(No Model.)

T. LO CASTO.

HAND CAR.

No. 460,558. Patented Oct. 6, 1891.

Fig. 1.

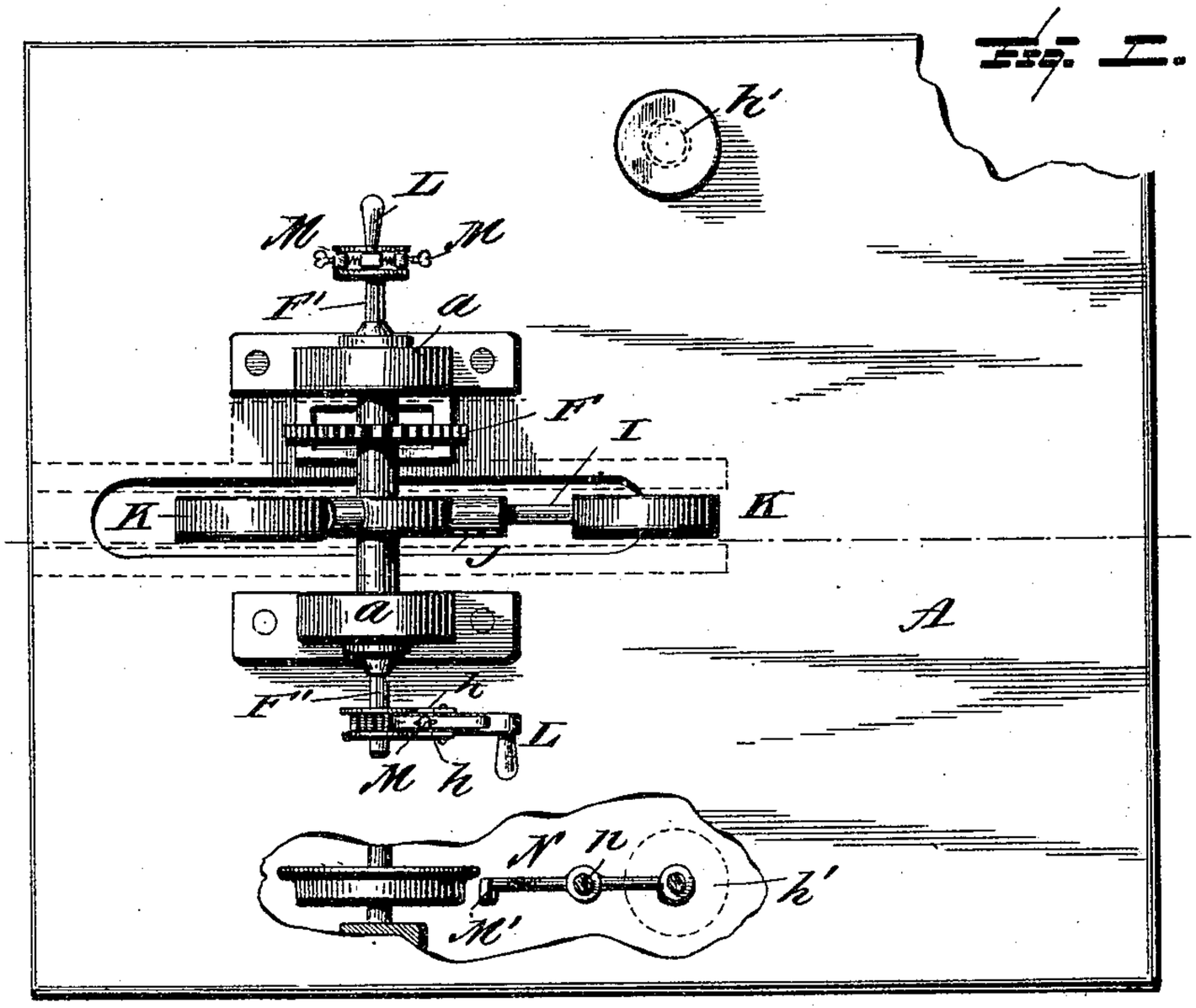

Fig. 2.

