

W. DENOVAN.

Velocipede.

No. 86 738.

Patented Feb. 9, 1869.

Fig. 1.

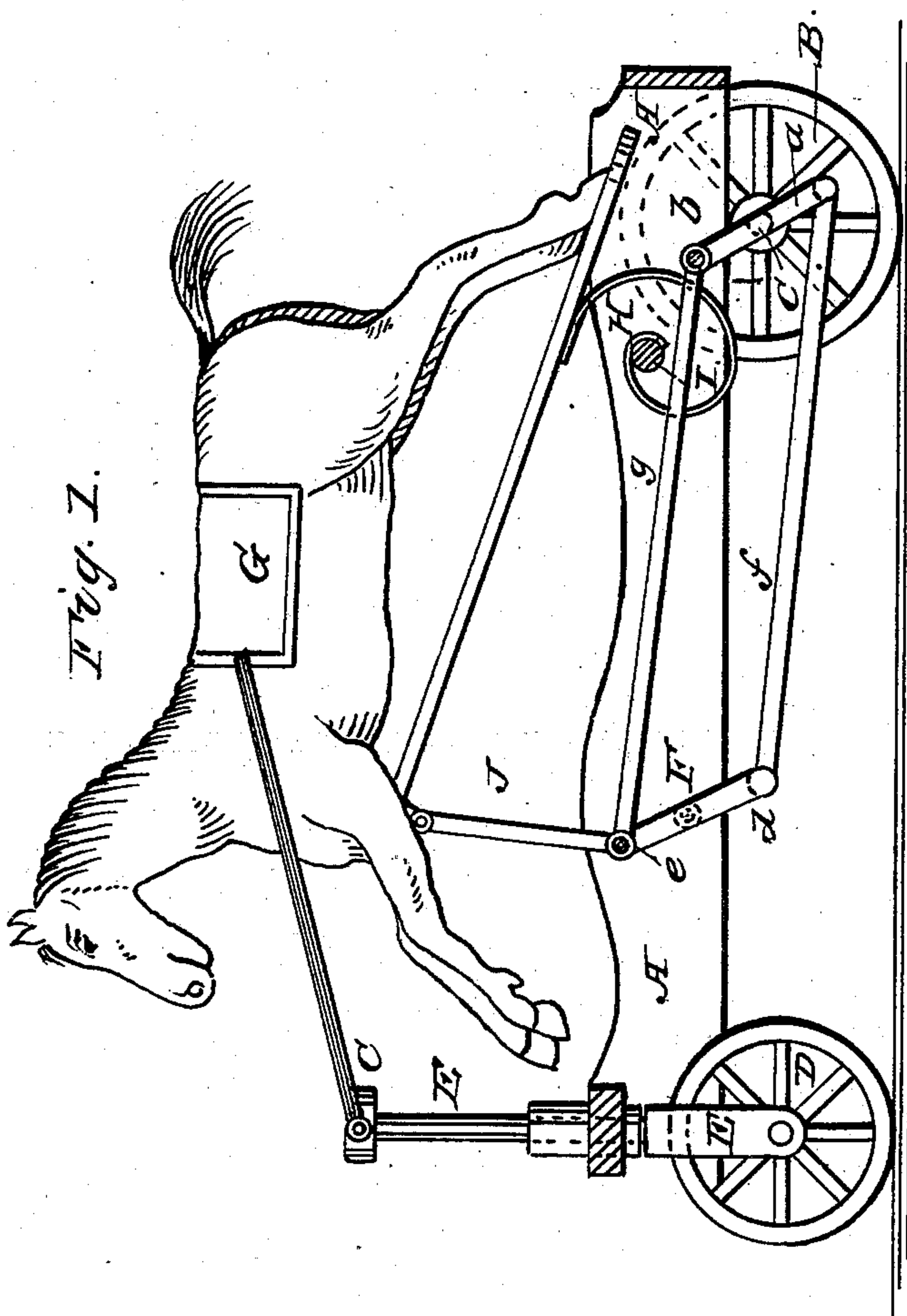
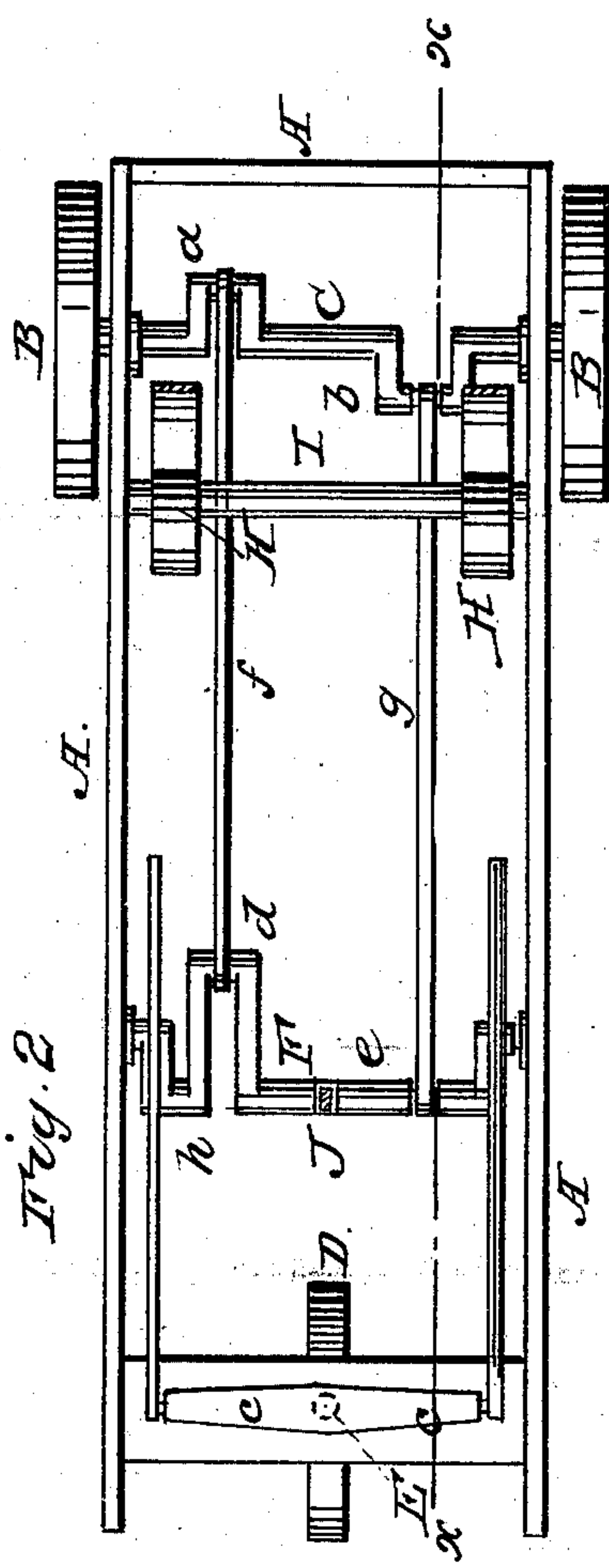


