

A. WHITE.

Improvement in Shingle Machines.

No. 124,101.

Patented Feb. 27, 1872.

Fig. 1.

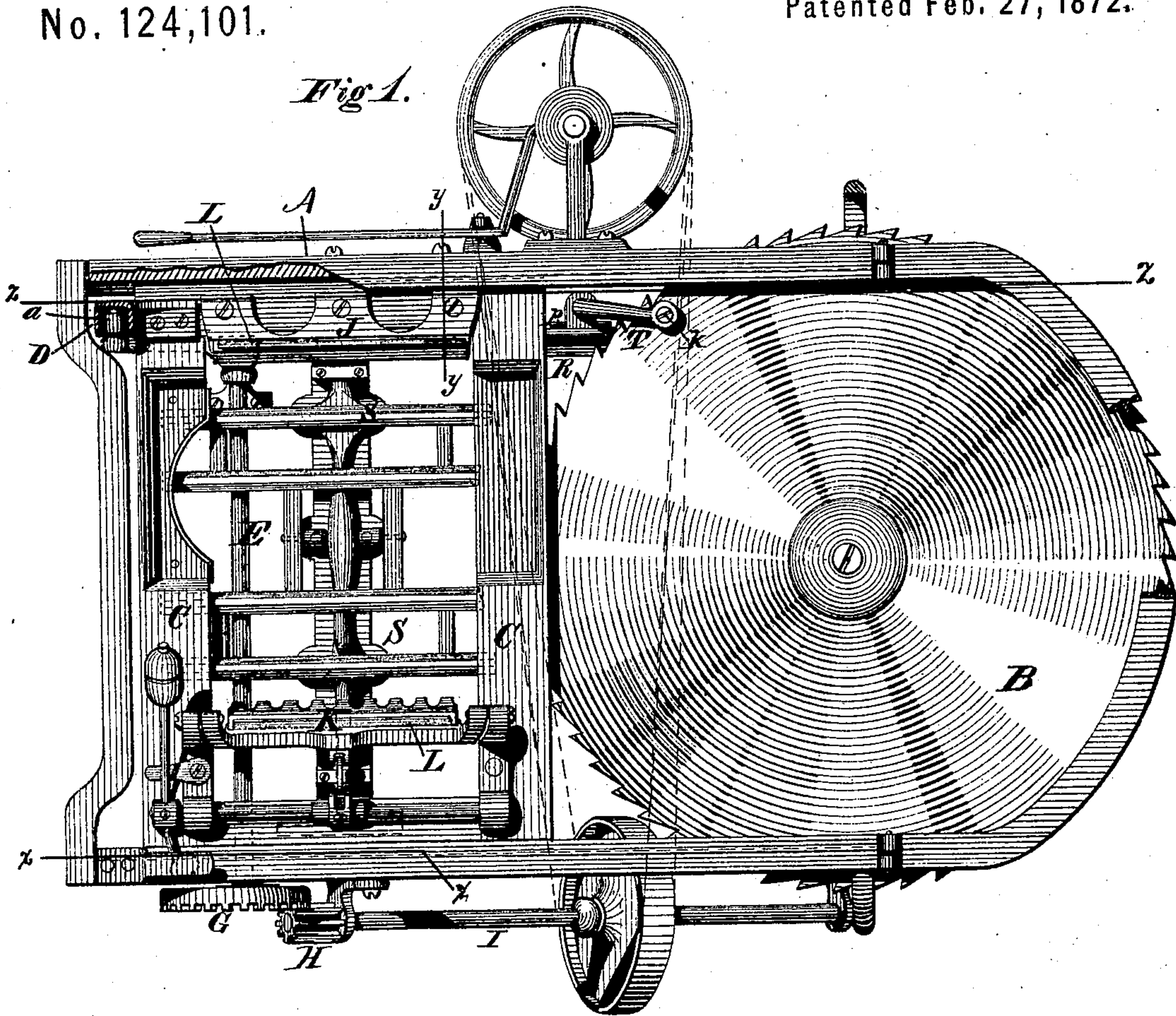
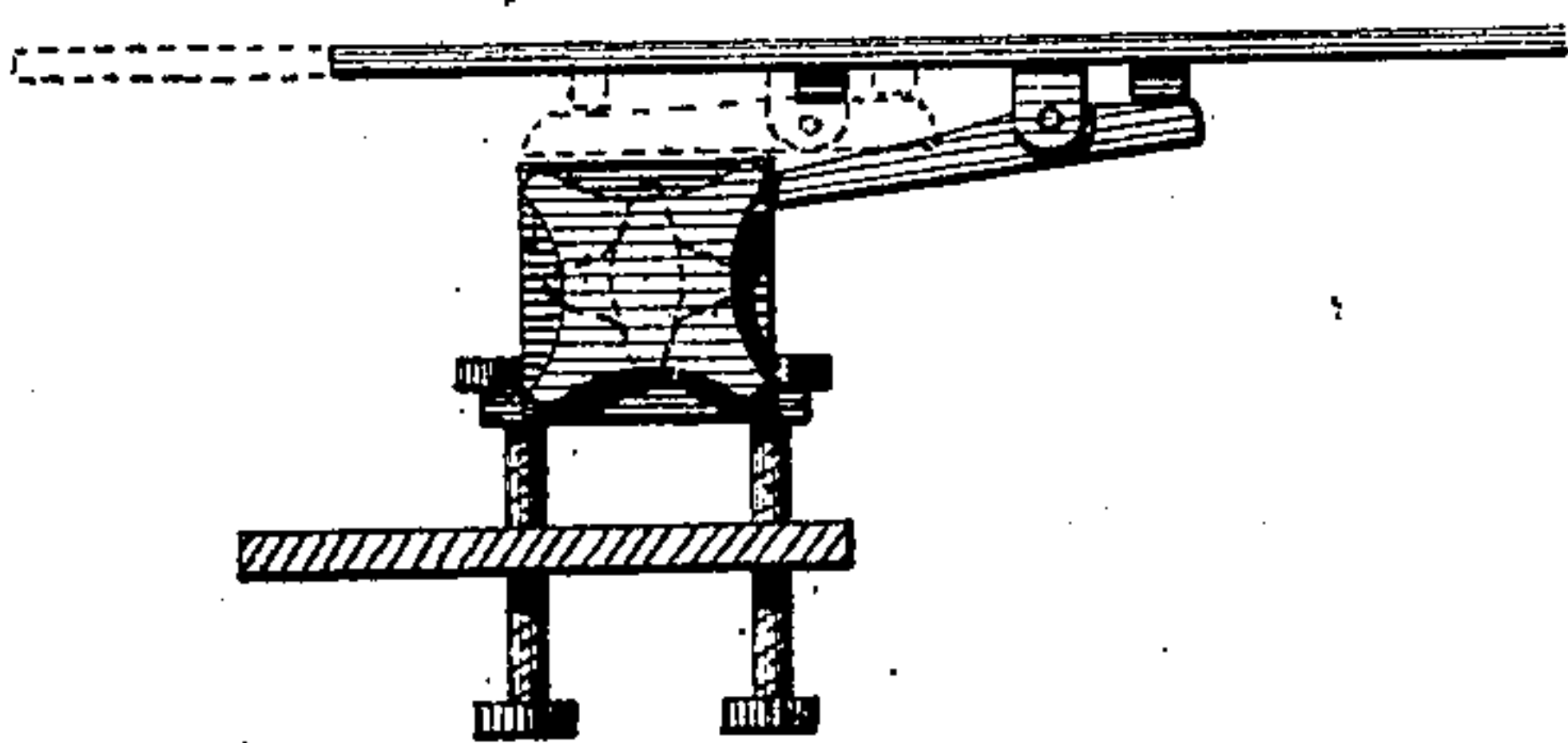


