

(No Model.)

2 Sheets—Sheet 1.

H. F. MANN.
RAILROAD VELOCIPEDE.

No. 468,671.

Patented Feb. 9, 1892.

Fig. 1.

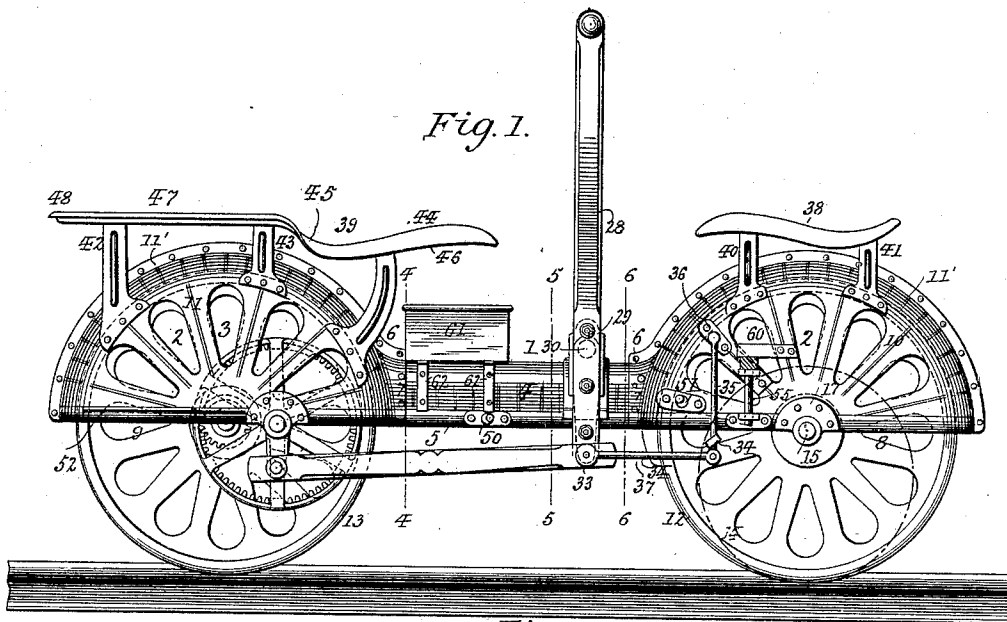


Fig. 2.

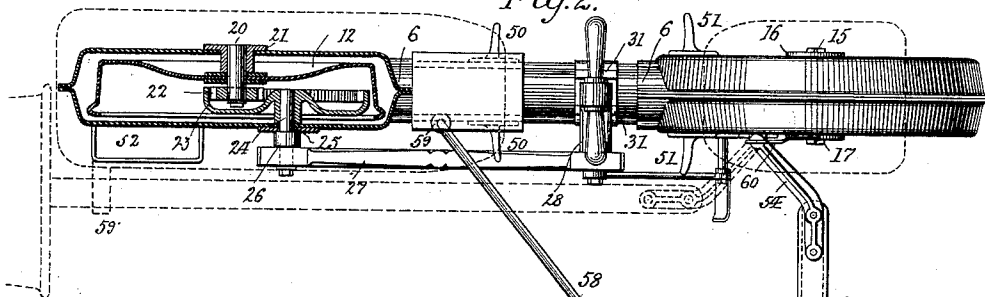
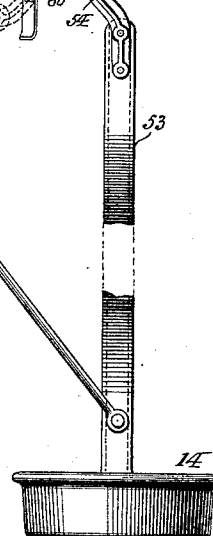
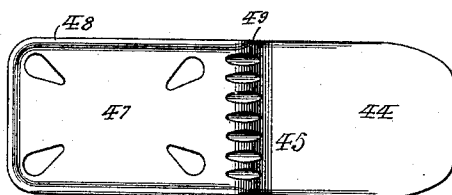


Fig. 3.



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Fig. 4.
on line 4-4.

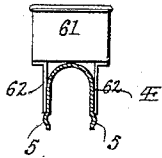


Fig. 5.
on line 5-5.

