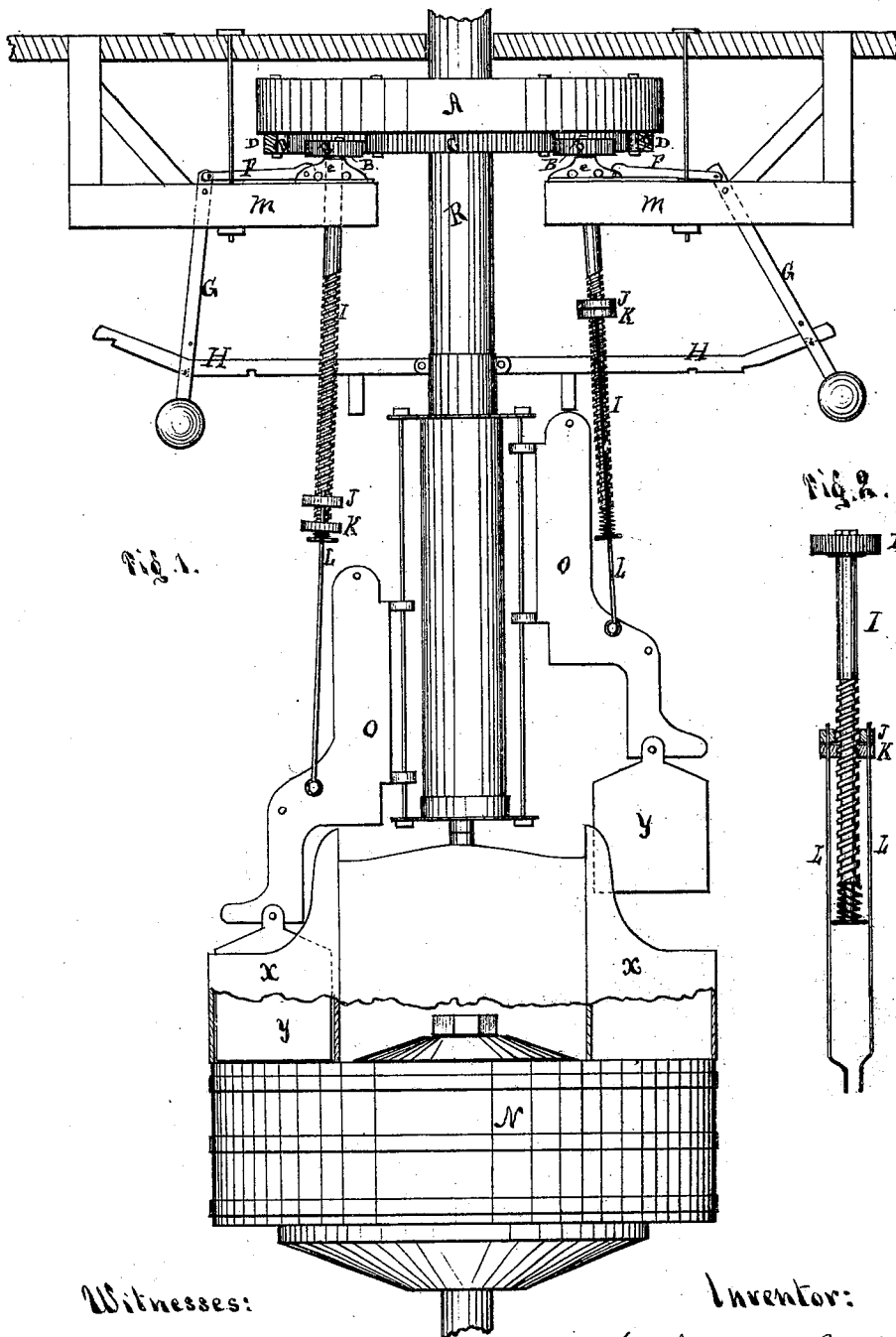


S. A. Perkins,
Wood Grinder.

No. 112,733

Patented Mar. 14, 1871.



Witnesses:

L. J. Rogers.
J. H. Plerson

Inventor:

Sanford A. Perkins
By N. W. Beadle & Co atty
S. A. P.

UNITED STATES PATENT OFFICE.

SANDFORD A. PERKINS, OF TOPSHAM, MAINE.

IMPROVEMENT IN MACHINES FOR GRINDING WOOD-PULP.

Specification forming part of Letters Patent No. **112,733**, dated March 14, 1871.

