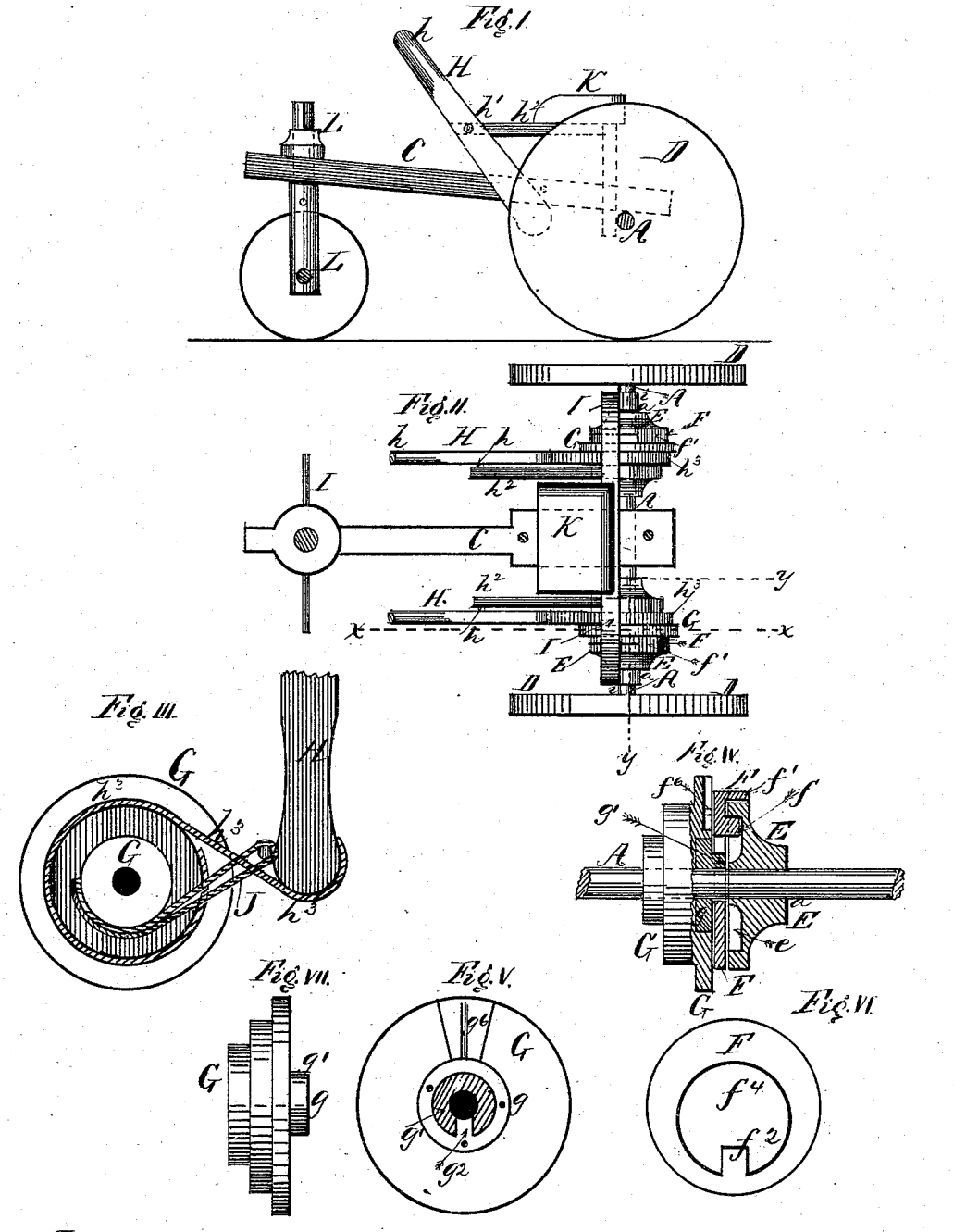
R. R. INGERSOLL.

