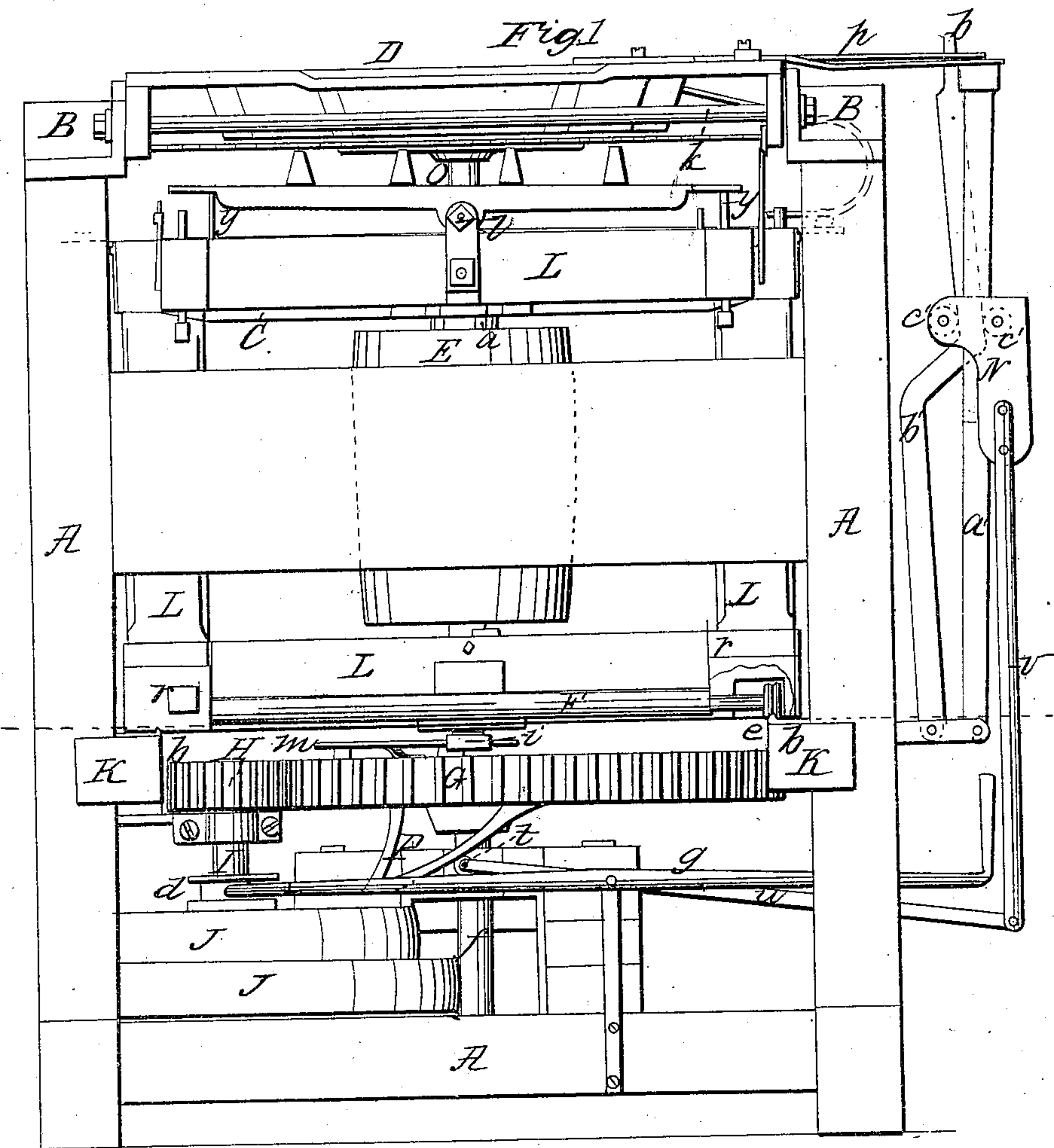


W. H. Walker,
Sawing Shingles.

N^o 76,566.

Patented Apr. 7, 1868.