To all whom it may concern:

Be it known that I, SANDFORD A. PERKINS, of Topsham, in the county of Sagadahoc and State of Maine, have invented a new and useful Improvement in Machine for Grinding Wood-Pulp; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

This invention relates to machines for raising the weights used in pressing down the blocks of wood upon the stone in what is known as the "Taft machine" for grinding wood-pulp; and it consists, more particularly, of devices hereinafter more fully set forth.

In the drawing, Figure 1 is an elevation of the machine, certain parts being broken away; and Fig. 2 is a detached view of the screw and nut and direct attachments to the weight.

As represented in Fig. 1, N is the stone, revolving like the ordinary millstone on a vertical axis. Above it are fixed the boxes X X, of any convenient size and number, in which are arranged weights Y Y to slide easily up and down.

To the arrangement of stone, boxes, and weights I lay no claim, my improvements being the devices now to be described.

Centrally located above the stone is the vertical shaft R, near the upper end of which is the drive-wheel A, revolving as a loose pulley on the shaft R, and receiving motion from a band, or in any convenient manner. On the under side of this wheel is a spur-wheel, C, and an internal spur-wheel, D. Between the inner and outer wheels C and D are pinions B, of diameter slightly less than the distance between C and D, fixed on the upper ends of screw-rods I I.

These rods are suspended in carriages *e e*, that slide on supports, such as *m m*, or of any convenient form, and have motion sufficient to throw the spur-wheel B into gear on either side. These carriages are moved by weighted levers G G, to which they are connected by rods, as shown at F. The weighted levers are held out of perpendicular line by the latches H, which pass through loops in the levers and have catches on their under sides.

A cross-head, J, slides freely on the screw-rod I, and has rods L L, connecting it either

to the weight or to the guide supporting the weight, and a nut, K, slides on the rods and is moved by the screw. The guide, which may constitute part of the weight, is shown at O O, and slides on vertical rods, as shown. This may be modified or dispensed with, and the rods attached directly to the weights, if desired.

The lower part of the rod I has a nut, and, immediately above, a neck without thread, and smaller than the threaded part, upon which is slid a spiral spring made a little longer than the neck.

The operation of my devices is as follows: The attendant, desiring to raise the weight from the boxes to add new blocks, throws the weighted levers outward far enough to latch. The pinion is then in gear with the inner wheel, and the screw-rod is turned in the nut, which, being thus raised up against the cross-head, raises the weight until the guide O strikes the latch H, or some suitable projection thereon, lifting it out of connection with the lever and allowing that to fall. This operation throws the pinion out of connection with the wheels, thus stopping the motion of the screw-rod. Fresh blocks of wood having been in the meantime placed under the various weights, the screw may be allowed to turn in the reverse direction by moving the lever to the inner notch, thus causing the nut to descend, leaving space for the weight to fall as it follows the wood worn away by the action of the stone. The nut reaching the extremity of the thread is thrust upon the neck and ceases to move forward, even though the rod should continue to turn. The coiled spring holds it in its contact with the thread, so that when the screw-rod turns in the other direction the nut shall take at once upon the thread and be drawn up.

It will be seen that the machine is nearly automatic in its movements, it being required only that, when any block is ground down, the weighted lever above it shall be thrown out and locked by the catch. Then, while the weight is rising, the attendant may put in place a new block and leave the weight to return.

It is obvious that the forms of the parts may be changed without departing from the spirit of my invention.

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

1. A device for raising the weights of a wood-pulp-grinding machine, consisting, essentially, of a series of screws, with pinions fixed thereon, and operated by cog-wheels, substantially as described.

2. The central shaft R and wheel A, with its cog-wheels D and C, acting in connection with the pinions and their screw-rods, as set forth.

3. In combination with the rods and pinions, arranged as described, the carriages and weighted levers, operating as set forth.

4. The latches H, with catch at the extremities, arranged to hold the lever G out of perpendicular line and to be lifted by the rising of the weight, as set forth.

5. In combination with the screw-rods I, the cross-head J, nut K, and rods L L, connecting the cross-head to the guides or weight, as set forth.

6. The rods i, when made with a neck in the extreme end and provided with a spring, as set forth.

7. The guides O, sliding on rods, and connected to the lifting-rods and weights, as described.

This specification signed and witnessed this 30th day of December, 1870.

SANDFORD A. PERKINS.

Witnesses:

FRANCIS S. HUSSEY,
WM. F. PERKINS.