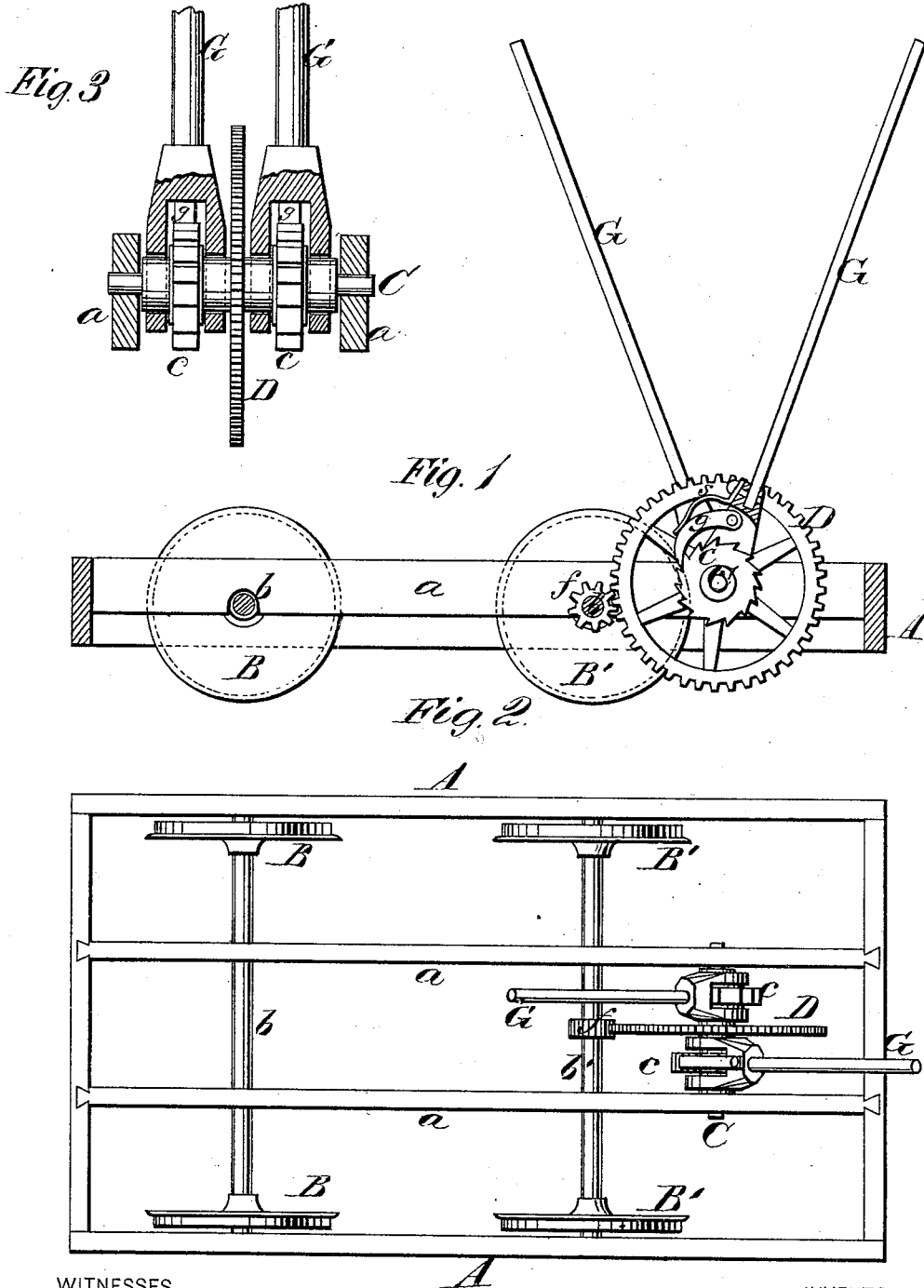


B. F. RAY.

Hand-Car.

No. 167,119.

Patented Aug. 24, 1875.



WITNESSES  
*Robert Everett*  
*E. H. Bates*

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# UNITED STATES PATENT OFFICE.

BENJAMIN F. RAY, OF BALTIMORE, MARYLAND.

## IMPROVEMENT IN HAND-CARS.

Specification forming part of Letters Patent No. **167,119**, dated August 24, 1875; application filed July 3, 1875.

*To all whom it may concern:*

Be it known that I, BENJAMIN F. RAY, of Baltimore, in the county of Baltimore and State of Maryland, have invented a new and valuable Improvement in Hand-Cars; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a longitudinal vertical section of my hand-car. Fig. 2 is a plan view of the same; and Fig. 3 is a sectional detail view.

This invention has relation to hand-cars, which are designed for the use of men engaged in laying and repairing railroads, and for other purposes; and the nature of my invention consists in two forked pawl-carrying levers, which are free to vibrate on a short shaft, carrying two ratchet-wheels and an intermediate spur-wheel, which latter engages with a pinion on the axle of two truck-wheels, said short shaft and truck-wheel axle having their bearings in two intermediate longitudinal beams of the truck-frame, as will be hereinafter explained.

In the annexed drawings, A designates a rectangular truck-frame, between the side beams of which are two longitudinal beams, *a a*, which are framed into the end beams. B B B' B' are the flanged truck-wheels applied fast on axles *b b'*, the latter one of which is borne by the side beams of the truck-frame, and also by the two intermediate beams *a a*. C designates a short shaft, which has its end bearings in the two beams *a a* near the axle *b'*. On this shaft is keyed a large spur-wheel, D, and on each side of this wheel a ratchet-

wheel, *c*, is keyed on the shaft C. The teeth of the wheels *c c* are pitched in the same direction, and astride of each wheel *c* is the forked end of a lever, G, which receives loosely through it the shaft C. To each lever G a pawl, *g*, is pivoted, which is acted on by a spring, *s*, and which engages with a ratchet-wheel, *e*, so that when the lever is drawn backward its pawl will engage with a ratchet-wheel, *e*, and turn the shaft C, and with it the wheel D. The wheel D engages with a pinion spur-wheel, *f*, on the axle *b'*, so that when levers G G are vibrated rotary motion will be imparted to the wheels B', and the car will receive locomotion.

One advantage of my improvement is that the axle *b'* and the shaft C are both sustained by the two strong longitudinal beams *a a* of the truck-frame, which maintains a fixed relation to the parts, and keeps the two wheels D *f* always properly in gear. Another advantage is in having the pawls *g* directly in line with the levers, which prevents the parts twisting and the levers from binding on the shaft C.

What I claim as new, and desire to secure by Letters Patent, is—

The vibrating forked levers G G, ratchet-wheels *c*, pawls *g*, and spur-wheel D on shaft C, combined with the pinion *f* on axle *b'*, and sustained by the beams *a a* of the truck-frame A, as shown and described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

B. F. RAY.

Witnesses:

JAS. B. LOOMIS,  
GEORGE E. UPHAM.