Jan. 11, 1944. F. M. MORGAN ET AL 2,338,730

VELOCIPEDE

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Fig. 1.

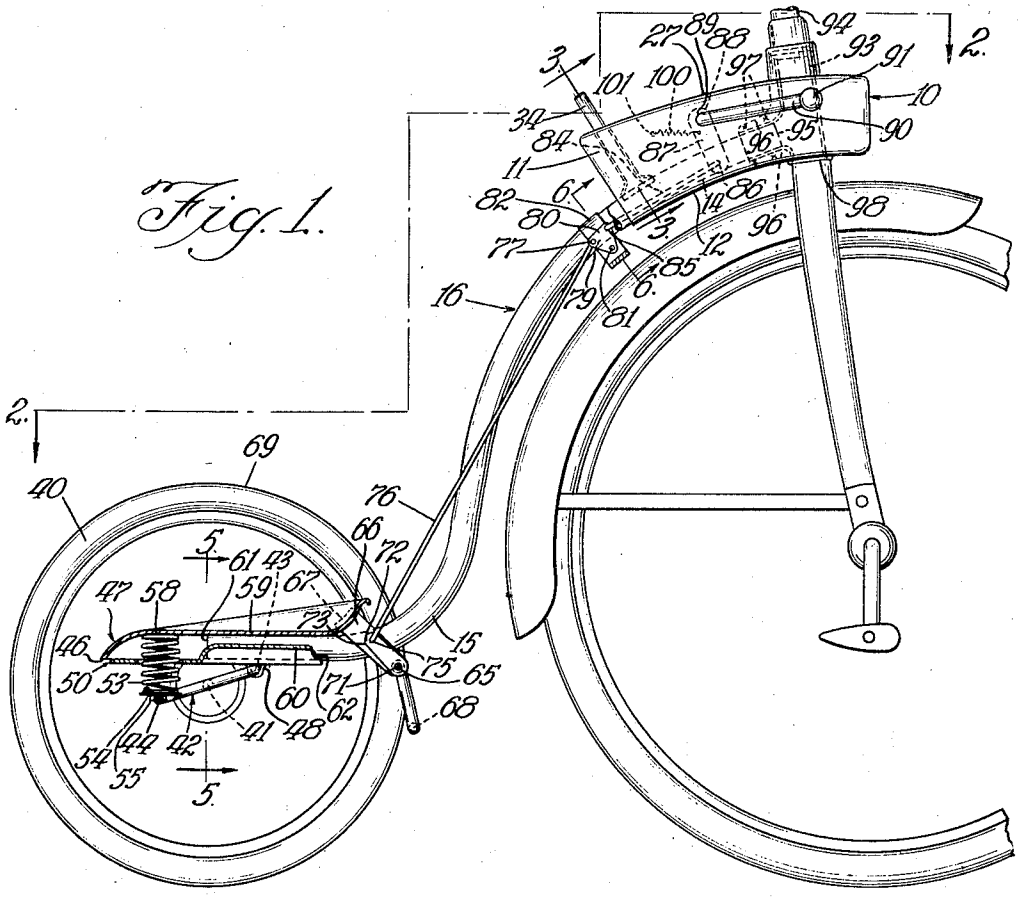


Fig. 3.

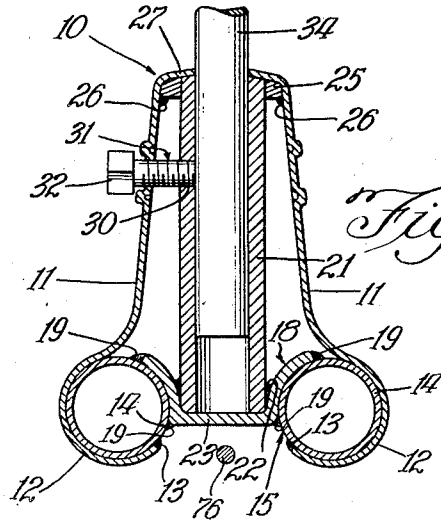
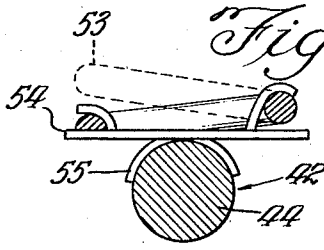


Fig. 4.



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Fig. 2.