Fig. 2.



Witnesses
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WILLIAM DENOVA, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 86,738, dated February 9, 1869.

IMPROVEMENT IN VELOCIPEDES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM DENOVA, of Philadelphia, in the county of Philadelphia, and State of Pennsylvania, have invented a new and improved Velocipede; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a vertical longitudinal section of my improved velocipede, the plane of section being indicated by the line *x x*, fig. 2.

Figure 2 is a plan or top view, partly in section, of the same.

Similar letters of reference indicate corresponding parts.

This invention relates to a new velocipede, which is propelled partly by muscular, partly by spring-power.

The invention consists in a new manner of connecting the swinging seat with a crank-axle, and with a spring, whereby the aforementioned object of combined muscular and spring-propulsion can in a satisfactory manner be obtained.

A, in the drawing, represents a frame, made of wood, or other suitable material, of oblong or other suitable shape, and of suitable size. It is supported on three wheels.

The rear wheels, B B, are mounted on an axle, C, which has two cranks, *a b*, projecting in opposite directions, and which has its bearings in the rear part of the frame.

The axle of the front wheel D has its bearings in the lower end of a bifurcated vertical rod, E, which is swivelled in the front part of the frame, and which has a head, *e*, on top, to allow steering.

F is a horizontal transverse crank-shaft, having its bearings in the front part of the frame, its opposite

cranks *d e* being, by means of rods *f* and *g*, respectively, connected with the cranks *a* and *b*, as shown.

There are three cranks, *d*, *e*, and *h*, formed on the shaft F, the cranks *d* and *h* being in line, as shown.

G is the seat, made in form of a saddle, chair, horse, or of suitable form.

It is, by means of coiled springs H H, fastened in rear to a cross-bar, I, of the frame, said springs tending to draw it up.

The front part of the seat is, by means of a rod, J, connected with the crank *e* or *h* of the shaft F.

The person occupying the seat has his feet on the cranks *h* and *e*, and by applying slight pressure will cause the shaft F to make a half revolution until the said cranks are below the axle. Then the pressure on the shaft F is released, when the springs H, which were contracted by the aforesaid motion of the shaft F, will expand, and thereby elevate the seat, causing, by this motion, a further half revolution of the shaft F, until the cranks *c h* are again above the shaft, as in the drawing. Every motion of the shaft F will, by the connecting-rods *f g*, cause a corresponding motion of the shaft C, and the rear wheels are consequently revolved by combined action of the feet and springs, as aforesaid.

Having thus described my invention,

I claim as new, and desire to secure by Letters Patent—

The combination, in a velocipede, of the crank-shafts C F, rods *f g*, springs H H, seat G, and rod J, all arranged and operating substantially as described, so that the velocipede can be operated by combined muscular and spring-power, as specified.

WM. DENOVA.

Witnesses:

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