

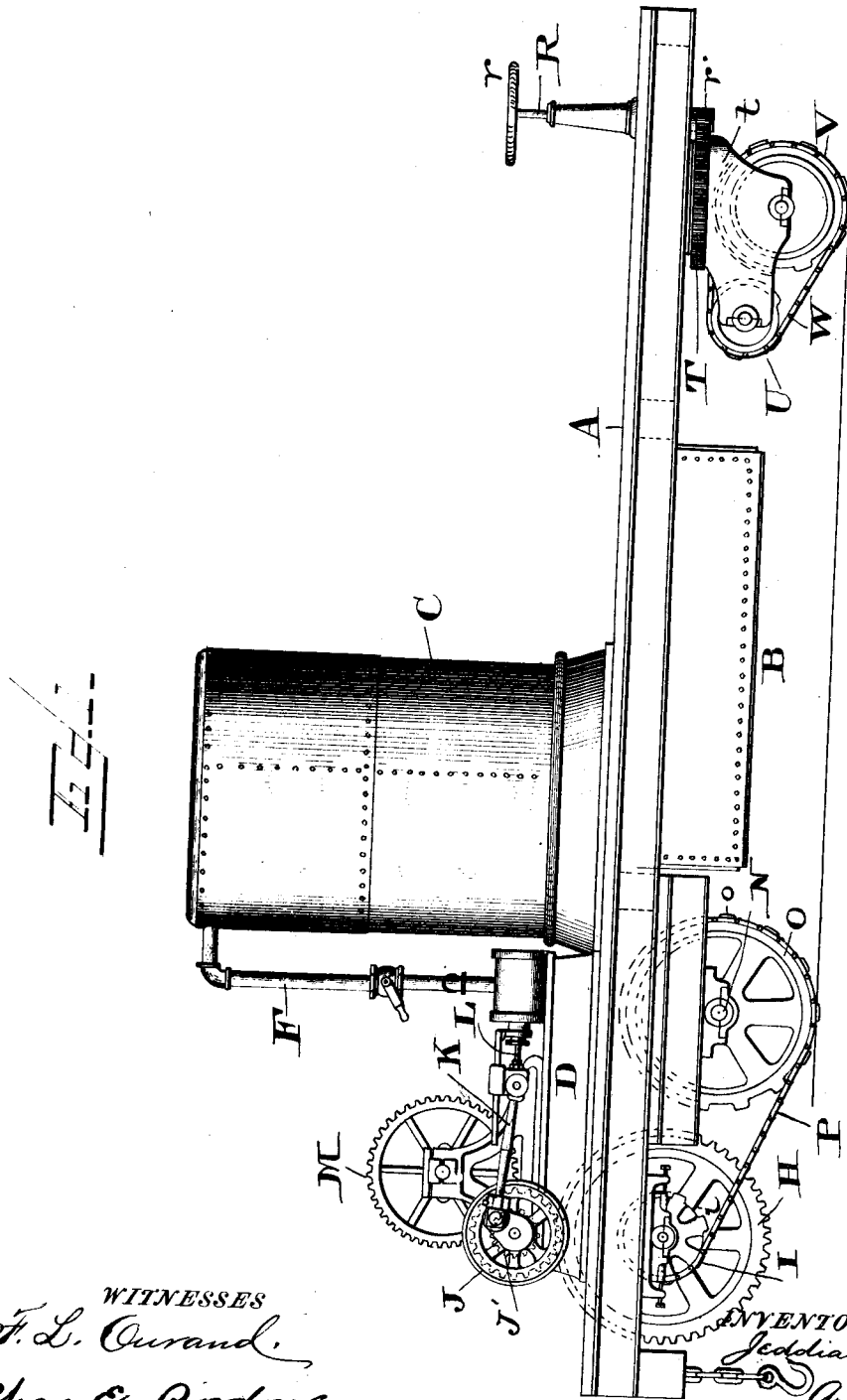
(No Model.)

J. F. HANSCOM.
ROAD LOCOMOTIVE.

2 Sheets—Sheet 1.

No. 467,095.

Patented Jan. 12, 1892.



