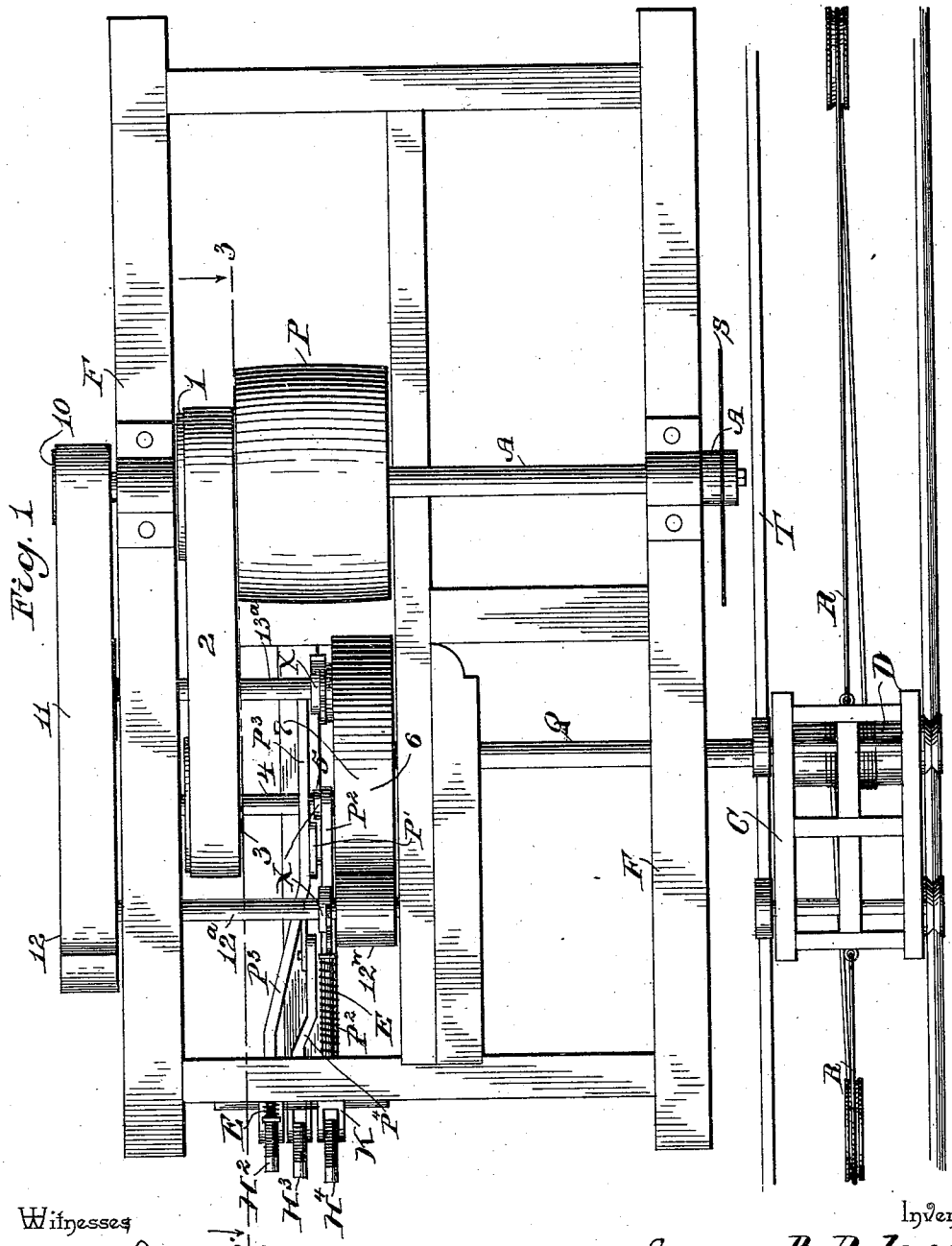
(No Model.) 3 Sheets—Sheet 1.

A. B. PALMER.

SAWMILL CARRIAGE FEED.

No. 475,046. Patented May 17, 1892.

Fig. 1.



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(No Model.) 3 Sheets—Sheet 2.

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SAWMILL CARRIAGE FEED.

No. 475,046. Patented May 17, 1892.

