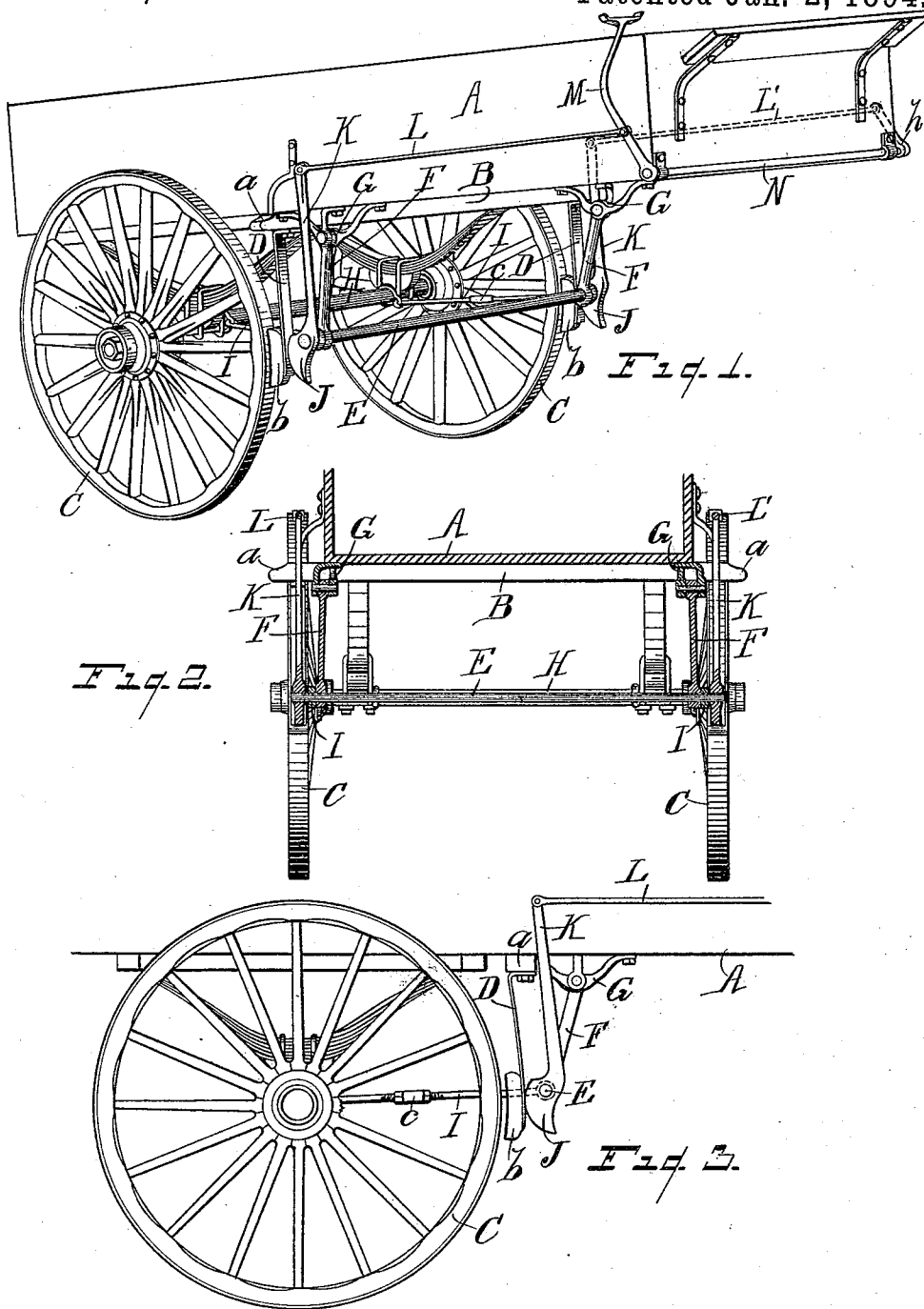


(No Model.)

DE LANCEY HAVEN.
VEHICLE BRAKE.

No. 512,249.

Patented Jan. 2, 1894.



WITNESSES

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DE LANCEY HAVEN, OF DETROIT, MICHIGAN.

VEHICLE-BRAKE.

SPECIFICATION forming part of Letters Patent No. 512,249, dated January 2, 1894.