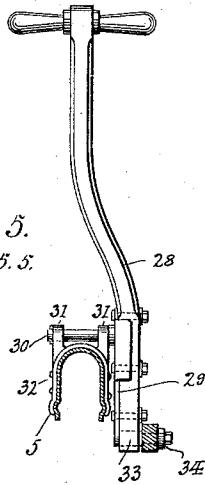


Fig. 6.
on line 6-6.

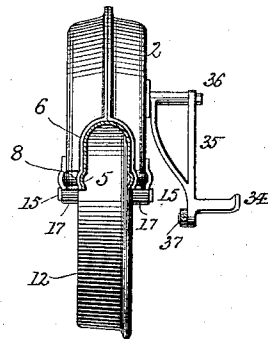


Fig. 7.

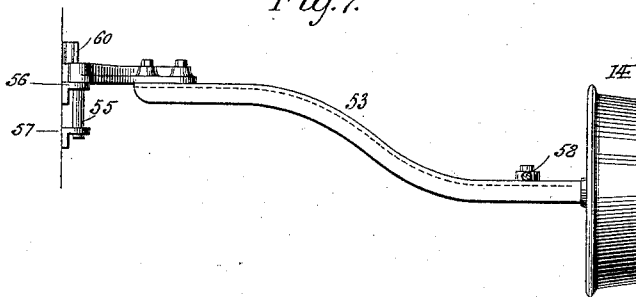


Fig. 8.

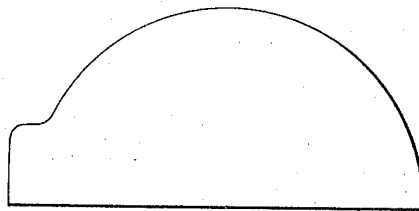


Fig. 9.



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UNITED STATES PATENT OFFICE.

HENRY F. MANN, OF ALLEGHENY, PENNSYLVANIA.

RAILROAD-VELOCIPED.

SPECIFICATION forming part of Letters Patent No. 468,671, dated February 9, 1892.

Application filed September 4, 1891. Serial No. 404,761. (No model.)

To all whom it may concern:

Be it known that I, HENRY F. MANN, of Allegheny, county of Allegheny, and State of Pennsylvania, have invented a new and useful Improvement in Railroad-Velocipedes, of which the following is a specification.

My invention relates to what are known as "railroad-velocipedes" or "hand-cars," the object being to produce a device of this character which will be strong, light, and durable.

To this end my invention consists, primarily, of a frame for the car, composed of metal, preferably sheet-steel, and constructed in the manner herein described.

It also consists of an improved seat and rear extension formed of one piece of metal.

It further consists of the details of construction and combinations of parts hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of a railroad-velocipede with my invention embodied therein, the guide-wheel being shown in dotted lines. Fig. 2 is a top plan view of the same, partly in section, on the line *xx* of Fig. 1. Fig. 3 is a top plan view of my improved seat and extension. Figs. 4, 5, and 6 are vertical cross-sections through the frame on the lines 4 4, 5 5, and 6 6, respectively. Fig. 7 is an elevation of the hinged arm carrying the guide-wheel. Fig. 8 is a view of one of the blanks composing a portion of the frame. Fig. 9 is a vertical cross-section through one of the standards supporting the seat and the hood to which it is secured.

Referring to the drawings, the frame 1 is composed of the front and rear semicircular sheet-metal hoods 2 and 3 and the intermediate connecting sheet-metal reach 4, of an inverted-U form in cross-section. Each of the hoods, which partly cover the front and rear wheels, is formed from two blanks, such as shown in Fig. 8, each of which is by suitable dies concaved and formed with a straight longitudinal flange 5. Each blank has at one side a projecting lip 6, which is bent in such manner that when two of the blanks are placed face to face a space of an inverted-U form will be left between the lips to receive the reach 4, and the straight flanges meeting the two are secured firmly together by means of rivets 7.

