

(No Model.)

2 Sheets—Sheet 2.

W. H. BINNS.
TANDEM.

No. 593,292.

Patented Nov. 9, 1897.

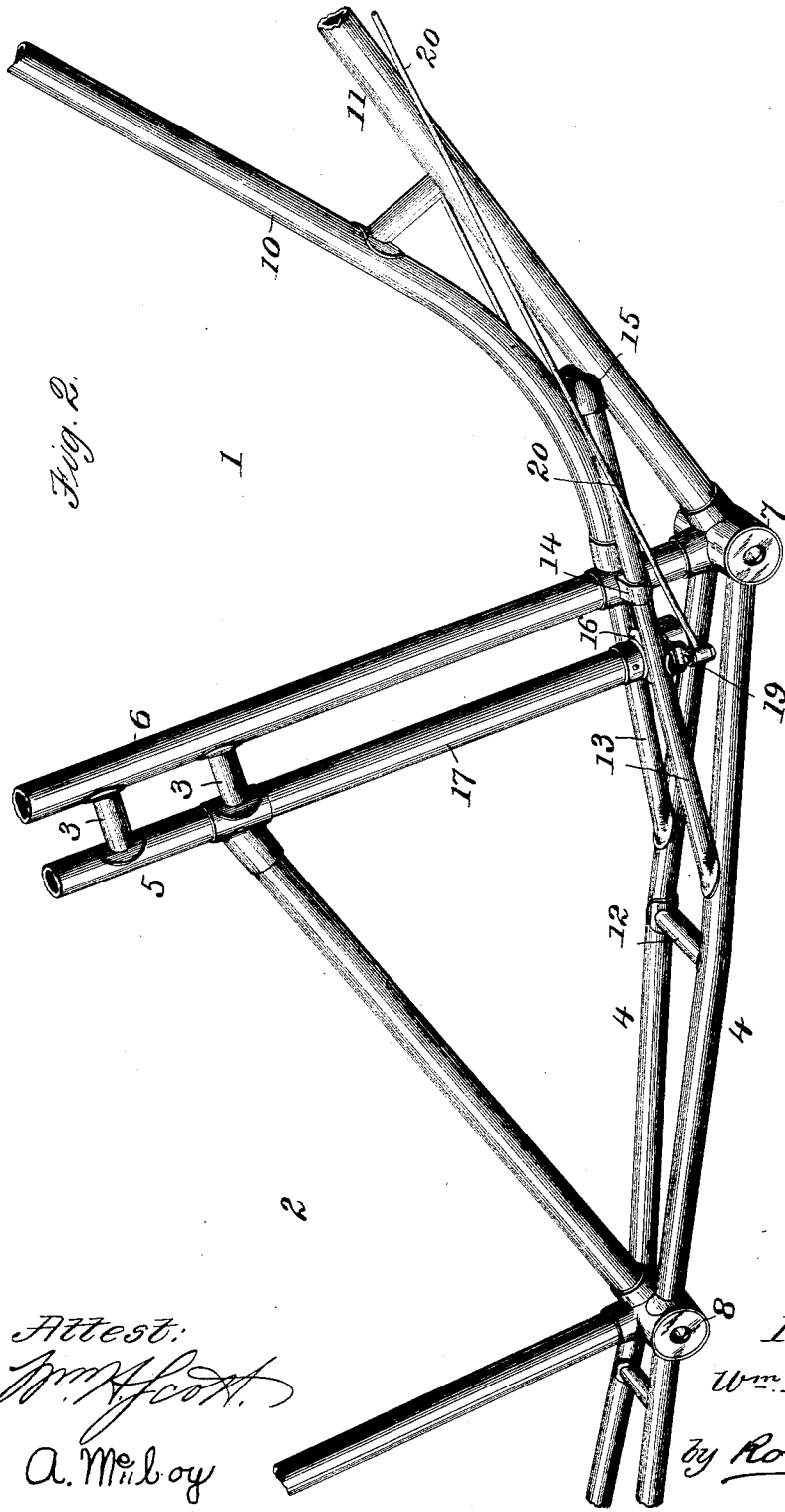


Fig. 2.

1

2

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Atty.

UNITED STATES PATENT OFFICE.

WILLIAM H. BINNS, OF CHICAGO, ILLINOIS.

TANDEM.

SPECIFICATION forming part of Letters Patent No. 593,292, dated November 9, 1897.

Application filed August 10, 1896. Serial No. 602,350. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. BINNS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Cycle-Frames; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to cycle-frames of the open or "drop" order that are intended for ladies' use, and more especially to the tandem type of cycle-frames in which the front portion is of the open or drop order.

The object of the present improvement is to provide a simple, strong, and rigid construction of the cycle-frame wherewith ample rigidity and stiffness is imparted to the frame not only in a vertical direction but also in a lateral direction as well, all as will hereinafter more fully appear, and be more particularly pointed out in the claims. I attain such object by the construction and arrangement of parts illustrated in the accompanying drawings, in which—

Figure 1 is a general side elevation of a tandem bicycle embodying the present invention; and Fig. 2, an enlarged detail perspective view of the central portion of the frame, illustrating the details of the present invention.

