

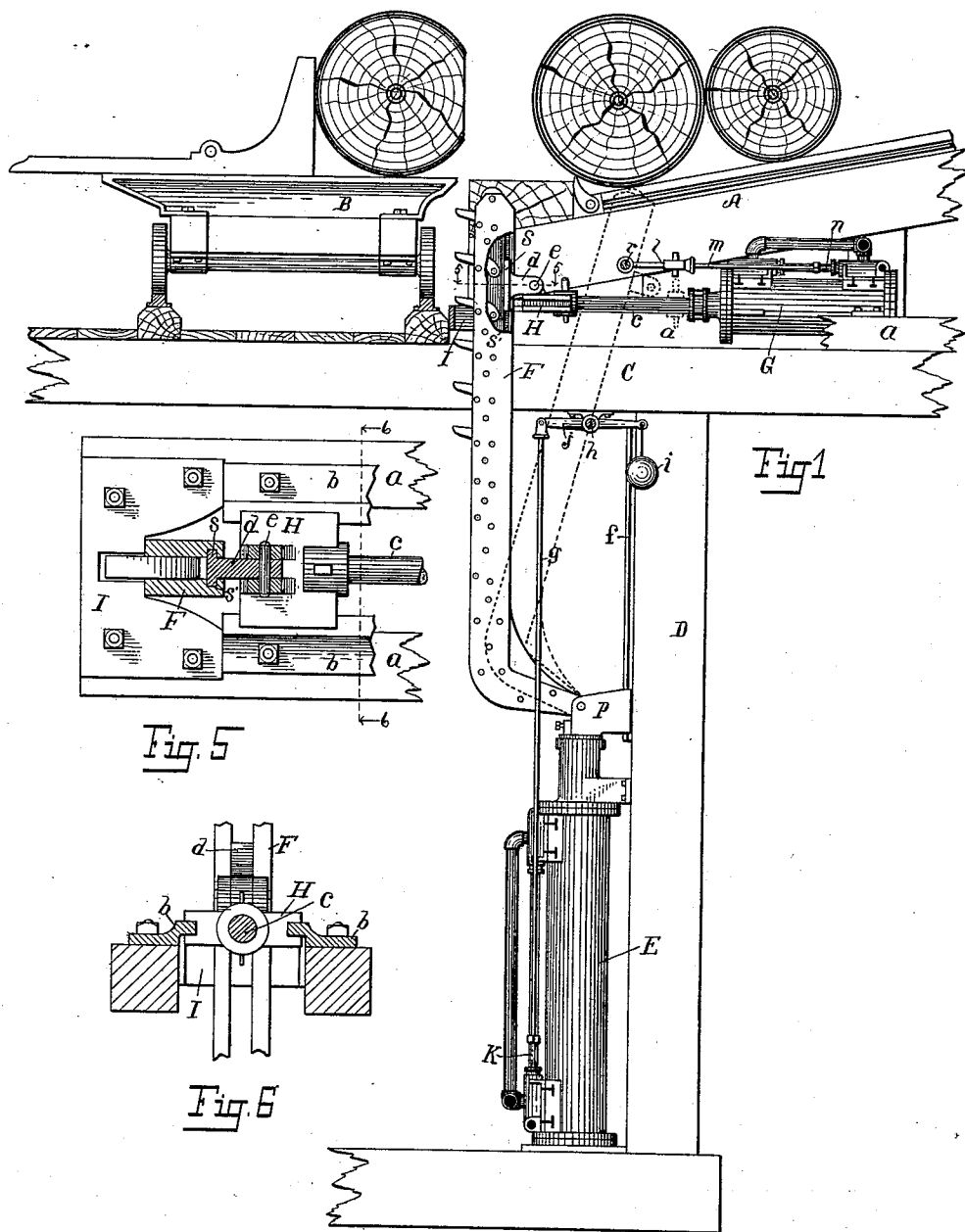
(No Model.)

2 Sheets—Sheet 1.

W. E. HILL.
LOG LOADING AND TURNING MACHINE.

No. 523,070.

Patented July 17, 1894.



Witnesses:

Jessie L. Nash
Lora Westbrook

Inventor.

William E. Hill
By Fred L. Chappell
Att'y.