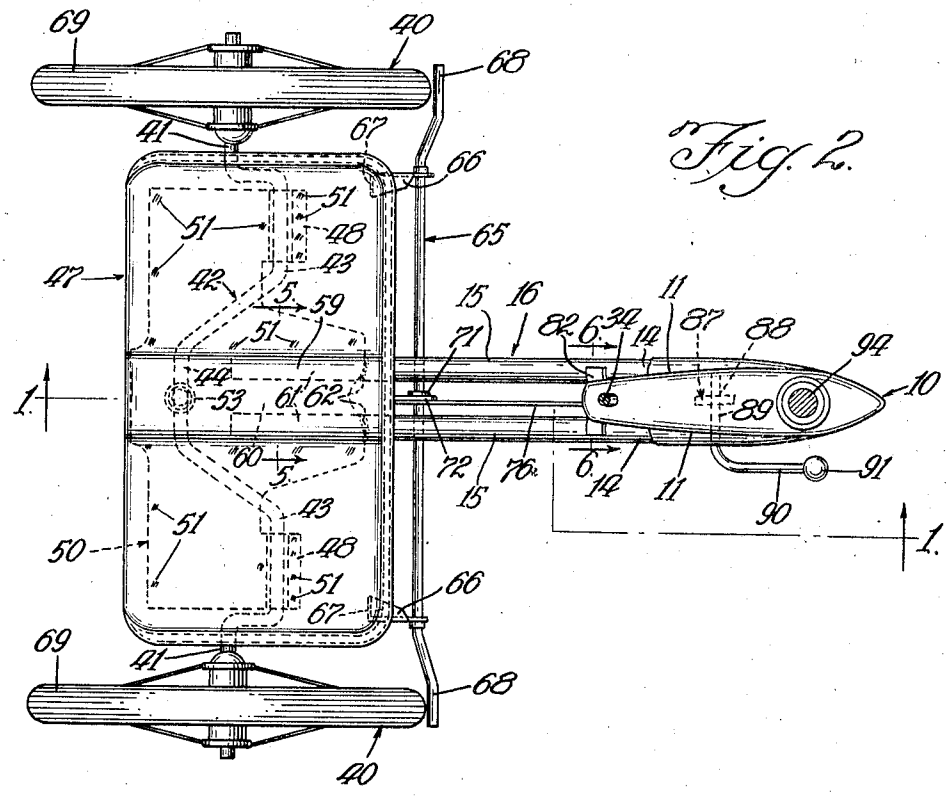


Fig. 5.

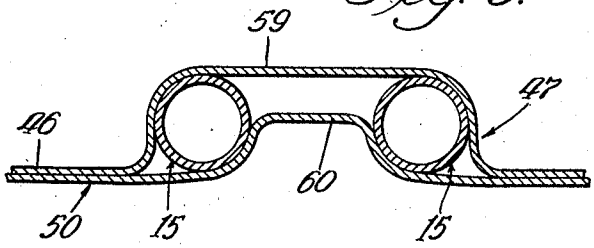
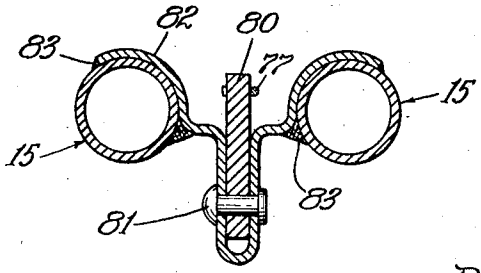


Fig. 6.



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UNITED STATES PATENT OFFICE

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VELOCIPEDE

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Application July 20, 1940, Serial No. 346,466

9 Claims. (Cl. 280—282)

This invention relates to vehicles and more particularly to velocipedes and is concerned with improved frame and brake construction making for more comfortable riding.

It is an object of our invention to provide a frame construction for a vehicle of the character referred to affording a yieldable connection between a load receiving member and an axle.

It is another object to provide an improved stand for supporting an extra rider.

A further object involves the provision of a brake operating mechanism substantially shielded from contact with the rider or riders.

It is also an object to provide an improved seat support.

Further objects and advantages of the invention will appear as the description proceeds. The invention will be better understood upon reference to the following description and drawing, in which:

Fig. 1 is a fragmentary side view, partly in section and partly in elevation, of a velocipede constructed in accordance with the principles of our invention, taken substantially as indicated by the line 1—1 in Fig. 2;

Fig. 2 is a sectional plan view taken as indicated by the line 2—2 in Fig. 1;

Fig. 3 is an enlarged fragmentary sectional view taken as indicated by the line 3—3 in Fig. 1;

Fig. 4 is an enlarged fragmentary sectional view showing how the shock absorber spring may be mounted on the axle; and

Figs. 5 and 6 are fragmentary sectional views taken as indicated by the lines 5—5 and 6—6, respectively, in each of Figs. 1 and 2.

