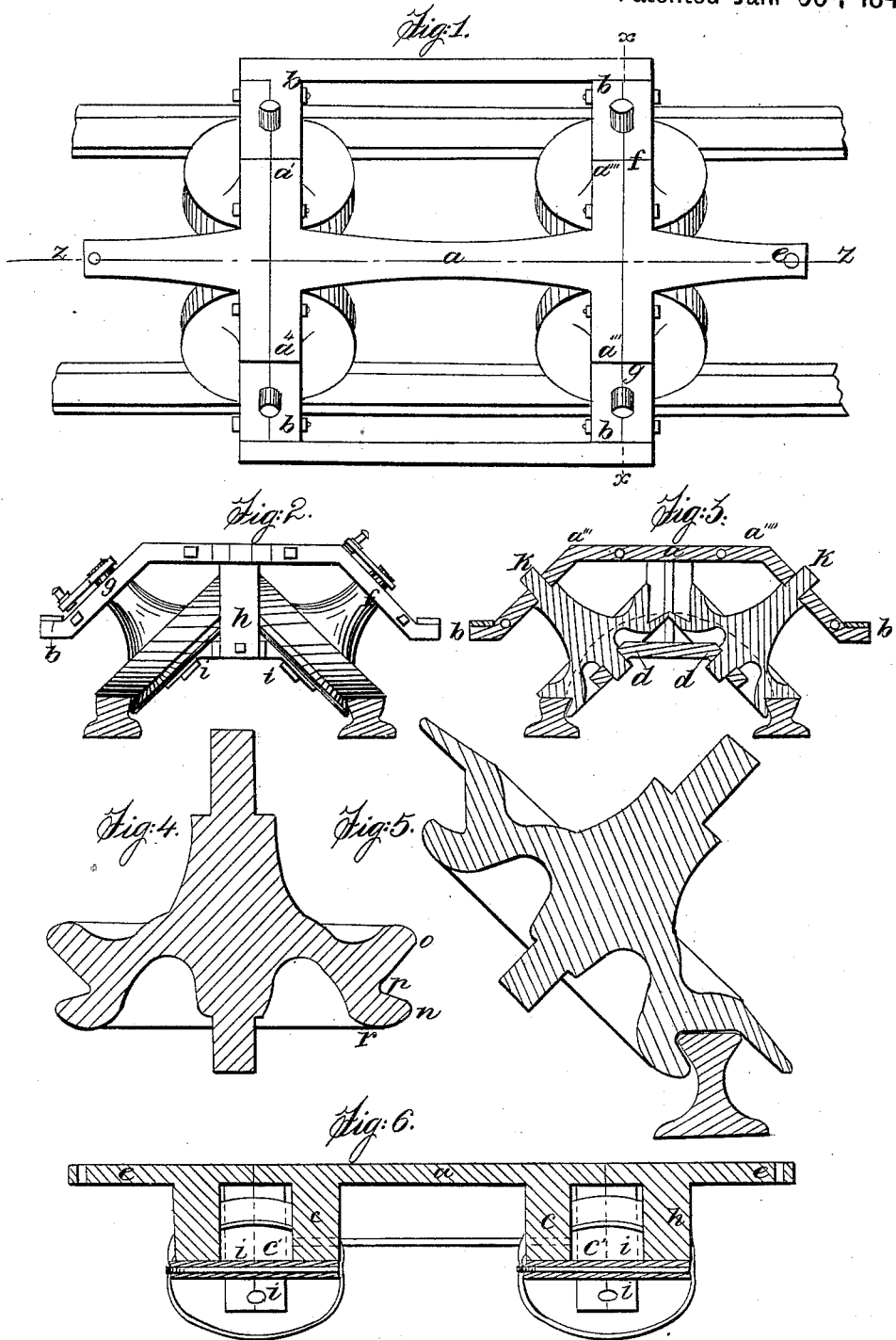


**Car Truck.**

No. 6,064.

Patented Jan. 30, 1849



# UNITED STATES PATENT OFFICE.

JACOB G. DAY, OF BROOKLYN, NEW YORK.

## RAILROAD-TRUCK.

Specification of Letters Patent No. 6,064, dated January 30, 1849.

*To all whom it may concern:*

Be it known that I, JACOB G. DAY, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Wheels and Trucks for Railways; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a top view of the truck and wheels Fig. 2 is an end elevation Fig. 3 is a cross section through the line  $x x$  of Fig. 1 Figs. 4 and 5 are sections of wheels. Fig. 6 is a longitudinal section through the line  $Z-Z$  of Fig. 1.

Similar letters refer to similar parts throughout the description.