Fig. 2

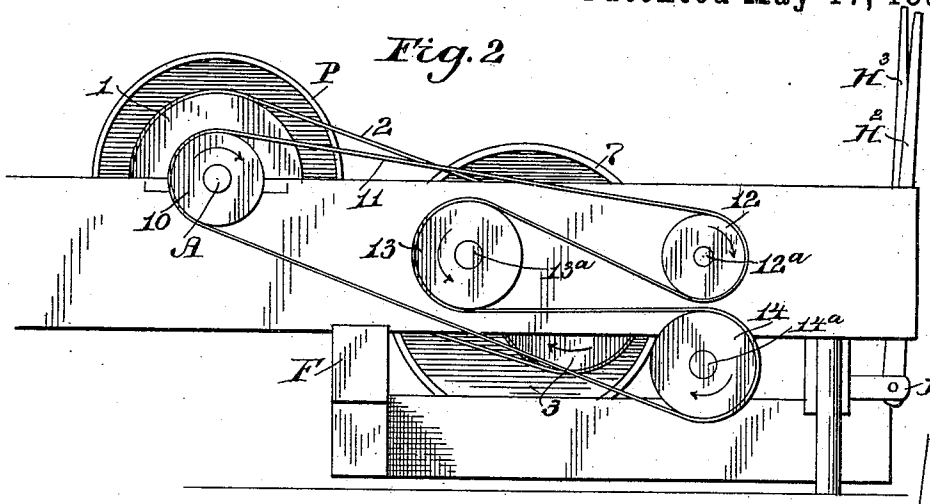


Fig. 3

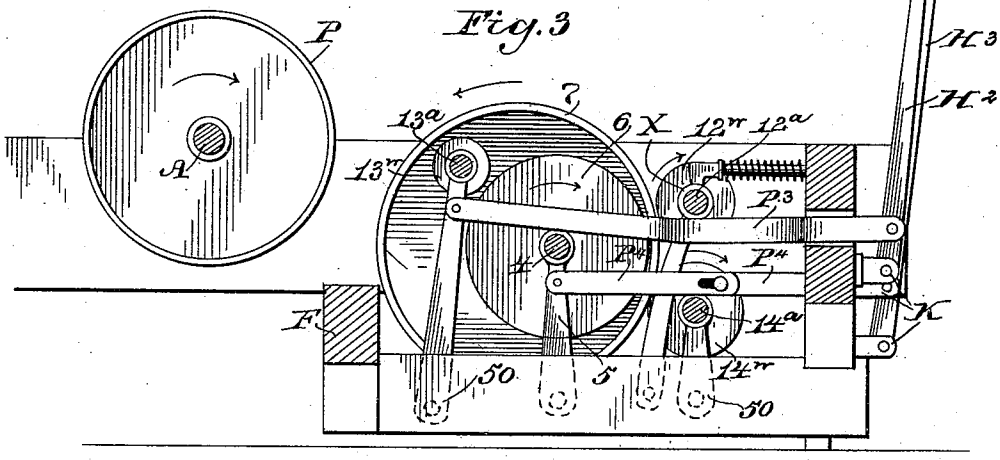


Fig. 4

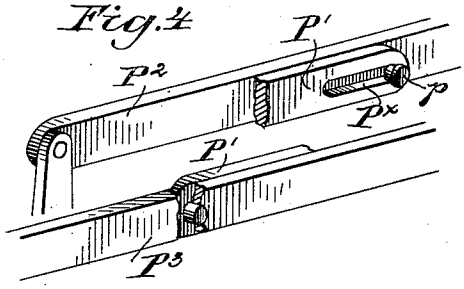
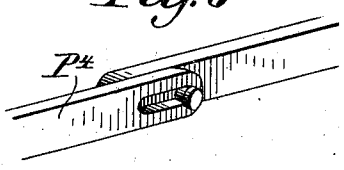


Fig. 5



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(No Model.) 3 Sheets—Sheet 3.

A. B. PALMER.

SAWMILL CARRIAGE FEED.

No. 475,046. Patented May 17, 1892.

Fig. 6.

