

3 Sheets--Sheet 1

TITUS H. RUSSELL.

Improvement in Saw-Mill Carriages.

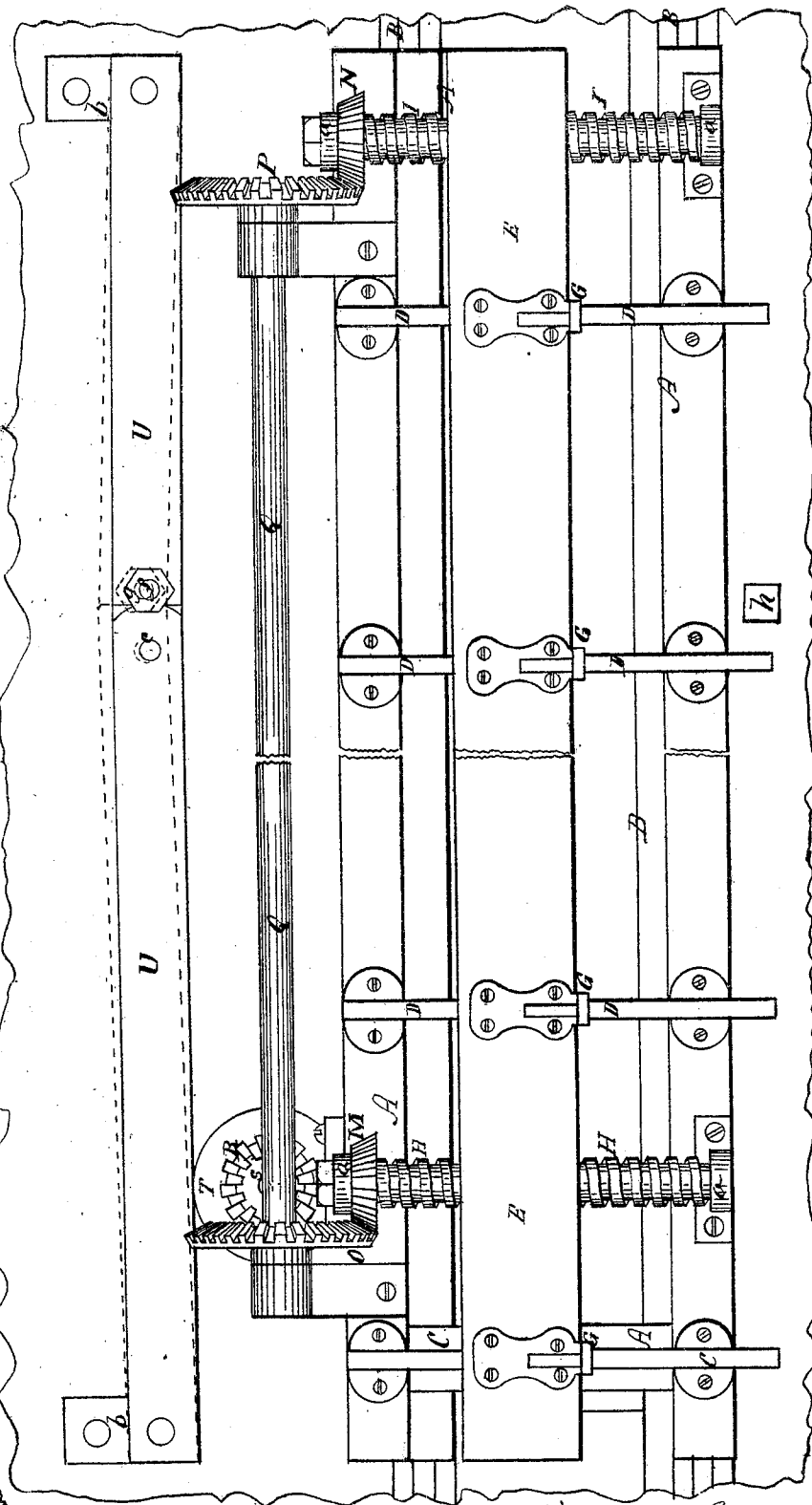


Fig. 1.

