

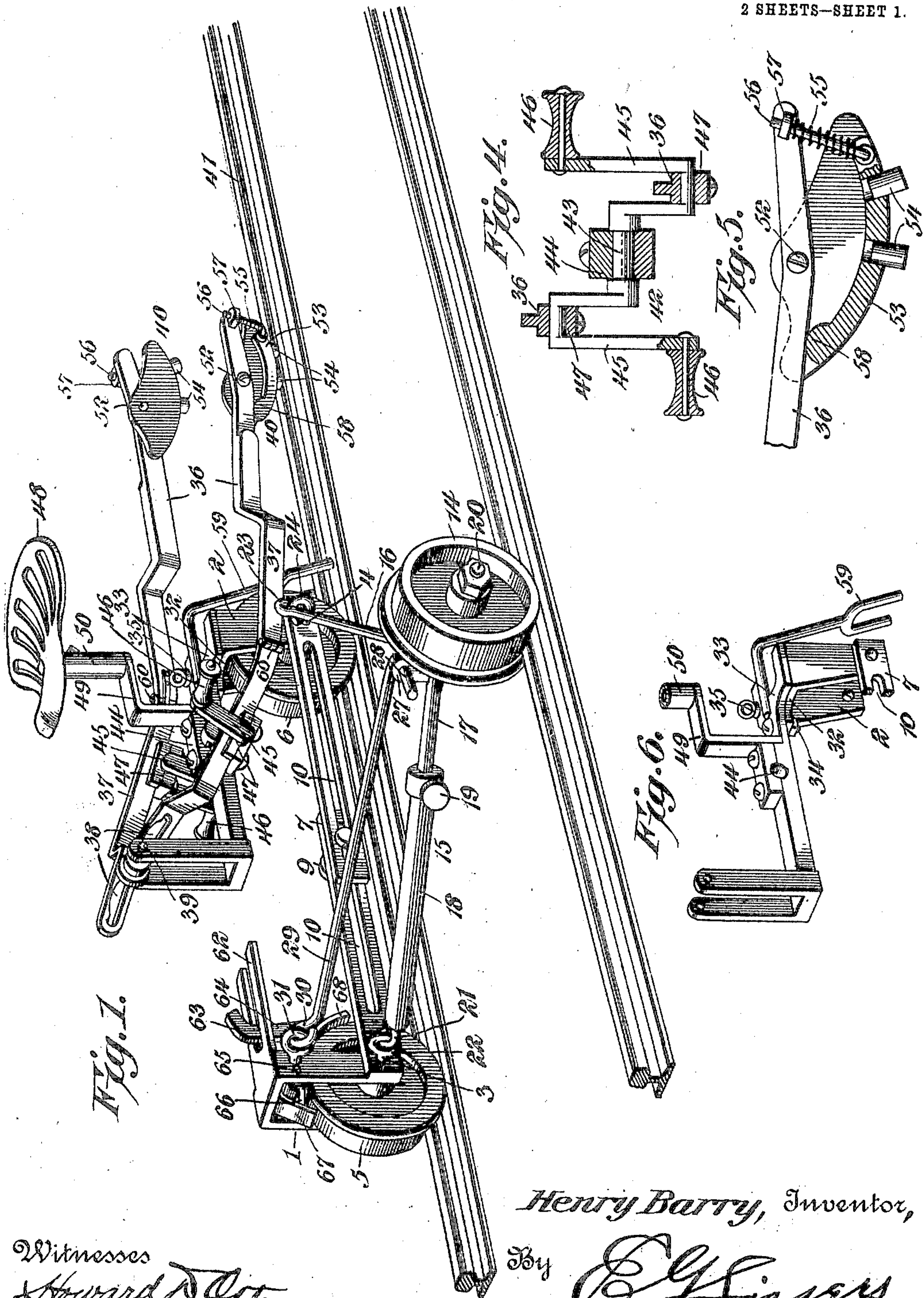
No. 811,269.

PATENTED JAN. 30, 1906.

H. BARRY.
FOLDABLE RAILWAY VELOCIPED.

APPLICATION FILED APR. 7, 1905.