WITNESSES
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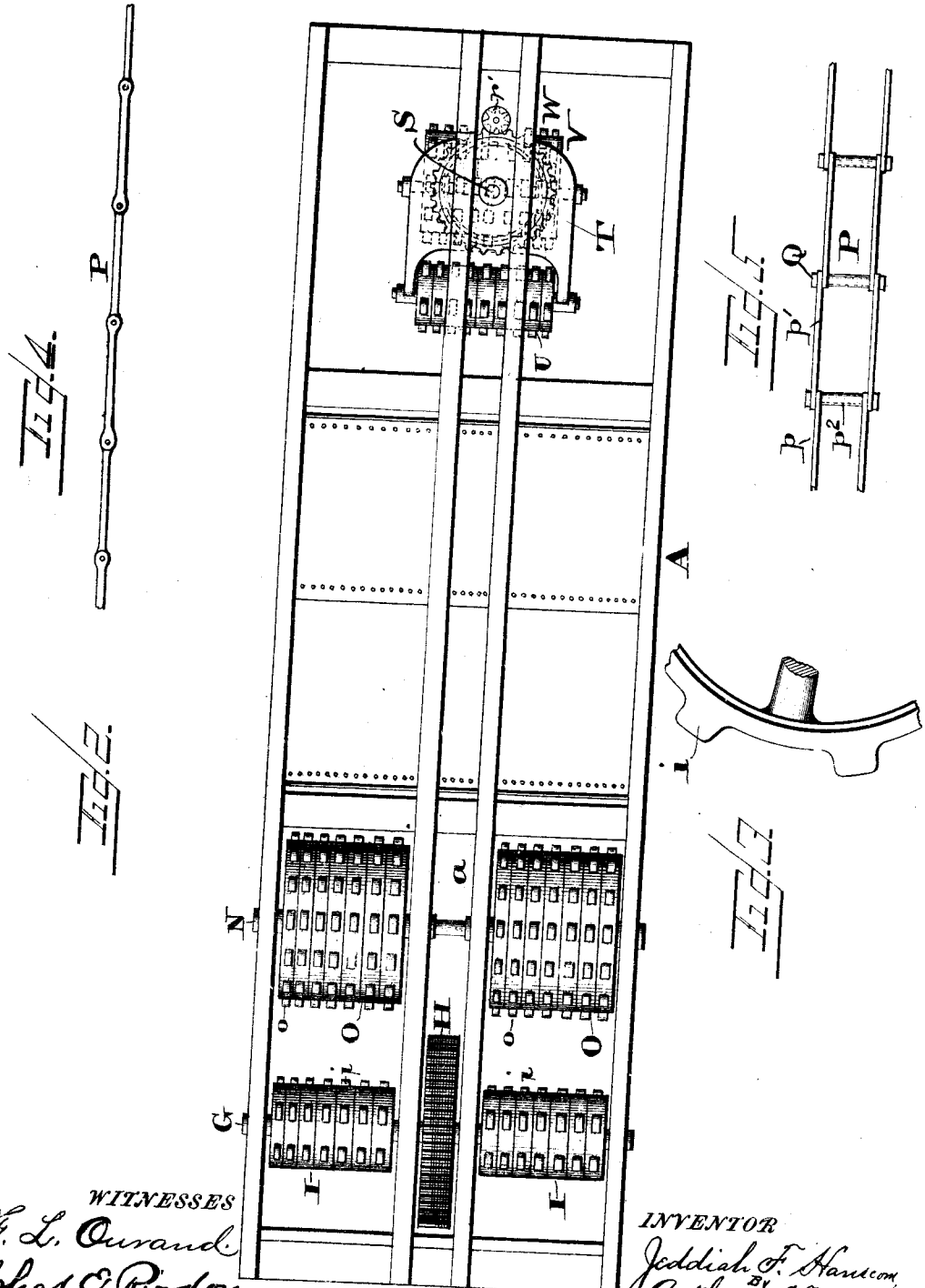
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UNITED STATES PATENT OFFICE

JEDDIAH F. HANSCOM, OF ASHLAND, WISCONSIN.

ROAD-LOCOMOTIVE.

SPECIFICATION forming part of Letters Patent No. 467,095, dated January 12, 1892.

Application filed July 30, 1891. Serial No. 401,168. (No model.)

