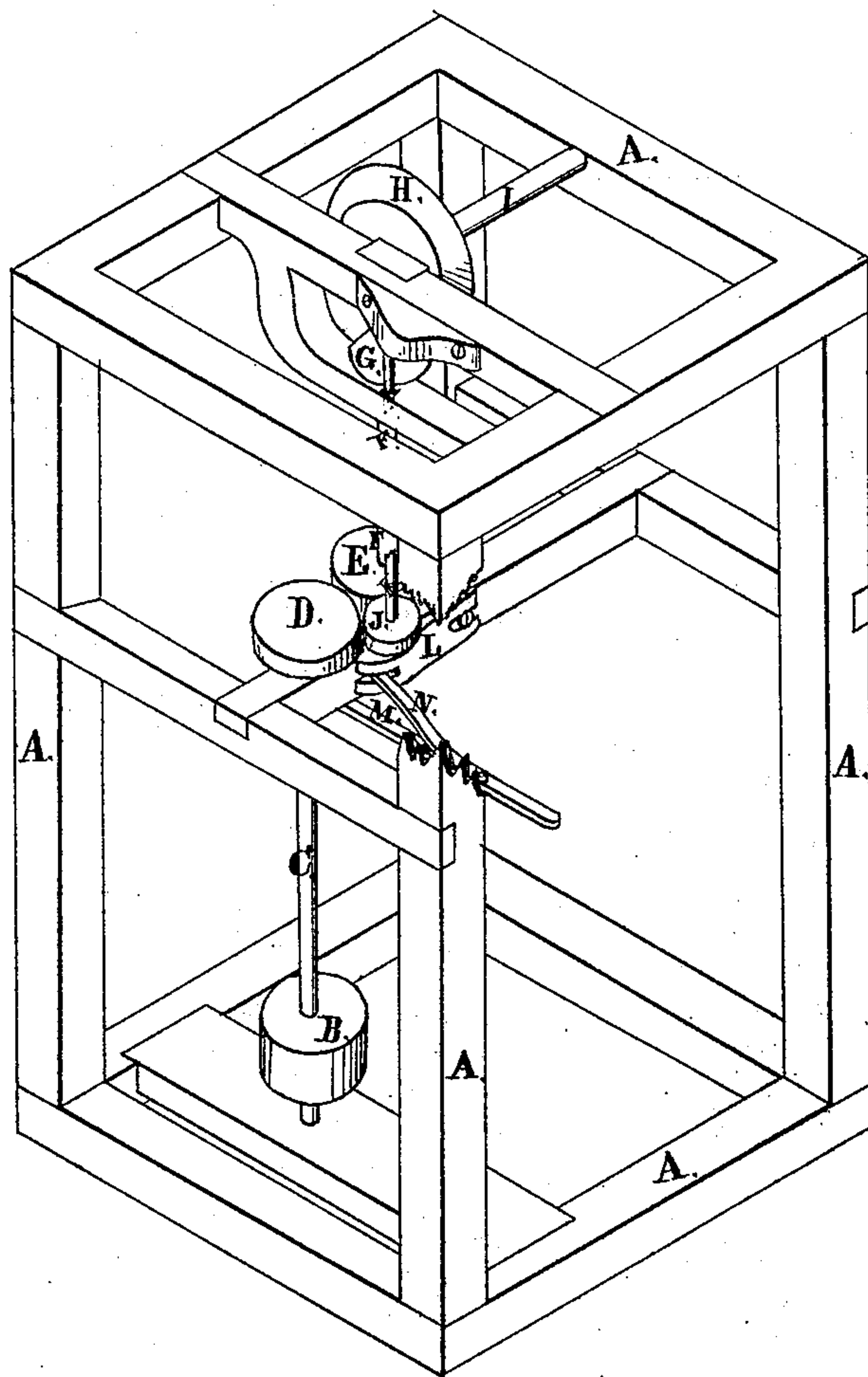


S. H. RICHARDSON.

Hauling up Logs.

No. 103,372.

Patented May 24, 1870.



Witnesses;

Jonathan Chen
Lyman P. Fowler

Inventor

Simon H. Richardson

United States Patent Office.

SIMON H. RICHARDSON, OF BANGOR, MAINE, ASSIGNOR TO HIMSELF AND
T. N. EGERY, OF SAME PLACE.

Letters Patent No. 103,372, dated May 24, 1870.

IMPROVEMENT IN HAULING UP LOGS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, SIMON H. RICHARDSON, of Bangor, in the county of Penobscot and State of Maine, have invented certain new and useful Improvements in Hauling up Logs into Saw-Mills; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The nature of my invention consists in so arranging the machinery by which the power is multiplied and transmitted from the water-wheel, or from the power supplied to the haul-up-wheel, sometimes called the nigger-wheel, as to allow a more simple arrangement of gear or friction-wheels, and to omit, entirely, the use of a belt, and, at the same time, to allow the haul-up-wheel to be reversed, so that the chain can be carried back directly from the wheel to the logs, thereby preventing the necessity of running the chain entirely off of the wheel before it can be carried back.