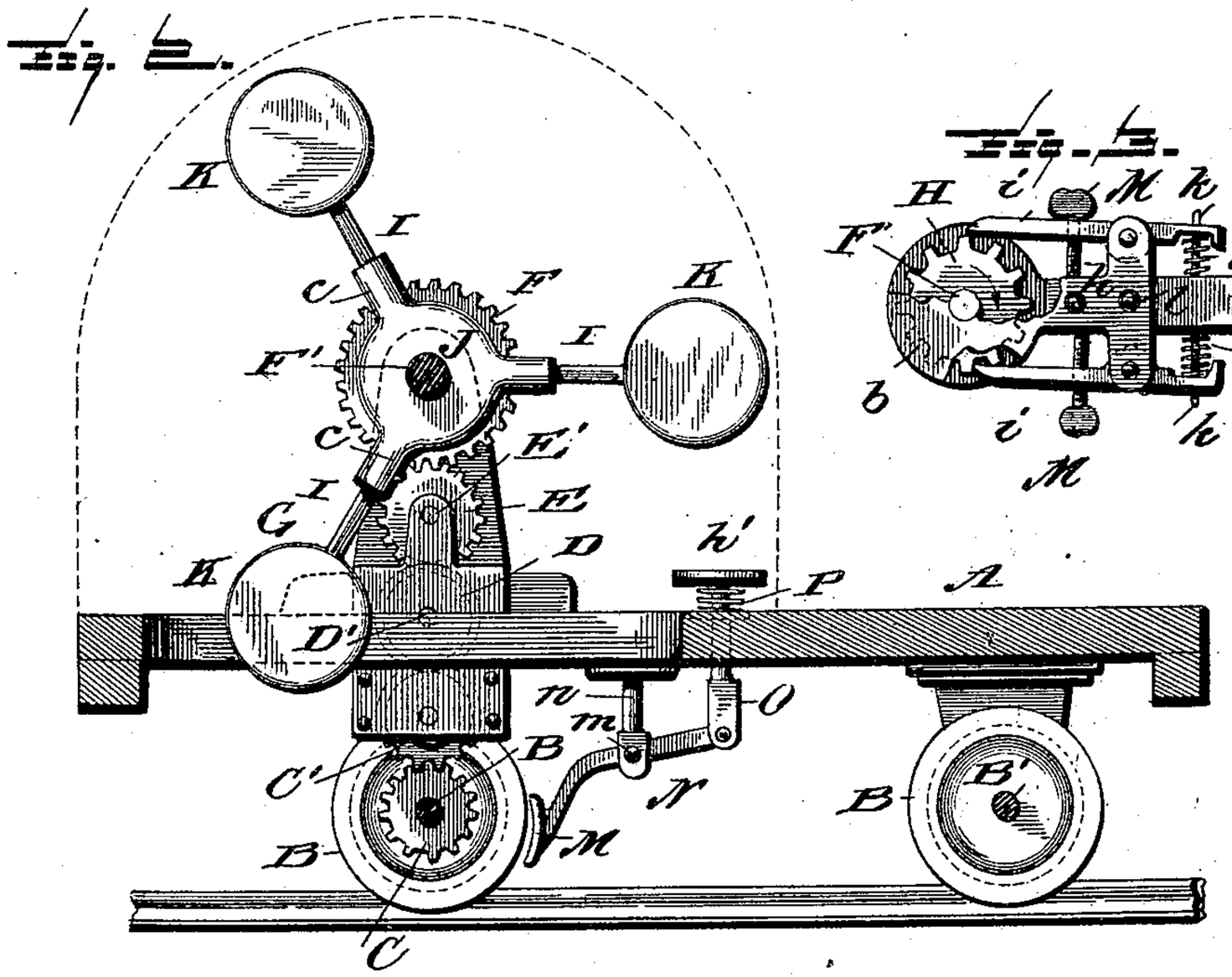

Fig. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

TONY LO CASTO, OF JEFFERSON, TEXAS.

HAND-CAR.

SPECIFICATION forming part of Letters Patent No. 460,558, dated October 6, 1891.

Application filed June 9, 1891. Serial No. 395,628. (No model.)

To all whom it may concern:

Be it known that I, TONY LO CASTO, a citizen of the United States, residing at Jefferson, in the county of Marion and State of Texas, have invented certain new and useful Improvements in Hand-Cars; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon.

This invention relates to certain new and useful improvements in hand-cars; and it has for its objects, among others, to provide an improved hand-car in which the operating mechanism, except the cranks, shall be hidden from view and where they will not be liable to cause injury to the parties riding upon the car or operating the same.