Witnesses
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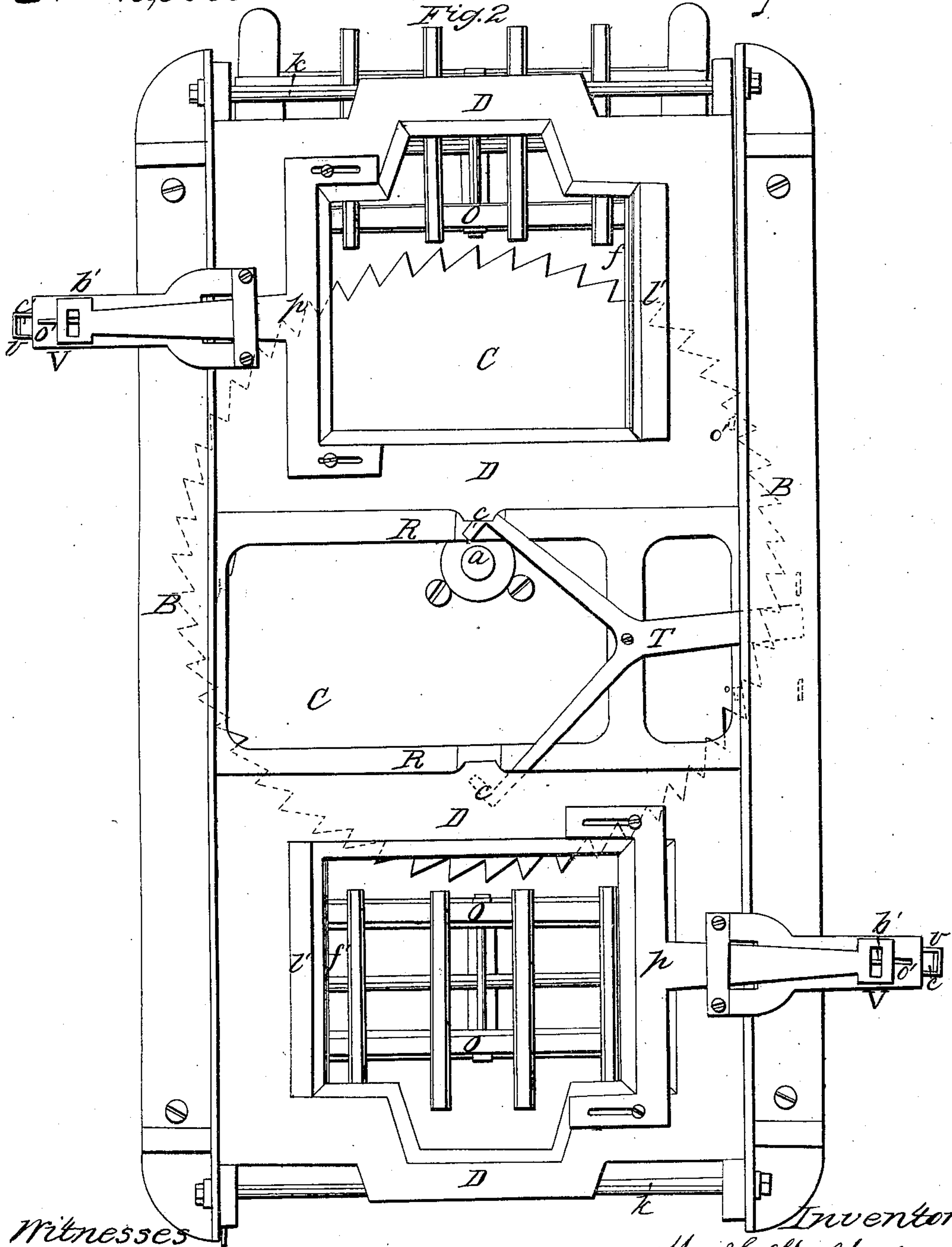
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