(No Model.)

A. K. MANSFIELD.

HAND CAR.

No. 376,604. Patented Jan. 17, 1888.

FIG. 1.

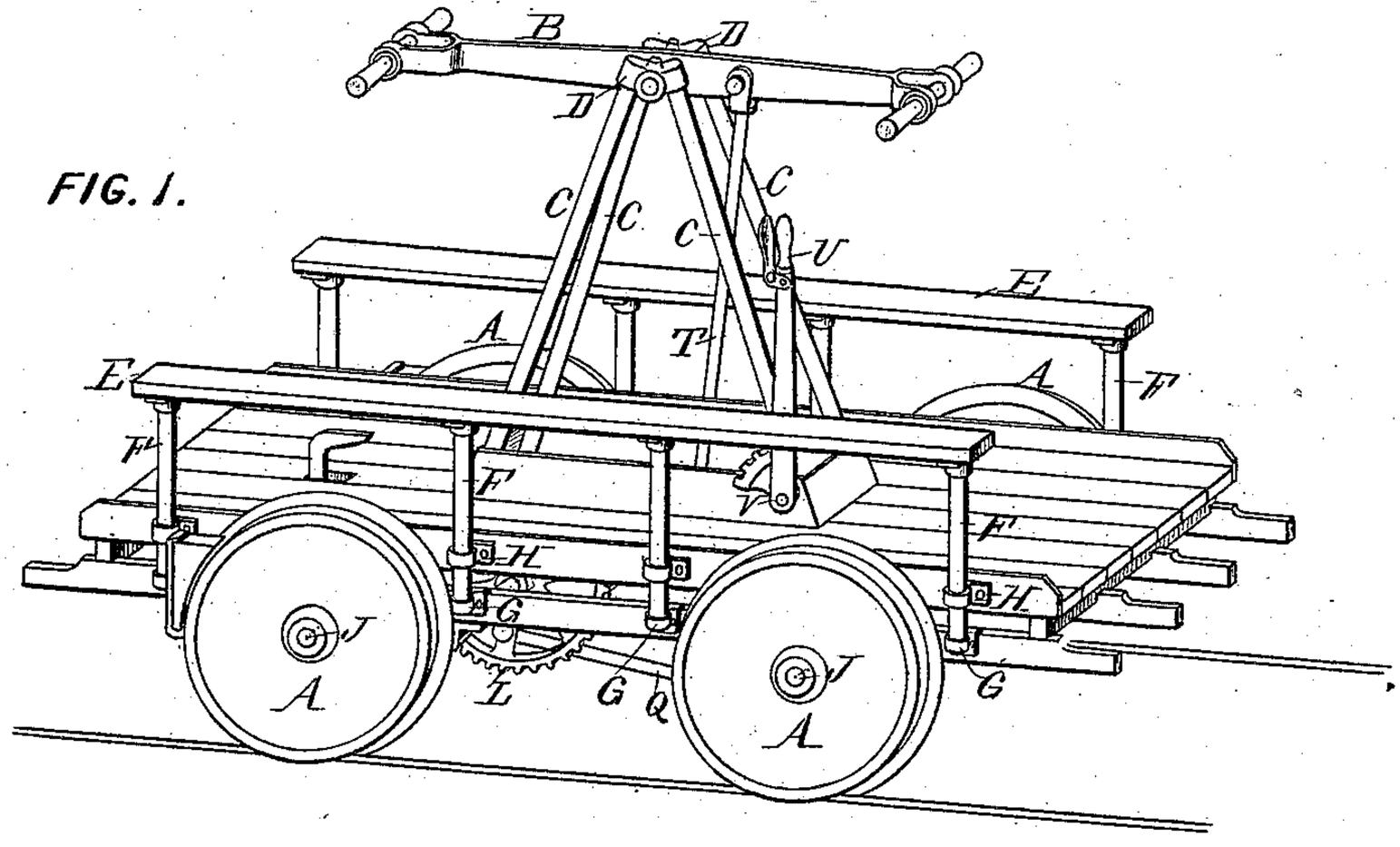
