

2 Sheets--Sheet 1:

Fig. 1.

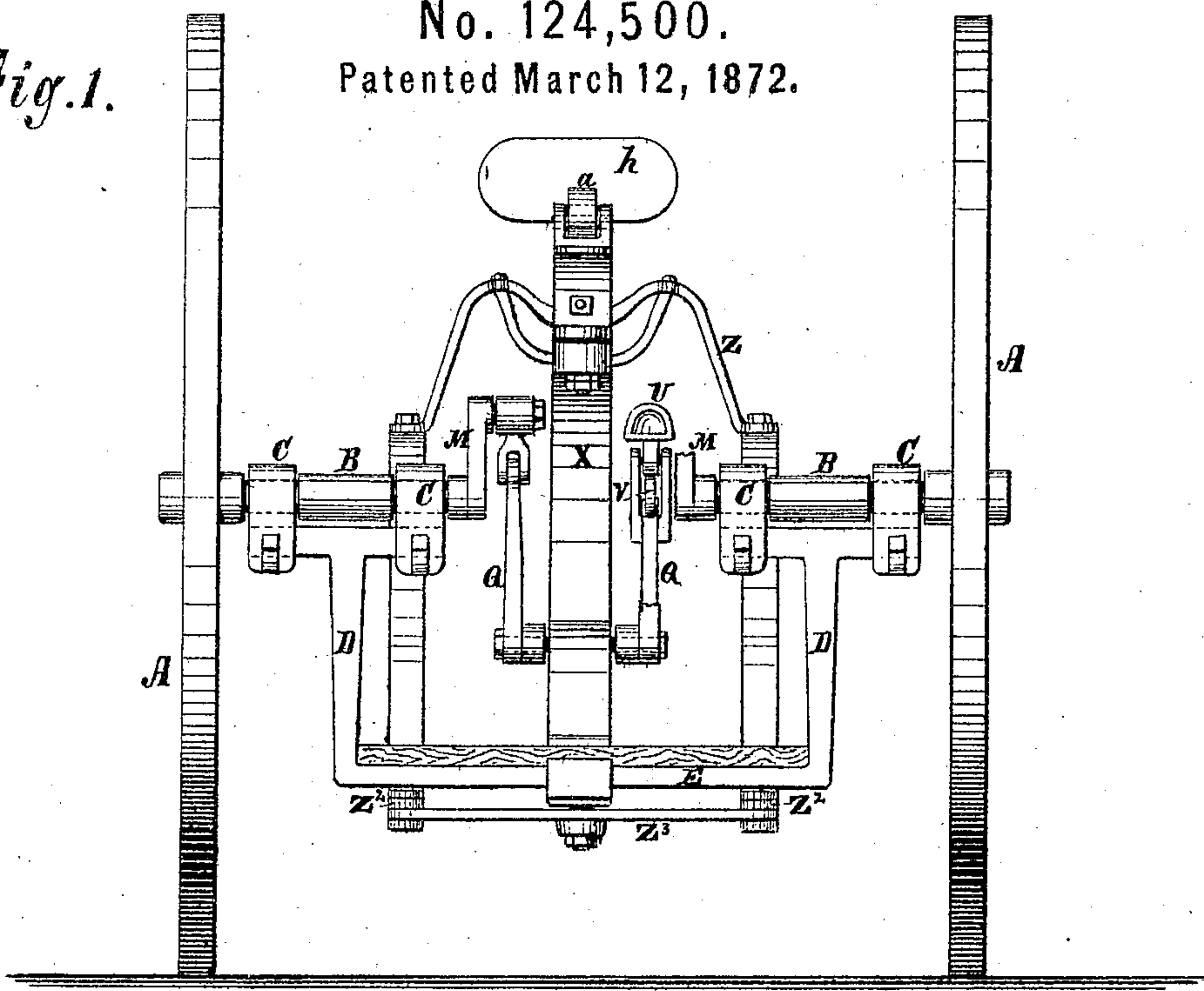