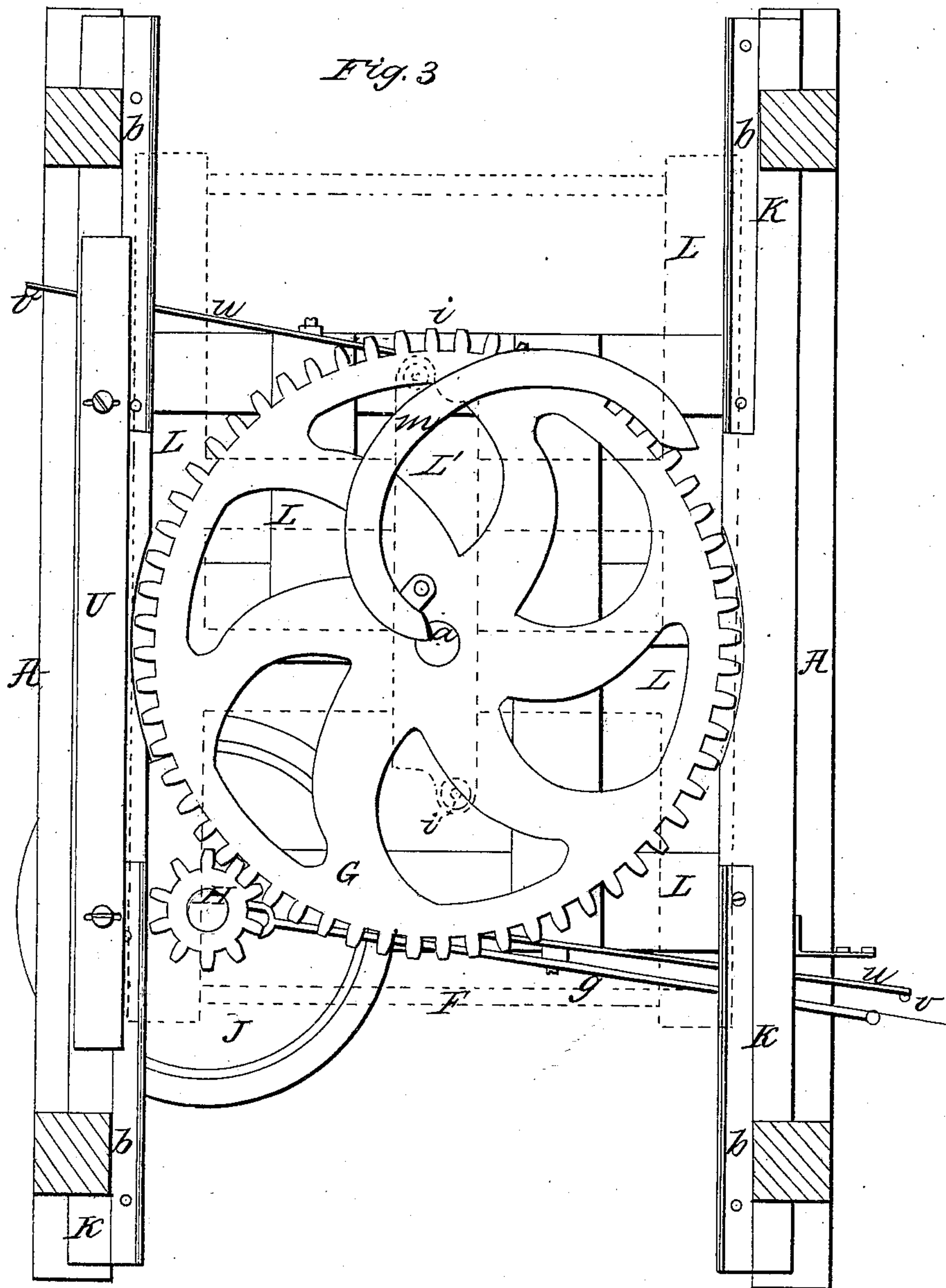
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UNITED STATES PATENT OFFICE.

