(No Model.)

D. B. JAMES.

TRACTION ENGINE.

No. 383,179. Patented May 22, 1888.

Fig. 1.

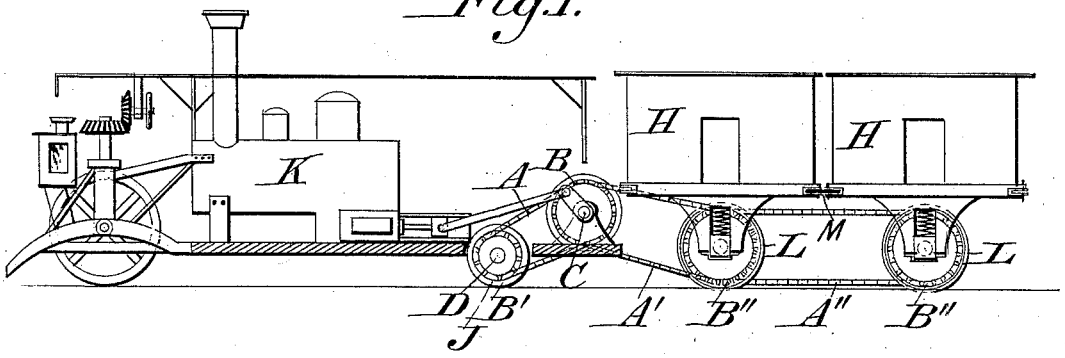


Fig. 2.

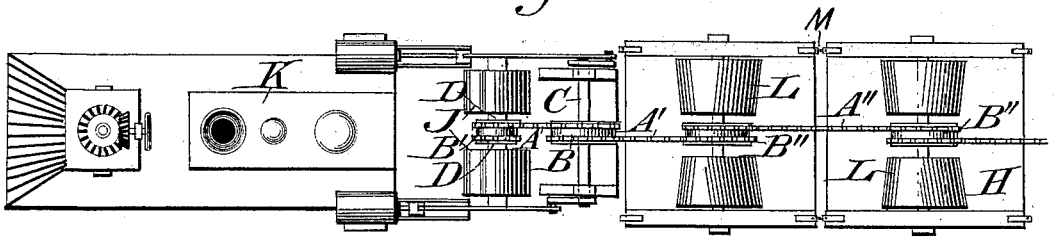


Fig. 3.

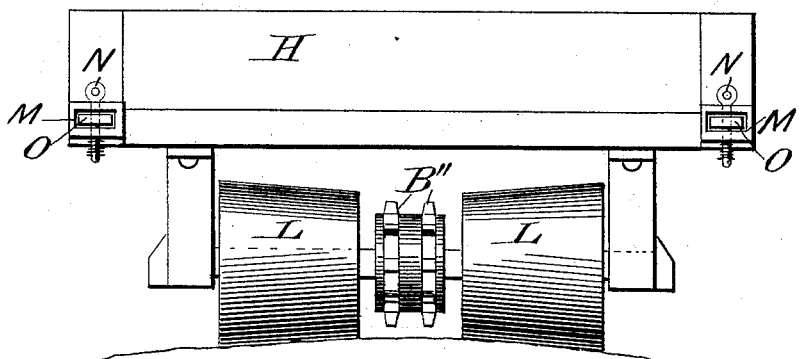


Fig. 4.

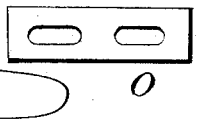
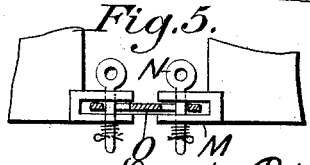


Fig. 5.



Witnesses.

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By his Attorney

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UNITED STATES PATENT OFFICE.

DAVID BICE JAMES, OF VISALIA, CALIFORNIA.

TRACTION-ENGINE.

SPECIFICATION forming part of Letters Patent No. 383,179, dated May 22, 1888.

Application filed November 23, 1887. Serial No. 256,020. (No model.)

To all whom it may concern:

Be it known that I, DAVID BICE JAMES, a citizen of the United States, residing at Visalia, in the county of Tulare and State of California, have invented certain new and useful Improvements in Traction Engines and Cars; and I do hereby 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.

