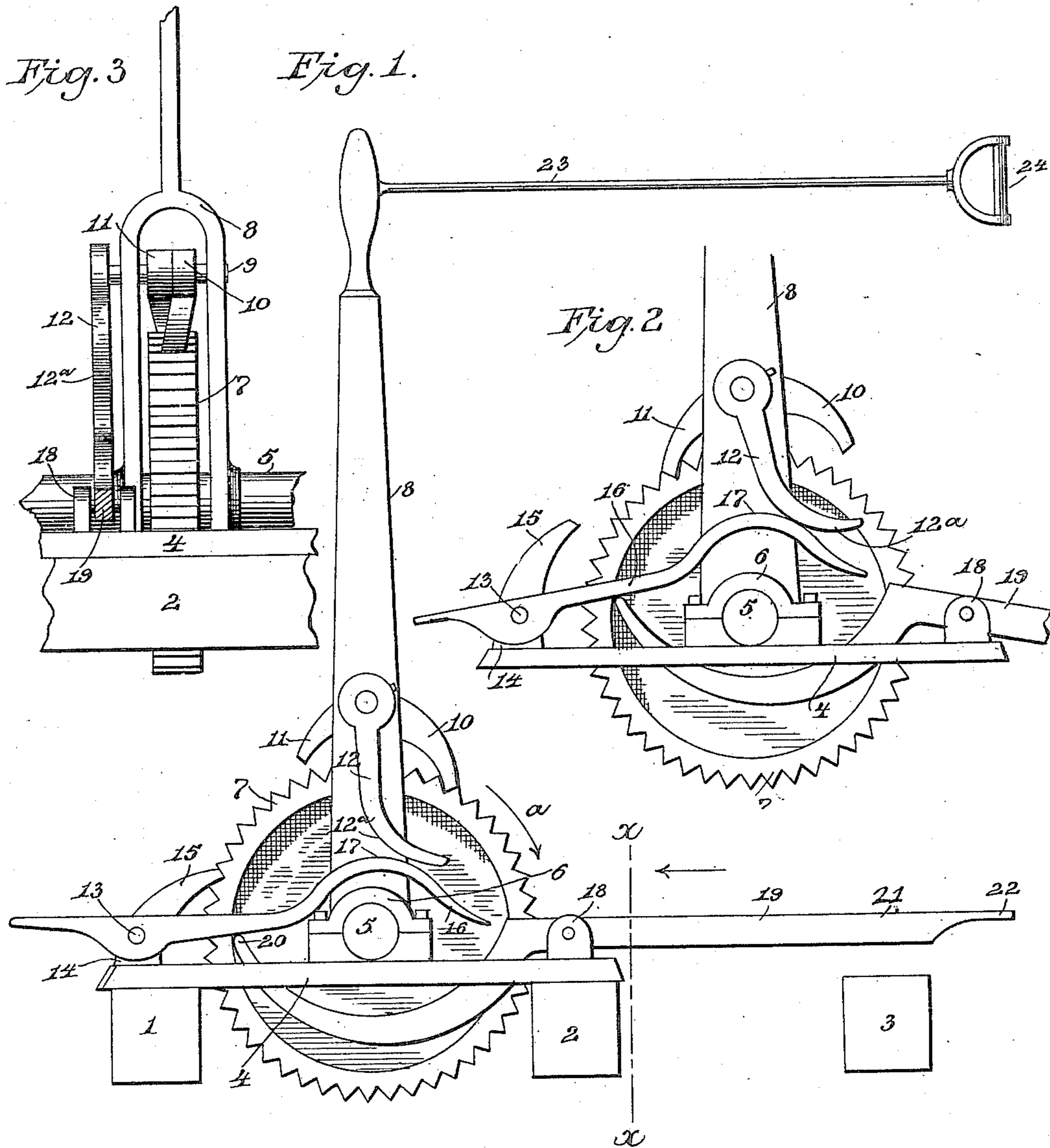


(No Model.)

W. J. GLADISH.
SAW MILL SET WORKS.

No. 446,443.

Patented Feb. 17, 1891.



Witnesses
E. B. Gallaher.

Per *E. B. Gallaher*

By his Attorneys,

C. A. Snow & Co.

Inventor

Wm. J. Gladish.

UNITED STATES PATENT OFFICE.

WILLIAM JAMES GLADISH, OF CHATTANOOGA, TENNESSEE.

SAW-MILL SET-WORKS.

SPECIFICATION forming part of Letters Patent No. 446,443, dated February 17, 1891.

Application filed May 21, 1890. Serial No. 352,593. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM JAMES GLADISH, a citizen of the United States, residing at Chattanooga, in the county of Hamilton and State of Tennessee, have invented a new and useful Improvement in Set-Works for Saw-Mills, of which the following is a specification, reference being had to the accompanying drawings.

This invention has relation to set-works for moving the standards of head-blocks on saw-mill carriages to move the log up to or away from the saw; and it consists in the construction and novel arrangement of parts, as will be hereinafter fully described, and particularly pointed out in the claims.

Figure 1 is a side elevation of my improved setting device, only so much of the carriage being shown as is necessary to illustrate the application of the invention thereto. Fig. 2 is a similar view showing the pawls in position for the reverse movement of the carriage; and Fig 3 is a sectional view taken on the line $x x$ of Fig. 1, looking in the direction of the arrow.

