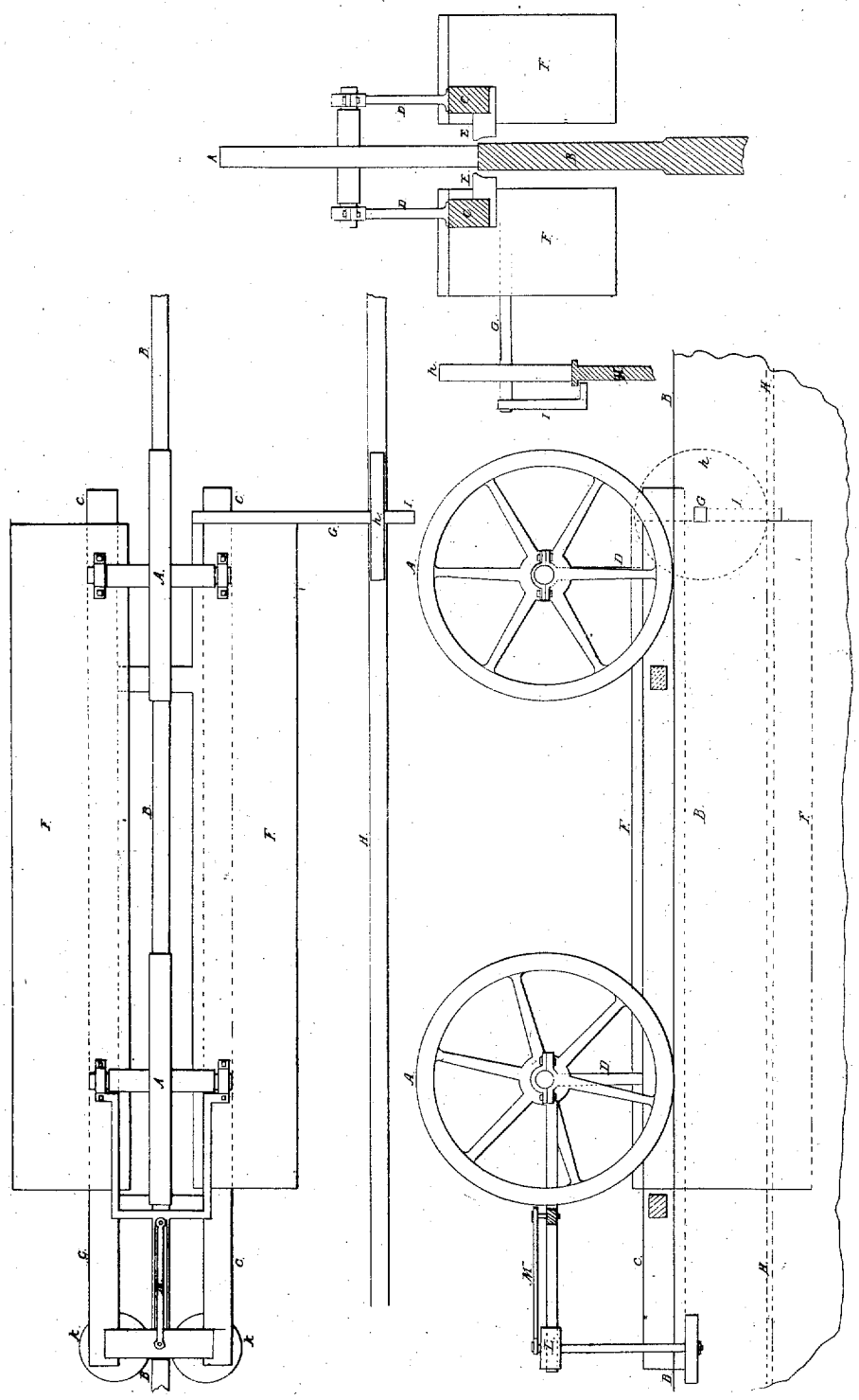
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Bryant & Hyett.

Railroad.

Patented Jun. 13, 1831.



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June 13, 1831 167.

William Bryant & Isaac Hiett.

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Letters Patent.

The Schedule referred to in these Letters Patent, and making part of the same, containing a description in the words of the said William Bryant and Isaac Hiett, themselves, of their improvement in the rail-way Carriage.