My invention relates to an improvement in traction engines and cars; and it consists, essentially, in mechanism comprising chains, sprocket-wheels, &c., whereby said engine and cars are operated or driven, and, further, in certain details in the construction, arrangement, and combination of the several parts, substantially as will be hereinafter described, and then more particularly pointed out in the claims.

In the accompanying drawings, illustrating my invention, Figure 1 is a longitudinal sectional side elevation of an engine and a couple of cars constructed in accordance with the principles of my present invention. Fig. 2 is a plan view of the same, the engine being viewed from above and seen in top plan, while the cars are viewed from beneath and seen in bottom plan. Fig. 3 is an end elevation of a car, showing particularly the way in which the cars are coupled together by devices located at the corners thereof. Fig. 4 is a detail view of the coupling-plate, and Fig. 5 is a detail view showing the several parts of one of the couplings.

Similar letters of reference designate corresponding parts throughout all the figures.

The nature and object of my improvement in traction engines and cars consists, chiefly, in the novel manner in which I transmit the power from the engine to the cars by means of chains engaging the sprocket-wheels on the engine-shaft and also with the cars, each and every one of said cars being connected similarly and made to operate simultaneously. Every car is furnished by the engine with power to move itself. Thus the engine creates sufficient surplus power over what is necessary to carry itself as to provide all the cars with motive power therefor, thus distributing the power equally and through separate chains from one car to the other.

K denotes the engine, and H H denote cars arranged in the form of a chain and connected to the engine. The engine K may be made in different ways, it being only essential that it shall be provided with a couple of cylinders—one on each side—which may be arranged to operate a driving-shaft, C. This shaft is provided with cranks on each end, which connect by means of connecting-rods to the pitman-rods in the steam-cylinders. The shaft C is suitably journaled, and when the steam-pistons operate it will be revolved. Upon it is located a double sprocket-wheel, B. Around this sprocket-wheel pass two chains. One of these, as A, extends to and around a double sprocket, B′, located on the axle D, that carries the traction-wheels J J of the engine. Thus, when the shaft C is revolved through the agency of the steam-pistons, it will be seen that the axle D will also be rotated and the traction-wheels revolved. The other chain, which is around the double sprocket-wheel on the axle C—that is, the chain A′—extends to and around a double sprocket on the axle of the car adjacent to the engine. This car, as likewise all the cars which I use in carrying out my invention, is furnished with a single axle and pair of wheels. Upon this single axle are the double sprocket just mentioned and two traction-wheels, which are preferably of incline or conical shape.

The sprocket on the axle of the car is indicated by B″. From the sprocket on this first car passes a chain, A″, to another sprocket B″ on the next car. In this manner it will be seen how the several cars and locomotive are connected for the purpose of joint movement by the devices described. The sprocket-pulleys being double sprockets, the chains will be located alongside each other in the manner best shown in Fig. 2. The mode of connecting the cars together so that there may be no pulling strain upon the operating-chains, and so that the ends of the cars which have only a single pair of wheels may not fall down, but be held up, is as follows:

Instead of having the couplings centrally located, they are located on the ends of the cars nearest the sides; hence the end of each car will be provided with two couplings instead of one, as is customary.

M M denote the sockets, located on the end of the car, near the sides, as shown.

N represents the pins, and O the slotted plate that enters the sockets.

The arrangement of the parts is shown in detail in Fig. 5. By means of these couplings the cars will be permitted to have a side play enough to enable them to turn curves easily.

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

1. A traction road engine or locomotive provided with two cylinders containing pistons which connect by suitable rods with a driving-shaft upon which is a double sprocket-wheel to receive two chains, one leading from it to a corresponding sprocket-wheel under floor of engine, on the carrying or traction wheel of same, and the other chain leading to a corresponding sprocket-wheel on the axle of the first car connected to it, and alike to as many cars as the engine has the capacity to move, substantially as and for the purpose shown and specified.

2. In a traction engine, the combination of two wheel cars supported by each other at the corners by a coupling that acts as a hinge, connecting engine and train of cars in one continuous line, with side-play in couplings to allow for curves and follow over any reasonable depression on road, substantially as and for the purpose shown and specified.

Witness my hand and seal this 26th day of July, 1887.

DAVID BICE JAMES. [L. S.]

Witnesses:

D. O. ANDERSON,

M. H. GARNETT, Jr.