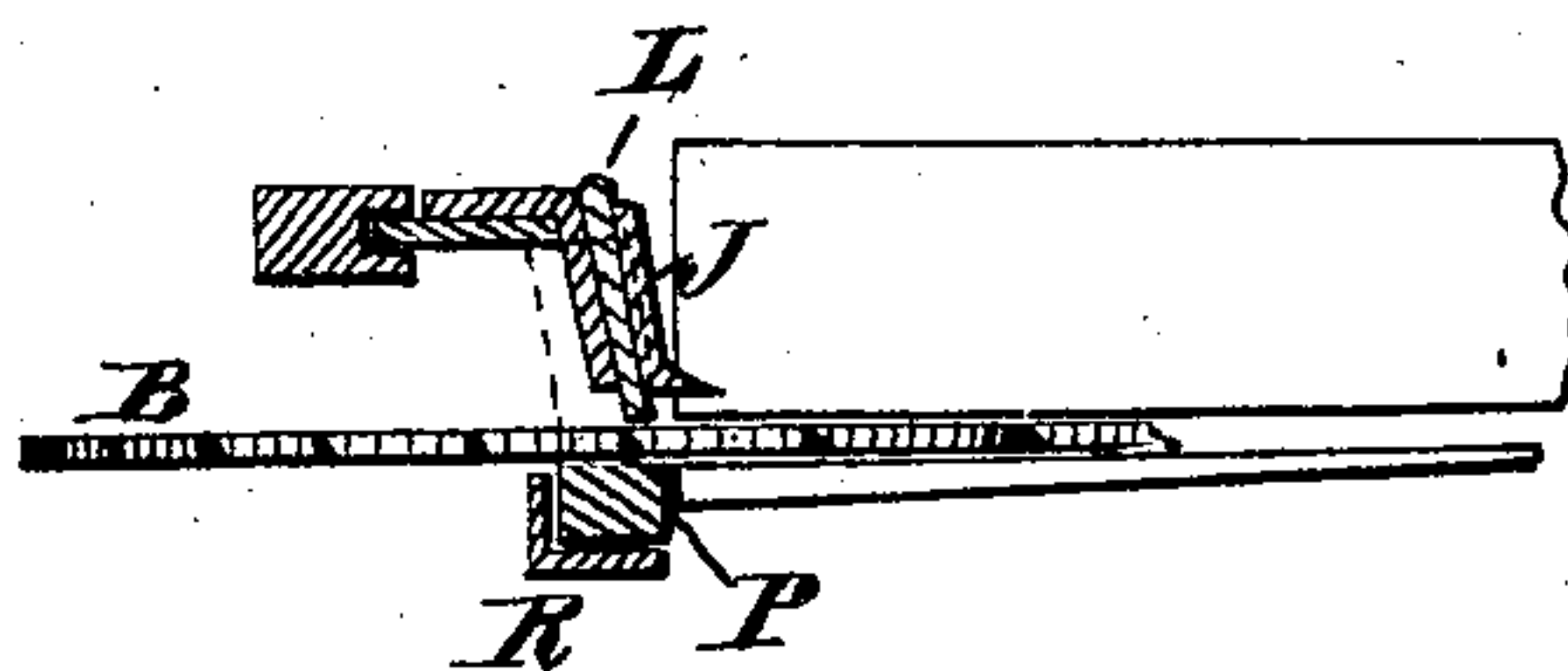
Fig. 2.