2 SHEETS—SHEET 1.



Witnesses

Howard D. Carr

J. J. Riley

Henry Barry, Inventor,

By

E. G. Siggers

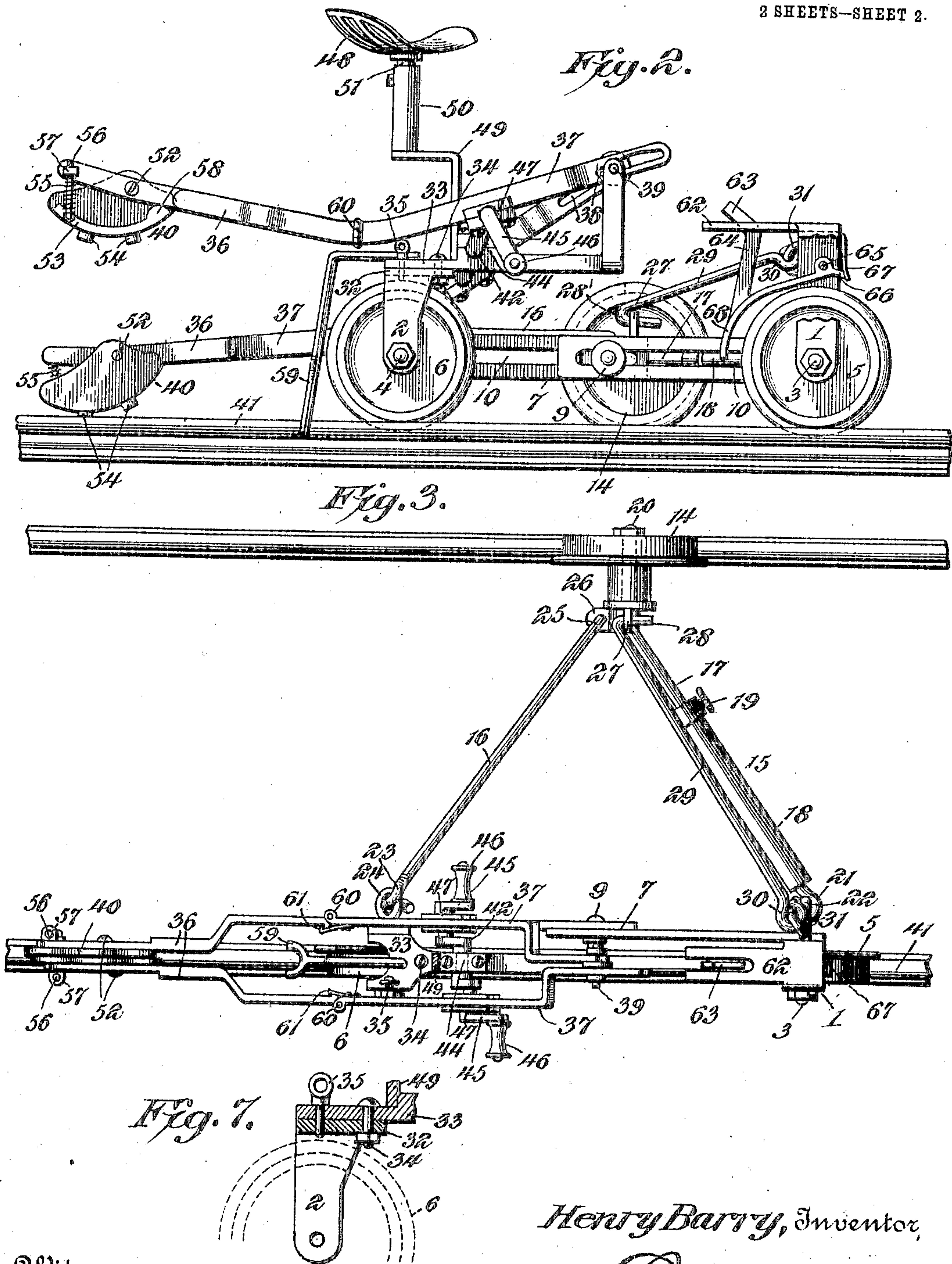
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UNITED STATES PATENT OFFICE.

HENRY BARRY, OF CHICAGO, ILLINOIS.

FOLDABLE RAILWAY-VELOCIPEDE.

No. 811,269.

Specification of Letters Patent.

Patented Jan. 30, 1906.

Application filed April 7, 1905. Serial No. 254,394.

