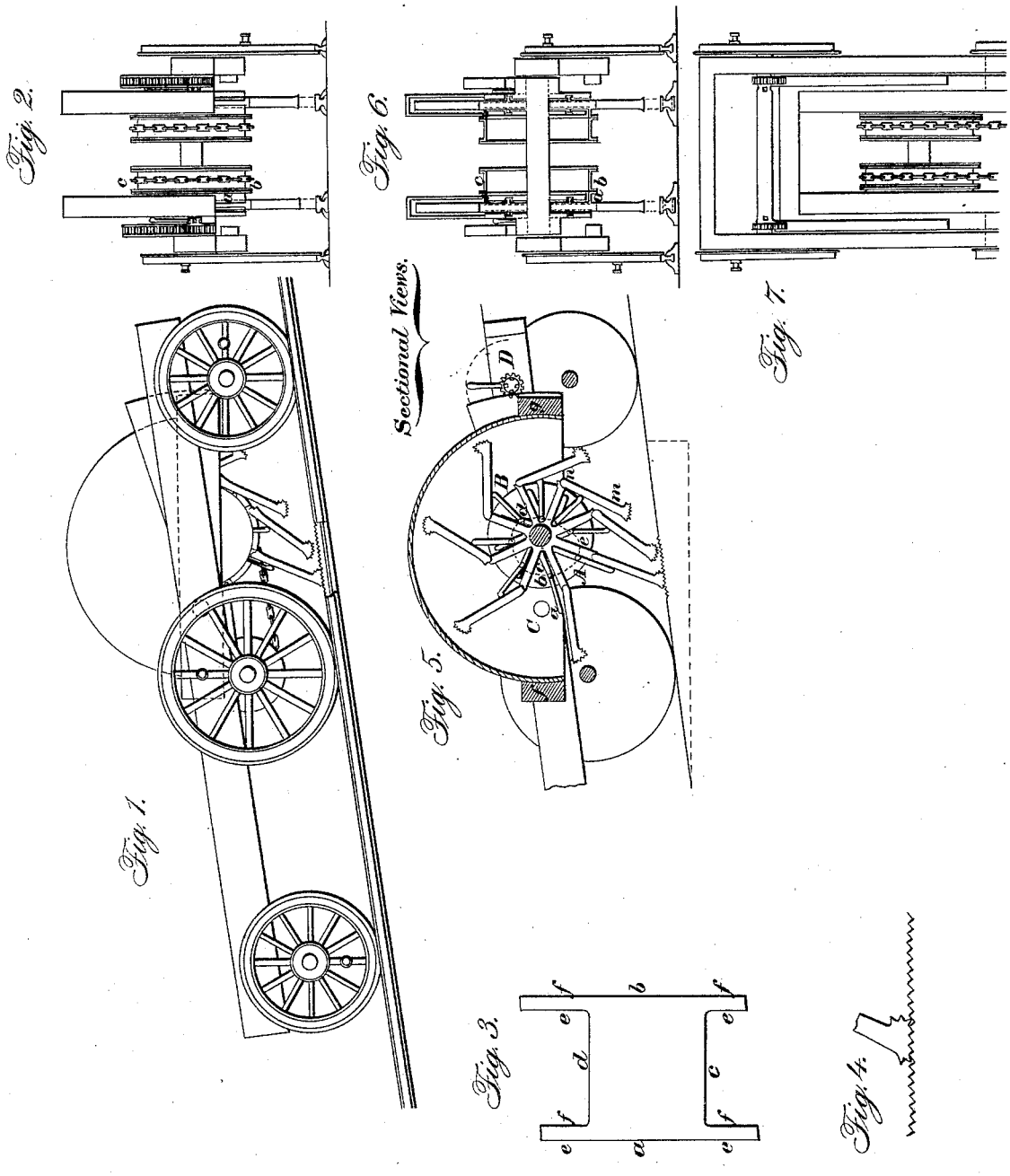
R. G. & O. P. HATFIELD.

Car-Propeller.

No. 6,334. Patented Apr. 17, 1849.



UNITED STATES PATENT OFFICE.

R. G. HATFIELD AND O. P. HATFIELD, OF NEW YORK, N. Y.

RAILWAY-PROPELLER.

Specification of Letters Patent No. 6,334, dated April 17, 1849.

To all whom it may concern:

Be it known that we, ROBERT G. HATFIELD and OLIVER P. HATFIELD, of the city and State of New York, have invented a new and Improved Mode of Propelling Railway-Carriages; and we do hereby declare that the following is a full and exact description.

The nature of our invention consists in hinging a certain number of legs to a wheel, which legs are carried around by the wheel, and governed by pins working in eccentric grooves in such a manner as to cause the legs to strike the rail always in the rear of the axle however steep the grade, and by a pressure against the rail analogous to the action of a horse's leg to force the carriage forward.

To enable others to make and use our invention, we proceed to describe its construction and operation, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side elevation, Fig. 2 is an end elevation, Fig. 3 is a section of the wheel, Fig. 4 is a section of the foot of one of the legs, &c., Fig. 5 is a longitudinal section showing the operation of the propeller, Fig. 6 is a transverse section of the same, and Fig. 7 is a ground plan or a view of the top of the carriage.

The wheel A B, Fig. 5, is constructed as shown by the section, Fig. 3; *a b* being the thickness and *c d* the breadth of the spokes, and *e f* the thickness of the intervening disks, leaving a space, *f e*, in the thickness of the wheel, in which the rods which govern the position of the legs, play—as shown in Fig. 5. At the end of these rods, *a b*, Fig. 5, as at *b*, there is a pin which plays freely in an opening in the disk of the wheel, as *b c*, and also in an eccentric groove indicated by the dotted line *b d e*, which groove is formed in a stationary or fixed casement on each side of the wheel, as shown in Fig. 6. From the inner side of the wheel a flange *d*, Fig. 2, and Fig. 6, is projected to which is attached a drum *b c*, by which the power is applied to the wheel. The axle upon which the wheel plays is secured to a frame which is independent of the frame of the carriage, and of which *f* and *g* Fig. 5, are the end pieces. This frame is hung to the frame of the carriage by an axle at C and by a wheel and ratchet at D. By the wheel at D the propeller is lifted from the ground when not in use, and the pressure upon the track properly regulated when in use. Additional rails with corrugated surface, as shown at Fig. 4 and Fig. 6, are laid where the propeller is brought into use.

It is proposed to make the wheel A B and the groove casements of cast iron, and the rods *a b* and legs of cast or wrought iron, and to have the pins running in the eccentric grooves arranged with friction rollers.

What we claim as our invention and for which we desire Letters Patent is:—

The combination of the revolving disk with the legs *m n* and straightening rods *a b* attached to it and the eccentric slots which are constructed in fixed pieces of metal, and act upon the rods,—the whole constructed and arranged substantially as herein described and constituting a propeller to be attached to a locomotive.

R. G. HATFIELD.
OLIVER P. HATFIELD.

Witnesses:
A. HILL,
WARREN ROBINSON.