Witnesses.

Larry King
Phil S. Dodge

Fig. 3.



Inventor.

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Fig 4.

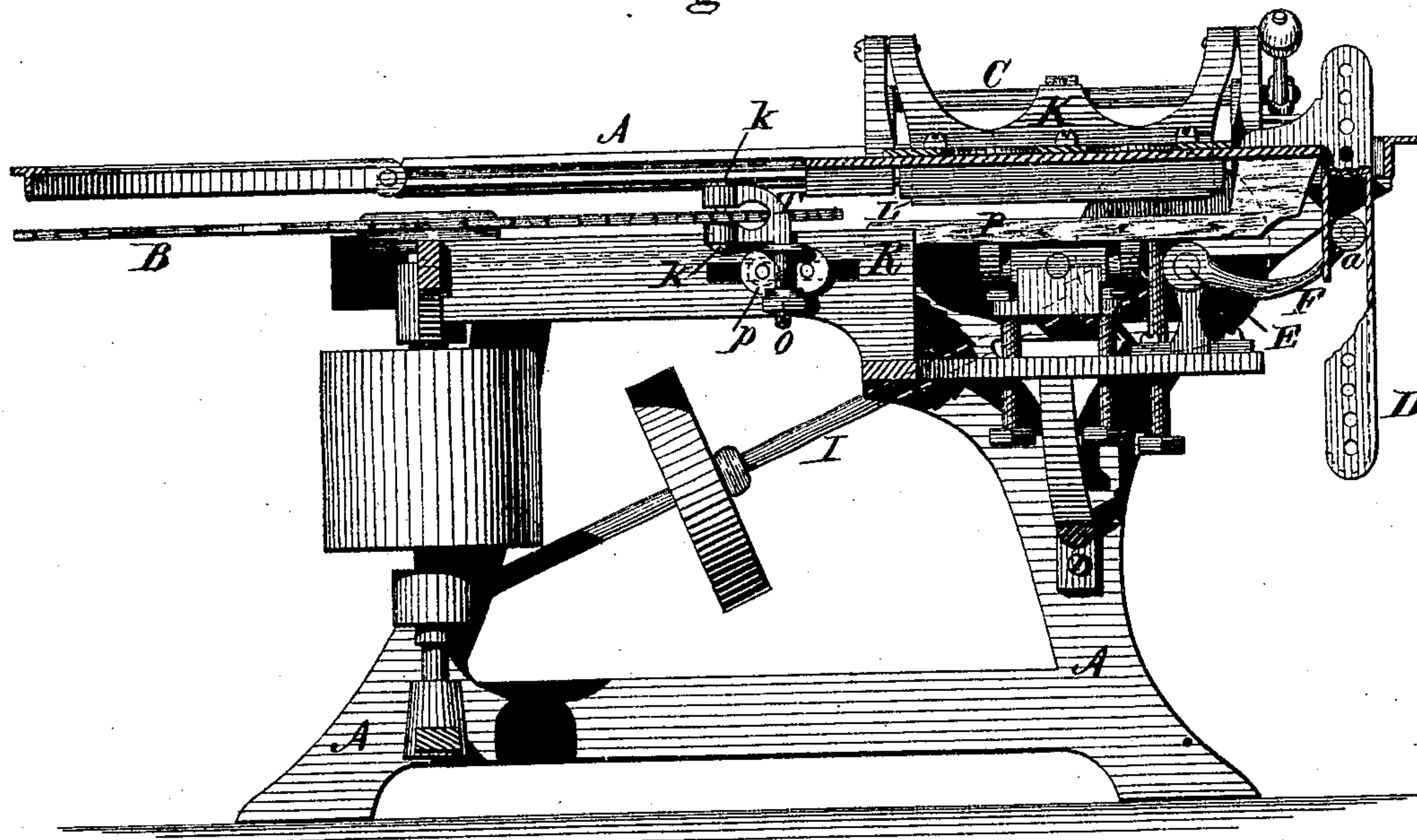
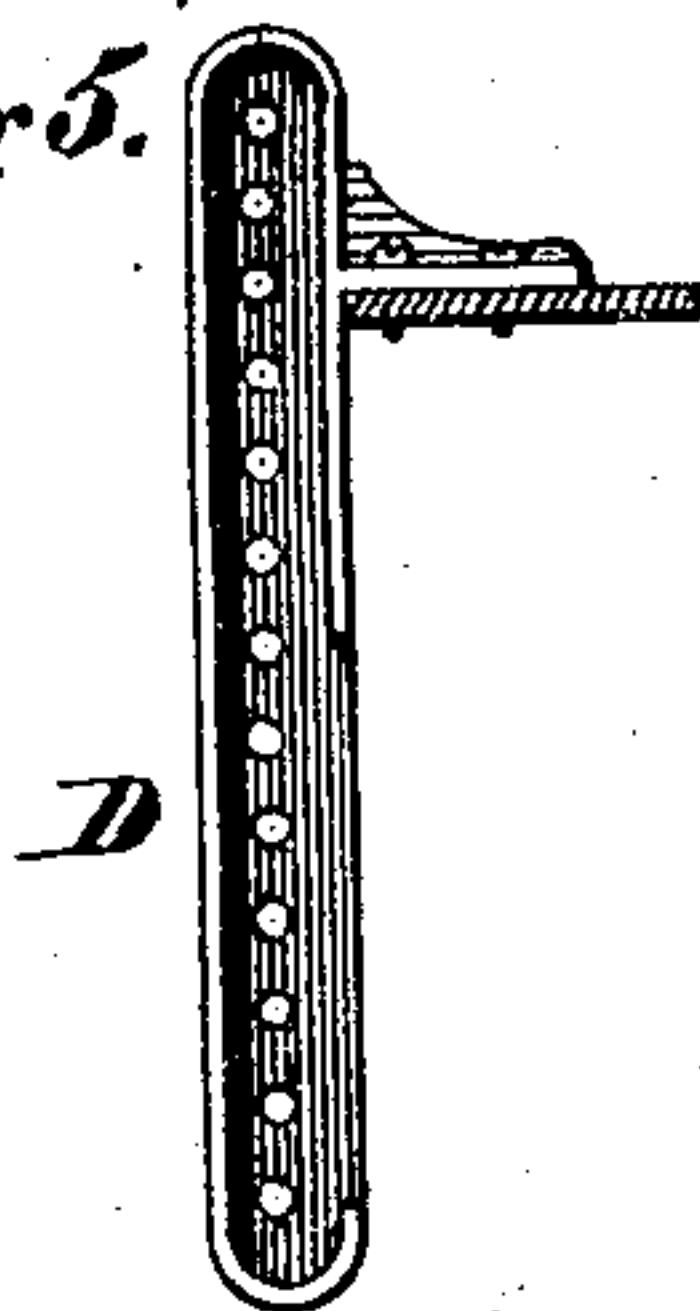