Similar numerals of reference denote corresponding parts in the several figures of the drawings hereto annexed.

1, 2, and 3 designates parts of the frame, and 4 a portion of the platform of a saw-mill carriage.

A shaft 5 is mounted in suitable journal-boxes 6 (only one of which is shown) upon the platform 4 of the carriage, and is connected by any suitable means with the standards of the head-blocks to move the said head-blocks backward or forward when the shaft 5 is rotated, as is usual in this form of machines.

A ratchet-wheel 7 is mounted upon the shaft 5 about midway of its length, and a lever 8, bifurcated at its lower end, is fulcrumed upon the said shaft 5, one arm thereof being situated upon each side of the ratchet-wheel 7, as shown in Fig. 3. A short rock-shaft 9 is journaled in the arms of the lever 8 above the ratchet-wheel 7, having keyed or otherwise secured thereon the pawls 10 11, the former of which being adapted to engage the ratchet-teeth on the wheel 7 in front of said lever 8, and the latter arranged to engage the same ratchet-teeth in rear of the lever, as will

be seen by reference to Figs. 1 and 2. The rock-shaft 9 extends a short distance beyond the lever 8 on one side thereof, and has secured to its end a downwardly-projecting lever 12, which is curved at its lower end to form an inclined surface 12^a. The weight of the lever 12 serves to keep the pawl 10 normally in engagement with the teeth of the ratchet-wheel 7.

A shaft 13 is mounted in suitable standards 14 in rear of the ratchet-wheel 7, having a pawl 15 arranged thereon to engage the teeth on said ratchet-wheel, and a lever 16, secured to the end thereof, extending under the curved lower end of the lever 12, the lever 16 being curved over the shaft 5 to form the inclined surface 17.

Fulcrumed in suitable standards 18 is a lever 19, the rear short arm of which is curved under the shaft 5, and the extremity 20 thereof normally rests in contact with the lower side of the lever 16, the long arm 21 of the lever 19 extending beneath the log to the front side of the carriage, its extremity being formed into a foot-piece 22 within easy reach of the foot of the operator.

A rod 23, having one end secured to the upper extremity of the lever 8, extends above the log to the front of the machine within reach of the hand of the operator, and is provided with a suitable hand-piece 24.

The operation of my invention is as follows: After a cut has been made and the log returned to its initial position, the operator grasps the hand-piece 24, by which he is enabled to pull the upper end of the lever 8 toward the front of the carriage. The pawl 10, normally engaging the teeth on the ratchet-wheel 7, will turn the latter in the direction of the arrow a , turning the shaft 5, which operates to move the head-blocks, as will be readily understood. The pawl 15, which is normally held in engagement with the teeth on the ratchet-wheel 7 by the weight of the long arm of the lever 16, will prevent the said ratchet-wheel 7 from turning backward when the lever 8 is released or moved backward to enable the pawl 10 to engage another tooth. When it is desired to move the head-blocks backward, the operator depresses the long arm 21 of the lever 19 with his foot, causing the rear end 20 to ascend and raise the lever

16, which operates through the shaft 13 to raise the pawl 15 out of engagement with the ratchet-wheel 7 at the same time the curved portion 17 of the lever 16 will impinge against the curved lower end of the lever 12, and by reason of the inclined surfaces formed by the curved portions of the levers 12 and 16 the latter will deflect the former and rock the shaft 9 to raise the pawl 10 out of and lower the pawl 11 into engagement with the ratchet-wheel 7, as shown in Fig. 2. Now, if the lever 8 is operated backward and forward, the pawl 11 will engage the teeth of the wheel 7 to turn it and the shaft 5 when the lever 8 is moved backward, thus propelling the head-blocks in the reverse direction, but will slip idly over the said teeth when the lever is pulled forward to enable the pawl 11 to engage another tooth. It will thus be seen that by the use of my invention one man can easily operate the head-blocks of a saw-mill carriage either backward or forward without changing his position at the saw, and that this is accomplished by mechanism which is simple, cheap, and durable, without the use of chains, ball-and-socket joints, or other complicated machinery, which is an objectionable feature in many of the appliances now in use.

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

1. The combination of a shaft 5, a ratchet-

wheel 7, retaining-pawl 15, shaft 13, and lever 16, having the inclined or cam surface 17, with a lever 8, having pawls 10 11, and lever 12, connected with the pawls 10 11 and having an inclined or cam surface adapted to be operated by the inclined or cam surface of lever 16, substantially as and for the purpose described.

2. The combination of a lever 8, having pawls 10 11, and a lever 12, connected thereto and having an inclined or cam surface, a shaft 5, a ratchet-wheel 7 upon the same, with a retaining-pawl 15, a lever 16, connected thereto and having an inclined surface 17, and a lever 19 to operate the lever 16, substantially as and for the purpose described.

3. In a saw-mill set-works, the combination of the lever 19, the lever 16, having inclined surface 17, the pawl 15, suitably connected to lever 16, with the lever 12, having inclined surface 12^a, adapted to be operated upon by the surface 17 of the lever 16, lever 8, pawls 10 11, carried by lever 8 and arranged to control a ratchet-wheel, said lever 12 being connected to pawls 10 11, substantially as and for the purpose described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM JAMES GLADISH.

Witnesses:

JAMES O. PATRIDGE,
LILLIAN P. GLADISH.