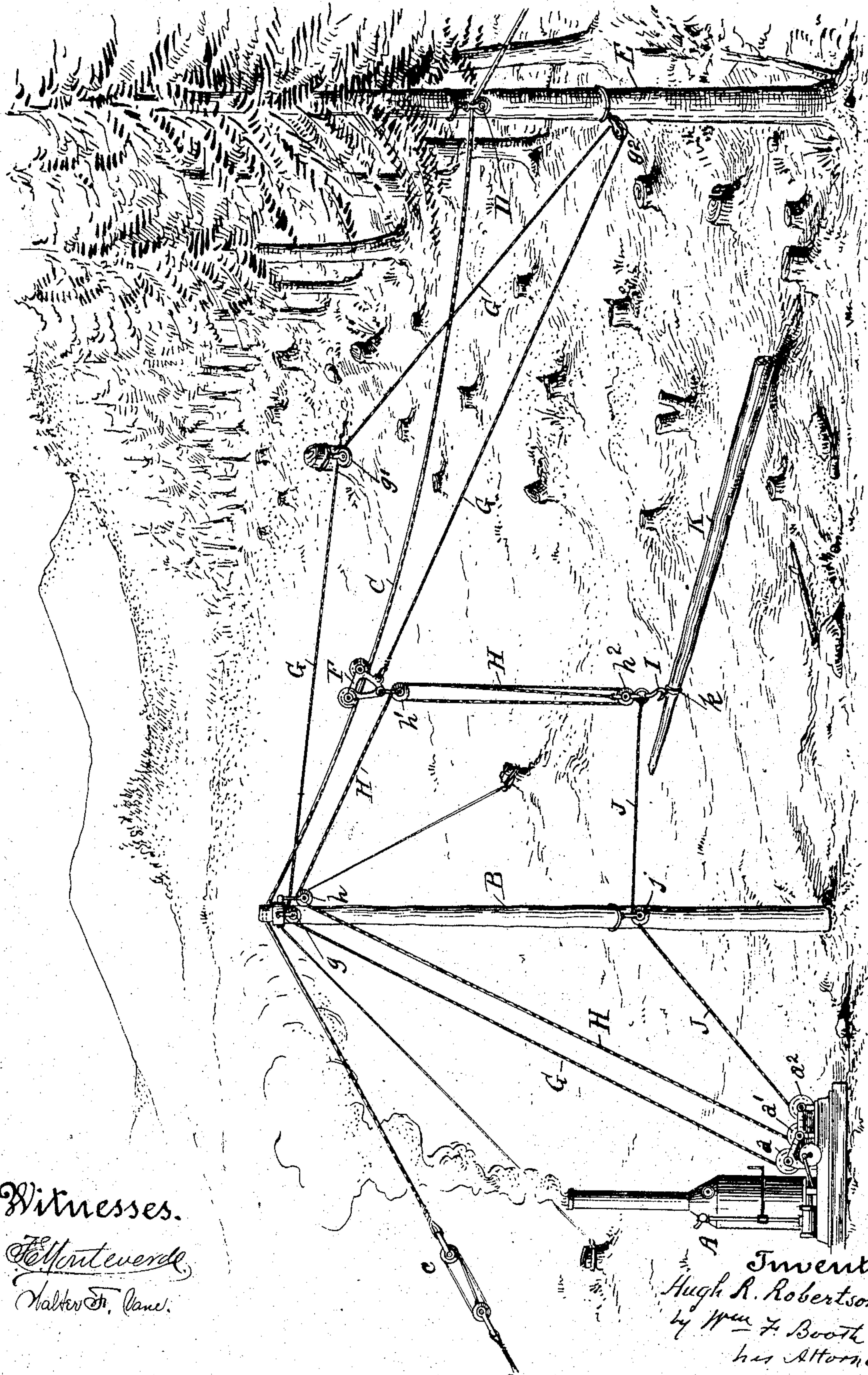


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H. R. ROBERTSON.
LOGGING APPARATUS.
APPLICATION FILED JUNE 20, 1904.



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LOGGING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 781,095, dated January 31, 1905.

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To all whom it may concern:

Be it known that I, HUGH RODERICK ROBERTSON, a citizen of the Dominion of Canada, residing at Portland, Multnomah county, State of Oregon, have invented certain new and useful Improvements in Logging Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to that class of apparatus for handling and carrying logs from where they lie when cut to a common spot of departure for transportation to their destination. Such apparatus usually comprises a suitable engine with winding-drums, cables operated thereby, hooks, blocks, choker-straps, and other devices adapted to take hold of the logs and haul them to the central station. In a well-known form of apparatus of the class 10 which a trolley travels. The trolley is sent out by means of a trip or haul-back line and is drawn in by the hauling-line, which serves also as the lifting-line.

My invention is an improvement in this class of apparatus using an overhead wire or track cable; and its objects are to avoid the necessity existing in the old form of apparatus of lifting the log or timber up to the trolley before the hauling in can commence and to relieve 30 the excessive strain such lifting and carrying imposes on the trip-line. These objects are all the more important in view of the fact that their accomplishment enables me to handle whole trees the size of which as they exist in the Northwest would render impracticable the common practice of lifting and carrying the logs high up.

