No. 629,401. Patented July 25, 1899.

L. B. SMYSER.

FRAME FOR BICYCLES OR LIKE VEHICLES.

(Application filed May 22, 1896.)

(No Model.)

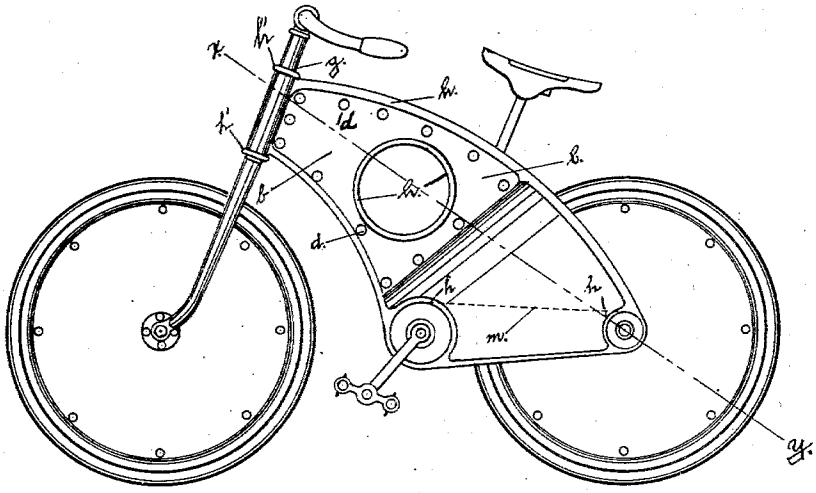


Fig. 1.

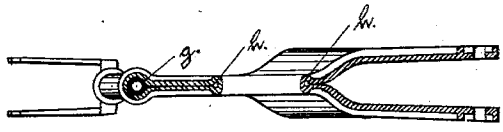


Fig. 2.

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UNITED STATES PATENT OFFICE.

LOUIS B. SMYSER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO WILLIAM H. McFADDEN, OF SAME PLACE.

FRAME FOR BICYCLES OR LIKE VEHICLES.

SPECIFICATION forming part of Letters Patent No. 629,401, dated July 25, 1899.

Application filed May 22, 1896. Serial No. 592,629. (No model.)

To all whom it may concern:

Be it known that I, LOUIS B. SMYSER, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Frames for Bicycles or Like Vehicles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in frames for bicycles and other vehicles, and some of the objects of the invention are to provide such a frame which is strong, durable, and comparatively inexpensive and one which is simple and easy of construction; and with these and other objects in view the invention consists, essentially, of the construction, combination, and arrangements of parts, substantially as hereinafter more fully described in the following specification and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a bicycle constructed according to my invention, and Fig. 2 is a longitudinal section on line *x y* of Fig. 1 of the frame.

Similar characters of reference designate corresponding parts throughout both views.

Referring to the drawings, the reference-letters *b b* represent vulcanized sheets or plates of fiber, papier-mâché, or similar material, but preferably of the material first named, and these sheets or plates *b b* may be formed of one continuous piece or portion of material, or there may be separate sheets or plates, as desired, and when formed of one continuous piece or portion of material the same is bent upon itself intermediate of the length thereof, and the bent portion is suitably constructed to form a journal or bearing for the steering-head, and adjacent to said bearing the plates or sheets *b b* are secured together by means of rivets or bolts *d d*. The free ends or rear portions of said sheets are preferably separated to form a forked or bifurcated portion to receive the drive-wheel, and adjacent to the forked or bifurcated extremities or ends of said sheets or plates the same are secured together with bolts or rivets *d d*, as clearly shown in the drawings. Similar bolts or rivets are secured in said plates or sheets *b b* adjacent to the outer edges thereof. The outer edges or rims of said plates *b b* are bent upon themselves to form a strengthening rim or bead *h*, adapted to reinforce and strengthen the plates *b b* without increasing the weight thereof and at a very slight increase in the labor and expense required to construct the frame, and I also construct reinforcing or strengthening beads around the journals of the crank-shaft and axle of the drive-wheel for the purpose of giving additional strength and rigidity to these parts without increasing the weight of the frame.

The drive-wheel is suitably mounted in reinforced journals or bearings in the free extremities of the forked or bifurcated portions of said frame, as shown, and the crank-shaft is similarly mounted in the lower part of said bifurcated or forked portion of the frame, and the drive or sprocket chain *m*, passing over the sprocket-wheel on the crank-shaft and the sprocket-wheel of the drive-shaft, is also journaled in said bifurcated or forked portion of the frame.

I preferably cut away the central forward portion of the frame, as shown in Fig. 1, and bend the edges of the cut-away portion upon themselves to form a reinforcing or strengthening rim or bead *h'* for the purposes specified, and this construction tends to lighten the frame without materially detracting from the strength and durability of the same.

The upper and lower orifices of the journal or bearing of the steering-head are also provided with a reinforcing or strengthening bead or rim *h'*, the same being preferably a continuation of the reinforcing or strengthening bead or rim *h*, formed upon the edges or rim of said frame. Within said journal or bearing of the steering-head a steel bushing *g* is preferably inclosed, provided with anti-friction ball-bearings on which the steering-head is mounted.

The saddle-post may be secured in the socket or recess formed in the upper edge of the frame, as shown, or in any other suitable manner.

I may, if preferred, construct my improved bicycle-frame of veneers, papier-mâché, or other similar material; but I prefer to use vulcanized fiber for the manufacture of my improved bicycle-frame.

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

1. A frame for a bicycle or other vehicle, consisting of one or more sheets or plates of vulcanized fiber or similar material, provided with a reinforcing or strengthening rim or bead upon the outer edges or rim thereof and being cut away upon the forward central portion thereof, and having the edges of the cut-away portion bent upon themselves to form a continuous reinforcing or strengthening bead or rim, said frame being bent upon itself to form a journal or bearing for the steering-head provided at the top and bottom thereof with said reinforcing or strengthening rim or bead, the free or rear ends of said frame being bifurcated or forked to accommodate the driving mechanism and having journals or bearings for the axle of the drive-wheel, and the crank-shaft provided with reinforcing or strengthening rims or beads, said frame being secured together by rivets inside of said reinforcing or strengthening rim or bead, and said bifurcated portion, substantially as described.

2. The combination with a guide and drive wheel of a bicycle and the steering-head and driving mechanism of a frame formed of one continuous portion of vulcanized fiber, having the outer edges or rim thereof bent upon itself to form a reinforcing or strengthening bead or rim and having the central forward portion thereof cut away and the edges of the cut-away portion provided with a similar reinforcing or strengthening bead or rim, said frame being bent upon itself intermediate of the length thereof to form a bearing or journal for said steering-head and the free or rear ends of said frame being bifurcated or forked to receive said drive-wheel and driving mechanism, said frame being riveted together around the outer edge thereof within said strengthening bead or rim and said bifurcated portion and the journals or bearings for the axle of said drive-wheel, and for the crank-shaft having also a reinforcing or strengthening bead and a socket formed in the upper edge of said frame for the saddle-post, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

LOUIS B. SMYSER.

Witnesses:
WM. J. FERDINAND,
WM. H. HEULING, Jr.