The intermediate connecting-reach consists of a single piece of sheet metal, which is bent into an inverted-U form and seated at its opposite ends between the projecting bent lips of the hoods, to which it is suitably secured by rivets or otherwise. For the purpose of strengthening the frame it is formed along its lower edges with ribs 8 and 9, and the two hoods are likewise strengthened by means of radial ribs 10 and 11. Ribs may also be formed in the reach, as shown, to stiffen the same. The frame is sustained by the front flanged wheel 12 and the rear flanged driving-wheel 13, adapted to travel on one rail of the track, one in advance of the other, and by the flanged guide-wheel 14, adapted to travel on the opposite rail. The front wheel is sustained to turn upon a shaft 15, mounted in bearings 16 and 17, fixed to the lower edge of the front hood. These bearings consist, as shown, of the inwardly-extending collars 18, which are provided on their outer ends with flanges 19, which latter are seated against the side of the hood and secured by rivets, or otherwise. The shaft 15 is seated in these bearings and provided at its opposite ends with pins to retain it in position. The rear or driving wheel 13 is journaled upon a shaft 20, projecting inward from a sleeve 21, flanged on its outer end and riveted to the hood. This wheel is provided with a spur-pinion 22, fixed thereto, driven by an internal gear-wheel 23, carried by a shaft 24, journaled in a bearing 25, provided with a flange similar to the other bearings and riveted to the hood. The shaft 24 is provided on its outer end with a crank-arm 26, from which a pitman 27 extends forward to the lower end of an operating-lever 28, mounted on the reach.

While I have shown this arrangement of gearing as suitable for driving the car, other driving devices may be used. This gearing in itself does not form any part of the present invention, it being the basis of a separate application of even date herewith, Serial No. 404,764.

The operating-lever is fastened near its lower end by means of bolts to a vertical plate 29, which is provided at its upper end with a lateral journal 30, mounted in bearings 31, extending upward from a metallic saddle

32, seated upon and bolted to the reach. At its lower end this vertical plate is formed with a lateral stud 33, which extends through the lower end of the operating-lever and through the forward end of the pitman, which works loosely thereon. From the foregoing description it will be seen that if the operating-lever is moved to and fro the shaft 24 will be rotated, which, through the medium of the internal gear-wheel 23, will impart motion to the pinion fixed to the rear wheel and thus propel the car.

In order that the operator may use his foot to assist in the propulsion of the car, I provide a foot-lever 34, projecting from the lower end of a vertical link 35, which at its upper end is journaled on a standard 36, suitably secured to the side of the forward hood. The lower end of this link is connected by means of a horizontal rod 37, pivoted at its forward end to the link and mounted at its rear end upon the stud 33.

The velocipede is provided with two seats 38 and 39, sustained, respectively, over the front and rear hoods. The front seat is sustained on each side by two metal standards 40 and 41, which are widened at their lower ends and bent outward in such manner that they may be seated upon the curved portion of the hood to which they are bolted. The rear seat is sustained by standards 42 43, &c., formed at their lower ends in a manner similar to the front standards and attached to the rear hood. This rear seat is formed of a single piece of metal, its front part 44 being formed by suitable means with the depressed portion 45 and the downwardly-curved edge 46. The rear extension 47 of the seat is flat, and in addition to serving as a seat may be used as a receptacle for packages, &c. Its edge is bent upward, as shown, forming a vertical flange 48 to prevent the escape of articles held thereon. Where the depressed portion 45 joins the rear extension a series of longitudinal ribs 49 are formed, which act to strengthen the seat.

Foot-rests 50 are provided for the occupant of the front seat and rests 51 for the occupant of the rear seat.

For the accommodation of the occupant of the rear seat, when facing the side of the track, I provide a foot-rail 52, consisting of a rod bent laterally at its ends and secured to the side of the hood at its lower edge.

In order that the guide-wheel 14 and its carrying-arm 53 may be compactly folded along the side of the velocipede or entirely removed, I bolt to the inner end of the arm a rearwardly-curved plate 54, which is provided with vertical pivots 55, adapted to enter two eyes 56 and 57, fixed to the side of the forward hood. It will thus be seen that the arm, with the wheel, may be swung freely in a horizontal direction.

When in its operative position, as shown in full lines in Fig. 2, the arm is held by means of a brace-rod 58, pivoted at its outer

end to the arm and removably seated at its inner end in an eye 59, attached to the reach. When it is desired to fold the arm, the inner end of the brace is detached and the wheel swung around to the position shown in dotted lines, extending rearward of the frame at right angles to the same, and is supported upon a bracket 59', attached to the rear hood, as shown. It will be noted that, owing to the rearward curvature of the plate connected to the inner end of the arm, when folded the arm will extend at some distance from the operating-levers at the side of the car.

In order that there may be no danger of the inner end of the arm becoming detached, I provide a spring 60, having one end riveted to the hood adjacent to the upper eye 56 and its opposite end normally above the same a slight distance from the hood. When the arm is in place, the end of this spring will extend above the same and prevent its accidental detachment. By pressing the spring inward the arm may be removed or placed in position.

