

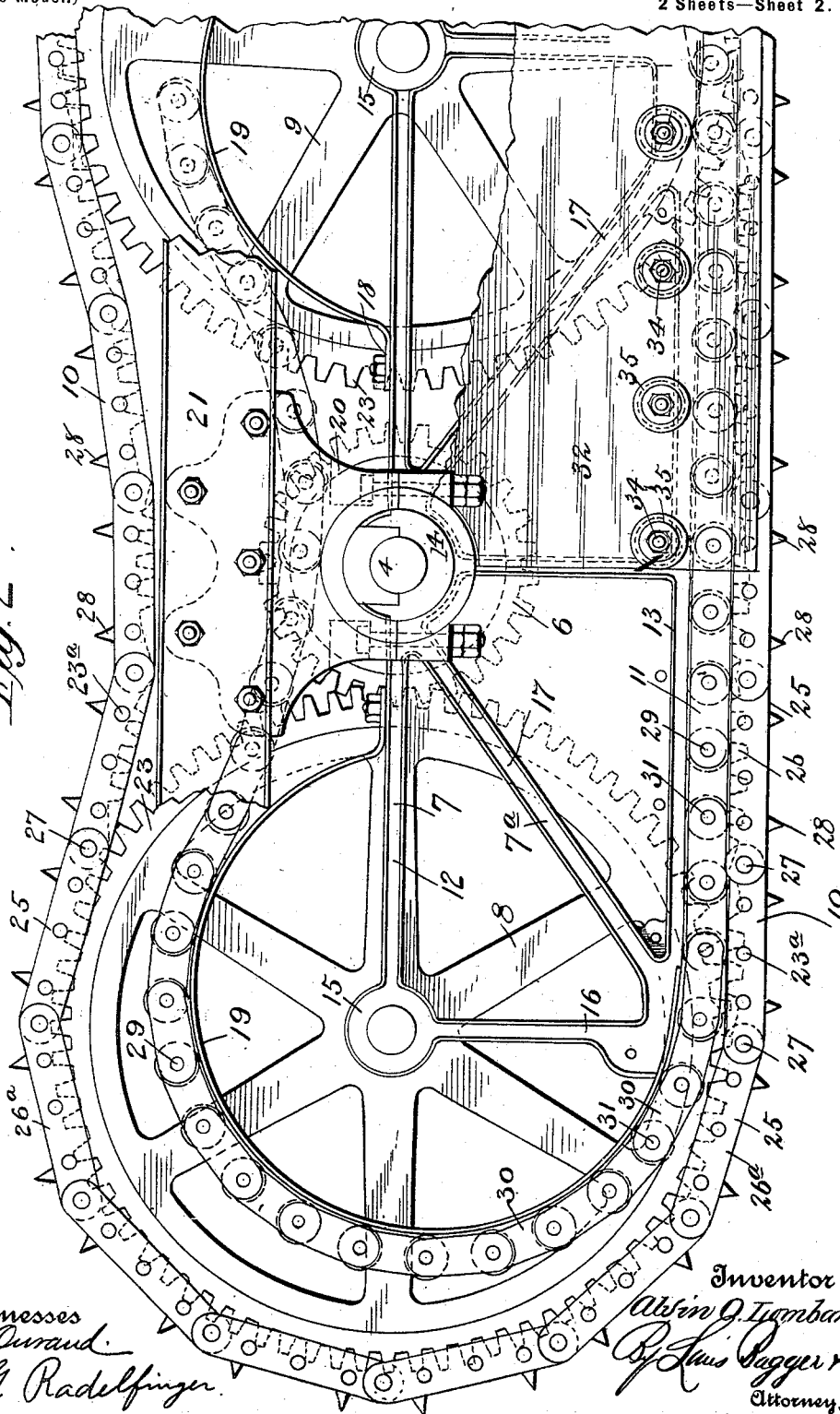
A. O. LOMBARD.
LOGGING ENGINE

(Application filed Nov. 9, 1900.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 2



Witnesses
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UNITED STATES PATENT OFFICE.

ALVIN O. LOMBARD, OF WATERTVILLE, MAINE.

LOGGING-ENGINE.

SPECIFICATION forming part of Letters Patent No. 674,737, dated May 21, 1901.

Application filed November 9, 1900. Serial No. 35,945. (No model.)

To all whom it may concern:

Be it known that I, ALVIN O. LOMBARD, a citizen of the United States, residing at Waterville, in the county of Kennebec and State of Maine, have invented new and useful Improvements in Logging-Engines, of which the following is a specification.

My invention relates to traction-engines, or, more specifically, to a traction-engine for hauling logs.

The object of the invention is to construct an engine of the kind which may be used on packed snow or soft and muddy roads to transport heavy and bulky loads. It is particularly designed for logging purposes; but obviously its usefulness is not limited to employment in that connection. It can be practically adapted to automobiles, especially for snow-roads, and for all kinds of farming implements driven by steam and drawn by horses.

The simple and novel construction designed by me in carrying out my invention is completely described in the following specification, and claimed.

In the accompanying drawings, which form a part of this specification, Figure 1 is a plan view of my improved engine. Fig. 2 is a side elevation of one of the traction members. Fig. 3 is a horizontal longitudinal section of the same. Fig. 4 is a transverse vertical section of the same.

