March 26, 1935. B. J. ANDERSON 1,995,529

VELOCIPEDE FRAME

Filed Oct. 5, 1934

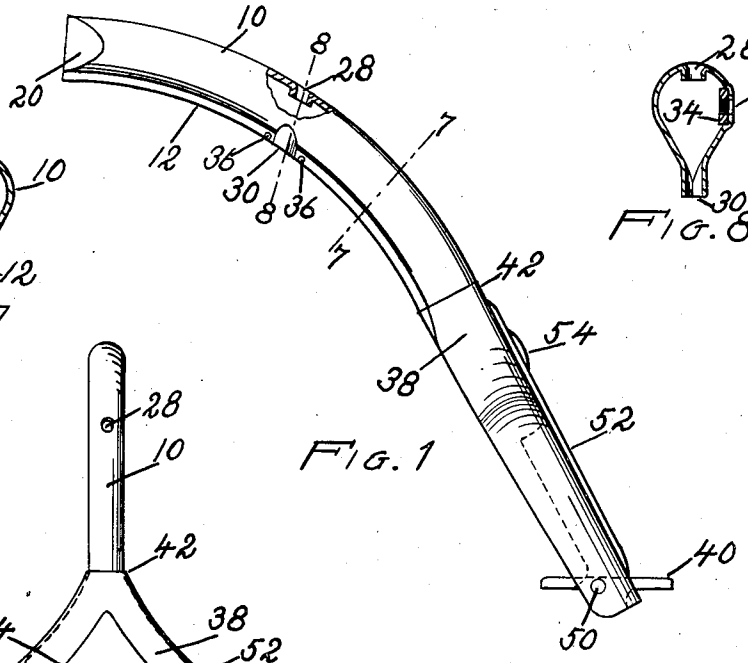


FIG. 1

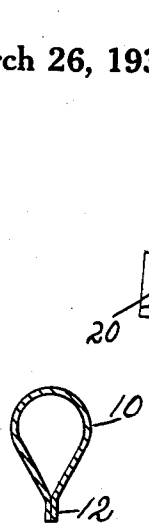


FIG. 7

FIG. 8

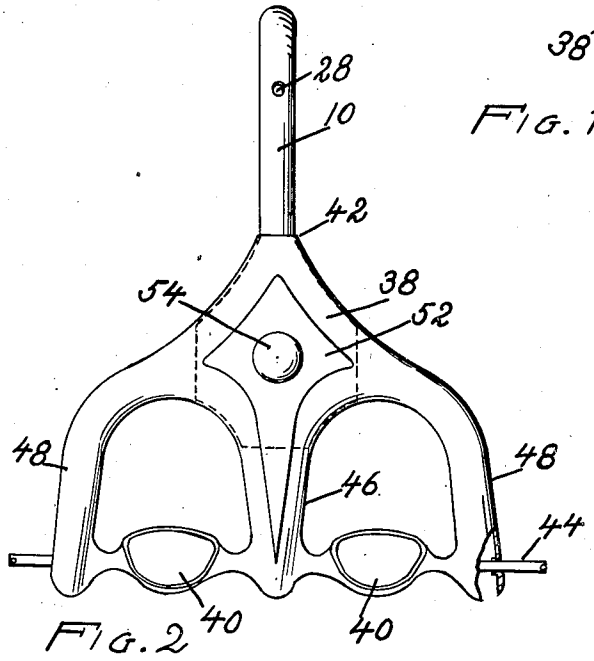


FIG. 2

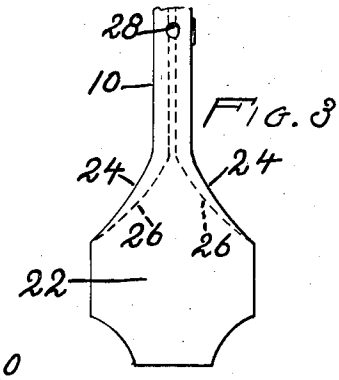


FIG. 3

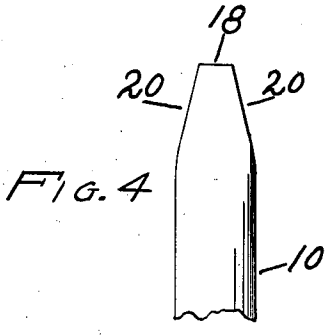


FIG. 4

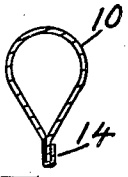


FIG. 5

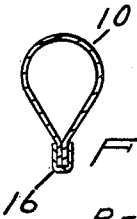


FIG. 6

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VELOCIPEDE FRAME

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14 Claims. (Cl. 208—113)

This invention relates to improvement in velocipede frames and has for one of its principal objects the construction of a sheet metal frame having integral step-plates.

Another and still further important object of this invention relates to the method of joining the two pieces of the frame to form a reenforced double portion at the point in the frame most susceptible to distortion or breakage from hard usage.