In the accompanying drawings—

A A A A is the frame which holds the machinery, so that the different parts occupy the same position relative to each other that those parts would occupy when running in a mill.

B represents the part to which power is applied, and which, ordinarily, would be a horizontal water-wheel or motive power.

C is a shaft, connecting B with a pulley or wheel, D.

E is a friction-pulley or wheel, which is connected by the shaft F with the beveled gear or friction-wheel G.

H is a gear or friction-wheel, which runs in connection with G, and carries the shaft I, and is generally called a nigger-wheel.

J is a friction-wheel, which is arranged on a movable shaft, K, in such a manner that it may be thrown into contact with the wheels D and E simultaneously while those wheels are separated from each other, and thereby transmit a motion to the wheel E which shall be the reverse of the motion transmitted to E when in direct contact with D.

M is a lever, by which the wheel D is thrown into contact with E, or removed from such contact.

N is a lever which acts on the movable box L, and carries the wheel J into contact with the wheels D and E. For convenience, the lever N may be fastened to the lever M, and whenever the lever M is moved forward from left to right, the wheel D is thrown out of contact with E, and the wheel J is thrown into contact with D and E by the same motion.

To enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation.

I provide a water-wheel, B, which is usually located

so as to draw water from the flume independently of the other machinery, or the power may be supplied by steam with about the same arrangement. The water-wheel located at B, but not necessary to be fully shown, is connected by the shaft C with the friction-wheel D. I provide the friction-wheel E, and connect it by the shaft F, with the beveled friction or gear-wheel G. I provide the beveled friction or gear-wheel H, and attach the shaft I. I provide the friction-wheel J, and attach it to a movable shaft, K. I provide the levers M and N. I then place the above-named parts in the same relative positions as shown in the drawings.

In operation, the power is applied by a water-wheel, or any other power, at B. The wheel B revolves, carrying with it the shaft C and wheel D. The lever M is thrown to the left, carrying the wheel D to the right, and into contact with the wheel E. The wheel E revolves, carrying the shaft F and beveled wheel G. The wheel G is intended to be kept always in contact with the wheel H, and, consequently, when E revolves H must revolve, and impart motion to the shaft I, upon which a chain is wound when in use.

This chain is heavy and long, and being free at each end, one end is thrown over the shaft and passed around it until coils enough are formed around the shaft to keep the chain from slipping with the load. The forward end is allowed to fall under the shaft as it gains forward. When the logs are hauled up as far as desirable, the chain will not be wound wholly up, and there may be one-half or one-third of the chain still between the logs and the shaft.

Now, by the usual process, the shaft cannot be reversed in its revolutions, but the chain must be run forward wholly off the shaft before it can be carried back, or else the revolution of the shaft must be reversed by hand-power, and just here we find an important improvement in the arrangement of the wheel J interposed between the wheels D and E, in such a manner as to reverse the revolution of the wheel H and shaft I at pleasure, and thus to facilitate the use of the chain at any required length.

A second advantage gained by this arrangement is found in dispensing with the use of a belt. The only other arrangement deserving of comparison with this, is one now in general use, and which necessitates the use of a belt. Belts are always expensive and always needing repairs, and in such heavy work as is required for hauling up logs, heavy and expensive belts must, of necessity, be used.

A third advantage results from dispensing with so much of the usual amount of machinery that a more simple and compact arrangement of the parts is practicable, and considerable of the space usually occupied is saved. This is an important consideration, as

will readily be understood, even by those least familiar with saw-mills, for all the room occupied by the haul-up, and its necessary machinery, must be taken out of the most central and most valuable room in a mill, and all the space which can be saved here is an advantage of no light importance.

A fourth advantage arises from the facility with which the machinery can be arranged for convenience in handling, for the wheels D, E, and J may all be placed under the floor of the mill, and there need be nothing seen above the floor but the handles of the levers, by which they are controlled.

A fifth advantage arises from the entire noiselessness with which this machinery can be run, and the absence of any jar to the different parts, the wheels H and G, whether geared or friction, are always in proper connection, and the power is transmitted through the friction-wheels D E, preventing any sudden jars or strain, such as would result from the con-

tact of geared wheels; and, finally, this arrangement is so simple that it seldom needs repairs, and when it does need them, they are easily and cheaply made.

What I claim as my invention, and wish to secure by Letters Patent, is—

1. The arrangement of the shaft and wheel C D, with the wheel, shaft, and wheel E F G, in combination with the wheel and shaft H I, all as shown and described, for the purpose of hauling up logs.

2. The combination of the shaft and wheel C D, with the wheel, shaft, and wheel, E F G, the wheel and shaft H I, and the wheel J, with the levers M and N, in the manner and for the purposes shown and described.

SIMON H. RICHARDSON.

Witnesses:

JONATHAN CHASE,
LEYMAN P. FOWLER.