Witnesses

O. J. Brown
L. Smith

Titus V. Russell,
By his atty.,

J. S. Brown.

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3 Sheets--Sheet 2

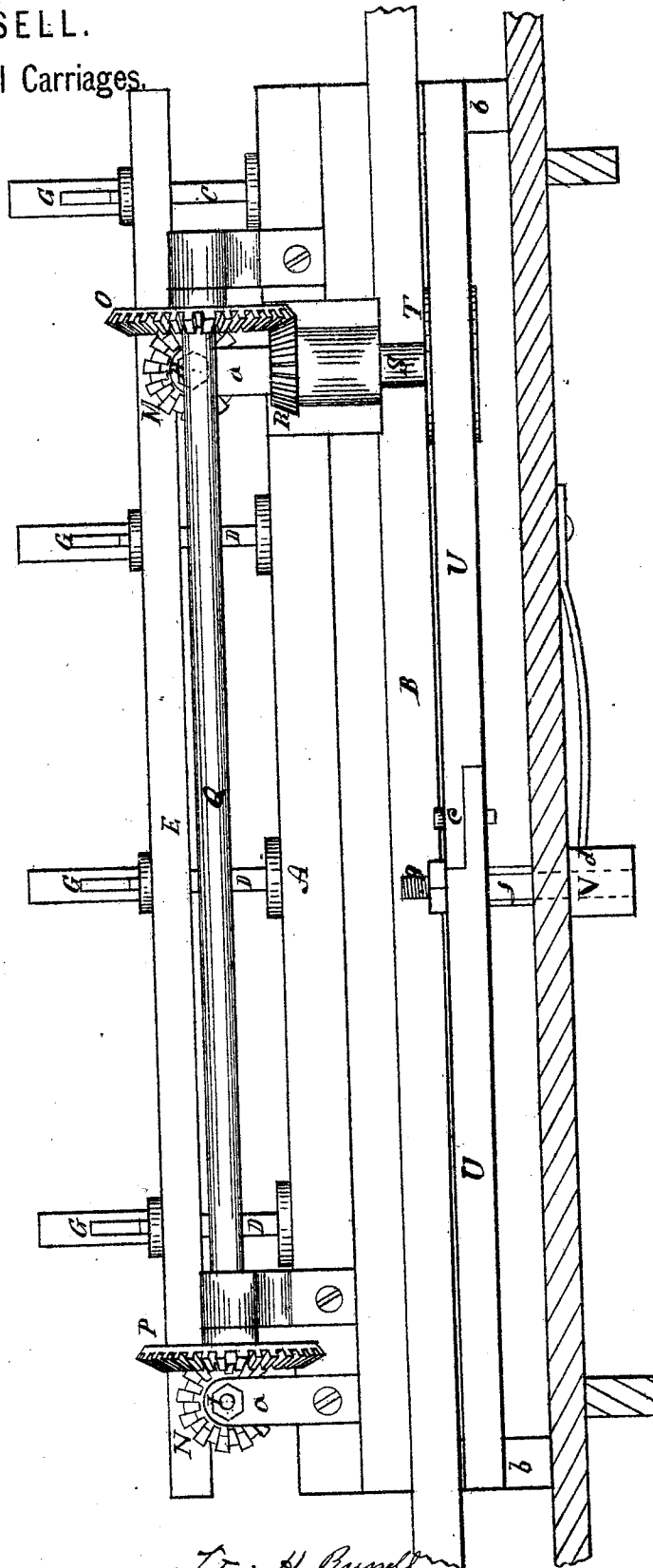
TITUS H. RUSSELL.

Improvement in Saw-Mill Carriages.

No. 121,664.

Patented Dec. 5, 1871.

Fig. 2.



Witnesses,

D. J. Brown
C. D. Smith

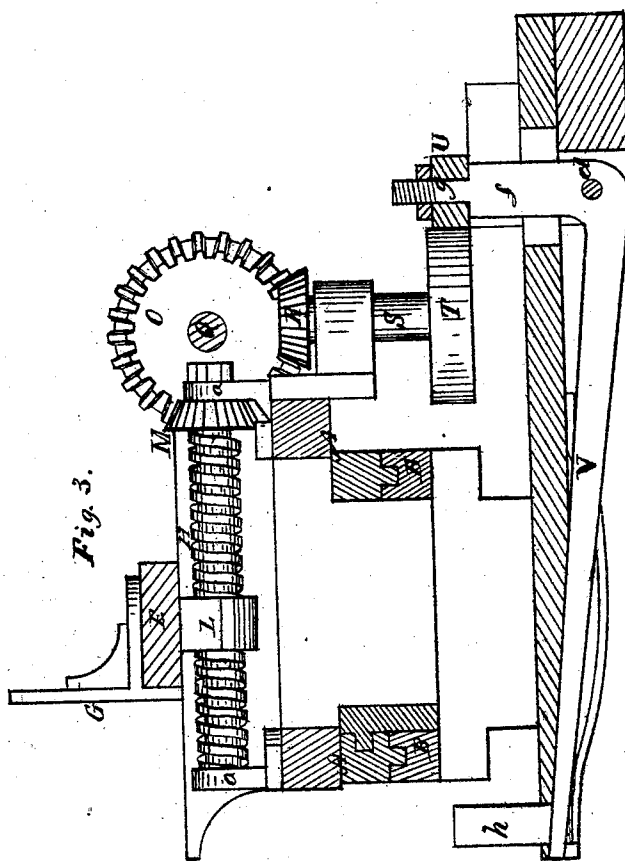
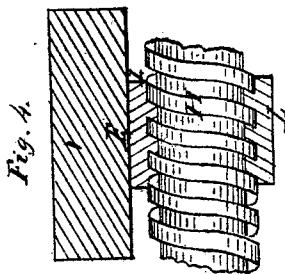
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Witnesses,

D. J. Brown
R. D. Smith

Titus H. Russell,
Proprietor

J. S. Brown.

UNITED STATES PATENT OFFICE.