To all whom it may concern:

Be it known that I, HENRY BARRY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Foldable Railway-Velocipede, of which the following is a specification.

The invention relates to improvements in foldable railway-velocipedes.

The object of the present invention is to improve the construction of foldable railway-velocipedes and to provide a simple, inexpensive, and efficient one of great strength and durability adapted to be easily operated by foot-power and capable of being compactly folded when not in use.

A further object of the invention is to provide a velocipede of this character adapted to be quickly set up for use and capable of being arranged for operating on sharp curves.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion, size, and minor details of construction within the scope of the claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a perspective view of a railway-velocipede constructed in accordance with this invention. Fig. 2 is a side elevation partly in section. Fig. 3 is a plan view. Fig. 4 is a detail sectional view illustrating the construction of the crankshaft. Fig. 5 is an enlarged detail sectional view illustrating the construction of the pivotally-mounted shoes. Fig. 6 is a detail perspective view of the pivoted bracket which carries the propelling mechanism. Fig. 7 is an enlarged detail sectional view illustrating the manner of pivoting the bracket and the means for holding the same rigid with the main frame.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 and 2 designate front and rear standards arranged in pairs and designed to be constructed of any suitable material and provided at their lower ends with openings for the reception of suitable axles 3 and 4, upon which are mounted flanged wheels 5 and 6,

located at the same side of the velocipede and arranged to run on the same rail, as clearly shown in Figs. 1 and 3 of the drawings. The standards are adjustably connected at their lower ends by a bottom bar 7, composed of slotted sections having inner overlapped ends. The outer ends of the sections are connected with the lower terminals of the inner members of the front and rear standards 1 and 2, and the inner overlapped ends are provided with slots for the reception of a clamping-bolt 9 or other suitable clamping device, which secures the sections in their adjustment. The upper portions of the front and rear standards are not connected with each other, and the slots of the sections of the bottom bar permit the sections to slide on each other, whereby the frame of the railway-velocipede may be compactly folded, so that the velocipede will occupy only a small amount of space when not in use. The front and rear standards are also connected with a flanged wheel 14 by front and rear transverse connections 15 and 16, arranged at an angle to each other, and these connections 15 and 16 cooperate with the front and rear standards and the bottom bar to form the frame of the velocipede. The front transverse connection 15 consists of telescoping members 17 and 18, adjustably secured together by a clamping-screw 19 or other suitable fastening device. The outer member has an angularly-disposed portion 20, forming a journal or bearing portion for the reception of the wheel 14. The inner end of the front connection 15 is hinged to the adjacent end of the front axle, suitable eyes 21 and 22 being provided to form the hinge-joint; but any other suitable means may be provided for this purpose. The rear transverse connection, which consists of a rod, is provided at its inner or rear end with an eye 23, which is linked into an eye 24 of the rear axle. The outer end of the connecting-rod 16 is provided with a hook 25, which is engaged with a substantially horizontally disposed perforated ear or flange 26 of the front connection. The perforated ear or flange 26 may be mounted on the outer member 17 in any desired manner, and the said member 17 is also provided with an upwardly-extending perforated flange or ear 27, that is engaged by a hook 28 of a bracing-rod 29, which extends to the upper portion of the inner end of the front standards and which is hinged to the same.

The bracing-rod 29, which is detachably secured to the front and rear connections at the outer ends thereof, is adapted to maintain the same rigidly in their operative position. The inner end of the bracing-rod 29 is provided with an eye 30, which is linked into an eye 31 of the inner front standard to form a hinge connection for permitting the bracing-rod 29 to fold. The rods 16 and 29 are adapted to be disconnected from the outer end of the front connection 15 when it is desired to fold the velocipede.