For the purpose of holding tools, &c., I provide a box 61, sustained on both sides by vertical brackets 62 and 63, bolted or secured in any suitable manner to the sides of the reach in front of the rear hood. These brackets each consist of a plate bent outward horizontally at its upper end, the box being seated and secured upon the bent ends.

The hoods may be cut away between the radial ribs, as shown, in order to render them light, and may be stiffened by forming in the bent portions adjoining the straight flanges a series of ribs 11'. The standards supporting the seats may also be stiffened by forming thereon longitudinal ribs, as shown.

Having thus described my invention, what I claim is—

1. The frame for a velocipede, consisting of the two metallic hoods and the intermediate connecting-reach seated at its ends within and secured to the hoods, substantially as described.

2. The frame for a velocipede, consisting of the two metallic hoods and the intermediate connecting-reach secured at its ends to the hoods.

3. The frame for a velocipede, consisting of the two hoods, each composed of two concaved sheet-metal plates secured together, and the intermediate connecting-reach attached at its ends to the said hoods.

4. The frame for a velocipede, consisting of the two metallic hoods formed at their adjacent ends with the sockets of an inverted-U form, and the intermediate reach of an inverted-U form seated at its ends in said sockets and secured thereto.

5. The frame for a velocipede, consisting of the two hoods, each composed of the two concaved sheet-metal members provided with annular flanges and secured face to face, and the intermediate reach connecting said hoods.

6. In a frame for a velocipede, the combina-

tion, with the hoods, each composed of the two sheet-metal members secured face to face and provided with the bent lips, of the bent sheet-metal reach seated at its ends between and secured to said lips.

7. In a frame for a velocipede, the combination, with the two hoods, each composed of the two sheet-metal semicircular concaved flanged members provided with the bent projecting lips and secured together, of the connecting sheet-metal reach of an inverted-U form in cross-section seated at its ends between the bent lips and secured to the same.

8. The sheet-metal frame for a velocipede, consisting of the two metallic hoods and the intermediate connecting-reach, said frame provided with the longitudinal and radial strengthening-ribs.

9. In a velocipede, the combination, with the metallic frame, of the bearing for the wheels, said bearing consisting of the inwardly-projecting sleeve and the flange secured to the frame.

10. In a velocipede, the combination, with the sheet-metal frame, of the inwardly-extending sleeve provided with the flange seated against and secured to the outside of the frame.

11. The combination, with the hood curved outward at its sides, of the standards for the seat, seated and secured upon said curved portion of the hood, and the seat resting on the standards.

12. The combination, with the hood curved outward at its side, of the standards widened at their lower ends, bent outward to fit upon the curved portion of the hood, and secured thereto.

13. The combination, with the seat provided with the downwardly-curved edge, of the adjoining extension provided with the upwardly-curved edge.

14. The combination, with the depressed seat and the adjoining horizontal extension

formed integral therewith, of the longitudinal ribs formed on said depressed portion.

15. The combination, with the reach, of the bearings thereon, the horizontal rock-shaft mounted in said bearings, the vertical plate attached to said rock-shaft and provided at its lower end with the stud, the operating-lever secured to said vertical plate, and the pitman connecting the operating parts of the car to the stud.

16. The combination, with the metallic reach of an inverted-U form in cross-section, of a saddle seated thereon and provided with bearings, the rock-shaft journaled in said bearings, the operating-lever secured to the said rock-shaft, and connections between the lever and operating parts of the car.

17. The combination, with the frame, of the guide-wheel, its carrying-arm removably hinged to the frame at its inner end, and a spring-latch to prevent its accidental removal.

18. The combination, with the frame, of the guide-wheel, its carrying-arm, the vertical pivot thereon adapted to enter a vertical socket on the frame, and the spring extending normally over the arm when in place.

19. In a railroad-velocipede having the front and rear wheels, the frame, and the operating devices extending along the side of the frame, the combination therewith of the guide-wheel and its carrying-arm hinged to the front of the frame, said arm bent rearward at its inner end in such manner that when folded it will extend outside of the operating devices and the guide-wheel will extend transversely of and in rear of the frame.

In testimony whereof I hereunto set my hand, this 28th day of August, 1891, in the presence of two attesting witnesses.

HENRY F. MANN.

Witnesses:

W. R. KENNEDY,
FABIUS S. ELMORE.