Application filed July 17, 1893. Serial No. 480,680. (No model.)

To all whom it may concern:

Be it known that I, DE LANCEY HAVEN, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Vehicle-Brakes; 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.

This invention relates to new and useful improvements in vehicle brakes, and consists in a certain construction and arrangement of parts as hereinafter fully set forth, the essential features of which being pointed out particularly in the claims.

The object of the invention is to provide simple and effective means for exerting great leverage force upon the brake-shoe, and for easily maintaining said force when once applied. This object is attained by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a portion of a vehicle, showing the application of my improved brake. Fig. 2 is a vertical transverse section through the vehicle body and brake mechanism. Fig. 3 is a side elevation of said mechanism.

Referring to the letters of reference A designates the body of the vehicle. Crossing under the face of the body and secured thereto, is a transverse bar B, the ends *a* of which extend beyond the body of the vehicle in line with the wheels C. Depending from the outer ends of said bar, in front of said wheels, are the spring arms D, carrying brake-shoes *b* at their lower ends, which hang adjacent to the periphery of the wheels and are curved concentric therewith.

E designates a transverse shaft, which is suspended below the body of the vehicle by hangers F which are pivotally coupled at their upper ends to the brackets G attached to the vehicle body on each side.

Extending from the axle H to the shaft E, are the tie rods I which couple said shaft to the axle and retain it securely in place, at the same time permitting of the free movement

of all of said parts to accommodate the action of the vehicle springs.

Secured to the outer ends of the shaft E are the eccentric heads J, the curved faces of which describe the arc of a circle and lie against the back face of the shoes *b*. Attached to said heads and extending vertically on each side of the vehicle body, are the levers K, to the upper ends of which are coupled the horizontal side rods L, L' respectively, rod L of which is pivotally attached at its forward end to a foot lever M which is coupled to one end of a rock-shaft N that crosses the front of the vehicle body and carries on its opposite end a crank *h* which is attached to rod L', by which means a depression of the foot lever actuates said eccentrics in unison and carries them against the shoes *b* forcing said shoes against the wheels and applying the brake.

It will be seen, that, the construction of parts is such that a brake of great power is produced, in which the application of comparatively small force on the foot lever will exercise great power in applying the brake shoes to the wheels. The employment of the tie-rods I for coupling the shaft E to the axle, forms a rigid support for said shaft against the action of the eccentrics J thereon, so that the turning of said eccentrics is equivalent to forcing a wedge between a rigid support and the brake-shoes to carry them against the wheels, and by means of this construction, when the brakes are on, they may be held with the application of but little force to the lever M. On the release of said lever, the springs D carry the shoes away from the wheels.

The tie-rods I are provided with a turn buckle *c*, whereby they may be adjusted longitudinally to compensate for wear and maintain the eccentrics and shoes in proper position with respect to the vehicle wheels.

While I have shown in this application, of the invention, the eccentric heads J each provided with a lever-arm K, it is evident that a single arm may be attached to the shaft E and said heads actuated thereby.

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

1. In a vehicle brake, the combination with the running gear, of the suspended shaft, the

eccentric thereon, the shoe lying against said eccentric, said shoe depending from a spring arm which normally holds it away from the wheel, and means for actuating said eccentric
5 by a foot lever, substantially as set forth.

2. In a vehicle brake, the combination with the running gear, of the suspended shaft, the tie-rods coupling said shaft to the axle, the eccentrics on said shaft, the shoes interposed
10 between said eccentrics and the vehicle wheels, the lever arms extending from said eccentrics, the foot lever, and the rods connecting said arms thereto.

3. In a vehicle brake, the combination with
15 the axle and wheels, the suspended shaft carrying the eccentrics thereon, the tie-rods coupling said shaft to the axle, the shoes depend-

ing from the spring arms and interposed between said eccentrics and the vehicle wheels, and mechanism connected with said eccen- 20 trics whereby they may be actuated to throw said shoes against the wheels.

4. In a vehicle-brake, the combination of the suspended shaft, the eccentrics upon said shaft having the lever arms extending there- 25 from, the depending shoes lying against said eccentrics, the foot-lever, and the rods coupling said lever to said arms.

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

DE LANCEY HAVEN.

Witnesses:

G. W. COOK,

E. S. WHEELER.