W. H. H. STINEMAN & C. T. HOLLOWAY.

VELOCIPEDE.

No. 186,379. Patented Jan. 16, 1877.

Fig. 1.

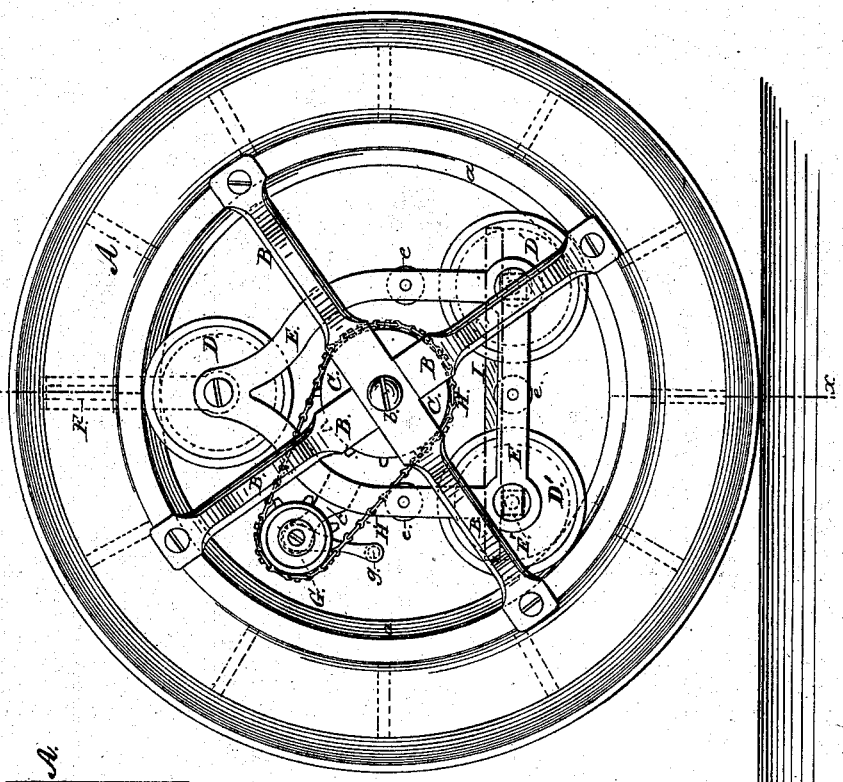


Fig. 3.

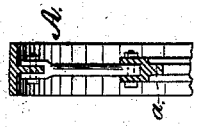
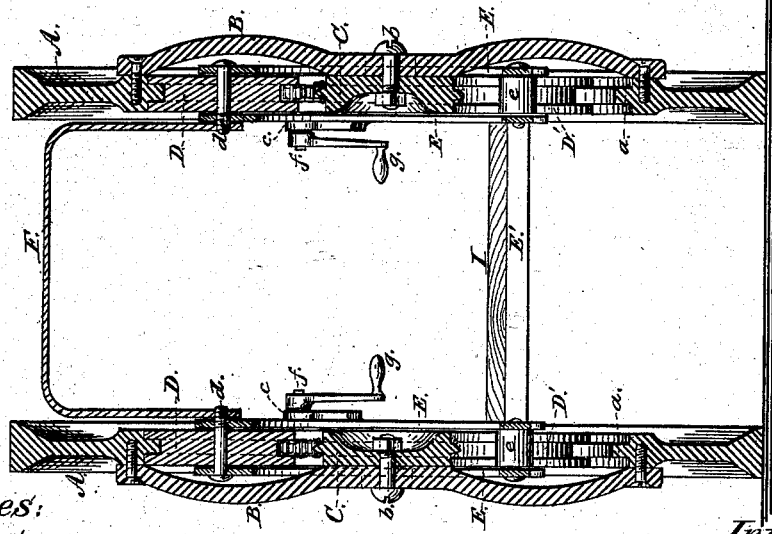


Fig. 2.



Witnesses:

R. Ross Holloway

P. Lochlman

Inventors:

Chas. T. Holloway

W. H. H. Stineman

UNITED STATES PATENT OFFICE.

WILLIAM H. H. STINEMAN AND CHARLES T. HOLLOWAY, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN VELOCIPEDES.

Specification forming part of Letters Patent No. **186,379**, dated January 16, 1877; application filed October 27, 1876.

To all whom it may concern:

Be it known that we, WILLIAM H. H. STINEMAN and CHARLES T. HOLLOWAY, of Baltimore city, in the county of Baltimore and State of Maryland, have invented certain new and useful Improvements in Velocipedes; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of our invention is to produce a velocipede that is simple in its construction, not liable to get out of order, that can be easily operated and guided in any direction, with very little power, and that is steady and firm, and can pass over obstructions with great facility and ease.

The invention consists of a pair of large wheels, having a tongue-track or flange on their inner edges, which travel or revolve on three sets of sheaves or grooved wheels, respectively, for each wheel. These sheaves are secured to double pendent frames, in which the pins or short shafts for the sheaves are secured, and thus retain them in their relative positions. The frame is of triangular form, and the sheaves are arranged so that one is near the apex, and the other two below, in the corners of the angle on a horizontal line.

By arranging the sheaves in this manner the carriage is always retained in a vertical position, and can never ride up on the revolving track or wheels, and the power is directly applied to said wheels by means of the central sprocket-wheels and curved arms.