Referring now more particularly to the drawings, there is illustrated a velocipede on the front frame of which may be supported a casing 10 for a light, horn, etc., said casing having its sides 11 curled downward and inward to provide rearwardly open sockets 12 in which are welded as at 13 or otherwise suitably secured the forward ends 14 of a pair of backbones 15 of a frame indicated generally at 16. The backbones are preferably arranged side by side and, preferably within the casing 10, are securely bridged by a strap 18 welded or otherwise suitably joined thereto as at 19. A sleeve 21 is welded as at 22 or otherwise integrally united to the web 23 of the bridge 18 and may have additional lateral support in a ring 25 welded as at 26 or otherwise suitably secured to the deck 27 of the casing 10. The sleeve 21 has a threaded opening 30 which receives a set screw 31 passing through a side wall 11 of the casing and having its head 32 outside the casing for ready manipulation. The sleeve 21 affords a socket in which the post or bracket 34 of a seat (not shown) is adapted to be adjustably received, the screw 31 serving by contact with the post 34 to maintain the seat at the desired height.

In accordance with our invention, the rear wheels 40 are mounted on the stub ends 41 of an axle 42, which has adjacent inwardly disposed forwardly offset portions 43 and a central rearwardly offset portion 44. The forward portions 43 of the axle are rotatably secured to the underside 46 of a stand or toe plate 47 for an extra passenger, as by suitably formed extensions 48 of a reinforcing plate 50 welded as at 51 to the stand. A spring 53 is anchored at its lower end as to a thrust member 54 bearing at 55 on the rear offset portion 44 of the axle, the upper end of the spring being engaged as at 58 with a rearward extension of an upwardly projecting bulge 59 on the stand 47. The spring is preferably normally under compression.

The reinforcing plate 50 has an upward bulge 60 which cooperates with the bulge 59 in providing sockets receiving the free rear ends 61 of the backbone members 15, the forward end of the bulge 60 being preferably arc-welded as at 62 to the ends 61.

The weight of the passenger on the stand 47 and/or the operator in the seat (not shown) depresses the entire stand and accordingly the forward portions 43 of the axle, about the axis of the wheel-supported axle ends 41, and at the same time compresses the spring 53, which thereby provides a resilient comfortable support for the rider or riders, and in addition the backbones 15 are considerably relieved of stress.

Should the wheels 40, or either of them, enter a depression or strike a bump, the action above described will be momentarily accentuated; the mechanism operating as a shock absorber for the operator, passenger and frame.

Another feature of our invention is concerned with a brake. To this end we extend a rod 65 transversely of the vehicle adjacent the front of the stand 47 and rotatably support the rod as by hangers 66 attached to the stand. The ends 68 of the rod are offset outwardly beyond the supports 66 and are disposed in juxtaposition to the treads 69 of the wheels 40 so that, upon turning of the rod, its ends 68 may move toward and away from the treads, as will appear.

Welded as at 71 or otherwise suitably fixed to a central part of the rod 65 is a crank 72 whose

free end 73 is connected as at 75 to an actuating member 76 which may be a stiff rod preferably extending along and between the backbone members 15. The rod 76 is connected at its forward end as at 77 to the free end 79 of a rock arm 80 pivoted as at 81 to a bracket 82 welded as at 83 to the backbones 15. A second rod 84 is connected as at 85 to the rock arm 80 and extends into the casing 10, the forward end of the rod 84 being connected as at 86 to a crank 87 welded as at 88 or otherwise suitably fixed to an actuating spindle or arbor 89. The arbor is suitably fixed to and journaled in the casing 10 and projects therefrom and carries a second crank 90 having a handle 91 within convenient reach of the seated rider.

The sleeve 93 for the steering spindle 94 passes through the casing 10 and is split to provide a socket in which the forward ends 95 of the backbones 15 terminate, the halves of the socket having flanges 96 welded together as at 97.

The casing 10 is supported in place by the lower flange 98 of the steering post sleeve 93, and the seat post tube 21 and the backbone portions 14 received in the casing sockets 12.

To stop or slow down the vehicle, the rider pulls up on the handle 91, thereby swinging the crank 87 and pulling the rod 84, arm 80, rod 76 and crank 72 forward, thereby rotating the rod 65 in a direction to swing its ends 68 into engagement with the wheel treads 69, whereby a braking pressure is applied. As is evident, a relatively short movement of the handle 91 is needed for this purpose, and when the pull is relaxed a suitable spring 100 anchored as at 101 to the casing or an element connected thereto and also anchored to the crank 87 draws and yieldably holds the brake rod ends 68 free of the tire treads to prevent drag and rattling.

