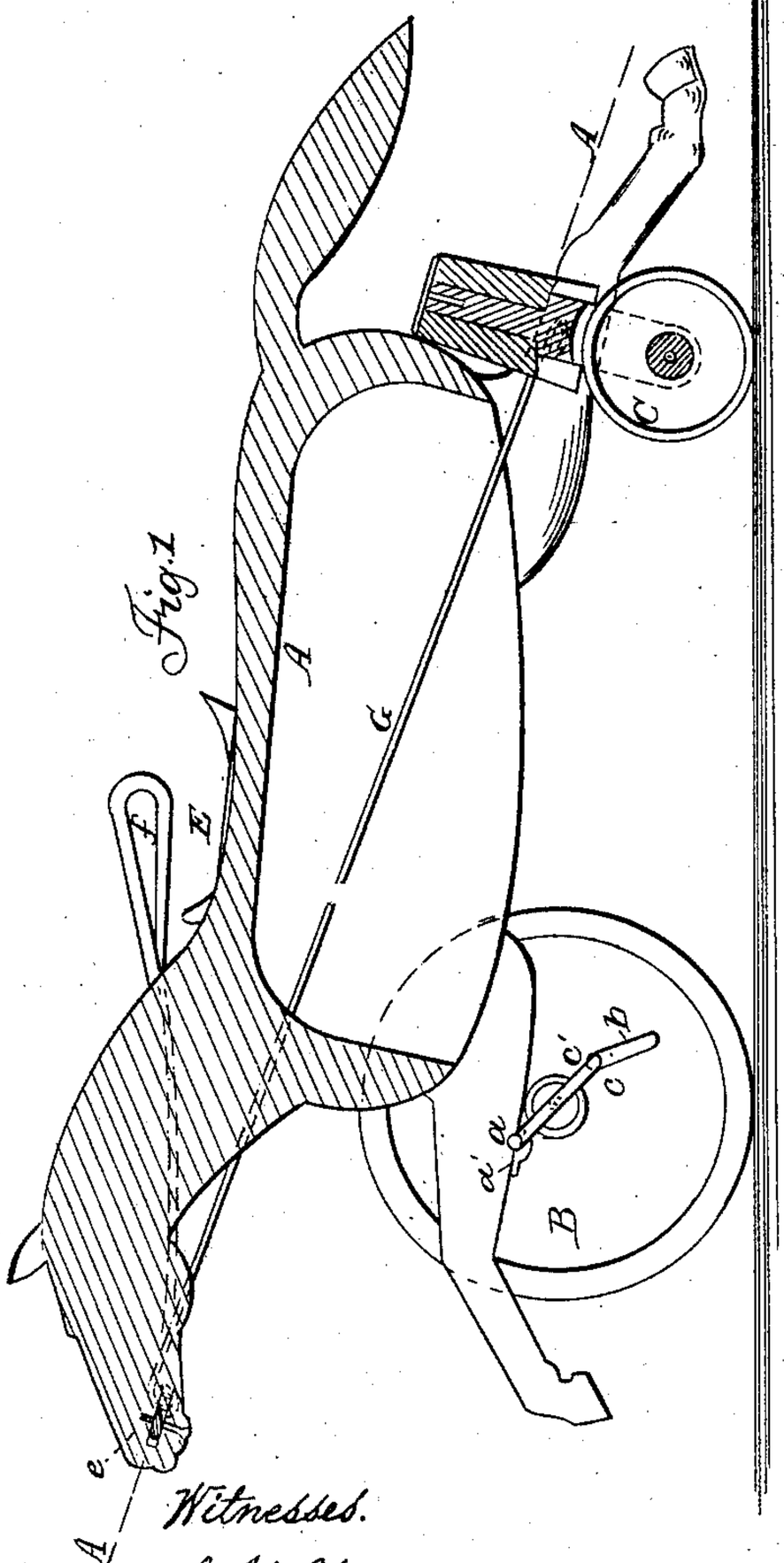
P. W. MACKENZIE.

Velocipede.

No. 41,310. Patented Jan. 19, 1864

Fig. 1.

