G. H. HAMILTON.

SAWMILL SHOCK ABSORBER.

APPLICATION FILED JULY 28, 1915.

1,180,918.

Patented Apr. 25, 1916.

2 SHEETS—SHEET 1.

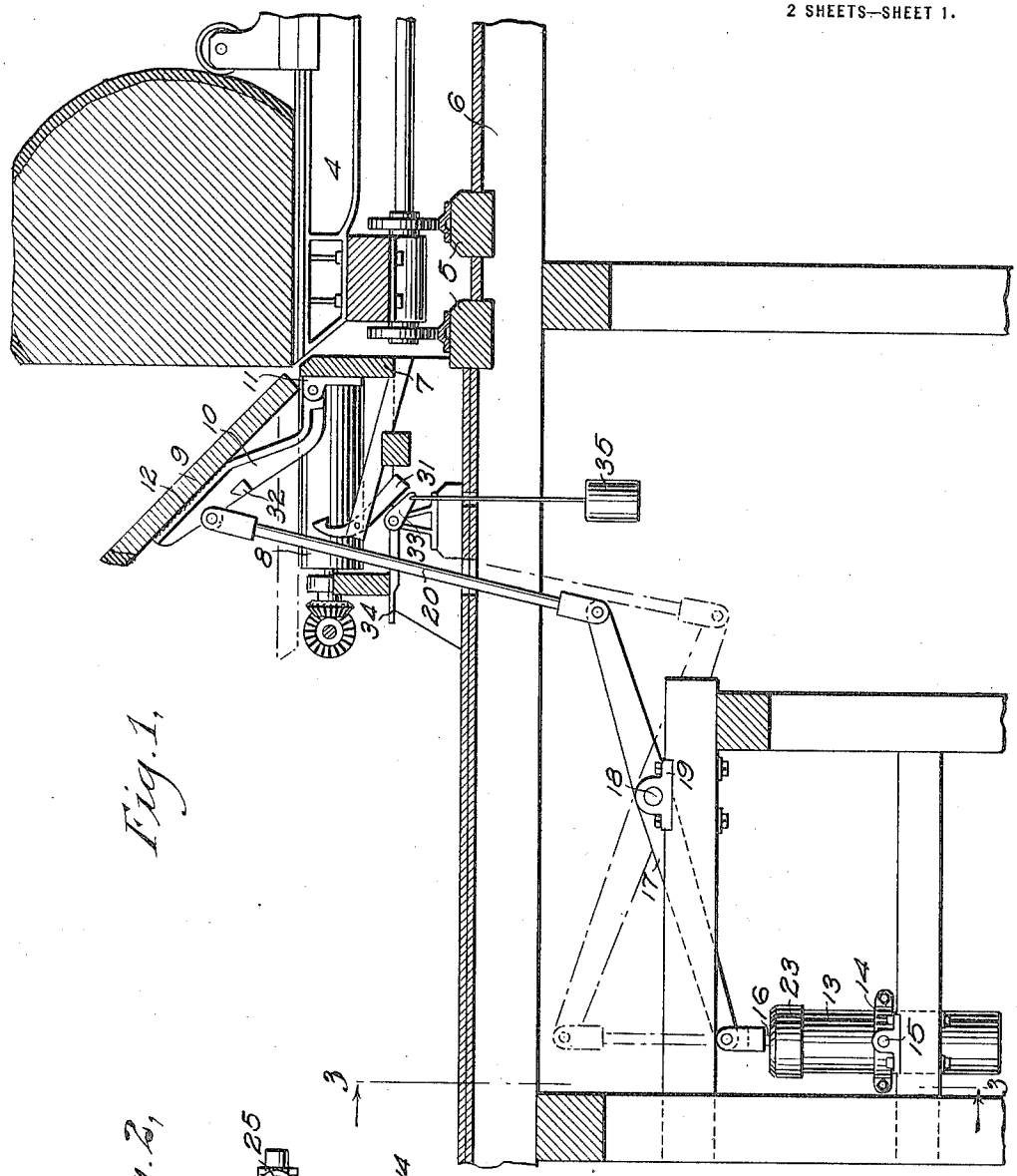


Fig. 1.