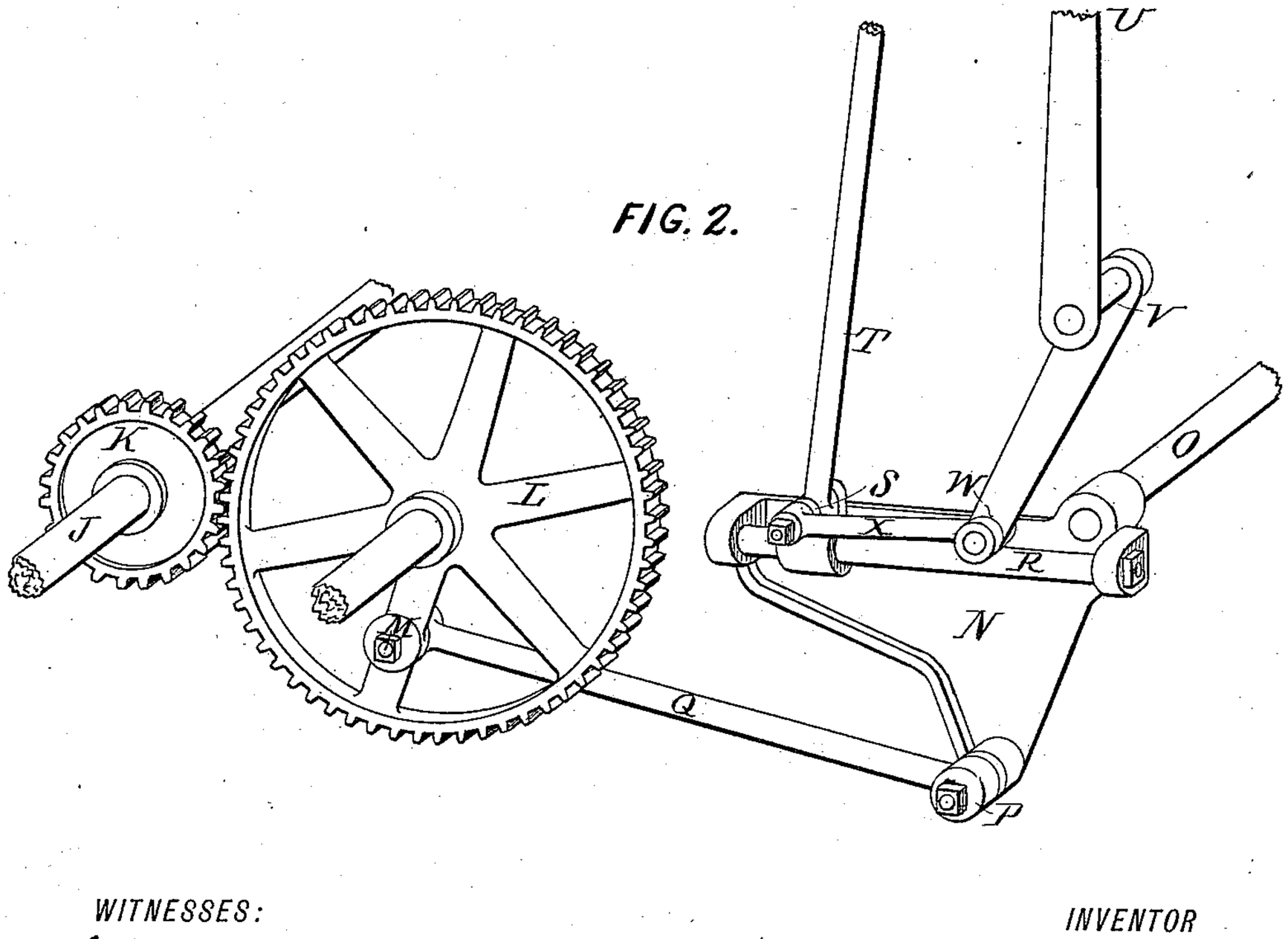


FIG. 2.



WITNESSES:

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HAND-CAR.