Fig 5.



Witnesses.

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UNITED STATES PATENT OFFICE.

ALEXANDER WHITE, OF FOND DU LAC, WISCONSIN.

IMPROVEMENT IN SHINGLE-MACHINES.

Specification forming part of Letters Patent No. 124,101, dated February 27, 1872.

SPECIFICATION.

To all whom it may concern:

Be it known that I, ALEXANDER WHITE, of Fond du Lac, in the county of Fond du Lac and State of Wisconsin, have invented certain Improvements in Shingle-Machines, of which the following is a specification, reference being had to the accompanying drawing.

My invention relates to that class of shingle-machines in which the block to be cut is fed to a circular saw by means of an automatic sliding carriage; and it consists in a novel manner of operating the carriage; in so arranging the carriage that it may be readily removed from the machine; in a peculiar manner of applying wooden strips to the metal clamping-dogs so as to hold the block when very thin; in applying to the carriage a wooden bar to run under the saw and hold the block when too thin to be held by the dogs, whereby the machine is enabled to cut up the entire block without the usual waste; and, lastly, in a guide to prevent the saw from springing.

Figure 1 is a top-plan view of my machine. Fig. 2 is a section on the line *x x*. Fig. 3 is a section on the line *y y*. Fig. 4 is a longitudinal vertical section of the machine on the line *z z* of Fig. 1; and Fig. 5 is a side view of the slotted bar or yoke of the carriage.

In the drawing, A represents the frame of the machine; B, the horizontal saw, mounted in one end of the frame; and C, the sliding carriage, having its ends mounted in the grooved top rails of the frame. The carriage is provided, at its outer end, with a vertical slotted bar or yoke, D, and across the frame there is mounted a horizontal shaft, E, having on one end a crank, F, provided with a roller, *a*, which plays in the slotted bar D, so as to move the carriage back and forth when the shaft is turned. The shaft E is provided, on the opposite end, with a crown-wheel, G, which is mounted eccentrically thereon and operated by a long pinion, H, attached to the end of an inclined shaft, I, mounted on the side of the main frame. When the pinion is acting on the inner edge of the wheel or edge nearest the shaft, it, of course, turns the same faster than when acting on its outer edge, the wheel being given a faster speed during one-half of its revolution than during the remainder. The

wheel is so arranged on its shaft E that it receives its rapid motion while the carriage is moving back from the saw, and its slow motion while the carriage is moving forward; by which arrangement the carriage is moved slowly and gradually up to the saw, and moved back quickly and without loss of time. To facilitate the removal of the carriage from the machine, the inner lower side of the slotted bar D is cut away, as shown in Figs. 4 and 5, so that, upon turning the crank down until its roller is opposite the open or cut-away side of the bar, the carriage may be drawn back free from the crank, and then, after removing the end rail of the frame, slid out of the machine. As the open side of the bar is not acted upon by the crank, the cutting away of the same does not interfere with the operation of the carriage. The carriage is provided at one end with a stationary dog or jaw, J, and at the opposite end with a movable dog, K, for the purpose of holding the block when being presented to the saw. The movable dog may be arranged and operated in the manner shown, or in any of the other usual methods, as such arrangements are used in all machines of this class, and constitute no part of my invention. Each dog or clamp has a long vertical slot or opening made through it, and a wooden strip or block, L, driven down through it and cut off flush with the top of the saw, so that, when the block being sawed becomes so thin as to pass under the dog, it will bear against and be held by these wooden strips. The wood is, of course, arranged with its grain vertically, so that its lower edge will not be split or broken off by the pressure of the block, and it is made to fit so tightly that it will remain in place without being otherwise fastened. When the wood becomes worn off at the lower end, the carriage is drawn back and the wood driven down, and then the carriage moved forward so as to have the saw cut the wood off flush with its upper surface. When the wooden block or strip is used up, or nearly so, another piece is driven into the dog so as to push out the old one and take its place. I am aware that it is a common practice to secure wooden strips to the dogs by means of bolts; but as much time and trouble is required to adjust the strips when so applied, and as they have to be adjusted and renewed quite frequently, such ar-

rangement is very objectionable. By my arrangement the wood is held firmly in place, but at the same time may be adjusted or renewed in an instant.