My invention consists in the novel combinations of parts which I shall hereinafter fully 40 describe.

Referring to the accompanying drawing, the figure is a perspective view showing my apparatus *in situ*.

A is an engine having three winding-drums, 45 the drum *a* being the trip-line drum, *a'* the lift-line drum, and *a''* the hauling-line drum.

B is a mast suitably stayed and guyed.

C is the overhead wire or track cable. It is carried in the top of mast B, and its end is 50 provided with a suitable tightener *c*. From

the mast the overhead wire C extends off in suitable direction to a block D, secured at a proper point and distance to a tree E, and from this block it descends to an anchorage.

Upon the overhead wire is mounted the 55 trolley F.

G is the trip or haul-back line. It passes from drum *a* to a block *g*, hung from the head of the mast, and thence in any direction to get it out of the way of the track-cable and 60 other lines—say, as here shown, to a guide-block *g'* on a stump off to one side, and thence to a terminal or head block *g''* in the vicinity of the end of the overhead wire or track, and thence back to the trolley F, to which it is se- 65 cured.

H is the lifting-line. It passes from drum *a'* to a block *h*, hung from the head of the mast, and thence to a block *h'*, hung from the trolley F. Through this block *h'* and a block 70 *h''*, secured to the butt-hook I, the lifting-line is passed to form a tackle, as shown.

J is the hauling-line. It passes from drum *a''* through a guide-block *j*, hung to the mast, and thence to the butt-hook I, to the ring of 75 which it is secured.

K represents a fallen whole tree. Upon its small end or top is secured a choker-band *k*, and with this the hook I engages.

The essential feature of the use of this ap- 80 paratus is the lifting of the engaged end of the tree only high enough to clear any obstructions. This is all that is needed, and when working with whole trees of great size is all that is practicable. The function of the 85 lifting-line H in my apparatus is merely and solely to lift the point of the tree high enough to clear obstructions of every kind, whether they be stumps, or logs, or other trees, or brush, or debris, or inequalities of the ground, 90 and to carry it so lifted. Now by the addition to the apparatus of the separate hauling-line J the tree, the point of which is thus lifted and carried by line H, may be hauled in, its butt dragging on the ground and riding 95 over every obstruction.

In the common form of apparatus designed for much smaller sticks the lifting and hauling is done by a single line, which from its drum passes to a block at the head of the 100

mast, thence to a block hung to the trolley, and thence directly down, as a single line, to the butt-hook. With such a construction it is obvious that the first effect of winding in on the line is to lift the log, and this lifting has to continue until the log is carried chock-a-block to the trolley before any hauling in can take place by the same line. This is too great a strain when handling large sticks. In addition to this disadvantage the common apparatus has the further drawback, because of the single lifting-line passing directly down from the trolley to the hook, of imposing a severe strain on the trip or haul-back line while the log is being held and carried chock-a-block. This is because the trip-line must offer the necessary resistance to the lifting and carrying strain while the log is being hauled in by the same line which lifts and carries it. In my construction by reason of passing the lift-line between the trolley and hook through the blocks to form a tackle instead of a direct connection the tackle thus formed is better adapted to carry the weight and relieve undue strain on the trip or haul-back line.

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

- 30 1. A logging apparatus comprising an overhead wire or track cable, a trolley traveling thereon, a lifting-line guided by a block on the trolley and having a means on its depending extremity for engaging the log, a hauling-line secured to the log-engaging extremity of the lifting-line, a trip or haul-back line suitably guided and secured to the trolley, and separate winding-drums for operating each of said lines.
- 40 2. A logging apparatus comprising an overhead wire or track cable, a mast for carrying

one end of said wire or cable, a trolley traveling on said wire or cable, a lifting-line guided by a block at the head of the mast to a block on the trolley and having a means on its extremity depending from the trolley-block, for engaging the log, a trip or haul-back line, guided by a block on the head of the mast, said line being secured to the trolley, a hauling-line guided by a block on the mast and secured to the log-engaging extremity of the lifting-line, and separate winding-drums for operating said lines.

3. A logging apparatus comprising an overhead wire or track cable, a trolley traveling thereon, a lifting-line having a hook on its extremity for engaging the log, a block on the trolley and a block on the hook, the said lifting-line being passed between said blocks to form a tackle, a hauling-line secured to the hook, a trip or haul-back line suitably guided and secured to the trolley, and separate winding-drums for operating each of said lines.

4. A logging apparatus comprising an overhead wire or track cable, a trolley traveling thereon, a lifting-line having a hook on its extremity for engaging the log, a block on the trolley and a block on the hook, the said lifting-line being passed between said blocks to form a tackle, a hauling-line secured to the hook, a trip or haul-back line suitably guided and secured to the trolley, a mast for supporting one end of the overhead wire or track cable, suitable blocks on said mast for guiding the lines, and separate winding-drums for operating each of said lines.

In witness whereof I have hereunto set my hand.

HUGH RODERICK ROBERTSON.

Witnesses:

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