

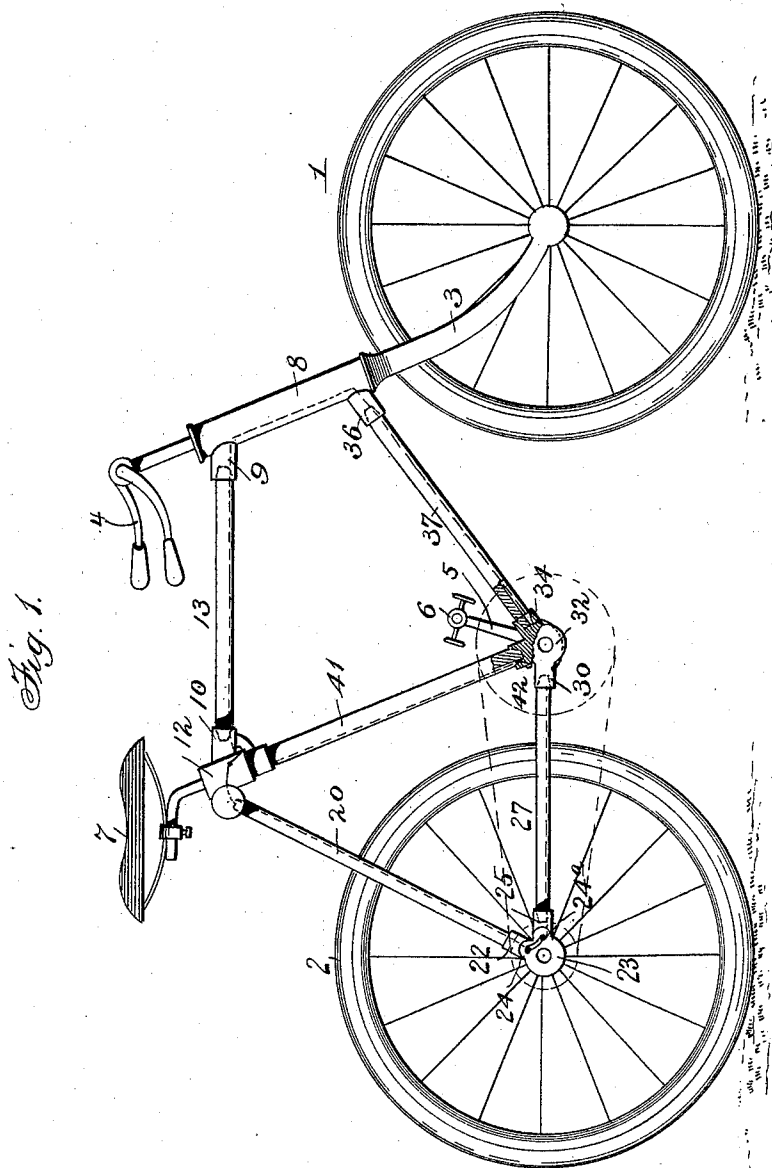
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3 Sheets—Sheet 1.

A. FAY & J. McNAB.
BICYCLE.

No. 567,825.

Patented Sept. 15, 1896.



Witnesses:

F. L. Ouraud,
James H. Jones

Inventors:

Alpheus Fay,
John McNab,
James Ruggie & Co.,
Attorneys.