The nature of my invention consists in a novel and useful method of constructing wheels and trucks for railways, the said improvements having for their object increased safety in running, and economy of manufacture. It will be perceived by examining the drawing hereunto annexed, that the axis of the wheels are inclined from a horizontal position; this angular position I do not claim in itself merely, wheels having been set in such position before. But by the method I introduce, all lateral thrust is avoided, while by the peculiar position, I am enabled to shape the flanges so that they shall have an under hold upon the rails, thereby furnishing a guard, which insures the position of the wheels at all times upon the rails; in the position given to the wheels, I also introduce the principle of the arch, by causing their upper diameters to meet, and thus revolve upon those surfaces and equalize the bearing. By this improvement the car can never run off the rails; neither will the wheels pass over any obstruction upon the rails; but by the construction and angle of the flange and face of the wheel, obstacles instead of being passed over, will be pushed along until worked off. In turning curves, this arrangement is well adapted, the inclination of the wheels favoring their passage around them.

From the property the wheels possess of holding on to the rails, in any position in which they may be placed, whether horizontally on the ground, or suspended in the air, so that the car would hang inverted.

I propose to use this principle for many purposes besides, viz, for the suspension of gates, doors, draw-bridges and the like, by hanging them upon trucks running on elevated railways, depending from abutments &c.

The truck may be made of any suitable material, but I should prefer iron either wrought or cast or both combined.

In Fig. 1 is a top view of the truck; at ( $a$ ) is seen a center connecting piece or kind of perch; at each end this branches at right angles, into four arms, as ( $a' a'' a''' a''''$ ), from these points there is an angular deflection of the arms, the ends terminating in a narrow step; as seen in Fig. 3, from ( $a''' a''''$  to  $b b$ ); midway from ( $a'''$  to  $b$ ) there are on all four arms, openings for the insertion of boxes, to form the bearings of the upper axis of the wheels, as represented. Beneath the perch ( $a$ ) at ( $c c$ ), seen in section Fig. 6, there are two vertical posts; these connect the under framing, forming the bearings for the lower axis of the wheel; at the bottom it diverges at right angles, and parallel to ( $a$ ), as seen at ( $c'$ ), from ( $c'$ ) it again divides into two arms, which are parallel with the arms ( $a' a''$  &c.), as seen at ( $d d$ ) Fig. 3; and from ( $d$ ) the arms deflect to their ends, in the manner represented.

To complete the truck, end pieces are formed to match the parts above described, ( $e f g'$ ) Fig. 1, showing the manner in which it is joined to the frame at ( $a''' a''''$  and  $b b$ ); at ( $h i$ ) Fig. 6 is a section showing the jointings below; and ( $e, f, g, h, i$ ) Fig. 2, is an end view, as it would appear if attached to ( $a, b, b$ ) on the cross section Fig. 3.

The combination of the end pieces with the center frame is effected by bolts and nuts or other known means.

In a truck frame thus formed, I fit wheels constructed as follows: Having ascertained the width or gage of the track, I select such a diameter for the wheels as shall cause their circumference to meet, on placing their axis ( $d, k$ ), at angles of ninety degrees; as seen in Fig. 3. Although other diameters may be selected so as to vary this angle, I deem this one the most judicious. The wheel itself may consist of cast iron, or wrought in other manner; but when of cast metal, it should have a dished center to allow for shrinkage; as seen in Figs. 3 and 4;

and in all other parts, such as the journals, setting of the axles &c., may be as ordinarily constructed, with the exception of the periphery; and this is different, both with respect to the angle of the flange, and its shape. The flanges, instead of being at right angles to the face, as in the common wheel, I make at an acute angle as seen at (*n o*) Fig. 4, (*o p*) being the wearing surface, and (*n p*) the flange; I also give to the inner face a bevel shape (*n r*), so as to form a bearing surface for the action of the wheels upon one another, where they meet at the apex. Thus constructed, this truck will run upon rails of the ordinary construction, without the possibility of running off the same; as can be plainly seen by an examination of the drawings hereunto annexed.

In Fig. 5 is a view of a wheel, having an additional flange protracted from the outside, which will be found useful in steadying the motion, and also serve to keep the rails in line. This form of wheel is in-

tended to run on level ground as well, either by filling up the flanges, or casting it flat.

What I claim as my invention and improvement and desire to secure by Letters Patent is—

1. Giving to the axis of the wheels such an angle as will join their circumferences in the manner described.

2. I claim giving to the flanges any angle which shall be less than a right angle to the bearing faces of the wheel, so that when the wheels are upon the rails in their proper position in the trucks the said flanges shall project under the concave sides of the rails, in the manner and for the purpose described.

3. I claim the shapes and combinations of the truck frame pieces so as to form the upper and lower bearings for the wheels, in the manner described and set forth herein.

JACOB G. DAY.

Witnesses:

J. P. PERSSON,

J. L. KINGSLEY.