WILLIAM H. WALKER, OF FOND DU LAC, WISCONSIN.

IMPROVEMENT IN SHINGLE-MACHINES.

Specification forming part of Letters Patent No. 76,566, dated April 7, 1868.

To all whom it may concern:

Be it known that I, WM. H. WALKER, of Fond du Lac, in the county of Fond du Lac and State of Wisconsin, have invented certain new and useful Improvements in Shingle-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference marked thereon, like letters indicating like parts wherever they occur.

To enable others skilled in the art to construct and use my invention, I will proceed to describe it.

My invention consists in certain improvements in the construction of machines for sawing shingles, the details of which will be hereinafter explained, and which relates, first, to the method of operating the saw-carriage; second, the means of operating the dogs that hold the teeth; third, a device for raising the blocks free from the saw after a shingle is cut off; fourth, arranging the tip-tables upon the saw-carriage, together with certain details herein-after more fully specified.

Figure 1 is an end elevation of my improved machine; Fig. 2, a top plan view, and Fig. 3 a transverse section taken on the line *xx* of Fig. 1.

In constructing my improved machine I first provide a suitable main frame, A, having a top frame, B, of metal or other suitable material, secured on its top, as represented in Figs. 1 and 2. Within this main frame is fitted a movable frame, L, in which is mounted a circular saw, G, said saw being mounted horizontally on the upper end of a shaft, *a*, upon which is secured a pulley, E, the shaft being located centrally in the frame L, and of such a height as to bring the saw close under the top frame, B, as shown in Fig. 1.

Directly under the movable carriage L, and in the center of the main frame A, I locate a large gear-wheel, G, horizontally on a vertical axis, *f*, said wheel being driven by a smaller wheel, H, mounted on a vertical shaft, I, located near one corner of the frame, and having driving-pulleys J secured thereon, there being a sliding clutch, *d*, on the shaft I, operated by a foot-lever, *g*, for disengaging the pulley J, when it is desired to stop the motion

of the saw-carriage, these parts being more fully shown in Figs. 1 and 3.

Upon the upper side of the gear-wheel G, I secure an eccentric or cam, *m*, as represented in Fig. 3, and at the opposite ends of the central bar, L', of the saw-carriage L (shown in red outlines in Fig. 3 in the position it occupies above the wheel G) I locate a friction-roller, *i*, which projects downward far enough to be in the same horizontal plane as the cam *m*, as shown in Fig. 1, so that as the cam *m* revolves with the wheel G the cam *m* will strike or press against one of the friction-rollers *i*, and thus crowd the carriage L, with its saw, over to one end of the machine, and then, as it comes around to the opposite side, will press against the other roller *i*, and thus drive the carriage back to that end of the machine, the cam *m* being so apportioned to the position of the rollers *i* that, as soon as the outer extremity of the cam shall have passed one roller, its inner portion shall press against the other roller, and thus keep the carriage constantly moving back and forth. By giving to the cam *m* the requisite form the saw may have imparted to it either a regular or irregular feed, as may be desired. It may be arranged to cut with a regular feed through the entire block, or it may be made to feed faster during the first part of its cut and then decrease, either with a regular or irregular speed, or vice versa.

In order to insure the easy and accurate movement of the carriage with its saw, I provide metal bars *b* for the carriage to run on, said bars being secured upon horizontal beams K, as shown in Figs. 1 and 3. These bars have their inner edges provided with a V-shaped ledge, inverted and projecting vertically, on which run rollers *e*, having a corresponding groove in their face, these rollers being secured to each end of an axle, F, placed transversely across the bottom of the carriage L, as shown in Fig. 1, there being one of these axles at each end of the carriage.

In order to keep the track clean and free from particles of saw-dust and similar material, I secure on the lower corners of the carriage, at each end, a piece of leather, rubber, or other flexible material (represented by *r* in Fig. 1) in such a position that as the carriage moves along it will rest upon and brush off

from the ways or bars *b* any dust or material that may chance to be thereon.

On each side of the carriage *L*, at the top, is secured a metal plate, *w*, and on the upper side beams of the main frame is secured, on each side of the machine, a metal plate, *o*, by means of set-screws passing through slots therein, the plates *o* being placed horizontally, and having their inner edges projecting inward against the sides of the carriage *L* and over the plates *w*, secured thereto, as shown in Fig. 1, thus preventing the carriage from being raised or moved sidewise off its track.

Upon the top frame, *B*, at each end, is hinged by a rod, *k*, a metal frame, *D*, having an opening in it of suitable size to receive the bolt or block from which the shingles are to be sawed, the outer sides of said frames *D* being supported or hinged on the rod *k*, and their inner sides resting on a cross-bar, *R*, of the frame *B*, as shown in Fig. 1. At one end the frames *D* are provided with a stationary dog for holding the bolt, while at the opposite end they are provided with a movable dog, *p*, which has an arm extending outward over the side of the machine, as shown in Fig. 1, and resting on a fixed arm, *V*, which projects from the side of the frame *D*, there being a slot, *o'*, in the outer portion of the fixed arm *V*, in which the upper end of a vertical rod, *b'*, works to and fro, to operate the dog *p* and cause it to secure and release the bolt at proper times.