TITUS H. RUSSELL, OF LEBANON, NEW HAMPSHIRE.

IMPROVEMENT IN SAW-MILL CARRIAGES.

Specification forming part of Letters Patent No. 121,664, dated December 5, 1871.

To all whom it may concern:

Be it known that I, **TITUS H. RUSSELL**, of Lebanon, in the county of Grafton and State of New Hampshire, have invented an Improvement in Saw-Mill Carriages; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing making part of this specification—

Figure 1 being a top view of a saw-mill carriage provided with my improvement as located on its track; Fig. 2, a rear elevation thereof; Fig. 3, a vertical cross-section of the same; Fig. 4, detached part thereof, represented in section.

Like letters designate corresponding parts in all of the figures.

The nature of my invention consists in a new and improved device for moving the set-beam either one way or the other, to any desired extent, by the forward and backward motions of the carriage, substantially as hereinafter set forth.

Let **A** represent a saw-mill carriage; **B**, the track or ways on which it runs; **C D D D**, the head-block, tail-block, and other blocks thereof; and **E**, the set-beam, bearing the knees or uprights **G G** against which the logs are dogged. The other parts of the saw-mill not necessarily connected with my invention are not shown in the drawing. In a suitable position near the head-block of the carriage a screw, **H**, is mounted on the carriage, at right angles to the same, and turns in bearings **a a**, secured to the side rails thereof. A similar screw, **I**, is in like manner mounted near the tail-block of the carriage. These screws turn in female screws or nuts **L L**, fastened to the under side of the set-beam **E**, and they are alike, so that by turning the screws to an equal extent they will move the two ends of the set-beam equally one way or the other, according to the direction in which the screws are turned. There are pinions **M N** of equal size on the rear ends of the two screws, respectively, gearing into other pinions **O P** on a longitudinal connecting-shaft, **Q**, mounted on the back side of the carriage. This shaft secures an exactly equal turning of both screws, and consequently a precisely equal movement of both ends of the set-beam at all times. Into one of the pinions **O** on the shaft **Q** gears another pinion or bevel-wheel, **R**, on a short vertical shaft, **S**, mounted on the carriage. On this shaft also is secured a driving friction-pulley, **T**, by which the screws

H I are turned through the pinion-gearing and connecting-shaft above described whenever and as much as desired. To effect the turning of this friction-pulley, as the carriage advances or recedes, substantially the following device is employed: In a proper position are located one, or preferably two, bearing-timbers or rails, **U U**, made stationary and situated so that one of their sides may be either in contact with the friction-pulley **T** or not as the latter passes by them, whether in the forward or backward movement of the carriage. To bring these pressure-rails into contact with the friction-pulley they are arranged as shown—that is, pivoted to stationary blocks or supports **b b**, and to each other at **c**—or otherwise arranged in an equivalent manner so that they may be moved laterally into position of contact with the pulley, as shown by full lines in Fig. 1, and be pressed against the pulley with sufficient force to cause the same to revolve as the carriage carries the latter along; or they may be moved out of contact with or reach of the said pulley, as indicated by dotted lines in the same figure. To produce this lateral movement of the friction pressure-rails a lever, **V**, is located cross-wise under the carriage-track or floor of the mill, and is pivoted at **d** to a fixed support. A bent arm, **f**, extends from one end of the lever upward to the pressure-rails, and is coupled thereto at **g**. From the other end of the lever an arm or rod, terminating in a pedal, **h**, extends up through the floor. By placing his foot on this pedal and depressing that end of the lever the sawyer can press the rails inward, so as to be in contact with the friction-pulley as it passes, with sufficient force to cause the same to revolve and turn the screws **H I**. The arrangement is such that when the carriage is going forward the pressure of the rails against the pulley causes the set beam to move toward the front side of the carriage, and when the carriage is moving backward the action of the rails on the pulley moves the set beam toward the back side of the carriage; or vice versa, if preferred. The length of the rail or rails may be such as to move the set-beam the full extent of its lateral movement on the carriage when the pulley runs in contact with the entire length thereof; but when logs are set along an inch or two at a time, in setting off the thickness of boards, planks, or dimension-stuff, only a small portion of the length of the rails is to be brought into contact with the pulley each time—say ten

inches of the length—to set for an inch board. This setting may be done automatically and gauged to any thickness by means of a gauge device attached to the same frame invented by me and to be made the subject-matter of other Letters Patent which I purpose to apply for.

The friction driving-roller T might be applied directly to one of the screws H I; but there are objections to such an arrangement; and I prefer the arrangement substantially as above described.

What I claim as my invention, and desire to secure by Letters Patent, is—

The friction driving-roller T and movable pressure-rail or rails U, acting in combination with the carriage B and set-beam E of a saw-mill, substantially as and for the purpose herein specified.

TITUS H. RUSSELL.

Witnesses:

E. J. DURANT,
C. V. COBB.

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