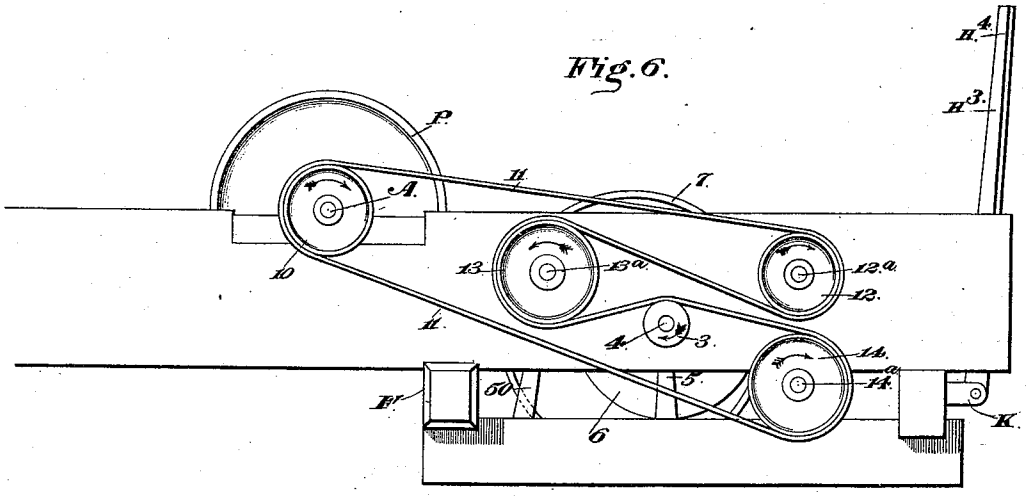
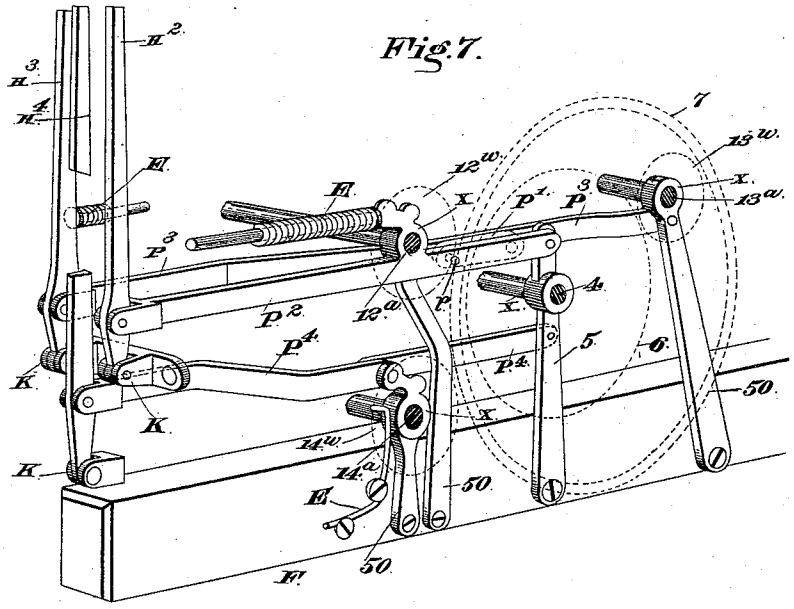


Fig. 7.



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UNITED STATES PATENT OFFICE.

AMOS B. PALMER, OF PORT ALLEGANY, PENNSYLVANIA.

SAWMILL-CARRIAGE FEED.

SPECIFICATION forming part of Letters Patent No. 475,046, dated May 17, 1892.

Application filed April 22, 1891. Serial No. 390,029. (No model.)

To all whom it may concern:

Be it known that I, AMOS B. PALMER, a citizen of the United States, residing at Port Allegany, in the county of McKean and State of Pennsylvania, have invented a new and useful Sawmill-Carriage Feed, of which the following is a specification.

This invention relates to wood-sawing machines, and more especially to circular-sawing-machine-carriage feed devices.

The object of the invention is to produce certain improvements in machines of this character; to which end it consists in the details of construction hereinafter more fully described and claimed, and as illustrated on the sheets of drawings, wherein—

Figure 1 is a plan view of this device. Fig. 2 is an elevation of the left side. Fig. 3 is a longitudinal section on the line 3 3. Fig. 4 is a perspective detail of the link broken, the parts which it connects being also shown. Fig. 5 is a perspective detail of the two-section pitman. Fig. 6 is a left-side elevation showing a modification. Fig. 7 is a perspective detail of the shifting mechanism.