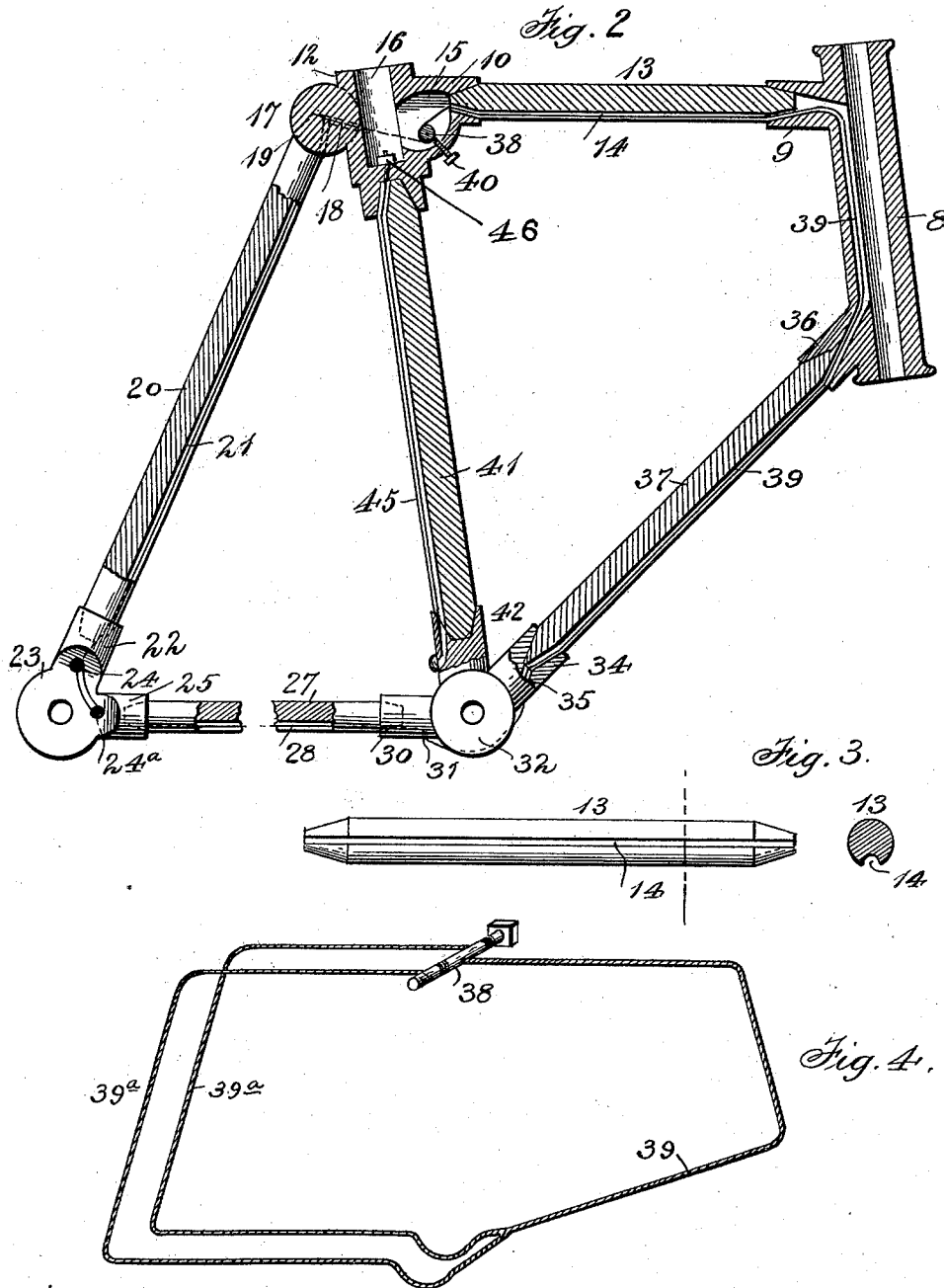
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BICYCLE.

No. 567,825.

