G. W. BEMIS.
HAND-CAR.

No. 193,214. Patented July 17, 1877.

*Fig. 1.*

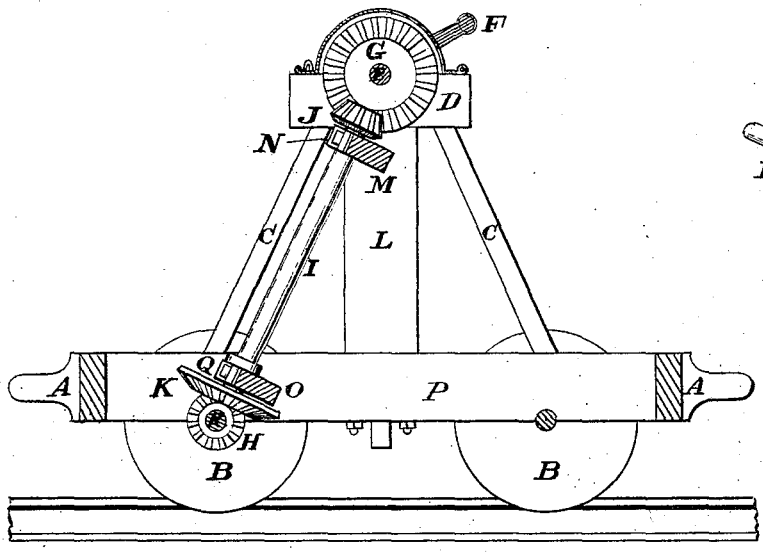



*Fig. 3.*

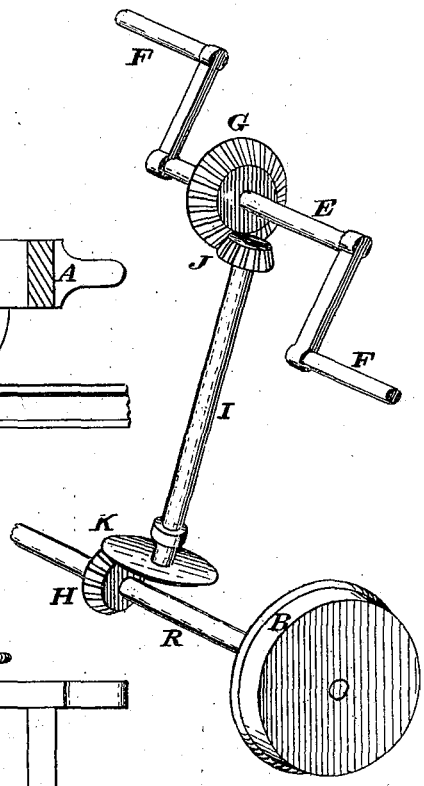
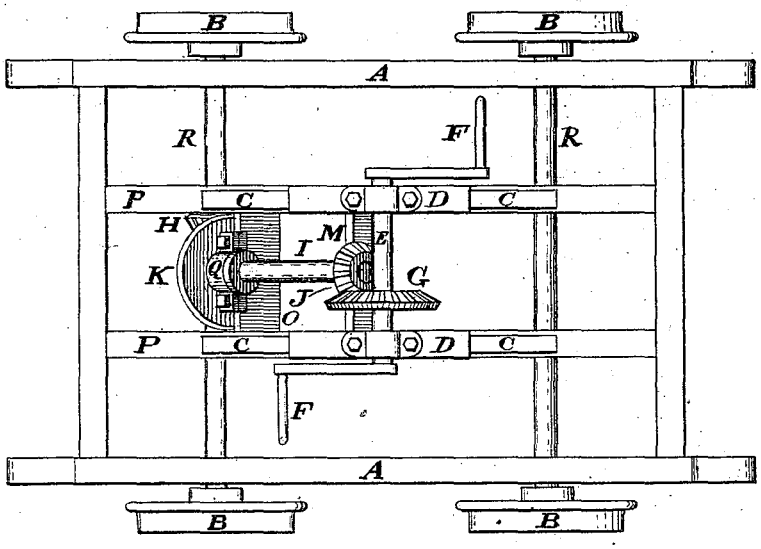



*Fig. 2.*




Attest
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Attys.

# UNITED STATES PATENT OFFICE.

GEORGE W. BEMIS, OF CINCINNATI, OHIO.

## IMPROVEMENT IN HAND-CARS.

Specification forming part of Letters Patent No. **193,214**, dated July 17, 1877; application filed August 17, 1876.

*To all whom it may concern:*

Be it known that I, GEORGE W. BEMIS, of Cincinnati, Hamilton county, Ohio, have invented a new and Improved Hand-Car for Railways, of which the following is a specification:

My said invention relates to a new and improved form or construction of those railroad cars or trucks which are adapted for propulsion along the track through the agency of suitable machinery, operated by one or more persons occupying the platform.

My improvement consists in a railroad hand-car constructed with stanchions, having stays and supported by sills, these parts being braced together by means of cross-pieces forming bearings for an oblique shaft, provided with bevel-gear wheels engaging with a bevel-gear wheel on a hand-crank shaft mounted on said stanchions, and a bevel-gear wheel on an axle, all arranged in the manner hereinafter described.

The special objects of utility sought in my invention are high speed and compactness of the driving machinery, coupled with greater efficiency, the arrangement being, moreover, such as, by economizing platform-space, affords the greatest possible room for the goods and passengers.

In the accompanying drawings, Figure 1 is a vertical section, and Fig. 2 a top view, of a hand-car embodying my invention, the floor being omitted. Fig. 3 is a perspective view of the propelling mechanism detached from the car-bed.

The following members may be of ordinary construction, to wit: The platform A, the four car-wheels B, the standards C, and the driving-shaft E, with its cranks F.

Instead of the usual bulky and expensive train of spur-gearing, the driving-shaft E is provided with bevel-wheel G, which communicates direct with bevel-wheel H upon one of the axles by means of a simple shaft, I, journaled obliquely, as shown, and armed at its ends with bevel-wheels J and K.

My apparatus comprises two stanchions, L, with cross-rail M framed in from one to the other, to carry the upper journal N of the shaft I. It also comprises a cross-piece, O, between the two intermediate sills P P, for carrying the bottom journal Q of said oblique shaft I.

The bevel-gear G H J K and the single oblique intermediate shaft I convey motion direct from the crank-shaft to the axle-shaft R in a very compact manner, and with great economy of power and space.

The bevel-wheel gear in the described combination with the direct oblique shaft enables the accomplishment of a high rate of speed with small wheels and within compact limits.

The cross-pieces M and O, besides affording journal-bearings for the oblique shaft, are adapted to brace the frame together.

I claim—

The improved railroad hand-car herein described, constructed with a frame consisting of stanchions L L, supporting-sills P P, stays C C C C, and brace-pieces M O, and a driving-gear consisting of an oblique shaft, I, journaled in the brace-pieces M O, and provided with bevel-gear wheels J K, the hand-crank shaft E F, having bevel-gear wheel G, and the axle-shaft R, carrying bevel-gear wheel H, all arranged substantially as set forth.

In testimony of which invention I hereunto set my hand.

GEORGE W. BEMIS.

Attest:

GEO. H. KNIGHT,

JOHN MCCORMACK.