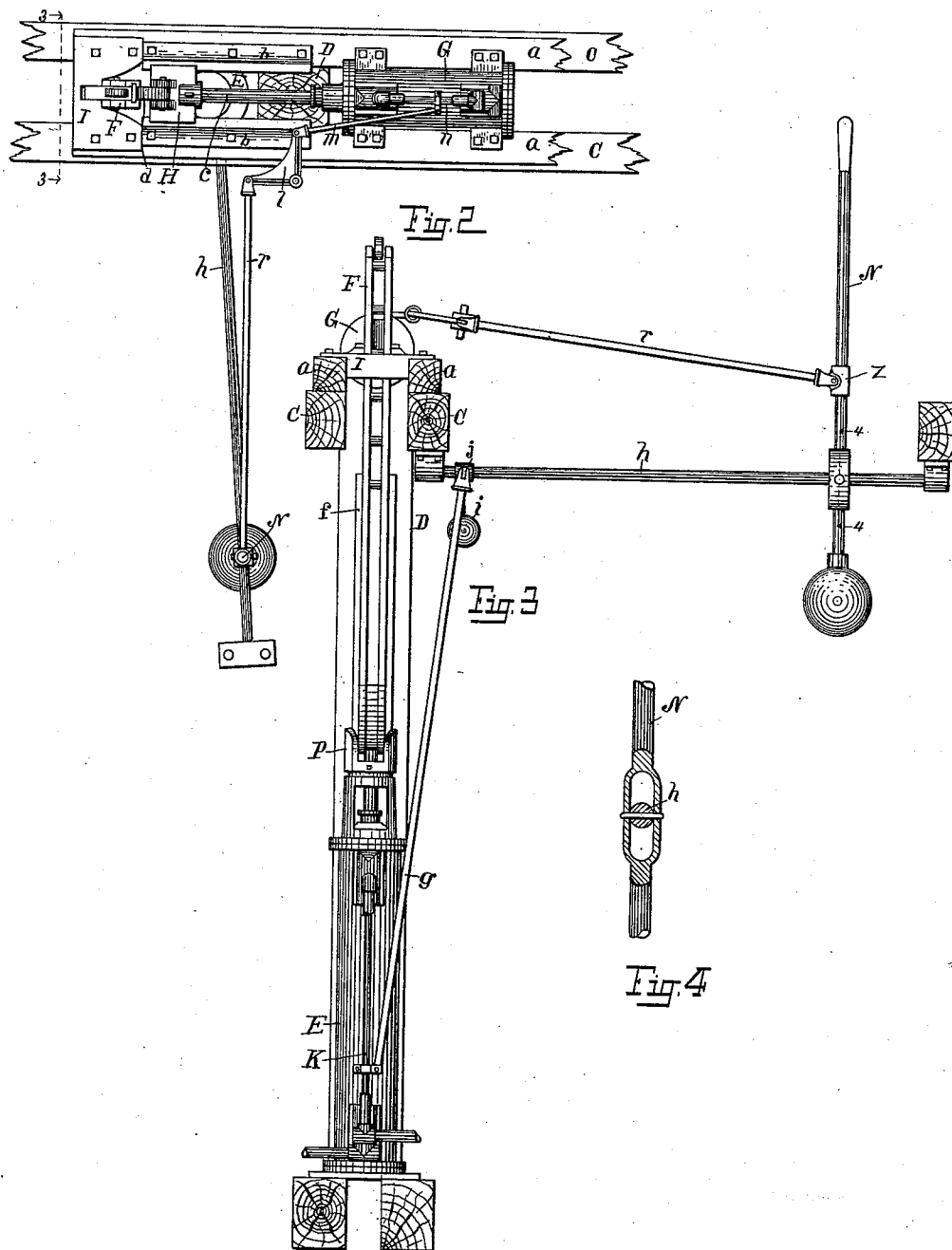
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UNITED STATES PATENT OFFICE.

WILLIAM E. HILL, OF KALAMAZOO, MICHIGAN.

LOG LOADING AND TURNING MACHINE.

SPECIFICATION forming part of Letters Patent No. 523,070, dated July 17, 1894.

Application filed December 23, 1892. Serial No. 456,147. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. HILL, a citizen of the United States, residing at the city of Kalamazoo, in the county of Kalamazoo and State of Michigan, have invented certain new and useful Improvements in Log Loading and Turning Machines, of which the following is a specification.