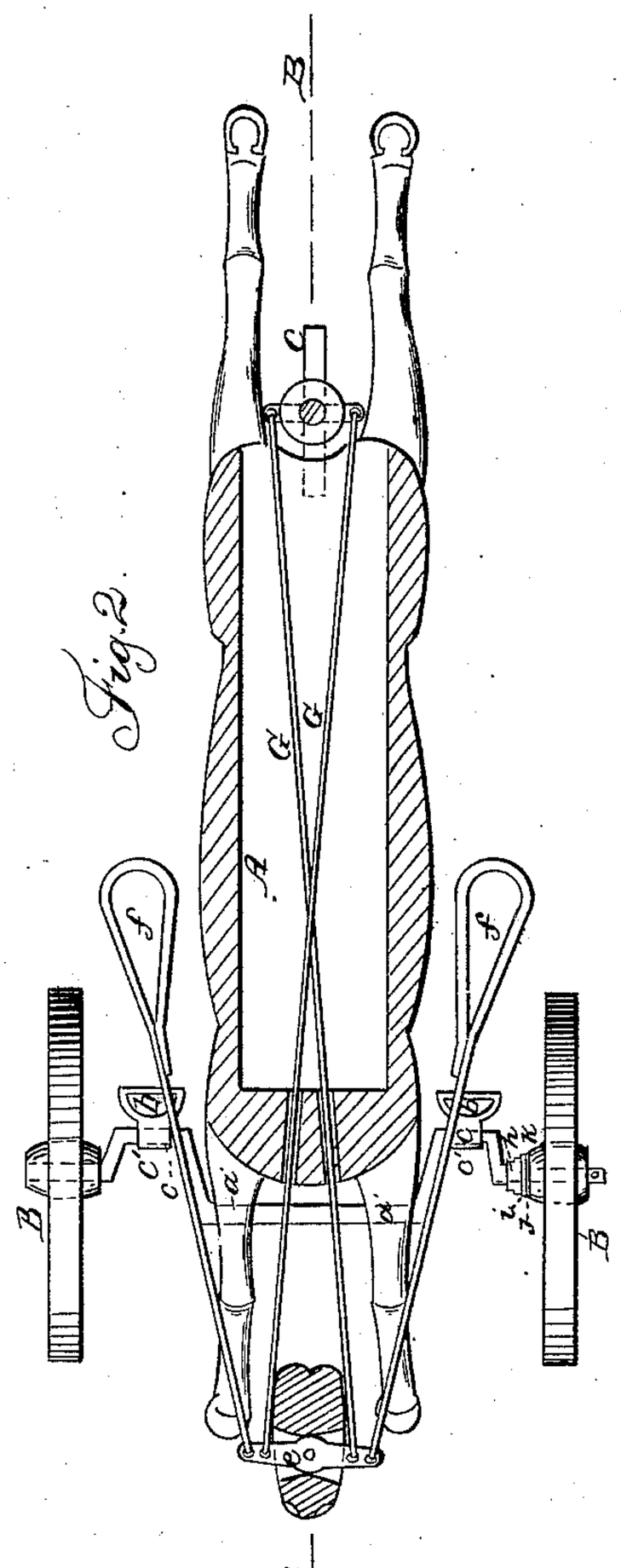


Witnesses.

J. F. Foster

E. H. Roe

Fig. 2.



Inventor.

Philip W Mackenzie

UNITED STATES PATENT OFFICE.

PHILIP W. MACKENZIE, OF JERSEY CITY, NEW JERSEY.

IMPROVEMENT IN AUTO-PROPELLING HORSES AND VEHICLES.

Specification forming part of Letters Patent No. **41,310**, dated January 19, 1864.

To all whom it may concern:

Be it known that I, PHILIP W. MACKENZIE, of Jersey City, county of Hudson, and State of New Jersey, have invented a new and useful Improvement in Auto-Propelling Horses and Vehicles; and I hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference thereon.

My invention consists of constructing a horse or other seat for the rider perfectly rigid in all its parts, thereby avoiding all joints, connecting rods, reaches, or platforms, the fore part resting on the crank-pin or shaft. A small block may intervene when it is desirable to raise its height. The seat or saddle is quite low, making it safe and easy to mount. The stirrups or foot-rests are attached to the opposite crank-pin or shaft, whereby the weight of the rider may be transferred or alternated from the seat to the stirrups or foot-rests. The connecting of bit and bridle or handle with the steering wheel or wheels behind is made direct, bringing a part of the connecting-rods within the body, making the steering arrangement very simple and reliable, and not likely to get out of order. The bit, with bridle attached, is placed in the horse's mouth, but may be placed farther back in the head or in the neck, and a wooden or other handle attached; but this arrangement is the most natural and of course the most desirable mode of guiding a horse. The connecting-rods are crossed to obtain another natural movement—the pulling of the reins on the side the rider wishes to go. A friction-plate is arranged to press against the hub of one wheel, and so adjusted as to compensate in turning short curves. When intended for use where there is ample space, both wheels are firmly secured to the shaft.

Similar letters refer to the same part of the different figures.

Figure 1 is an elevated section through the line B B, Fig. 2. Fig. 2 is a horizontal view with the upper portion of the head and body removed to the line A A, Fig. 1.

A A is the body; B, driving-wheels; C, steering-wheel; D, crank-shaft; E, seat; *a*, crank-pin; *a'*, bearing for body on crank-pin *a'*; *b b* stirrups or foot-bearings; *c'*, connection of stirrups or foot-bearings on crank-pin *c c*. *e* is the bit; *f*, the bridle; *g g*, connecting-rods connecting the bit with the steering-wheel behind. *h* is a collar firmly secured to the shaft. *i* is rubber or other elastic substance; *j*, friction-plate; *k*, hub of wheel.

Its operation is as follows: The rider mounts the seat E, the weight bringing the crank-pin *a* to the lower position. The feet are then placed in the stirrups *b*. Grasp the bridle *f* and attempt to raise in the stirrups, thereby throwing the weight upon the crank-pin *c*, relieving the pressure upon the crank-pin *a*, producing a propelling power and onward motion, giving a graceful rise and fall to the horse. In guiding the rein is drawn on the side the rider wishes to go. If to the right, the connecting-rod on the left, crossing over to the right side of the wheel behind, throwing the front part of wheel to the left, causing the back part of carriage to take that direction, thereby turning the head to the right. When turning short curves, the hub *k* will slip on the friction-plate *j*, relieving the strain on shaft and allowing the face of wheel to travel to correspond with the difference from center of motion. The collar *h* may be secured to the hub of the wheel, and the face of the wheel slip in turning slight curves.

I claim—

1. The direct connection of a rigid auto-propelling horse or other seat for a rider, in combination with a cranked shaft with two or more centers.

2. The stirrups *b*, a foot-rest arranged direct on the crank-pin, a shaft opposite the one on which the body rests, in combination with the cranked axle and body.

3. The direct connection and arrangement, by means of the rods *g g*, of the bit *c* with the steering wheel or wheels behind, in combination with cranked axle and body.

4. The arrangement of the friction-plate *j*, the elastic *i*, and the collar *h*, in combination with the cranked axle and body.

PHILIP W. MACKENZIE.

Witnesses:
H. W. ZERINGTON,
E. H. ROE.