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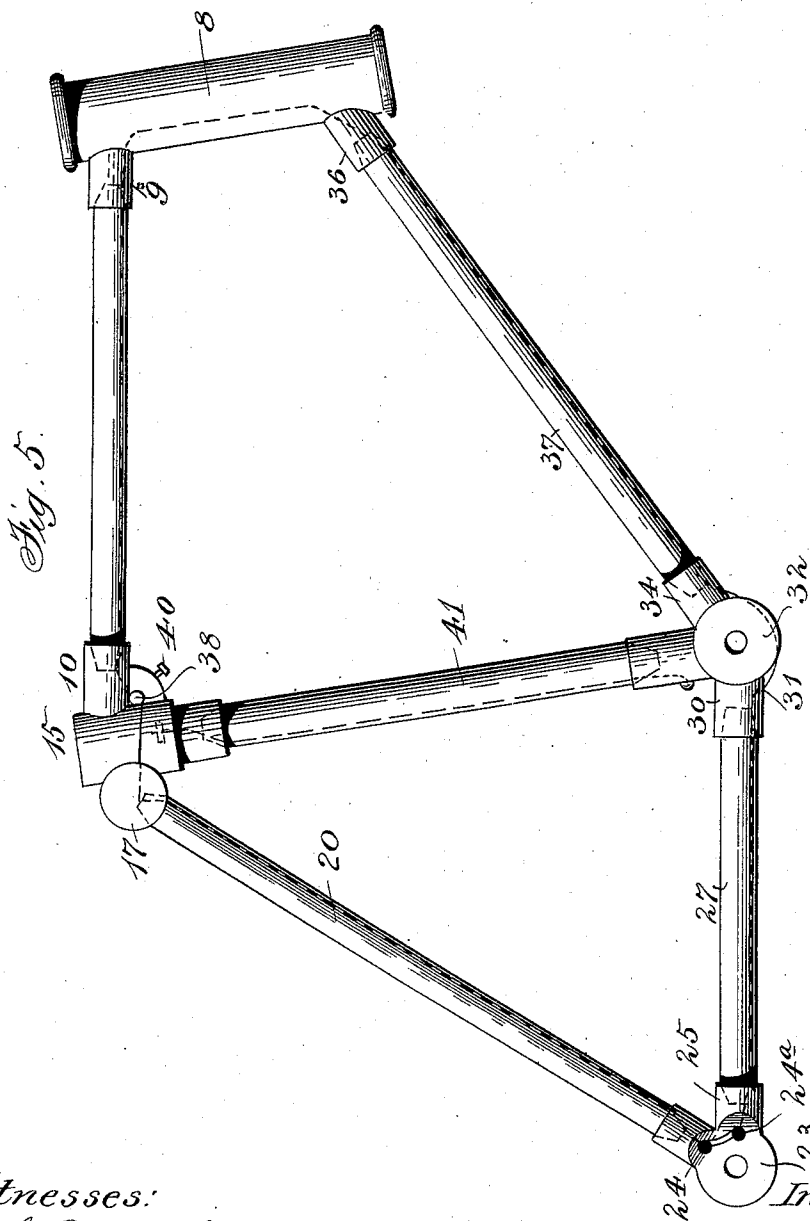
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3 Sheets—Sheet 3.

A. FAY & J. McNAB.
BICYCLE.

No. 567,825.

Patented Sept. 15, 1896.



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UNITED STATES PATENT OFFICE.

ALPHEUS FAY, OF CINCINNATI, OHIO, AND JOHN McNAB, OF LOUISVILLE, KENTUCKY.

BICYCLE.

SPECIFICATION forming part of Letters Patent No. 567,825, dated September 15, 1896.

Application filed January 13, 1896. Serial No. 575,348. (No model.)

To all whom it may concern:

Be it known that we, ALPHEUS FAY, of Cincinnati, in the county of Hamilton and State of Ohio, and JOHN McNAB, of Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Bicycles; and we do hereby declare that the following is a full, clear, and exact description of the invention, 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, which form a part of this specification.

Our invention relates to bicycle-frames of that class or description in which a continuous wire is employed for tightening the joints should they become loose through long use or other causes. In application for Letters Patent filed by us January 4, 1896, Serial No. 574,292, we have shown a hollow bicycle-frame through which the strengthening-wire passes. The present invention relates to similar frames, but the frame, instead of being made hollow, is grooved on the outer sides, so that the wooden bars of the frame may be made solid, and consequently stronger. They can also be manufactured more economically, and also in case of breakage of the wire it can be repaired or replaced by a new one more readily.

The invention consists in the novel construction and combination of parts hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of a bicycle, partly in section, constructed in accordance with our invention. Fig. 2 is a longitudinal sectional view of the frame. Fig. 3 is a detail view of one of the wooden bars of the frame, showing the same in elevation and cross-section. Fig. 4 is a perspective view of the tightening-wire disconnected from the frame. Fig. 5 is an elevation of the frame.