To all whom it may concern:

Be it known that I, JEDDIAH F. HANSCOM, a citizen of the United States, residing at Ashland, in the county of Ashland and State of Wisconsin, have invented certain new and useful Improvements in Road-Locomotives; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention has relation to improvements in road-locomotives used for logging and other purposes.

The invention contemplates, broadly, the employment of link chains in connection with a series of wheels, the latter provided with sprockets which pass through the links of the chains a sufficient distance to engage the ground in the case of those wheels of the series which constitute the driving-wheels, thereby securing a firm purchase upon the road and preventing slipping incidental to the employment of smooth-surfaced wheels, especially on hard snow or ice.

In road-engines and similar devices now in use employing either smooth-surfaced wheels or wheels having peripheral projections to engage the ground it has been found that in traversing muddy or snowy roads the mud or snow, as the case may be, has a tendency to adhere to the wheels, thus clogging the parts and creating considerable trouble from the consequent uneven running of the machine. It is of course obvious that the employment of wheels having peripheral projections is a great advantage; but the tendency to the adherence of mud and other extraneous matter is found greater in this class than in the case of smooth-surfaced wheels. It therefore results that it is a desideratum to employ a machine of the character referred to having wheels provided with projecting sprockets in connection with means for keeping the wheels clear at all times of adhering substances.

The object of this invention, therefore, is to accomplish the above-described desirable end; and with this in view the invention consists

in the improved construction and combination of parts, as hereinafter more fully described and pointed out.

In the accompanying drawings, Figure 1 is a side elevation of my improved road-locomotive. Fig. 2 is a plan view with the engine-boiler, flooring, and upper gear-wheels removed. Fig. 3 is a view of a section of the periphery of one of the drive-wheels. Fig. 4 is a side elevation of a portion of one of the sprocket-chains, and Fig. 5 is a plan view thereof.

Like letters of reference refer to like parts throughout the several figures of the drawings.

Referring to the drawings, the letter A indicates the platform of the locomotive, which is constructed, preferably, of steel eye-beams running longitudinally, braced by iron rods and planked for a flooring. Beneath the platform is located a water-tank B, while resting upon said platform near its center is a steam-boiler C and near its rear end a bed-plate D. This bed-plate supports a steam-cylinder connected to the boiler by a pipe F. At the rear end of the machine is also arranged a transverse shaft G, said shaft carrying a central gear-wheel H, which passes up through an opening therefor in the platform. The shaft also carries two side wheels I I, arranged beneath the platform, said wheels having broad surfaces or peripheries, which are provided at regular intervals with projecting sprockets.

Journalled in bearings in the bed-plate D is a gear-wheel J, which meshes with the central gear-wheel H, and thereby transmits motion to the transverse shaft G. The wheel J derives its motion through the pitman K, which is joined to piston-rod L. The shaft of wheel J has also mounted thereon a smaller gear J', which meshes with a gear-wheel M, the shaft of which is journalled in pillow-blocks extending from the bed-plate. This last-mentioned wheel serves to transmit the power through a suitable chain or belting for whatever purpose it is desired to be utilized. A second transverse shaft N is arranged beneath the flooring a short distance in advance of shaft G and carries thereon two wheels O O, located in corresponding positions to the wheels upon said shaft G, and also having

broad peripheries with projecting sprockets therefrom, (designated by the letter *o*.) It will be noticed, however, that while the rear wheels I are clear of the ground wheels O O are much greater in circumference and come in contact with the road-bed, thus serving as driving-wheels. While I have only shown in the present illustration of my invention at the rear end of the machine four of these wheels, it is obvious that the number may be increased, if so desired. Both sets of wheels are made up of single spools or thin wheels fitted side by side upon the same axis or shaft, each of the spools being identical with its fellow.

In Figs. 5 and 6 I have illustrated the preferred form of chain to be used for connecting the wheels just described. These chains are indicated by the reference-letter P and are composed entirely of open links *p p'*. It will be noticed that links *p* pass within the ends of the side pieces of links *p'*, the ends of links *p* being tubular, as indicated at *p*², and the whole series of links connected by transverse bolts Q, which pass through the adjacent sides of the links and through the tubular end pieces. The bolts are of course adapted to turn freely, so that the chain may conform to the contour of the wheel which it partly surrounds.