To all whom these presents shall come;

Be it known that we William Bryant and Isaac Hiett, of the County of Davidson and State of Tennessee, have invented a new and useful carriage, to run on such rail-ways as have but one principal rail to bear the chief weight of the carriage and load, and a secondary rail to steady the carriage; and that the following is a full and exact description of our said invention.

The plan of the before named carriage is as follows

Two wheels of about three feet in diameter, three inches wide on the rim, and six feet apart, from centre to centre, run on the principal rail. The shell frame, consists of two bars of wood or iron, of strength in proportion to the weight to be conveyed; placed one on each side of the principal rail

They extend, from a few inches back of the axle of the hind wheel, forward about two feet in front of the fore wheel.

These are so framed together about one foot apart, and are suspended from the axles of the wheels by four rods of iron, which are attached to the bars at their lower ends, and at their upper end to the bows in which the axles run.

The bottom of the bars are about nine inch and a half below the surface of the rail; to their under sides opposite each wheel are attached short pieces of wood or iron, turned

grooved

guards, which project to within about a half an inch of the wheels on each side, they are intended to prevent the wheels going off the rail in time of loading, or when running if the guide should fail to direct them properly.

The body of the carriage is fastened upon, and borne by the bars of the wheel frame; it may be of a legal shape to suit the fancy or convenience of the owner.

To prevent jolting from irregularities of the railway, the bars of the wheel frame, or the body of the carriage, may be cushioned by springs; and friction rollers may be used in the boxes of the axles to diminish their friction.

The carriage is kept steady, and its overturning is prevented, in the following manner.

A strong piece of iron, securely fastened to the hind part of the carriage, reaches out opposite to the secondary rail; this iron, is the axle of the third or steadying wheel, and has a journal on its outer end for the wheel to turn on.

This wheel is about eighteen inches diameter, it runs on the before named axle, and bears on the secondary rail to keep the carriage steady.

A piece of iron attached to the axle of the third wheel, extends about a foot from the axle at right angles, it there bends and stands parallel with the axle to its end which is even with the outside of the wheel. This iron passes near the secondary rail on the edge opposite the wheel, and prevents the carriage overturning. The guiding of the carriage is effected in the following manner.

About two feet in front of the fore wheels, the guide wheels are placed; they are about ten inches in diameter, and placed horizontally on each side of the principal rail, within about one fourth of an inch of it, and near the top.

The axles of the guide wheels, are screwed into a piece of iron about one foot in length near its ends; this piece is bound

placed perpendicular to the rail about one foot above it, and the piece of iron attached to the middle; this, passing back to within an inch of the fore wheel; it there forks, and passes on each side of the wheel, and is attached at the ends to the boxes of the axle, or to the axle near its ends, or to the suspension rods near the boxes; this iron is termed the guide.

And to the fore end of the bar is fixed a piece of wrought iron termed the guide rest; through the middle of this piece is a horizontal mortise or slit, and the guide iron near the fore end passes through it. The design of the rest, is to keep the guide wheels always at the same height on the rail; The guide can move in the slit freely to either side, to permit the guide wheels to follow the course of the rail. By this arrangement the guide wheels are directed by the rail, the fore wheel by the guide, and the hind wheels is attached to the bars and body of the carriage in such a manner, as to make it track, or follow directly after the fore wheel; consequently the wheels of the carriage are kept properly on the rail, without the assistance of grooves, flanges or ledges, on either the wheels or rail.

The fore wheel is kept at its proper place by a connection which has a hole at each end, and is attached at one end, by a bolt or pin through the hole, to the guide near the fork, and at the other end to the axle in the same manner.

The rod being moveable on the pins through its ends, permits the wheel to wind or turn to either side; but prevents moving backward or forward.

The carriage may be propelled by any of the powers commonly used for such purposes, or by hand. If it is moved by hand, a wheel about eighteen inches in diameter, is placed in the carriage so as to be conveniently turned with a crank, a band on this wheel, gives motion to the fore wheel by

turning

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driving a whistle on its axle of about six inches diameter; or instead of the whistle and bands before named, bag wheels may be used.

Milwaukee
Mc Carrell
Alex Porter

Wm Bryant
Isaac Hill

1078 n.b.