The rear standards are connected by a transversely-disposed top plate or portion 32, to which is pivoted a superimposed frame or bracket 33, which carries the propelling mechanism. The superimposed frame or bracket is substantially L-shaped and consists of a horizontal portion which is secured to the top connecting portion of the rear standards by a vertical pivot 34, preferably consisting of a bolt and adapted to permit the propelling mechanism to adjust itself to a sharp curve when the superimposed frame or bracket is free to move on its pivot. The superimposed frame or bracket is rigidly locked against such pivotal movement by a pin 35 or other suitable locking device, which is removably arranged in registering perforations of the top connecting portion and the horizontal portion of the superimposed frame or bracket. The pivoted frame or bracket is provided at the front of the horizontal portion with a vertical portion composed of two sides or arms spaced apart to receive the front ends of a pair of push bars or rods 36, which have laterally-offset intermediate portions 37 to clear the lower horizontal portion of the pivoted frame or bracket. The front ends of the push-bars are provided with similar slots 38 and receive a transverse pivot or fulcrum 39, the push-bars being adapted to swing upward and downward and being capable of backward and forward movement or reciprocation to carry a pair of cam-shaped shoes 40 alternately in engagement with the adjacent rail 41. The upper walls of the slots 38 are curved or arched and present concaved faces to the pivot, and, if desired, any suitable antifriction devices may be employed for operating in the slots.

The push-bars are vertically oscillated and horizontally reciprocated by means of a crank-shaft 42, having a central bearing portion 43, which is arranged in a suitable bearing 44 of the superimposed frame or bracket. The crank-shaft, which is disposed transversely of the frame or bracket 33, is provided with a pair of inner cranks 44 and a pair of outer or operating cranks 45. The inner cranks are connected with the push-bars at points between the ends thereof, and the outer cranks are provided with suitable pedals 46, adapted to receive the feet of the operator. The push-bars are provided with

suitable bearings 47 for the inner cranks; but instead of constructing the crank mechanism as illustrated in Fig. 4 of the drawings any other preferred construction may be provided.

An adjustable seat or saddle 48 is mounted on the superimposed frame or bracket by means of an angularly-bent seat-standard 49, having a vertical stem 50, which receives a depending tube or sleeve 51 of the seat or saddle. The depending sleeve or tube 51 of the seat or saddle is adjustably secured to the upwardly-extending stem of the standard by means of a clamping-screw or other suitable device.

The cam-shaped shoes 40, which are substantially arc-shaped or semicircular, are secured between their ends by pivots 52 to the rear portions of the push-bars, and they are provided at their lower peripheral edges with curved ribs or bosses 53, forming enlarged treads for engaging the rails. The cam-shaped shoes are designed to be provided with protuberances or buttons 54, of rubber or other suitable material, for preventing them from slipping, and the front ends of the ribs or enlargements form stops and are yieldably held in engagement with the push-bars by means of coiled springs 55, located at the rear ends of the cams or shoes and disposed on rods 56, pivoted at their lower ends to the cams or shoes and slidably connected at their upper portions with the rear ends of the push-bars. The push-bars are provided at their rear ends with guides 57 to receive the upper portions of the rods 56. The stops 58 form a rigid connection between the push-bars and the cam-shaped shoes on the rear or propelling stroke of the push-bars, and the springs form cushions for preventing the cams or shoes from being injured at the end of the forward stroke when they drop into engagement with the rail. The pivots 52 are located in advance of the centers of the cams or shoes, and the latter are held at an angle to the push-bars when out of engagement with the rail, as clearly shown in Figs. 1 and 5 of the drawings. When the crank-shaft is rotated, the combined oscillatory and reciprocable push-bars carry the cams or shoes into engagement with the rail 41 on the rear or propelling stroke and lift the cams or shoes from the rails on the forward stroke. By this construction the velocipede may be rapidly propelled over a railroad-track.

When the superimposed frame or bracket is free to move laterally of the velocipede on its vertical pivot, the propelling mechanism is maintained in proper relation with the rail by means of a depending fork 59, having an L-shaped shank which is fixed to the rear end of the horizontal portion of the pivoted bracket or frame. The fork straddles the head of the rail 42, and its sides are spaced sufficiently from the same to prevent bind-

ing. If desired, any suitable antifriction device, such as a sleeve or wheel, may be employed on the sides to reduce the friction to a minimum. The fork will cause the propelling mechanism to remain in proper relation with a curved rail. When the pivoted frame or bracket is locked rigidly to the main frame of the velocipede, the fork does not come in contact with the rail.

10 The push-bars are composed of front and rear sections connected by hinges 60, which permit the rear sections to fold on the front sections. Suitable catches 61 are provided at the inner faces of the push-bars for locking
15 the sections in alinement; but any other suitable means may be employed for this purpose.