It has for a further object to provide an easy and simple, cheap, and durable mechanism for actuating the car and for readily reversing the motion when desired. I provide gearing operated by cranks, on the shaft of which are arranged triangular balance devices, the cranks being adjustable by means of set-screws or other analogous means, so that they may be made to operate the wheels in either direction desired.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be specifically defined by the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a top plan of a portion of a hand-car provided with my improvements, with portions broken away to better disclose other parts. Fig. 2 is a vertical longitudinal section on the line *z z* of Fig. 1, showing the gearing and balance-weights in side elevation. Fig. 3 is an end view of one of the operating-cranks and the gear-wheel with a portion of the head of the spool broken away.

Like letters of reference indicate like parts throughout the several views in which they occur.

Referring now to the details of the drawings by letter, A designates the platform of a hand-car, which may be of any desired construction, and carried by the wheels B on the axles B′.

On the forward axle is the gear-wheel C, with which meshes the gear-wheel C′, arranged upon a suitable shaft parallel with and above the axle, and this gear-wheel in turn meshes with another gear-wheel D, carried by the shaft D′, and this wheel D meshes with the gear-wheel E on the shaft E′ and meshes with the large gear-wheel F on the shaft F′, which is journaled in suitable boxes or bearings *a* on the standards or uprights G, the ends of the shaft F′ being extended, as seen in Fig. 1, and provided with gear-wheels H, the teeth of which are located between the heads *b*, as seen in Figs. 1 and 3.

On the shaft F′ are the arms I, which are held in the casting J, having radial sockets *c*, into which the said arms are secured in any suitable manner. The outer ends of the arms are provided with the weights K, the three weights being arranged in triangular form, as seen in Fig. 2. The weights and gearing are designed to be covered by a suitable case, as indicated by dotted lines in Figs. 1 and 2, to protect the same and prevent injury to the persons on the car by contact therewith.

The heads of the spools which carry the gear-wheels H are extended, as shown at *h* in Fig. 3, and the ends formed at right angles thereto, and to the ends of the vertical portions are pivoted the pawls *i*, the inner ends of which are designed to engage the teeth of the said wheels H, as seen in Fig. 3, and their other ends acted upon by the springs *j* around the rods *k*, which are held to the pawls and to the operating-handle L, which is pivoted at *l* to the extension of the spools, as seen in Fig. 3.

M are set-screws arranged to act one upon each pawl and designed to be adjusted to throw either one of the pawls into engagement with the teeth of the wheels H, according to which way it is desired to move the car.

The operation is simple and will be readily understood. The car is propelled by actuating the crank-handles, which revolve the wheels H, and consequently the shaft F′, and through the medium of the multiplying-gear the front axle is turned. The triangular balance-weights aid very materially in propelling the vehicle and in giving it movement

after the crank-handles have no longer been turned. The adjustment of the set-screws of the crank-handles readily changes the direction of rotation of the wheels H.

The brake is shown at M. It consists of the lever N, which carries the brake-shoe, and is pivoted, as at *m*, to the hanger or arm *n*, attached to the under side of the platform, as shown in Fig. 2, the lever being pivotally connected at its upper end with the end of the foot-lever O, which passes upward through a hole in the platform and is provided with a foot-piece *p*, a suitable spring P being provided, as shown in Fig. 2, to keep the shoe normally out of contact with the wheel. Pressure on the foot-piece presses the shoe against the periphery of the wheel and stops the car.

My invention is equally applicable to street-cars, as well as other vehicles, and can be applied thereto by making such changes as would come under ordinary mechanical skill to adapt it to its specific use, and in place of the train of gear-wheels shown as a means of communicating motion to the wheels of the car a sprocket-chain and sprocket-wheels may be substituted, or any of the ordinary or well-known means may be used to make the connection between the shaft carrying the weighted arms and the wheels of the car.

What I claim as new is—

1. The combination, with the axle and the gearing for communicating motion thereto, of the casting on the main shaft, the triangularly-arranged radial arms extending from said casting, the weights on said arms, the gear-wheel on the main shaft, and the reversible crank-handles provided with pawls engaging the said wheels, as set forth.

2. The combination, with the axle and the gearing, of the main shaft F′, the triangularly-arranged balance-weights thereon, the gear-wheels on said shaft, the heads surrounding the said gear-wheels, the extensions thereof, the handle pivoted to the extensions, the pivoted pawls, the springs acting thereon, and the set-screws for adjusting the said pawls, substantially as shown and described.

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

TONY LO CASTO.

Witnesses:
J. D. KITCHEN, Jr.,
J. H. MORGAN.