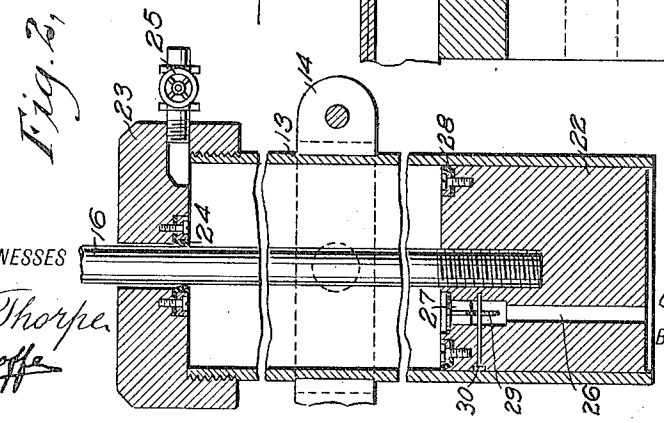


Fig. 2.

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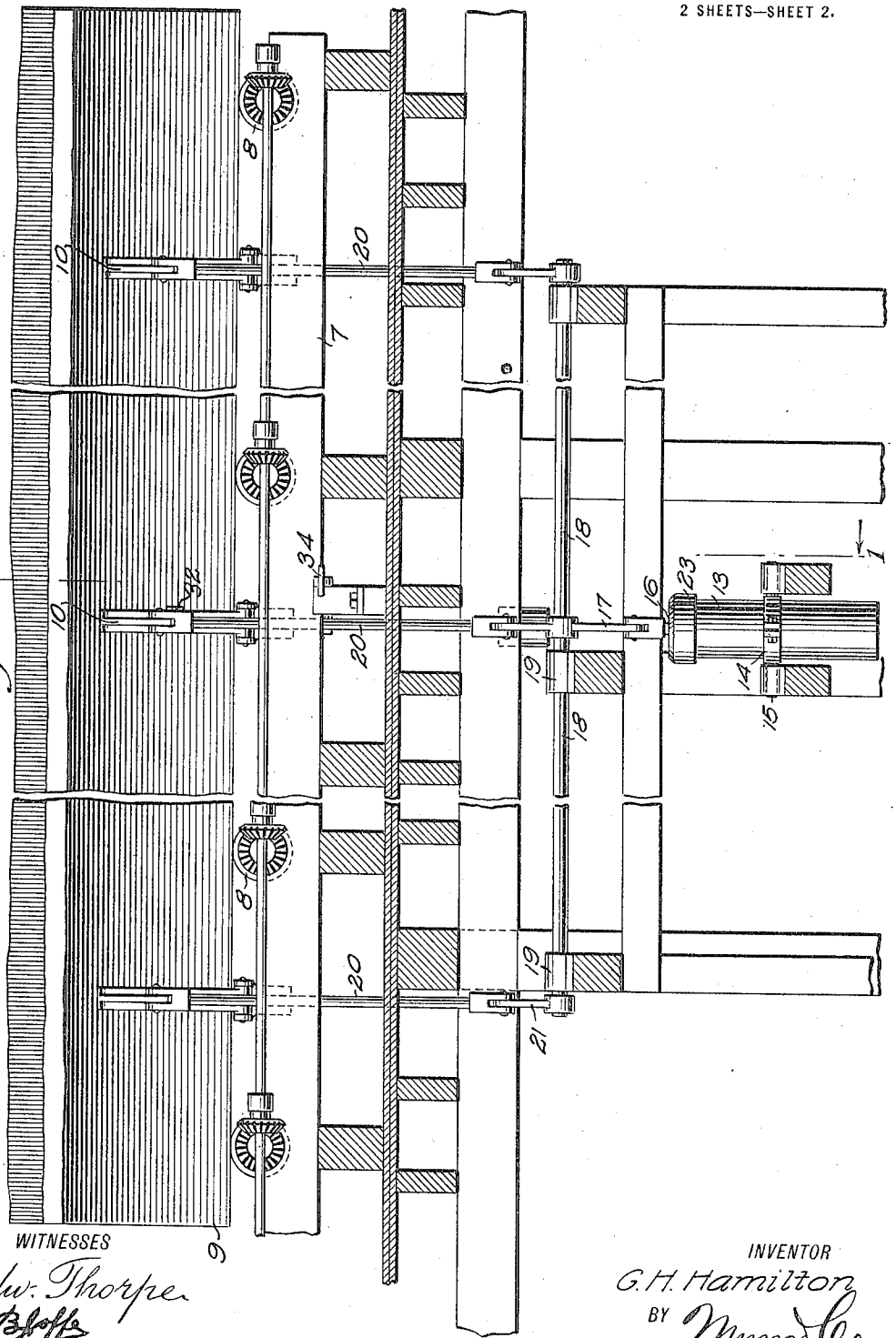
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Fig. 3.



