extending shaft journaled to the outer boards and extending across the opening, a double cone-shaped roller secured to the shaft within the opening, a fly wheel secured to one end of the shaft, a cylinder pivoted to one of the ties, a piston slidable within said cylinder and eccentrically connected to the fly wheel, said cylinder provided with an internally screw-threaded opening adjacent its pivoted end, and a bolt threaded in said opening of

the cylinder and provided with a slot from the inner end to a point midway of the length thereof to provide means for reducing and increasing the pressure within the cylinder as desired. 35

2. In combination, a log chute comprising slide boards having their adjacent ends relatively spaced, a roller journaled between said spaced ends and extending transversely of said boards, the upper side of the roller being located above said slide boards and means for retarding the speed of rotation of the roller so that the engagement of a log with the roller will affect the reduction in the speed of the log. 40 45

3. In combination, a log chute comprising pairs of slide boards having their upper faces inclined downwardly and inwardly and their adjacent ends relatively spaced, a double cone-shaped roller journaled between said spaced ends and extending transversely of said slide boards, the upper sides of said roller being located above the upper faces of said boards and means for retarding the speed of the rotation of the roller so that the engagement of a log with the roller will affect the reduction of the speed of the log. 50 55 60

In testimony whereof I affix my signature in presence of two witnesses.

ROBERT J. HAMILTON.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."