Referring to the said drawings, the letter F designates the main frame-work of the device; A, the saw-arbor carrying the saw S and driven from the power-wheel P; T, the tracks for the carriage; D, a drum around which passes a rope R, which is connected to the two ends of the carriage C, and Q the shaft upon which this drum D is mounted. When this shaft is revolving in one direction it will be obvious that the carriage will be moved forward and when in the opposite direction the carriage will be moved backward.

Although I have thus described the carriage-operating devices which I preferably use, it will be understood that I may employ others without affecting the remainder of my invention.

Upon the arbor A is a pulley 1, connected by a belt 2 with a pulley 3, mounted on a shaft 4, which is journaled at one end in the frame F, and has a pivoted support 5 near its other end. Upon this extremity is secured a friction-wheel 6, which travels inside a drum 7, that is secured upon the shaft Q. It is obvious that when this friction-wheel 6, which is of considerable size, is drawn into contact with the rim of the drum 7 and the parts are revolving in the proper direction, which is indicated by arrows, the carriage will be drawn backward and at considerable speed.

Upon the end of the arbor A is a pulley 10, from which a belt 11 leads over a pulley 12, thence backward and over a pulley 13, thence over a pulley 14, adjacent that numbered 12, and then back to the pulley 10 at the point of starting. As seen in Fig. 6, the belt 2 could be omitted, and the belt 11 might pass over the pulley 3 of the gig-shaft 4 by continuing the latter through the frame-work and locating the pulley 3 at a proper point, and this belt 11 could lead from any suitable source of power other than its saw-shaft.

The pulley 12 is mounted on a shaft 12^a and has a friction-wheel 12^w at its inner end standing adjacent the outside of the drum 7. In the same manner the pulley 14, which is somewhat larger than the pulley 12, is mounted on a shaft 14^a and carries a friction-wheel 14^w, which, however, is somewhat larger than the friction-wheel 12^w and stands immediately below it. The pulley 13 is mounted on a shaft 13^a and carries a very small friction-wheel 13^w, which stands inside the drum 7, all as best seen in Fig. 3. It will be seen that the rotation of the arbor A in the proper direction drives the friction-wheels 12^w and 14^w in the same direction, and by reason of the peculiar belting the friction-wheel 13^w is turned in the opposite direction, all as indicated by the arrows; but as the former two stand outside and the latter inside the drum 7 they will cause it to turn in the same direction when they are brought against it, and this will be opposite that in which it will be turned by the large friction-wheel 6. It is obvious that this drum will be rotated at different speeds according as these friction-wheels, which differ in size and in their relative speeds of rotation, are brought against it; or the pulleys 12, 13, and 14 may differ in size and their friction-wheels be of the same diameters and the result will be the same. While the carriage C is drawn backward at considerable speed, as is desirable, it may be forced forward at variable degrees of speed, all of which are more or less than the speed of the return movement. My improved carriage-feed de-

vice is especially applicable to machines wherein the stock being sawed is constantly changing in size, and the speed of the carriage-feed must be adjusted accordingly.

Any suitable mechanism may be used for moving the various friction-wheels into and out of contact with the drum; but the means I preferably employ are hand-levers H^2, H^3, and H^4, respectively connected with rods P^2, P^3, and P^4, which pass through the ends of the frame and are attached to boxes X, within which the various shafts are journaled adjacent the friction-wheels. These levers are pivoted at their lower ends to brackets K, carried by the frame, and springs E are preferably properly located to hold the various friction-wheels out of contact with the drum when in their normal positions, pivoted supports 5 and 50 permitting the inner ends of the shafts to move, as will be necessary.