In the center of the main wheels, and also of the three sheaves, are pivoted or journaled sprocket-wheels, and held in position by four curved arms or spiders, whose outer ends are secured or cast to the main wheels. A pair of smaller sprocket-wheels are pivoted to brackets secured or cast to the double pendent frames, and connect with the central sprocket-wheels by chains, belts, or in any other suitable manner. On the inner ends of the shafts or studs of the small sprocket-wheels are arranged suitable cranks, by which motion is imparted to the whole apparatus, and by arranging one on each side the velocipede can turn on its own central axis by turning one crank in one direction and the other crank in the opposite direction. It also facilitates the turning of very short curves. The lower two sets of sheaves are journaled on two shafts, extending from side to side of the apparatus, and pass through the pendent frames, and to said shafts is also secured the seat of the operator. A brace at the top connects the upper two sheaves and frames, and thus gives steadiness and rigidity to the whole apparatus, all as hereinafter more fully described.

In the accompanying drawing, Figure 1 represents a side elevation of our velocipede Fig. 2 is a vertical cross-section on line *x x* of Fig. 1. Fig. 3 is a modification of the track.

Like letters in the figures refer to like parts.

In the drawing, A A represent the two main or driving wheels, made of any suitable material, and having on the inner edges a tongue or flange, *a a*. To the outside of these wheels are secured the spiders or curved arms B B, of which there may be any number desired. In the center of these spiders are journaled, on studs or shafts *b b*, the wheels C facing inward. Upon the flange *a a* the sheaves or grooved wheels D D′ travel, and are arranged so as to have one above and two below, and they are pivoted or journaled upon triangular double pendent frames E, which are held and secured in position by thimbles *e*, allowing sufficient space for the sheaves to clear their sides and revolve freely between them. The two sets of sheaves, one on each side of the velocipede, with their pendent frames, move on the wheels A A, and are secured to their proper width by shafts E′ below, which pass through the frames E, and are secured by nuts, and above by a curved brace, F, the lower ends of which are secured to the pins *d* of the upper sheaves D, as seen best in Fig. 2. On the inner sides of the pendent frames E are cast, or otherwise suitably secured, the brackets *c c* for the pins or studs *f f*, to which the small sprocket-wheels G are attached in line with large sprocket-wheels C, and are operated by the chains or belts H. The shafts or pins *f f* are squared on their in-

ner ends for the reception of the crank-handles *g g*, by which motion is imparted to the entire apparatus. A suitable seat, I, for the operator, is attached to the shafts E′.

The various parts may be made of any suitable material, and of any size desired; and the arms B may be cast to the wheels or rims A A, if preferred. They can be also ornamented in any manner desired. Other suitable gearing may be substituted for the sprocket-wheels and chains or belts.

Instead of the annular track being in one piece with the main wheels and tire, spokes may be substituted to connect the fellies and tracks, as shown by the dotted lines.

The operation of the velocipede is as follows: The operator sits on the seat I, and by turning the crank-handles *g g* imparts motion to the sprocket-wheels G, which operate the large sprocket-wheels C by means of the chains or belts H. The wheels C give motion to the two main wheels A A, which freely revolve on the sheaves or grooved wheels D D′ attached to the pendent frames E. The sheaves D D′, revolving loosely on the pins or shafts, act as friction-wheels, and, by turning one crank in one way and the other in the opposite direction, the velocipede will turn on its own center, or by turning one only and holding the other still it will turn the shortest curves.

The advantages of our velocipede are that it is very firm and rigid, and can pass over obstructions with the greatest ease, there is hardly any loss by friction, it is perfectly safe and comfortable, and can be very easily manipulated. It can be furnished at a very small cost.

We are aware that velocipedes have been made with a revolving track, upon which an inner carriage travels; but in these there is no connection with the track, excepting the frictional contact of the wheels of the traveling carriage, whereas in our improved velocipede, in which the central or driving sheaves or sprocket-wheels are arranged on a central stud or shaft, secured to the curved arms or frame, the power is applied direct to said wheels or revolving track. The carriage is always retained in a vertical position by arranging one sheave at the apex above, and the two lower sheaves in a horizontal line in the pendent frames. We therefore do not broadly claim velocipedes with a revolving track; but

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The wheels A A and sheaves D D′ in combination with pendent double frames E, sprocket-wheels C G, and chains or belts H, substantially as shown and specified.

2. The wheels A A, sheaves D D′, pendent double frames E, with brace F and seat I, arranged on the axles E′, all substantially as shown and specified.

3. The wheels A A, having flange *a a* and curved arms B, in combination with the sheaves D D′, pendent frames E, and sprocket-wheels C G, operated by chains or belts H, when all are constructed substantially as shown, and for the purpose described.

4. The velocipede herein described, consisting of the wheels A A, sheaves D D′, frames E E, sprocket-wheels C G, chains or belts H, axles E′, seat I, brace F, and cranks *g g*, all constructed and arranged substantially as shown, and for the purpose herein specified.

5. A velocipede having wheels A, with flanges *a* revolving on sheaves or grooved wheels D, arranged in pendent frames E, with one sheave in the center above and two below the axle, substantially as specified.

In testimony that we claim the foregoing as our own we hereby affix our signatures in presence of two witnesses.

W. H. H. STINEMAN.
CHAS. T. HOLLOWAY.

Witnesses:
W. S. WILKINSON,
JAS. HENDERSON.