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SAWMILL SHOCK-ABSORBER.

1,180,918. Specification of Letters Patent. Patented Apr. 25, 1916.

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To all whom it may concern:

Be it known that I, GEORGE H. HAMILTON, a citizen of the United States, and a resident of Portland, in the county of Multnomah and State of Oregon, have invented a new and Improved Sawmill Shock-Absorber, of which the following is a full, clear, and exact description.

My invention relates to a shock absorber for saw mills, and which is adapted to receive the cants sawn off from the logs by the mill and to lower said cants to the delivery rollers.

An object of the invention is to provide a simple and inexpensive shock absorber for saw mills which will prevent the cants from striking the delivery rollers and thereby causing injury to the rollers, the foundation of the mill, and also to the part of the cant projecting beyond the end of rollers.

A further object of the invention is to provide a shock absorber for mills in which an air dash-pot is utilized to gradually lower the cants to the delivery rollers.

With the above and other objects in view, the nature of which will more fully appear as the description proceeds, the invention consists in the novel construction, combination and arrangement of parts as herein fully described, illustrated and claimed.

In the accompanying drawings, forming part of the application, similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a vertical section on line 1—1, Fig. 3, through a mill embodying my invention; Fig. 2 is an enlarged section through the dash pot; and Fig. 3 is a section on line 3—3, Fig. 1.

Referring to the drawings, 4 is the log carriage of the saw mill, which travels over tracks 5 provided on the saw-mill platform 6. Located on the platform to one side of the tracks is a delivery roller case 7 in which, at suitable intervals, the delivery rollers 8 are mounted and on to which the lumber cants 9 are delivered by the mechanism forming my invention and described below.

Suitably spaced delivery arms 10 are pivotally connected within the roller case 7 by means of brackets 11, each of which is secured to the inside back of the roller case 7, and to which bracket the lower end of the corresponding arm is pivotally connected. A portion 12 of each arm, adjacent the upper end, is serrated to prevent the lumber cants from slipping. The serrated portions 12 of the arms are at about an angle of 45° to the horizontal when said arms are placed into operative position by a dash-pot 13, which is pivotally mounted between its ends within the frame of the mill through the medium of a clamp 14 which has trunnions 15 engaging bearings mounted within the frame.

The piston-rod 16 of the dash pot is connected to one end of a beam 17 which is keyed to a shaft 18 mounted to rock on suitable bearings 19 provided in the mill frame. The other end of the beam is pivotally connected to one of the arms 10 by a rod 20, and a similar rod connects the other arms pivotally to a crank 21 rigidly secured to the shaft 18. A heavy piston 22 is secured to the piston rod 16. The weight of the piston balances the connections and the arms when the arms are in operative position and causes said arms to move from the inoperative to the operative position. The additional weight on the arms will cause the piston to rise within the pot 13.

