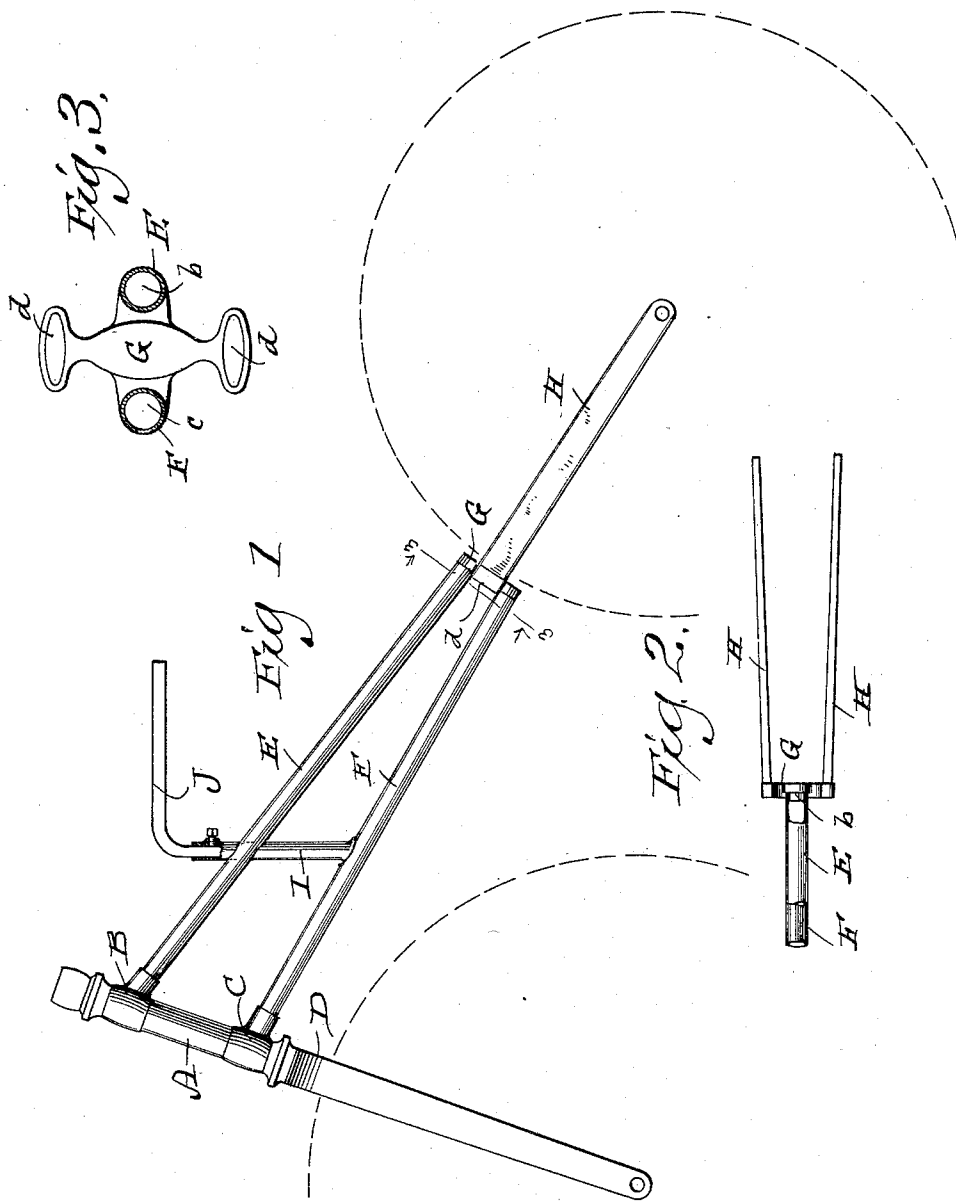


(No Model.)

F. H. BOLTE.
BICYCLE FRAME.

No. 476,974.

Patented June 14, 1892.



Witnesses
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UNITED STATES PATENT OFFICE.

FRANK H. BOLTE, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO THE SERCOMBE-BOLTE MANUFACTURING COMPANY, OF SAME PLACE.