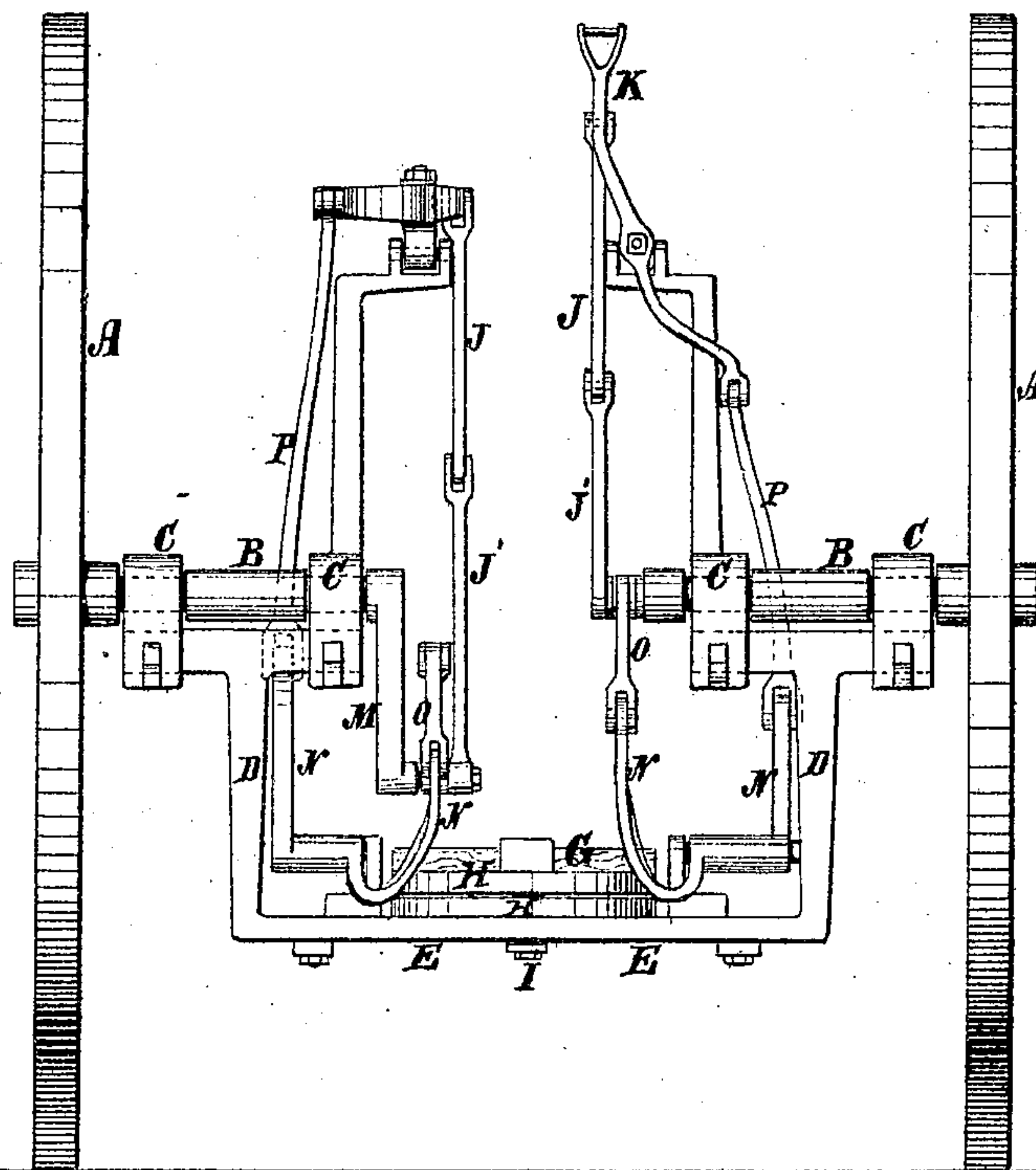