The front standards are connected by a top transverse portion which is provided with a
20 slotted or bifurcated plate or extension 62, to which extends an arm 63 of a brake-lever 64. The brake-lever is substantially V-shaped, as clearly shown in Fig. 2, and one of its arms is pivoted near its upper end by a
25 bolt 65 between the front standards. The arm extends outwardly beyond the pivot-bolt 65 to form a heel 66, which is engaged by a spring 67. The spring 67, which is secured to the connecting top piece of the front stand-
30 ards, engages the heel or projecting portion of the lever for holding the wheel-engaging portion 68 normally out of engagement with the front wheel. The other arm or portion of the V-shaped brake-lever extends through
35 the said slot or bifurcation of the plate or extension 62 and is angular, as shown. The upper portion of the angular arm of the brake-lever is extended rearwardly and is arranged to be engaged by the foot of the operator,
40 whereby the brake-lever is carried into engagement with the front wheel. The engaging portion or shoe 68 of the brake-lever is arranged at the angle formed by the sides of the said lever and is curved, as shown. The
45 brake is adapted to enable the velocipede to be readily stopped and will also hold the same stationary on a steep grade.

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

1. In a device of the class described, the combination of a wheeled frame, propelling mechanism, and supporting means for the propelling mechanism, said supporting means
55 being movable on the frame to permit the propelling mechanism to follow the contour of a rail.

2. In a device of the class described, the combination of a wheeled frame, propelling
60 mechanism, and supporting means for the propelling mechanism, said supporting means being laterally movable on the frame to permit the propelling mechanism to follow the contour of a rail.

65 3. In a device of the class described, the

combination of a wheeled frame, propelling mechanism, and supporting means for the propelling mechanism, said supporting means being pivotally mounted and arranged to swing horizontally to permit the propelling
70 mechanism to follow the contour of a rail.

4. In a device of the class described, the combination of a wheeled frame, propelling mechanism, supporting means for the mechanism, said supporting means being movably
75 mounted on the frame to permit the propelling mechanism to follow the contour of a rail, and means for guiding the propelling mechanism to retain the same in proper position with relation to the rail. 80

5. In a device of the class described, the combination of a wheeled frame, propelling mechanism, supporting means for the mechanism, said supporting means being movably
85 mounted on the frame to permit the propelling mechanism to follow the contour of a rail, and a fork arranged to straddle the rail to retain the propelling mechanism in proper position with relation to the same.

6. In a device of the class described, the
90 combination of a wheeled frame, propelling mechanism, supporting means for the propelling mechanism, said supporting means being movably mounted on the frame to permit the propelling mechanism to follow the con-
95 tour of a rail, and means for locking the said supporting means rigid with the wheeled frame.

7. In a device of the class described, the combination of a wheeled frame, a pivoted
100 frame mounted on the wheeled frame, propelling mechanism carried by the pivoted frame, and a fork connected with the pivoted frame and arranged to straddle a rail for guiding the propelling mechanism. 105

8. In a device of the class described, the combination of a wheeled frame, a pivotally-mounted frame or bracket arranged to swing horizontally, propelling mechanism carried
110 by the pivoted frame or bracket, and a removable locking-pin engaging the pivotally-mounted frame and the wheeled frame and adapted to lock the former rigidly with the latter.

9. In a device of the class described, the
115 combination of a combined oscillatory and reciprocable push-bar fulcrumed at one end and provided at the other end with track-engaging means, and actuating mechanism connected with the push-bar at an interme-
120 diate point.

10. In a device of the class described, the combination of a push-bar provided at one end with track-engaging means, means for slidably and pivotally mounting the other
125 end of the push-bar, and actuating mechanism located at an intermediate point.

11. In a device of the class described, the combination of reversely-movable push-bars provided at one end with track-engaging
130

means, means located at the other end of the push-bars for slidably and pivotally mounting the same, and a rotary element located at a point between the ends of the push-bars and eccentrically connected with the same.

12. In a device of the class described, the combination of reversely-movable push-bars provided at one end with track-engaging means, means located at the other end of the push-bars for slidably and pivotally mounting the same, and a crank-shaft having cranks connected with the push-bars between the ends thereof.

13. In a device of the class described, the combination of reversely-movable push-bars, means for slidably and pivotally mounting the same at a common point, and actuating mechanism for the push-bars.