At the forward end of the machine is located a steering-rod R, provided upon its upper end with a hand-wheel *r* and upon its lower end with a gear-wheel *r'*. Turning upon a short shaft S is a larger gear-wheel T, meshing with gear *r'* and having formed upon its under face a casting *t*, in which are journaled two sprocket-wheels U and V, similar in all respects to the sprocket-wheels at the rear of the machine, and connected by a chain W, also exactly similar to the chain illustrated in Figs. 5 and 6. The foremost of these wheels is much larger in circumference than the rear wheel, which latter is provided for the purpose of forming a connection for the endless sprocket-chain, said chain not only acting to drive the fore wheel, but at the same time keeping it clear of mud and the like.

By turning the steering-rod R gear-wheel T may be rotated, which carries the casting that forms the journal-bearing for the two forward wheels, and the position of said wheels may be readily varied and the course of the locomotive regulated.

From the above description, taken in connection with the accompanying drawings, it is thought that the construction, operation, and advantages of my improved road-locomotive will be readily understood. It will be seen that by the employment of open-link chains in connection with wheels provided with sprockets projecting through said links, so that in the case of the driving-wheels the sprockets may engage the ground, a construction results which possesses the greatest possible

amount of clearing capacity, so that a wheel may travel through the thickest mud without the mud adhering to it.

I do not confine my invention to use in connection with road-locomotives, as it is obvious it may be used for the purpose of propelling any and all road-engines, such as thrashing-machine engines, traction-engines, and the like. The sprockets also projecting through the links in such a manner as to engage the ground secures a firm purchase and insures against the slipping of the wheels, even though the surface be covered with hard snow or ice. Furthermore, the chain will more readily clear itself of mud and snow, because a sprocket passes through each link of the chain as it makes the circuit of the large wheel, and in passing to the small wheel in the rear, which is elevated from the ground, the action of the chain has a tendency to loosen all adhering soft mud or snow.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination, with series of wheels, of which one or more constitute the driving wheel or wheels, said wheels having their peripheries provided at regular intervals with projecting sprockets, of open-link chains connecting the driving wheel or wheels with the non-driving wheel or wheels.

2. In a road-locomotive, the combination of a platform having a central opening at its rear end, a transverse shaft having mounted thereon a gear-wheel extending through the opening, and also sprocket-wheels upon opposite sides of the gear-wheel, free from contact with the ground, said sprocket-wheels having broad surfaces or peripheries with projecting sprockets, a second transverse shaft having mounted thereon sprocket-wheels engaging the ground, similar in construction and located in a line with the first-named sprocket-wheels, open-link sprocket-chains connecting the sprocket-wheels, the sprocket of the entire series passing through the links, a gear-wheel mounted in suitable bearings extending upwardly from the platform, said gear-wheel meshing with the central gear-wheel, and means for rotating the gear-wheel located above the platform, substantially as set forth.

3. In a road-locomotive, the combination of a platform, a steering-rod located at one extremity thereof, provided at its upper end with a hand-wheel and at its lower end with a gear-wheel, a short shaft extending downwardly from the platform and carrying a gear-wheel meshing with the first-named wheel, said gear-wheel carried by the short shaft provided with depending brackets, forward and rear shafts journaled in said brackets, a sprocket-wheel mounted upon the forward shaft and provided with a broad surface or periphery having projecting sprockets therefrom, a sprocket-wheel of similar construction carried by the rear shaft, and an open-link sprocket-chain con-

necting the two wheels, the sprockets of said wheels passing entirely through the links of the chain, substantially as set forth. .

4. The combination, with a sprocket-chain
5 consisting of a series of open links, the inner links of the series provided with tubular end pieces passing between the open ends of the outer links, and bolts passing freely through the contacting portions of the links and
10 through the tubular end pieces, of a series of wheels of which one or more constitute the drive-wheels, said wheels having their pe-

ripheries provided with projecting sprockets, the sprockets of the entire series passing through the links and those of the driving- 15 wheels engaging the road-bed, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JEDDIAH F. HANSCOM.

Witnesses:

ORRIN F. SMITH,
AMBROSE RISDON.