Still another and further important object of the velocipede frame of this invention resides in the provision of means for joining the lower edges of the curved cylindrical backbone.

A still further important object of this invention resides in the reenforcing and joining of the lower ends of the axle supporting member with the step-plates.

Another and still further important object of the velocipede frame of this invention resides in the spade like construction of the rear end of the backbone.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description.

The invention, in a preferred form, is illustrated in the annexed drawing and hereinafter more fully described.

In the drawing:

Figure 1 is a side elevation of the velocipede frame of this invention with parts broken away.

Figure 2 is a rear view, taken from an angle slightly above, of the velocipede frame with parts broken away.

Figure 3 is a plan view of the expanded spade like rear end of the backbone.

Figure 4 is an enlarged top plan view of the restricted front end of the backbone.

Figure 5 is an enlarged sectional view of the backbone and shows a slight modification in the manner of joining the edges.

Figure 6 is an enlarged sectional view of the backbone and shows another slight modification in the manner of joining the edges.

Figure 7 is a slightly enlarged sectional view of the backbone taken on the line 7—7 of Figure 1, and shows the preferred construction of the cylindrical backbone.

Figure 8 is an enlarged sectional view of the backbone taken on the line 8—8 of Figure 1, and shows the relative positions of the apertures and threaded member.

As shown in the drawing:

The reference numeral 10, indicates in a general way the backbone of the velocipede frame of this invention, which in the preferred construction consists of a single piece of sheet metal, cylindrical in cross section, and longitudinally curved with a convex upper surface and a concave lower surface, as is best shown in Figures 1 and 7.

The construction of the backbone 10, consists of turning the outer portions of a flat piece of sheet metal downwardly and inwardly and joining the edges 12, at the bottom, as is best shown in Figures 5, 6, and 7, to form a substantially oval section. The edges 12, may be secured in position by welding or riveting or in any other suitable manner.

Suitable modifications of this means of securing the edges may be used as by lapping one edge over the other as shown by the reference numeral 14, in Figure 5, or by employing a channel 16, as shown in Figure 6.

The front end 18, of the backbone 10, is restricted and has flat sides 20 to more readily lend itself to attachment to any one of the various kinds of heads used in the art.

The rear end of the backbone 10, is an expanded spade like and substantially flat member 22, as is best shown in Figure 3. The forward edges 24, of the member 22, are turned downwardly and inwardly as indicated by the dotted lines 26, in Figure 3.

A draw neck aperture 28, in the upper surface of the backbone 10, is in alignment with an aperture 30, in the lower surface of said backbone, and is adaptable to receive and support the post of a saddle.

A side aperture 32, in alignment with the top and bottom apertures 28, and 30, respectively, has a female screw threaded member 34, in association therewith for receiving a seat adjustment set screw. It will be apparent however, that a ring and set screw, eye bolt and nut, or any other suitable seat securing means may be used. Rivets 36, may be employed to prevent the bottom aperture 30, from spreading.

Secured to the expanded portion 22, of the backbone 10, as is best shown in Figure 2, is an axle supporting member 38. In the preferred embodiment of the frame of this invention the member 38, including the step plates 40, is made from a single piece of sheet metal, which may be spot welded, riveted or otherwise suitably secured to the backbone.

The member 38, is substantially triangular in plan formation and has a restricted annu-

lar upper end 42, which encircles and is secured to the backbone 10, just forward of the expanded member 22, and a wide lower end adapted to support an axle 44. The wide lower end of the member 38, consists of a center member 46, and two oppositely disposed outwardly and downwardly extending semi-cylindrical members 48, reenforced and secured in spaced relation to each other by the step plates 40.

Aligned draw neck apertures 50, through the outer surface of the members 48, and adjacent the ends thereof support the axle 44, which may be secured against rotation.

The outer edges of the member 38, are turned downwardly and inwardly to strengthen the member and also to enhance its appearance. The edges above and to the sides of the step plates are also rolled to present a smooth surface and to prevent injury to a child or his clothing.

A raised center portion 52, on the surface of the axle supporting member 38, improves the appearance thereof and greatly increases its resistance to strain and torsion.

Provision is made for attaching a reflector 54, to the axle supporting member.

It will be apparent from the foregoing that herein is provided a sheet metal velocipede frame which is of compact and practical construction; composed of few, simple, and strong parts.

Furthermore, it will be apparent that the frame of this invention has the general appearance of a tubular frame, possesses much greater strength, is more readily adaptable to streamlining and decorating, yet is capable of much quicker and more economical manufacture.

Moreover, the step plates being integral parts of the frame, are not broken off and lost as are the conventional welded plats, rigidly secure the downwardly extending members in spaced relation. Furthermore, the great length and breadth of the member forming the rear end of the backbone, which is used in joining the members together, provides a bracing and reenforcing sufficient to withstand the most violent abuse.