Like numerals of reference designate like parts wherever they occur in the different views of the drawings.

My engine consists, essentially, of three parts—viz., the carriage and two traction members arranged on each side of the carriage. These parts will be taken up and described in the order named; but as there is little novelty in the carriage, and as the traction members are duplicates as to essential features, the description will be confined in the main to one of the traction members.

The carriage, which is designated by the letter A, is mounted on a framework which connects the two traction members B and ties them together. This carriage A comprises a platform 2, which has mounted thereon an engine 3 of suitable design and power. A crank or driving shaft 4 is journaled in boxes 5, supported on the carriage, and extends across and

supports on each end a pinion 6, which is keyed thereon and serves to drive the mechanism of the traction members B.

Each of the traction members B consists of a frame 7, two cogged driving-wheels 8 and 9, a cogged traction-belt 10, which meshes with said driving-wheels, and two antifriction roller-belts 11. The frame 7 consists of two vertical parallel trusses 7^a and 7^b, each of which has a top and a bottom chord, which are designated 12 and 13, respectively. The top chords 12 support boxes 14 and 15, in which the crank-shaft 4 and the shafts of the driving-wheels 8 and 9 are journaled, while the bottom chords 13 provide a bearing-surface for the roller-belts 11 and support the weight of the machine. Each pair of these chords 12 and 13 is tied together by a system of vertical members 16 and diagonal members 17, all formed integral with these chords. Secured to the ends of the bottom chords 13 and curved up and over and secured to the top chords at 18 are four guides 19 for the roller-belts 11. In order to tie the trusses 7^a and 7^b rigidly together, brackets 20 are mounted on the upper chord 12, are secured thereto, and surround the shaft 4. These brackets extend up and are firmly bolted to a pair of horizontal girders 21, which extend parallel to the frames 7 throughout their lengths and are curved in at each end and secured together at 22. By this construction the framework is tied together.

The cog-wheels 8 and 9 are identical in construction. They are journaled in the boxes 15 and provided with cogs 23, which are slightly rounded at 24 to fit cogged racks in the traction-belts 10. The wheels 8 alone mesh with the pinions 6, as these pinions are not placed symmetrical with respect to the wheels 8 and 9.

The traction-belts 10 are composed of a series of cogged sections 25, the racks 26 of which occupy the center half of the sections. These sections each have side members 26^a, attached by rivets 23^a and apertured at the ends to accommodate pintles 27, by which the sections are secured together. The faces of each of the members 26 are provided with two or more ribs 28, which serve to keep the machine from slipping and sliding. The union of the sections 26 form the belts 10,

which are as wide as the frame 7. These belts fit over the wheels 8 and 9 and form the traction-surface for the machine.

Each of the roller-belts 11 is composed of a system of rollers 29, which are journaled in side members consisting of short plates 30, pivoted together on cross-pins 31, which extend across and serve as axis for the rollers 29. These belts are interposed between the bottom chords 13 and the traction-belt 10 and fit around the guides 19, and thereby form roller-bearings for the whole machine. Each of the traction members B is incased in a casing of thin material, consisting of sides 32 and top 33. This casing is secured by cross-bolts 34, passed through apertures in the frames 7 and surmounted by broad nuts 35. In this way all dirt is excluded from the wearing parts.

The operation of my machine can now be easily set forth. It will be readily seen from the foregoing description that when the engine is started and the crank-shaft revolved the pinions 6 will be revolved, which action will revolve the wheels 8, with which they mesh, which will in turn act on the traction-belts 10, which, since they are held from slipping by the ribs 23, will propel the machine. The roller-belts 11 will reduce the friction between the chords 13 and the belt 10 to a minimum, thus rendering the machines efficient in operation from a mechanical standpoint.

I do not wish to be limited as to details of construction, as these may be modified in many particulars without departing from the spirit of my invention.

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

1. In a traction-engine, the combination,

substantially as described, with an engine provided with a driving-shaft having a pinion keyed on each end, of a pair or traction members each comprising a framework in which said driving-shaft is journaled, a pair of cogged driving-wheels journaled in said frame, and positioned so that one of said driving-wheels meshes with one of said pinions on said driving-shaft, a flexible traction-belt composed of racked sections pivoted together, and arranged to mesh with said driving-wheels, and a pair of roller-belts mounted to support the weight of the machine and make a rolling contact with said traction-belt.

2. In a traction-engine, a traction-belt comprising a number of sections pivoted together to form a flexible belt, each section being provided with a rack on one face occupying the middle half thereof, and a series of ribs on the other face.

3. In a traction-engine, a traction member comprising a trussed framework, said framework consisting of a pair of vertical parallel frames each having upper and lower horizontal chords, a pair of cogged drive-wheels journaled in said framework, a pinion positioned to mesh with one of said drive-wheels, a traction-belt mounted to mesh with said drive-wheels and consisting of a number of racked sections pivoted together, and means for supporting the weight of said frame and reducing the friction between the traction-belt and the said bottom chords of the framework.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ALVIN O. LOMBARD.

Witnesses:

HENRY L. CORSON,
NORMAN K. FULLER.