In the said drawings the reference-numeral 1 designates the front wheel, 2 the rear wheel, 3 the front fork, 4 the handle or steering bar, 5 the cranks, 6 the pedals, and 7 the seat, which may be of any ordinary or suitable construction.

The numeral 8 designates the steering-head, through which the handle-bar stem passes,

and consists of a metal tube provided at its upper end with a rearwardly-extending flaring socket 9. Connected with this socket and with a similar socket 10, formed with the seat-supporting coupling 12, is a wooden bar 13, having reduced or tapering ends which fit in the sockets and formed on the under side with a longitudinal groove 14. The said seat-coupling is formed with a recess 15 to receive a tightening bolt or pin, hereinafter described, and with a recess 16 for the seat-standard. It is also formed with lugs 17 and holes 18. Connected with said lugs, which are formed with flaring sockets 19, are two wooden bars 20, which extend down each side of the rear wheel, and each having a groove 21 on its inner side and formed with tapering ends. These bars are also connected with flaring sockets 22 of a coupling 23, formed with holes 24. The axle of said wheel is journaled to the coupling 23. This coupling on each side is also formed with holes 24^a and with a flaring socket 25, with which latter are connected wooden bars 27, having a groove 28 on the under side and connected at their front ends with flaring sockets 30, having a hole 31 formed with the crank-shaft hanger 32. This coupling is also formed with a flaring socket 34, having holes 35.

The numeral 36 designates a flaring socket at the lower end of the tube 8, and the numeral 37 a wooden bar having tapering ends and a groove on its under side. This bar engages with the sockets 34 and 36.

The numeral 38 designates a transverse pin or bolt journaled to the seat-support coupling and having an angular end for a wrench to engage with. The numeral 39 designates a tightening-wire secured to said bolt or pin and passing therefrom to the groove 14 in bar 13, then down through the tube 8 to bar 37 and to coupling 32. It is then divided, forming two wires 39^a, which pass through the holes 35, around the said coupling, then into holes 31, and from thence pass to the grooves in the bars 27 to the rear axle-coupling and out of the holes 24 therein around the said coupling. They then pass into holes 24 and then run along the grooves in bars 20 to the lugs 17 and are then connected with the transverse pin or bolt. While the said wire is

thus divided it practically forms a single continuous wire,

The numeral 40 designates a set-screw for holding the pin or bolt against rotation.

5 The numeral 41 designates a grooved bar having tapering ends which engage with flaring sockets 42 and 43, formed, respectively, with the crank-shaft and seat-support couplings. Passing through a hole in socket 42
10 is a headed wire 45, which extends up along the groove in the bar and passes through a hole in socket 43. The upper end is screw-threaded and provided with a tightening-nut 46. Should the joints of the frame become
15 loose from any cause, they can be tightened by loosening the set-screw 40 and rotating the bolt or pin 38, which will draw the tapering ends of the wooden bars into the flaring sockets.

20 Having thus fully described our invention, what we claim is—

1. In a bicycle, the combination with the frame comprising the couplings, having flaring sockets, the metal tube having flaring
25 sockets and the wooden bars formed with tapering ends and with grooves extending from end to end, of the wire passing through said sockets and couplings and engaging with said grooves; and means for tightening the same;
30 substantially as described.

2. In a bicycle, the combination with the frame-couplings the metal tube formed with flaring sockets, the couplings formed with flaring sockets, and the wooden bars having tapering ends and grooves extending from
35 end to end, of the wires passing through said sockets and couplings and seated in the grooves, the transverse bolt or pin to which said wires are connected, and the set-screw; substantially as described.

3. In a bicycle, the combination with the frame comprising the metal tube and the couplings formed with flaring sockets, the wooden bars having tapering ends and grooves extending from end to end, the grooved bar con-
45 nected with the sockets of the seat-support and crank-shaft coupling, the headed wire seated in said groove and provided with a tightening-nut, of the tightening-wires, the transverse bolt or pin to which they are se-
50 cured and the set-screw; substantially as described.

In testimony that we claim the foregoing as our own we have hereunto affixed our signatures in presence of two witnesses.

ALPHEUS FAY.
JOHN McNAB.

Witnesses:

EDGAR SLACK,
CHARLES B. AVEY.