I am aware that many changes may be made, and numerous details of construction varied throughout a wide range without departing from the principles of this invention, and I, therefore, do not purpose limiting the patent granted hereon otherwise than as necessitated by the prior art.

I claim as my invention:

1. A sheet metal velocipede frame including, a curved backbone restricted at one end and expanded at the other end and substantially oval in cross section, therebetween, the longitudinal edges of said oval portion being joined along the bottom, a draw neck aperture in the upper middle surface of said backbone, an aligned aperture formed by spreading the edges of the lower part of said backbone, an aperture in the side surface of the backbone in alignment with said upper and lower apertures, a female screw threaded member in association with the inner surface of the backbone and in alignment with the side aperture, an axle supporting member secured to the expanded end of the backbone, said axle supporting member having a downwardly extending central portion and outwardly and downwardly extending side portions connected at the lower ends thereof by integral step plates, aligned draw neck apertures adjacent the lower ends of the side portions for supporting an axle, and an axle positioned in said apertures.

2. A sheet metal velocipede frame including, a curved backbone substantially oval in cross section and having a flat lower end, the edges of said backbone being joined at the bottom of said oval, means in said backbone adapted to receive a seat support, a member adapted to support an axle adjacent the ends thereof secured to the backbone and encircling said backbone forward of its flat lower portion, and an axle operably positioned in said member.

3. A sheet metal velocipede frame including, a backbone having a convex upper surface and a concave lower surface and a flat rear portion, the edges of said backbone joined along the concave lower surface, means in said backbone adapted to receive a seat support, an axle supporting member secured to the top surface of the flat rear portion of the backbone and encircling said backbone at the upper end of the flat portion, an axle positioned in said supporting member, and step plates positioned above said axle and joined to said support member.

4. A sheet metal velocipede frame having a restricted front end adapted to be secured to the head of a velocipede and having a flat rear end, the forward edges of said flat rear end being turned downwardly, a perforated rear member adapted to support an axle adjacent the ends thereof, an axle positioned in said rear member, and a pair of step plates positioned above said axle and joined to the rear member and forming the lower sides of the perforations of the rear member.

5. A velocipede frame comprising the combination of a cylindrically formed upper portion having a restricted front end and an expanded flat rear end, and a substantially M shaped lower portion, a draw neck axle receiving aperture adjacent the end of each outer depending member, and a step plate positioned between each outer depending member and the center depending member and secured to said members.

6. A cylindrical sheet metal backbone for a velocipede, having a convex upper surface and a concave lower surface, the edges of the sheet metal being joined along the concave lower surface of said backbone, a draw neck aperture in the convex upper surface midway of the two ends and in alignment with an expanded opening in the convex lower surface, a rivet securing the edges on each side of said expanded opening, a restricted front end and a flat spade like rear end.

7. In a velocipede frame, a cylindrical backbone formed from a single piece of sheetmetal and having a restricted front end and a wide spade like rear end.

8. In a velocipede frame having a rear axle supporting member, a curved backbone having a rear end portion the width of which is greater than the diameter of or width of the front portion of the backbone and having one portion thereof conforming in contour to the contour of the adjacent portion of the axle supporting member and adapted to be positioned within and secured to the upper inside surface of the rear axle supporting member, and means in said backbone adapted to receive a seat support.

9. In a sheet metal velocipede frame, a curved backbone having a rear end portion the width of which is greater than the diameter of or width of the front portion of the backbone, certain portions of which are turned downwardly and formed

to fit the inside contour of a rear axle supporting member, means for securing a seat to said backbone, said means including a threaded member associated with the inner surface of said backbone for directing a set screw against a seat post passing therethrough.

10. A curved cylindrical backbone having a flat expanded rear end, the edges of said backbone joined along the lower curved surface thereof, and a channel member positioned over said joined edges.

11. A curved cylindrical sheet metal backbone joined along the lower surface thereof, the metal of one side overlapping and turned upwardly against the metal of the opposite side, and means for securing a seat on said backbone.

12. A sheet metal axle supporting member having a restricted annular upper end and opposing outwardly and downwardly extending semi-tubular lower ends, a pair of step plates positioned between said semi-tubular lower ends, and a central step plate supporting member joined to the upper portion of the axle supporting member.

13. A combination axle supporting and step plate member for a velocipede, consisting of a single sheet metal stamping, a restricted annular upper end, an outwardly and downwardly extending semi-tubular member on opposed sides thereof, aligned draw neck apertures adjacent the lower ends of said semi-tubular members, a downwardly extending central member in alignment with said semi-tubular members, and a step plate between each semi-tubular member and the central member and secured thereto.

14. A rear axle supporting member for a velocipede formed of a single piece of sheet metal and consisting of portions adapted to receive an axle, step plates and a backbone receiving portion.

BERT J. ANDERSON.