The pot, which is a tubular member, has a head 23 at the upper end thereof through which the piston rod 16 projects. Encompassing the rod and secured to the head within the pot is a leather cup 24 adapted to prevent the passage of air between the head 23 and the rod 16 when the piston 22 moves toward the head. The cylinder head 23 is provided with a valve 25 which controls the outlet from the pot and whereby the speed of the piston 22 within the pot is controlled. The piston 22 has a through bore 26 in which a valve 27 is mounted to prevent the escape of air therethrough when the piston moves toward the head but which valve 27 will allow the entrance of air into the pot through the piston when said piston moves away from the head. It will be noted that the lower end of the pot is open. A leather gasket 28 is provided on the piston 22 to make the same air tight when the piston moves toward the head. To prevent the valve 27 from being displaced out of the bore 26, the stem of the valve is provided with a slot 29 through which projects a pin 30 inserted into the piston through the lateral surface thereof.

To maintain the arms in the inoperative position, a pivotal latch 31 is provided

which is by gravity maintained in the path of travel of a lug 32 provided on one of the arms and which lug is adapted to snap into the catch when the serrated portions 12 of the arms are below the upper surface of the rollers 8. This engagement of the lug 32 with the latch 31 maintains the piston 22 at the upper end of the pot 13 and prevents gravity from causing the piston to move downward and therefore bring the arms to their operative position. To disengage the latch 31 from the lug 32 a rocking cam 33 is located adjacent the latch 31. The cam is operable by a pedal 34. By pressing on the pedal the latch 31 is caused to disengage the lug 32, thus allowing the piston 22 to descend under the action of gravity, consequently raising the arms 10 to their operative position, as shown in full lines in Fig. 1. To restore the cam to the normal or operative position, a counterweight 35 is provided and the movement of which counterweight under the action of gravity is limited by the engagement of the pedal 34 with the roller case 7.

When the lumber cant is being sawed from the log the off bearer releases the receiving arms 10 by pressing the pedal 34, when it will rise to the position shown in Fig. 1 under the gravitational displacement of the piston 22. The downward movement of the piston will not be retarded, as the entrance of air into the dash-pot is facilitated by the displacement of the valve 27. The arms, being in the operative position, will receive the cant as it is dropped from the log and ease it to the rollers 8 without jar because the upward movement of the piston 22 within the pot is gradual, in view of the fact that the escape of air from the dash-pot is restricted by means of the valve 25. Due to the gradual lowering of the cant on to the rollers 8 all shocks to the rollers and to the foundation of the mill are eliminated. Shock to the cant is also eliminated thereby, and consequent injury to that portion of the cant which will project beyond the ends of the rollers 8.

As the arms 10 move downward under the weight of the cant the lug 32 comes into engagement with the latch 31 and the arms will be maintained in inoperative position until another cant is nearly sawn off from the log, when the operator will repeat the operation.

While I have described the principle of operation, together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative and that such changes may be made as are within the scope of the appended claims.

I claim:

1. In combination with the delivery rollers of a saw mill, a shock absorber therefor comprising means mounted to swing to and from the rollers, gravitationally-operable means associated with said first means for swinging the same from the rollers, and air-cushioning means for easing the movement of said first means toward the rollers.

2. In combination with the delivery rollers of a saw mill, a mechanism for delivering cants to the rollers, delivery arms mounted to swing to and from the rollers, means normally tending to swing said arms from the rollers, air-cushioning means for easing the swinging movement of said arms toward the rollers, means for locking said arms when they are swung to the rollers, and means for unlocking said arms.

3. In combination with the delivery rollers of a saw mill, delivery arms mounted to move to and from the rollers, gravitationally-operable means tending to move said arms from the rollers, air-cushioning means for easing the movement of the arms to the rollers, means for locking the arms when the same are brought to the rollers whereby the gravitationally-operable means are prevented from moving the arms from the rollers, and means for unlocking the arms whereby the gravitationally-operable means are rendered operative.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE H. HAMILTON.

Witnesses:
W. W. McIntosh,
Geo. L. Davis.

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