It is evident from the foregoing that we have provided a shock-absorbing, easy, comfortable riding pedal-operated vehicle such, for example, as a tricycle or velocipede, for an extra passenger as well as the seated rider, the vehicle being of extremely simple construction and trim appearance, affording a dependable and conveniently located brake together with storage for a light and/or horn, and a secure support for an adjustable seat.

The flanges at the sides and front of the rear platform are a safety feature as they prevent the youngster supported thereon from slipping and falling.

With the spring mounting for the rear axle, a safe floating ride is made possible.

Various modifications may suggest themselves to those skilled in the art without departing from the spirit of my invention, and, hence, we do not wish to be restricted to the specific form shown or uses mentioned, except to the extent indicated in the appended claims, which are to be interpreted as broadly as the state of the art will permit.

We claim:

1. A velocipede comprising rear wheels and a front wheel, an axle for said rear wheels, said axle having a section offset from the axis of the wheels, an extra-passenger platform pivotally connected to said section, a frame connected to the front wheel and to said platform, a member rigid with said axle and having a portion disposed beyond the axis of the wheels in a direction opposite to the direction in which said section is offset, and a spring between said portion and said platform and yieldable in response to the weight of a person on said platform to enhance the riding comfort of such person.

2. A foot-propelled vehicle comprising front and rear wheel means and means for supporting a seated rider between the front wheel means and the rear wheel means, an axle for said rear wheel means, an extra-passenger stand above said axle and supported by said wheel means in a position to support a passenger standing behind the seated rider, said stand having portions disposed forwardly and rearwardly beyond the axis of said rear wheel means, said forwardly disposed portion being pivotally connected to said axle, and resilient means yieldably spacing said rearwardly disposed portion from said axle.

3. A velocipede comprising a rear axle having wheel receiving ends and intermediate portions offset forwardly and rearwardly relative to said ends, an extra-passenger toe plate pivotally mounted on one of said offset portions, and a spring spacing apart said plate and the other offset portion.

4. A velocipede comprising a rear axle having wheel receiving ends and intermediate portions offset forwardly and rearwardly relative to said ends, a toe plate pivotally mounted on said forwardly offset portion, a spring spacing apart said plate and the rearwardly offset portion, and a frame backbone connected to and extending in advance of said plate.

5. A velocipede comprising coaxial rear wheels, an axle connected to said wheels, said axle having intermediate portions forwardly and rearwardly offset relative to the axis of said wheels, a toe plate, a spring spacing apart said toe plate and said rearwardly offset portion, a backbone, and toe plate reinforcing means cooperating with said plate in providing sockets in which said forwardly projecting portion and said backbone are secured, said plate and forwardly projecting portion being relatively rotatable.

6. A velocipede adapted to be pedaled by a seated rider and comprising rear wheels, a toe plate supported thereby in a position to support a standing passenger behind the seated rider, a pair of backbones connected side by side to said plate, a brake bar journaled to said plate laterally beyond said backbones and having wheel-engaging portions, a crank rigid with said bar and extending between said backbones, an actuating member connected to said crank and extending forwardly between said backbones, and means operable upon said member by the seated rider for controlling said brake bar.

7. A vehicle of the class described, comprising a pair of backbones, a bridge secured to and extending over said backbones, a seat post receiving sleeve secured to and seated over and extending upward from said bridge, a casing adapted to support a headlight and enclosing said bridge and sleeve and the adjacent portions of said backbones, and means accessible from outside of the casing and passing through said casing and sleeve for securing a seat post in different adjustments.

8. A vehicle of the class described, comprising front and rear wheels, brake means mounted adjacent said rear wheels for movement toward and away from said rear wheels, a backbone extending between the front and rear wheels, a casing mounted adjacent the forward end of said backbone, an elongated brake actuating element extending from said brake means forwardly into said casing, and a bell-crank handle connected to said element within said casing and extending

to a position where it is readily reached by the rider for pulling said element to apply said brake means to said rear wheels, and means for normally holding said brake means free of said rear wheels.

9. A velocipede adapted to be pedaled by a seated rider and comprising rear wheels, a toe plate yieldably supported thereby in a position to support a standing passenger behind the seated rider, a pair of backbones connected side by side to said plate, a brake bar journaled to said plate laterally beyond said backbones and having wheel-engaging portions, a crank rigid with said bar and extending between said backbones, an actuating member connected to said crank and extending forwardly between said backbones, and means operable upon said member by the seated rider for controlling said brake bar, said wheel-engaging portions being disposed for engagement with said wheels notwithstanding yield of said plate.

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