My invention relates to log loading and turning machines in which a vertical and a horizontal steam cylinder are used to manipulate an upwardly projecting toothed bar to roll logs onto a saw-mill carriage and turn them to the correct position for sawing.

The objects of my invention are, first, to provide a suitable sliding joint for attaching the piston rod of the horizontal cylinder to the toothed bar; second, to form the toothed bar so that its weight will have a constant tendency to carry it against the log and so that an upward movement will press it solid against the timber. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1, is a vertical side view of my machine in position in a saw-mill, the operating lever not being shown. Fig. 2, is a top view showing the operating lever in position. Fig. 3, is a vertical view on line 3—3 of Fig. 2, looking toward the cylinders. Fig. 4, is a detail of the lever on line 4—4 of Fig. 3. Fig. 5, is a view on line 5—5 of Fig. 1, looking down showing the cross head and sliding joint. Fig. 6, is a view on line 6—6 of Fig. 5.

Similar letters refer to similar parts throughout the several views.

The skidway A, the carriage B, the floor C, and the post D, of the saw-mill are in the usual form. The vertical cylinder E is below the floor of the mill. To the top end of its piston rod is attached a guiding cross head P, that reciprocates on the guide f.

To the cross head P, is pivoted a laterally projecting arm from the bottom of the toothed bar F. The horizontal cylinder G is above the floor. The piston rod of this cylinder projects toward the carriage and is attached to the cross head H, which reciprocates on the guides b, b. To the cross head H, is attached the sliding bar s, by the pin e, through the

arm d. The bar s, is fitted to slide in the grooves s', on the inside of the toothed bar F, so that the toothed bar F, can reciprocate over it, no matter at what angle it may stand.

The operating lever N, is pivoted to the rockshaft h, by a pin at right angles to the shaft (as shown in Fig. 4). The end of the arm j of the rock shaft is attached by the connecting rod g, directly to the valve stem K, of the upright cylinder E.

Above the rockshaft h, on the lever N, is pivoted the connecting rod r, which is pivoted to the bell crank l, which is pivoted to the connecting rod m, which attaches to the valve stem n, of the horizontal cylinder G.

My machine is controlled by the single lever N. To use the machine the top of the lever N, is pushed toward the cylinders in the line of the rockshaft h, which by its connections will operate the valve of cylinder G, admitting steam to the front valve which will carry the top of the toothed bar F, back as shown by the dotted lines. The lever N, is then tipped away from the carriage which will rock the rockshaft h, and the arm j, will by the connecting rod g raise the valve stem K, and admit steam to the bottom of cylinder E, which will raise the toothed bar F. A little steam is then admitted to the rear of the horizontal cylinder G. This with the laterally projecting arm at the bottom of the toothed bar causes the teeth of the bar to take firm hold of the logs. It is thus clear that the top of the toothed bar can be moved back and forth or the toothed bar can be reciprocated vertically, independently or both at once. The usual stop plate I, is placed in front of the bar to keep it from coming in contact with the carriage.

A small weight i, is attached to an extension of the arm j, of the rockshaft h, to counterbalance the weight of the connecting rod g, and the valve stem K, and also reduce the bad effect of torsion in the rock shaft h, to the minimum.

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

1. In a log loading and turning machine the combination of an L shaped toothed bar, a

stationary upright cylinder set a considerable distance back from the front of the sawmill carriage under the log deck and in easy reach of the sawmill carriage, with its piston rod 5 pivoted at the end of the lateral projection of the toothed bar, a stationary horizontal cylinder with its piston attached by a sliding joint to the back of the toothed bar, and suitable means of admitting fluid under pressure 10 to the cylinders to operate the same.

2. In a steam log loading and turning machine, the combination of the upright cylinder E, set back from the front of the sawmill carriage under the log deck, and its piston and 15 piston rod, the toothed bar F, L shaped with the main part of the bar toward the sawmill

carriage from the cylinder pivoted thereto, the horizontal cylinder G, the guiding cross head H, pivoted to the bar S, which slides in the grooves S' all operated by the lever N 20 pivoted to the counterbalanced rockshaft h which said rockshaft and lever are connected to the valve stems of the cylinders substantially as described for the purpose specified.

In witness whereof I have hereunto set my 25 hand and seal in the presence of two witnesses.

WILLIAM E. HILL. [L. S.]

Witnesses:

E. S. ROOS,

CORA E. WESTBROOK.