The means for operating the dog *p* are shown in Fig. 1, and consist, first, of a cam, *P*, attached to and projecting vertically from the under face of the wheel *G*; second, of a pivoted rod, *u*, having its inner end provided with a friction-roller, *t*, so located as to be depressed by the cam *P* as the latter rotates, and having its outer end pivoted to a vertical rod, *v*, to the upper end of which is a plate, *N*, bent so as to embrace a pair of stationary guide-rods, *a'*, and the rod *b'*, which latter is placed between the bars *a'*, there being a friction-roller, *c'*, secured in the sliding box *N* on opposite edges of the rods *a'*, as shown clearly in Fig. 1. The upper portion of the rod *b'* is inclined, as shown in Fig. 1, and as the box or plate *N* is slid upon the guide-rods *a'*, by the cam *P* striking against the lever *u*, as already described, the upper portion of rod *b'* is thrown outward, and thereby moves the dog *p* outward, releasing the bolt, which then falls upon the tilting table *O*, pivoted upon the end of the saw-carriage *L*, as shown in Fig. 1. As soon as the cam *P* has passed over the friction-roller *t* the box *N* slides down, and as it does so it forces the rod *b'* inward, and thereby forces the dog *p* into the end of the block, and holds it secure until the shingle is sawed off. Thus at each revolution of the wheel *G* the cam *p* dogs and undogs a block in each of the frames *D*. The tilting tables *O* are placed on the opposite ends of the saw-carriage *L*, being

pivoted at their center on a rod or bolt, *l*, and are tilted by cams *y* on opposite ends of a shaft operated by a pawl, this latter part being common in machines of this kind, and hence not necessary to describe in detail.

Upon the top frame, *B*, I pivot a bifurcated lever, *T*, as shown in Fig. 2. This lever has an arm projecting under the inner edge of each frame *D*, the arm terminating at its extremity in a right-angled point, *c*, which is made wedge-shaped vertically. These arms and points are so arranged that when the outer end of the lever *T* is hit by a projection, *o'*, on the top of the saw-carriage *L*, as the latter moves to and fro, the point *c* is thrown inward and forced between the under edge of the frame *D* and the top of cross-bar *R*, thereby raising the frame *D* slightly, and thus lifting the block held in said frame free from the saw *C*. In this way all unnecessary friction on the saw is avoided, and it is therefore less liable to be dulled, heated, or worn.

The permanent dog *f'* consists of a metal plate having its inner edge made sharp to enter the end of the block. This plate *f'* is secured to the inner face of a wooden block or bar, *l'*, which is bolted or otherwise secured in the end of the frame *D*, as shown in Fig. 2.

By detaching the blocks *l'* others may be substituted at any time, and by using blocks *l'* of different thicknesses the size of the openings in frames *D* may be adjusted to suit blocks of different lengths, as may be desired.

By these various improvements I am enabled to produce a machine that performs its work in a very rapid and satisfactory manner.

Having thus described my invention, what I claim is—

1. The combination of the wheel *G*, provided with the cam *m*, and the sliding carriage provided with the friction-rollers *i*, or equivalents, all constructed and arranged to operate substantially as described.
2. Operating the dogs *p* by means of the inclined bar *b'*, sliding box *N*, and lever *u*, operated by cam *P*, substantially as set forth.
3. The forked lever *T*, pivoted upon the main frame *A*, and arranged to be operated by the carriage *L* for the purpose of raising the blocks from contact with the saw, substantially as described.
4. Locating and carrying the tip-tables *O*, with the cam-shafts, on the saw-carriage *L*, substantially as shown and described.
5. The metal dogs *f'*, secured to the wooden head-blocks *l'*, when arranged in the metal frames *D*, as set forth.

In witness whereof I have hereunto set my hand.

WM. H. WALKER.

Witnesses:

O. DODGE,
ANDREW SMITH.