BICYCLE-FRAME.

SPECIFICATION forming part of Letters Patent No. 476,974, dated June 14, 1892.

Application filed February 23, 1892. Serial No. 422,515. (No model.)

To all whom it may concern:

Be it known that I, FRANK H. BOLTE, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Bicycle-Frames; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to provide a light and rigid bicycle-frame especially designed for such vehicles as have a driving-gear in connection with the front wheel.

To this end the said invention consists in certain peculiarities of construction and combination of parts to be hereinafter described with reference to the accompanying drawings and subsequently claimed.

In the drawings, Figure 1 represents a side elevation of a bicycle-frame constructed according to my invention; Fig. 2, a plan view of the rear portion of the same, partly in section; and Fig. 3, a transverse section taken on line 3 3 of Fig. 1.

Referring by letter to the drawings, A represents a vertically-disposed tube having its ends brazed or otherwise rigidly secured in upper and lower joints B C, whereby I form what is generally termed the "steering-head" in that class of bicycles commonly known by the term "Safety," this steering-head being for loose engagement with a fork D, such as shown in Fig. 1. Brazed or otherwise rigidly secured at their front ends to the joints B C are upper and lower fore-and-aft tubes E F, that converge toward each other in a downward and rearward direction. At their lower rear ends the tubes E F are engaged by corresponding lugs *b c*, that extend forward from a plate G, and the connections between this plate and said tubes are made rigid by brazing or other suitable means. At right angles to the lugs *b c* thereon the plate G is provided with sockets or eyes *d* for tubes H H, that continue downward and toward the rear to serve as hangers for the rear wheel of the bicycle. Said plate and the rods or tubes constitute what is commonly termed a "rear fork."

Intermediate of its ends the upper fore-and-aft tube E is cut out to engage a vertical tube

I, that constitutes the socket for a saddle-post J, and this latter tube is flanged at its lower end to lap over the lower fore-and-aft tube F, all three of said tubes being rigidly united by any suitable means, preferably brazing. In some instances the saddle-post socket may not extend down to and connect with the tube F, although the construction shown is the one preferred, owing to the increase of rigidity in the frame. It is also possible to clamp a saddle-post socket on the upper fore-and-aft tube E without departure from what constitutes my invention in its broadest sense.

By the construction above described I provide a simple bicycle-frame of very light weight in comparison to its rigidity, as well as one that can be utilized with a driving-gear connected to the front wheel of the vehicle of which said frame forms a part, without changing the position of the rider relative to the pedals from that found by experience to be the best in connection with rear-gear bicycles.

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

1. A bicycle-frame comprising a steering-head, rearwardly-converging upper and lower fore-and-aft tubes connected to the steering-head, and a fork joined to the rear ends of the tubes, substantially as set forth.

2. A bicycle-frame comprising a steering-head, upper and lower fore-and-aft tubes connected to the steering-head, a fork joined to the rear ends of the tubes, and a saddle-post socket connected to the upper one of said tubes intermediate of its ends, substantially as set forth.

3. A bicycle-frame comprising a steering-head, upper and lower fore-and-aft tubes connected to the steering-head, a fork joined to the rear ends of the tubes, and a saddle-post socket in the form of a vertically-disposed tube that is rigidly connected to the former tubes intermediate of its ends, substantially as set forth.

4. A bicycle-frame comprising a steering-head, upper and lower fore-and-aft tubes connected to the steering-head, a plate having lugs engaging the rear ends of said tubes, and wheel-hangers engaging sockets or eyes in the

plate at right angles to the lugs thereon, substantially as set forth.

5 5. A bicycle-frame comprising a steering-head, upper and lower fore-and-aft tubes connected to the steering-head and converged toward each other in a downward and rearward direction, a vertically-disposed tube that is rigidly engaged with the upper one of the fore-and-aft tubes and lap-joined to the lower
10 one of the same, a plate fast to the rear lower ends of said fore-and-aft tubes, and wheel-

hangers extending downward and toward the rear from the plate, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses. 15

FRANK H. BOLTE.

Witnesses:

HENRY L. KASTEN,
N. E. OLIPHANT.