Similar numerals of reference indicate like parts in both views.

As represented in the drawings, the cycle-frame will in the main be of the usual form, and as the present invention is more particularly adapted to tandem bicycles I have used such type of frame for illustrating the application of the present invention. As usually formed, such frame comprises a forwardly-arranged drop or open portion 1 and a rearwardly-arranged closed or diamond portion 2, rigidly attached together by union-struts 3 and horizontally-extending bars or members 4, the union-struts 3 attaching the steering-head 5 of the rear portion 2 to the standard or seat-post 6 of the front portion 1, while the horizontal members 4 connect the crank-hanger shells 7 and 8 of the respective forward and rear portions 1 and 2 together.

As usual in the open or drop type of cycle-

frames, the front portion 1 will have its connection between its hanger-shells 7 and its steering-head 9 formed by a pair of inclined members 10 and 11, the upper one of which may be either of a straight or curved formation, as may suit the judgment of the constructor.

A material part of the present invention consists in the formation of the horizontally-extending members 4 of a bowed formation in a horizontal plane, the greatest distance between said members being near their mid-length and which are preferably held in such bowed condition by a transverse stay member 12, inserted between said members at their point of greatest spread, as illustrated in Fig. 2 of the drawings. By this construction a very light and rigid construction may be imparted to the cycle-frame, so that the weight thereof can be materially reduced without affecting the degree of strength and rigidity that is required in a cycle-frame.

Another portion of the present invention consists in a pair of brace or tie members 13, located some distance above the front hanger-shell 7 of the frame. In my preferred construction, as shown in the drawings, the brace or tie members 13 will be attached midway their length to the sides of the seat-post or standard 6 by a union 14, while their respective ends are attached at front to the inclined connecting members 10 and 11 and at the rear to the horizontal connecting members 4, the attachment at front being to a union or head 15, while at the rear they are connected to the bowed or curved horizontal members 4 at a point intermediate of the length of such horizontal members, as illustrated in Fig. 2 of the drawings.

Another feature of the present invention relates to a bearing-head 16, secured in place between the counterpart brace members 13 to afford a lower bearing for the steering-stem 17 of the rearwardly-arranged steering-handles 18 of the tandem, which steering-stem will be provided on its lower end with the usual cross-arm 19 or other like device, which in turn is connected by pull-rods 20 with a cross-arm on the forwardly-arranged steering-stem of the tandem. This connecting together of the steering-handles of tandems so as to operate in unison is quite common, and no novelty

is claimed for the connections shown other than the special means employed to support the lower end of the rearwardly-arranged steering-stem.

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

1. In a tandem-bicycle frame, the combination of the front and rear portions 1 and 2, 10 and a pair of horizontal members 4, that connect the pedal-shaft barrels of the tandem frame together, such members 4, being bowed outwardly in a horizontal plane, with the greatest distance between such members near 15 the mid-length of the same, substantially as set forth.

2. In a tandem-bicycle frame, the combination of the front and rear frame portions 1 and 2, a pair of horizontal members 4, that 20 connect the pedal-shaft barrels of the tandem frame together, such members 4, being bowed outwardly in a horizontal plane, with the greatest distance between such members near the mid-length of the same, and a transverse 25 stay member 12, arranged between the members 4, near the mid-length of the same, substantially as set forth.

3. In a cycle-frame, the combination with the inclined front connecting members 10 and 30 11, horizontal rear members 4, bowed outwardly in a horizontal plane, with the greatest distance between such members near the mid-length of the same, and hanger-shell 7, connecting said front and rear members together, of a pair of brace or tie members 13, 35 that are secured at their front ends to the members 10 and 11, intermediate the length

of the same, and at their rear ends to the outwardly-bowed portion of the same, said tie members extending across the hanger-shell 7, 40 some distance above the same, substantially as set forth.

4. In a cycle-frame, the combination with the inclined front connecting members 10 and 11, horizontal rear members 4, bowed out- 45 wardly in a horizontal plane with the greatest distance between such members near the mid-length of the same, the standard or seat-post 6, and hanger-shell 7, connecting the said frame members together, of a pair of brace 50 or tie members 13, attached midway their length to the seat-post 6, a distance above the hanger-shell 7, at their front ends to the members 10 and 11, intermediate the length of the 55 same, and at their rear ends to the outwardly-bowed portions 4 of the frame, substantially as set forth.

5. In a tandem-bicycle frame, the combination with the inclined front connecting members 10 and 11, horizontal rear members 4, 60 hanger-shell 7, and pair of brace or tie members 13, secured to said frame members intermediate the length of the same, and extending across the hanger-shell 7, some distance 65 above the same, of the bearing-head 16, attached to said brace member 13, and the stem of the rear steering-handles journaled in said bearing-head, substantially as set forth.

In testimony whereof witness my hand this 8th day of August, 1896.

WILLIAM H. BINNS.

In presence of—

ROBERT BURNS,
ARTHUR MCCOY.