It is well known to those skilled in the art that as soon as the log is sawed and the carriage-moving devices are thrown out of gear it becomes desirable to retract the carriage, and hence it is desirable that the several small friction-wheels which I have described shall be so connected with the large friction-wheel that one or the other will be constantly in contact with the drum. To this end the rod P^2 extends beyond the box X, which supports the shaft 12^a, and is connected to the pivotal support 5 of the shaft 4. In the same manner the rod P^4 extends beyond the bearing X of the shaft 14^a, and is also connected with the pivoted support 5. The rod P^3 has pivoted thereto a link P′, which connects with a pin p in the adjacent side of the rod P^2, and beyond this link the said rod P^3 extends to the pivoted support 50 of the shaft 13^a. Thus if any of the handles or levers be drawn outward power will be communicated to the pivoted support 5 to throw the large friction-wheel 6 into contact with the drum 7; but as soon as one handle is pressed inward, so that its connected friction-wheel will be thrown against the drum, the same movement throws the large friction-wheel out of contact therewith. Suitable devices (not shown) are preferably employed for holding the hand-levers at whatever points they may be set. It will occur at once that if each of the rods is connected to the pivoted support 5 and also to its own friction-wheel the movement of one friction-wheel will cause the simultaneous movement of the others, and all of them will be thrown into contact with the drum at the same time; but this I avoid in the following manner: The above-mentioned link P′ has a slot $P^\times$, in which the pin p fits loosely, as seen in Fig. 4, and the rod P^4 is in two sections, as seen in Fig. 5, which are loosely connected by a pin and slot, as shown. This construction permits the movement of one lever, rod, box, and friction-wheel without the movement of the others, but causes the movement of the pivoted support 5 simultaneously with the movement of each lever.

I do not confine myself to the exact details of construction, as considerable change may be made therein without departing from the spirit of my invention.

The feeding devices may be placed entirely independent of the saw-frame and driven from any source desired other than the saw-arbor.

What is claimed as new is—

1. In a saw-carriage feed, the combination, with the carriage, the carriage-feed shaft connected therewith, and a drum mounted on said shaft, of a large friction-wheel and a small friction-wheel within said drum and secured at the ends of swinging shafts, means for revolving these shafts in opposite directions, boxes on said shafts, a hand-lever, and a rod connecting said hand-lever with both the boxes, one friction-wheel being out of contact when the other is in contact with the drum, as and for the purpose set forth.

2. In a saw-carriage feed, the combination, with the carriage, the carriage-feed shaft connected therewith, and a drum mounted on said shaft, of a large friction-wheel and several small friction-wheels of different sizes adjacent said drum, swinging shafts upon which said friction-wheels are mounted, said shafts having pulleys on their opposite ends, belting revolving the shaft of the large wheel in one direction and of the smaller wheels in the opposite direction, and means, substantially as described, for moving the free ends of the oppositely-revolving shafts in opposite directions simultaneously at will, as and for the purpose set forth.

3. In a saw-carriage feed, the combination, with the carriage, the carriage-feed shaft connected therewith, a drum mounted on said shaft, a large friction-wheel within said drum, mounted on a swinging shaft, and belting revolving said shaft in a direction to return the carriage when the wheel is in contact with the drum, of a small friction-wheel mounted on a swinging shaft outside the drum, belting revolving this wheel in the same direction as the large friction-wheel, a pivoted hand-lever, and a rod in two sections loosely connected, the outer section extending from said hand-lever and connected with the free end of the shaft of the smaller wheel and the inner section extending farther and connected with the shaft of the other wheel, as and for the purpose set forth.

4. In a saw-carriage feed, the combination, with the carriage, the carriage-feed shaft connected therewith, a drum mounted on said shaft, a large friction-wheel within said drum, mounted on a swinging shaft, and belting revolving said shaft in a direction to return the carriage when the wheel is in contact with the drum, of a small friction-wheel mounted on a swinging shaft outside the drum, belting revolving this wheel in the same direction as the large friction-wheel, a still smaller friction-wheel mounted on a swinging shaft inside the drum, belting revolving this shaft in

the direction opposite to the others, a pivoted hand-lever, a rod connected to the shafts of the two larger friction-wheels and having a pin, another hand-lever, another rod connecting this hand-lever with the remaining swinging shaft, and a link connected to this rod and having a slot loosely engaging said pin, as and for the purpose hereinbefore set forth.

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

AMOS B. PALMER.

Witnesses:
M. J. COLCORD,
C. W. HOOKER.