For the purpose of holding the block when it is cut down so thin that the dogs or their wooden strips will not grasp it firmly, a wooden bar, P, is attached at one end to the under side of the carriage, immediately under the stationary dog J, so that when the carriage runs forward the bar passes under the saw, close thereto. The bar slides on and is supported by a rail, R, attached to the main frame, as shown in Figs. 1, 3, and 4. The end of the block being cut bears against the stationary dog, and also against the bar P, as shown in Fig. 3, so that it is supported both above and below the saw. When the block becomes so thin that it will only produce one perfect shingle, the tilting table S, which is arranged in the usual manner, has its end nearest the stationary dog J depressed, so that, when the carriage moves forward, the lower side of the block, which is being taken off to form the shingle, and which, of course, passes under the saw, bears against and is held by the bar P, as shown in Fig. 3. In this way the block is held firmly when so thin that the dogs cannot grasp it. In the ordinary machines the block depends entirely upon the dogs for its support, so that when quite thin it will be forced through under the dogs and thrown out of the machine by the saw; for which reason such machines cannot saw up the entire block, but require it to be removed and thrown away while still thick enough to form two or three shingles; but by my improvements the machine is enabled to cut up the entire block and avoid the usual waste.

To prevent the saw from springing up or down, its edge is caused to run between the two arms of a forked guide, T, which is mounted at the side of the frame, as shown in Figs. 1 and 4. Each arm of the guide is provided with a screw, k, which may be set up close to or against the saw, so as to guide the same perfectly true. The guide is supported by a stem, o, at its back end, which passes down through a block, p, and has a nut applied to its lower end, by which it may be tightened up so as to hold the guide in position. The guide may be turned to one side after loosening the nut, or, if a chip or splinter adhering to the saw strikes the guide, the latter will turn out of the way so as to prevent injury to the saw. The block p, in which the stem of the guide is mounted, is secured by bolts to the

side of the rigid bar R, which is slotted, so as to permit the guide to be adjusted forward and back. Several of the guides may be placed at different points around the saw, if desired.

By the use of the guide the saw is prevented from springing, and caused to run evenly and true, so that there is no danger of its striking the frame or other parts and breaking the teeth, and so that it will produce a smooth flat shingle. Another advantage of using the guides is, that a thinner saw may then be used, and thus the timber cut with less waste than usual. Still another advantage is, that, as the saw is caused to run perfectly true, the metal clamping-dogs may be brought down closer to it without danger, so as to hold the block more firmly.

It will thus be seen that by my improvements the carriage is given a slow forward and quick backward movement, the carriage rendered easy of removal, the dogs provided with readily-adjustable wooden strips, the machine enabled to cut up the entire block, and the saw kept perfectly true.

Having thus described my invention, what I claim is—

1. The arrangement of the eccentric wheel G and crank F with the slotted arm D, attached to the carriage, substantially as described, whereby the carriage has a quicker backward than forward movement, as set forth.

2. The wooden strips L, inserted in a slot in the clamps or dogs, substantially as described, whereby they afford a bearing for the block below the teeth of the dog, and can be readily adjusted, as herein specified.

3. The wooden bar P, attached to the carriage, in combination with the supporting-rail R, constructed and arranged to operate substantially as and for the purpose set forth.

4. The swinging guide T, arranged in relation to the saw, substantially as shown and described, whereby the guide will be swung clear of the saw when slivers or similar obstructions are forced against it by the saw, as set forth.

5. The slotted arm D, having a portion cut away at one side, when arranged in relation to the crank, as described, whereby it can be readily disconnected from the crank, and at the same time there is no danger of its being disconnected while in operation.

ALEXANDER WHITE.

Witnesses:

N. C. GRIFFIN,
H. T. ROSE.