14. In a device of the class described, the combination of reversely-movable push-bars slidably and pivotally mounted at the front, and a crank-shaft provided with cranks connected with the push-bars, said crank-shaft being also provided with pedal-cranks.

15. In a device of the class described, the combination of a push-bar, a pivoted shoe, a stop for limiting the movement of the shoe in one direction, and means for normally holding the shoe in engagement with the stop.

16. In a device of the class described, the combination of a push-bar, a shoe movably connected with the push-bar, and means for cushioning the shoe.

17. In a device of the class described, the combination of a push-bar, a shoe pivotally connected therewith, and a spring engaging the shoe and cushioning the same.

18. In a device of the class described, the combination of a push-bar, a shoe movably connected therewith, a slidable rod extending from the shoe, and a coiled spring disposed on the rod and cushioning the shoe.

19. In a device of the class described, the combination of a push-bar, a track-engaging shoe pivotally mounted on the push-bar, a stop for limiting the movement of the shoe, and yieldable means for holding the shoe at the limit of its movement forming a cushion.

20. In a device of the class described, the combination of a push-bar, a pivoted shoe, a stop located at one side of the pivot for limiting the movement of the shoe, and yieldable means located at the opposite side of the pivot for forming a cushion.

21. In a device of the class described, the combination of a shoe having a curved engaging face, and cushions arranged at intervals at the curved face, and means for operating the shoe.

22. In a device of the class described, the combination of a shoe having a curved engaging face, yieldable buttons or protuberances extending from the shoe, and means for operating the latter.

23. In a device of the class described, the

combination of a shoe, and means for moving the same backward and forward and for raising and lowering the shoe, said means embodying crank mechanism and a push-bar.

24. In a device of the class described, the combination of reversely-movable shoes, and means for moving the shoes backward and forward and for raising and lowering the same, said means embodying push-bars and a crank-shaft connected with the push-bars.

25. In a device of the class described, the combination of standards, adjustable means for connecting the standards, wheels connected with the standards and arranged to run on one of the rails of a track, transverse connections extending from the standards, and a wheel arranged to run on the other rail and mounted on the said transverse connections.

26. In a device of the class described, the combination of standards, a lower bar connecting the standards and composed of adjustably-connected sections, wheels connected with the standards and arranged to run on one of the rails of a track, transverse connections extending from the standards, and a wheel arranged to run on the other rail and mounted on the transverse connections.

27. In a device of the class described, the combination of standards, a lower bar connecting the standards and having slotted overlapped portions adjustably secured together, wheels connected with the standards and arranged to run on one of the rails of a track, transverse connections extending from the standards, and a wheel carried by such connections.

28. In a device of the class described, the combination of standards, a bottom bar connecting the standards and composed of sections movable on each other to fold the device, wheels connected with the standards and arranged to run on one of the rails of a track, foldable transverse connections extending from the standards toward the other rail of the track, and a wheel carried by the foldable connections.

29. In a device of the class described, the combination of a foldable wheeled frame, and propelling mechanism having a foldable push-bar.

30. In a device of the class described, the combination of a wheeled frame, and propelling mechanism having a push-bar composed of foldable sections hinged together and provided with means for holding the sections in operative relation.

31. In a device of the class described, the combination of a frame having front and rear wheels, a seat, propelling mechanism located adjacent to the seat, and a brake-lever having angularly-related arms and arranged to engage the front wheel, one of the arms being connected with the frame, and the other being arranged to be engaged by the foot.

32. In a device of the class described, the

combination of a frame having front and rear wheels, a seat, propelling mechanism located adjacent to the seat, and a brake-lever having angularly-related arms and provided at the angle formed by the arms with a shoe for engaging the front wheel.

33. In a device of the class described, the combination of a frame having front and rear wheels, a seat, propelling mechanism located adjacent to the seat, a brake-lever having angularly-related arms, one of the arms being arranged to be engaged by the foot, and the other arm being pivoted between its ends, and a spring engaging the pivoted arm.

34. In a device of the class described, the combination of a frame provided with standards having a slotted plate or extension, a wheel arranged between the standards, and a brake-lever also mounted between the standards and having an operating-arm projecting through the slotted plate or extension.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

HENRY BARRY.

Witnesses:

HARRY A. FLECK,
P. S. WHIDDEN.