SPECIFICATION forming part of Letters Patent No. 376,604, dated January 17, 1888.

Application filed June 18, 1887. Serial No. 241,687. (No model.)

To all whom it may concern:

Be it known that I, ALBERT K. MANSFIELD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Hand-Cars, of which the following is a specification.

My invention relates to cars operated by hand or manual power on railways; and the objects of my improvements are, first, to provide means, in cars operated by reciprocating levers, to vary the stroke of such levers, and therefore the leverage, at will; second, to provide removable seats for such cars; and third, to provide a lighter and simpler construction than heretofore used to support the pivot of the operating-lever. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is an oblique projection of the complete car, and Fig. 2 is a similar view of the principal part of the operating mechanism.

A A A A are the wheels of the car. B is the operating-lever.

C C C C are pipe-supports for the pivot-castings D D.

E E are side seats supported by the pipe-supports F, the bottom ends of which rest on brackets G. Above the brackets G are guide-brackets H, which hold the supports F in a vertical position. The supports F are fastened to the seats, but not to the car. The seats may therefore be lifted from the car at will.

J J are axles supporting the car and carrying the wheels A. One of these axles has fitted to it the pinion K, which meshes with the gear-wheel L, suitably supported underneath the car, and carrying the crank M.

N is a bell-crank or intermediate lever swinging on the stud or shaft O, which is journaled to bearings under or on the car.

Pivoted to one arm of the bell-crank at P is the connecting-rod Q, which at its other end takes hold of the crank-pin M. The other arm of the bell-crank consists of a rod or slide, R, carrying a sliding pivot, S, to which is pivoted the connecting-rod T, which at its other end is pivoted to the operating-lever B.

U V W is a lever, having its fulcrum at V, and suitably attached to the car and supplied with an ordinary spring-catch.

X is a connecting-rod uniting the sliding pivot S to the lower end of the lever U V W.

The operation is thus: When the car is ascending a heavy grade or is otherwise hard to operate, the lever U V W may be placed at such angle that the sliding pivot S stands at its greatest distance from the shaft O or fulcrum of the bell-crank N. This causes a large angular movement of the operating-lever B, giving the operator the advantage of increased leverage. When the car moves easily, as on descending grades, the lever U V W may be so placed as to bring the pivot S near to or at the center of the shaft O. This corresponds to a small or to no movement of the operating-lever. It thus becomes possible to vary the leverage from nothing to the maximum, as occasion requires.

It is not essential that the mechanism be arranged as shown. Various possible modifications will suggest themselves to skillful mechanics. In fact, the connecting-rod T may be connected at its lower end directly to the crank-pin M, and intermediate mechanism be omitted, if the upper end of the rod have a sliding connection to the operating-lever. This would enable the stroke to be varied, although it could not be decreased to nothing.

This device may be applied to other forms of hand-car besides that shown—for instance, to the now well-known velocipede hand-car, in which the operating-lever is worked by a sitting operator.

The crank-wheel L may be omitted and the crank formed directly in one of the axles of the car.

What I claim as my invention is—

1. In combination with the vibrating lever B, supporting-wheels A, and connecting parts between said wheels and lever, whereby vibrations of the latter produce rotation of the former, the vibrating pivot S, the non-vibrating pivot W, the connection X from one of these pivots to the other, and suitable means for changing the position of the pivot W at the will of the operator, substantially as and for the purpose described.

2. In a hand-car, the combination of operating-lever B, crank-wheel L, intermediate lever, N, hand-lever U V W, sliding pivot S, and connecting mechanism, substantially as and for the purpose described.

3. In a hand-car, the detachable seat E, in combination with suitable sockets or supports, G H, in which the seat rests, but is not permanently fixed, substantially as and for the purpose set forth.

4. In a hand-car, a support for the operating-lever formed of the combination of four inclined hollow posts, C, suitably fastened to the frame-work below and bound together by the pivot-castings D above, substantially as set forth.

In testimony whereof I hereunto subscribe my name.

ALBERT K. MANSFIELD.

Witnesses:
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