Velocipede.

No. 217,535. Patented July 15, 1879.



Witnesses:

J. Barrett

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UNITED STATES PATENT OFFICE.

ROSWELL R. INGERSOLL, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN VELOCIPEDES.

Specification forming part of Letters Patent No. **217,535**, dated July 15, 1879; application filed March 22, 1879.

To all whom it may concern:

Be it known that I, ROSWELL R. INGERSOLL, of Brooklyn, county of Kings, State of New York, have invented a new and useful Improvement in Motions for Velocipedes; and I do hereby declare that the following is a clear and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

The object of my invention is to produce a cheap, simple, and effective mechanical device for revolving the wheels of a velocipede or any other machine operated by hand, foot, or otherwise, such as a sewing-machine.

To assist me in the description of my invention I will turn at once to the drawings, of which—

Figure I is a side view of a velocipede embodying my invention. Fig. II is a plan view of the same. Fig. III is an enlarged sectional view on line *x x*, Fig. I. Fig. IV is a sectional view on line *y y*, Fig. II. Fig. V is a detached face view of the hub. Fig. VI is a detached face view of the cam-plate, and Fig. VII is a detached end view of the hub.

A A are two axles, supported and revolving in a journal-box attached to the horizontal support-piece C. The outer ends of these axles are provided with wheels D D.

E E are two disks, fastened onto the axles A A at *a a*, which disks are provided with annular grooves *e e*. Against these disks are placed the cam-plates F F, which are provided with outward-projecting lugs $f\ f\ f^1\ f^1$. The lugs $f\ f$ enter the annular grooves *e e*, and the lugs $f^1\ f^1$ project over the top of the disks E E, which are provided with serrated inner surfaces.

The plates F F are provided with a hole, f^4, in the center, and upward-projecting lugs $f^2\ f^2$. Against the plates F F are placed the hubs G G, which are permitted to revolve loosely around the axles A A. The outer faces of the hubs G G are provided with metal boxes or bearings *g g*, which have circular lugs $g^1\ g^1$, projecting out therefrom. These lugs enter the holes $f^4\ f^4$ in the plates F F, and are provided with slots $g^2\ g^2$, into which enter the lugs $f^2\ f^2$. The object of this arrangement is to cause the hub to take hold upon the cam-plate F in order to turn it. To further cause the hub to turn the plate, I use a pin, f^6, which rests against a spring-plate, g^6, fastened to the hub G. (See Fig. V.)

H H are two levers, with handles *h h*, which levers are fulcrumed at $h^1\ h^1$ to the arms $h^2\ h^2$, projecting from the arch-frame I, fastened to the axles at *i i*. The lower ends of these levers are connected to the hubs G G by the straps $h^3\ h^3$, which are connected at one end to the levers and at the other ends to the hubs after passing once around the same, as shown.

By drawing the levers inward the hubs G G are made to revolve, and the hubs in turn rotate the cam-plates F F. As the plates revolve, the serrated lugs $f^1\ f^1$ are pressed down upon the disks E E, causing them also to revolve and to carry with them the axle and wheels. After the hubs are revolved forward as far as the straps will allow they are automatically revolved back to their relative positions by the springs J J, and are again ready to be revolved by the levers, as hereinbefore described. K is a seat, and L a steering apparatus.

Having thus described my invention, I desire to claim—

The combination of the axles A, the hubs G, having the metal boxes *g* and circular lugs g^1, which latter are provided with the slots g^2, and the spring-plate g^6 and pin f^6, the cam-plates F, provided with open center f^4 and lug f^2 on one side, and circular projections or lugs $f\ f^1$ on the other, the disks E, having grooves *e*, and the lever H, the lever and hub being connected by means of the straps h^3 and spring J, all constructed and operating as described.

This specification signed this 5th day of March, 1879.

ROSWELL R. INGERSOLL.

Witnesses:

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