Fig. 2.



Witnesses:

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Improvement in Velocipede.

Patented March 12, 1872.

No. 124,500.



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UNITED STATES PATENT OFFICE.

DAVID MARTIN, OF HARRISBURG, PENNSYLVANIA.

IMPROVEMENT IN VELOCIPEDES.

Specification forming part of Letters Patent No. 124,500, dated March 12, 1872.

Specification describing a new and Improved Velocipede, invented by DAVID MARTIN, of Harrisburg, in the county of Dauphin and State of Pennsylvania.

My invention consists of the arrangement of propelling and steering apparatus for operating a four-wheeled carriage by manual power, using both hands and feet, as hereinafter described.

Figure 1 is a rear elevation of my improved machine. Fig. 2 is a front elevation; and Fig. 3 is a longitudinal sectional elevation.

Similar letters of reference indicate corresponding parts.

The four wheels A have each a separate cranked axle, B, having two bearings, C, inside the wheels, upon the top of a T-headed vertical arm, D, of a connecting-bar or auxiliary axle, E, cranked downward to mount the connecting-beam F, and operating gear as low as possible. The connecting-beam F is rigidly attached to the hind auxiliary axle, and to the front one by the saddle G, fifth-wheels H H, and a king-bolt, I. The front cranked axles are each connected to a hand-lever, K, pivoted on the top of a standard, L, supported on the auxiliary axles, and rising to a suitable height for being worked by hand by a person in a standing position, or nearly so, above the connecting-bar F, the said connections being double or in two sets—one on each side of the fulcrum of the levers—one being the jointed links J, connected to the lever, and the link J', connected to the crank M, and the other being the rocker-lever N, and connecting-links O O and P, the said rocker being pivoted to the lower horizontal part of the auxiliary axle. The double-acting connections will, it is believed, cause a more uniform action of the force on the crank than a single connection will. The hind cranked axles B are connected to the cranked treadles Q, pivoted to the connecting-beam at R by the links S, and the treadles extend forward under the seat T, and a little in front of it where they have each a foot-piece, U, mounted on a pivot, W, with a spring, Z, under it conveniently for being

acted upon by the feet of the operator, partly sitting on the seat and partly standing on the said treadles, and at the same time working the hand-levers. The springs V are introduced to hold the toes of the oscillating foot-pieces properly up to the foot of the operator. The seat T is mounted on the top of the C-spring X by a vertical pivot, Y, and is to be oscillated by the body of the operator to guide or steer the front wheels, which it does by the bars Z Z¹, connecting-bars Z², and the bar Z³, the said bars Z² being arranged on opposite sides of the king-bolt, and pivoted to the front auxiliary axle for turning it, one being pushed forward by the seat and bars Z Z¹, and the other backward at the same time. The pivot Y extends above the seat-plate F, and receives a locking-latch, a, in a deep slot, b, in its upper end, to lock the steering apparatus against turning when the machine is set to run in a straight line, the said locking-latch being pivoted to the rear end of the seat-plate at d, with a spring, e, above it to hold it down in place. This latch has to be raised out of the slot to allow of the turning of the fore wheels, and a tripper, f, is pivoted in the slot with the rear end under the latch, and the other extending forward under a spur, g, projecting from the rear side of the seat back h, which is pivoted at i in such manner that a backward motion of the body will cause the rear end of the tripper to rise and lift the catch out of the slot. At the same time this is done an oscillatory movement of the body will cause a corresponding vibration to the front axle, and thus guide the carriage as required.

It is believed that a carriage constructed and operated on this plan, by which both the power of the legs and arms can be applied, being made light and with large wheels, may be propelled at a high rate of speed.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The independent cranked axles for each wheel, and the auxiliary cranked axles E,

combined and arranged substantially in the manner described.

2. The front cranked axles, connected to the hand-levers by the double systems of connecting apparatus, substantially as specified.

3. The hind cranked axles, connected to the foot-treadles, and the latter relatively arranged with the seat and the hand-levers of the front axles, substantially as specified.

4. The foot-treadles, provided with the foot-pieces and springs, the said foot-pieces being

pivoted to the treadles and the springs arranged therewith, substantially as specified.

5. The oscillating seat, connected to the front axle by the bars $Z Z^1 Z^2 Z^3$, substantially as specified.

6. The combination, with the oscillating pivot, of the stop-latch a , tripper f , and jointed seat-back, all substantially as specified.

Witnesses: DAVID MARTIN.

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