

March 13, 1951

D. S. LIVINGSTON
AUXILIARY LOAD-CARRYING ATTACHMENT FOR
TRICYCLES, VELOCIPEDES, AND THE LIKE

2,544,963

Filed Jan. 16, 1948

2 Sheets-Sheet 1

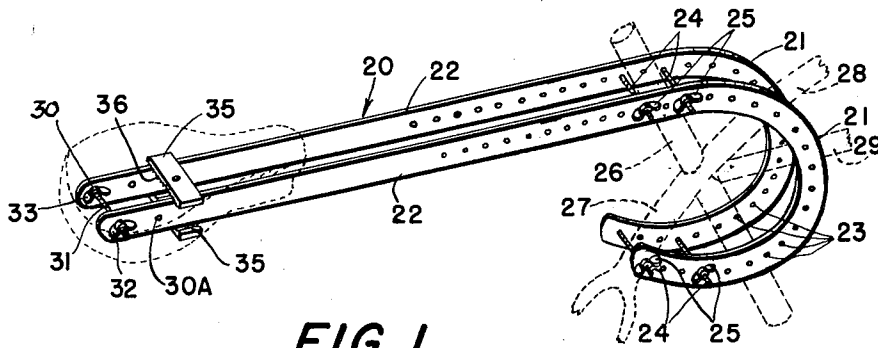


FIG. 1

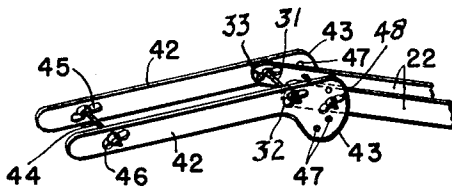


FIG. 10

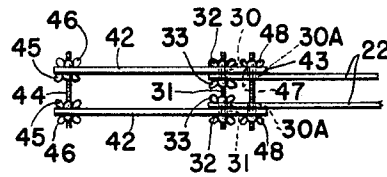


FIG. 11

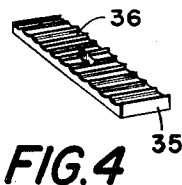


FIG. 4

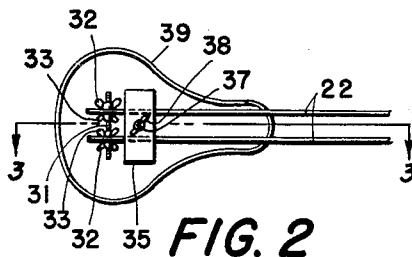


FIG. 2

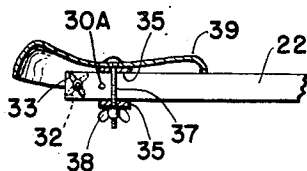


FIG. 3

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2 Sheets-Sheet 2

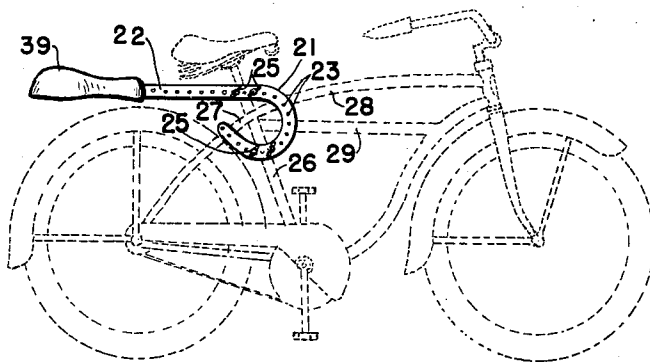


FIG. 5

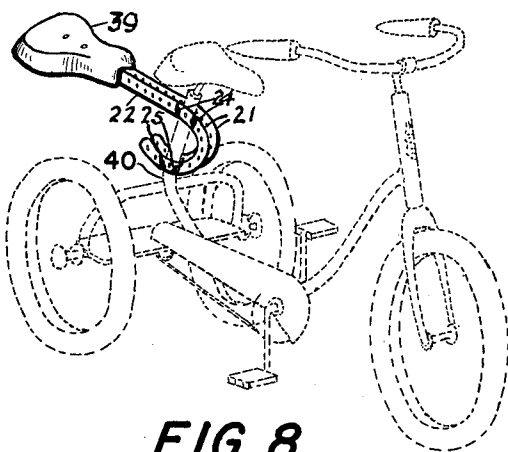


FIG. 8

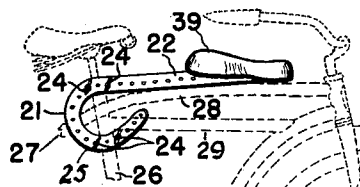


FIG. 6

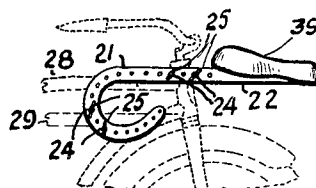


FIG. 7

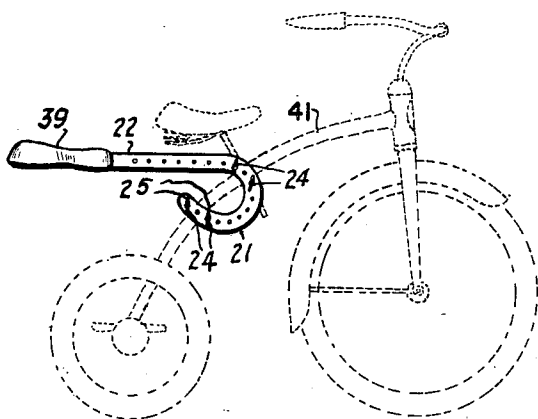


FIG. 9

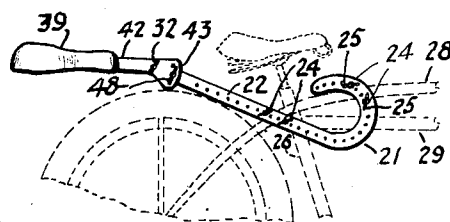


FIG. 12

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AUXILIARY LOAD-CARRYING ATTACHMENT
FOR TRICYCLES, VELOCIPEDES, AND THE
LIKE

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7 Claims. (Cl. 155—5.12)

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This invention relates to auxiliary attachments for tricycles, velocipedes, bicycles and the like which may be employed as an auxiliary seat for carrying a second person or as a platform for carrying loads on the vehicle.

A primary object of the present invention is to provide a novel attachment for tricycles, velocipedes, bicycles and the like which will enable the operating rider to carry a second rider or other load in one or more positions in front of, or to the rear of the operator.

Another object is to provide a novel form of such attachment which is of universal application to any of the several types of vehicles mentioned and which can be arranged in any one of several positions on such vehicles in conformance with the particular arrangement of the frame members of such vehicles.

A further object is to provide a novel form of such attachment which may be readily mounted in the desired position on a vehicle of the class described without the use of tools and without the need for the exercise of any mechanical skill on the part of the user.

Various other objects and advantages of this invention will be apparent from the following detailed description when read in conjunction with the accompanying drawings which illustrate useful embodiments of the attachment in accordance with this invention and a number of positions in which the attachment may be arranged on various vehicles of the types mentioned.

In the drawings:

Fig. 1 is a view in perspective of the attachment in accordance with this invention;

Fig. 2 is a view looking upwardly toward the portion of the attachment on which a seat is mounted;

Fig. 3 is an elevational cross-section along line 3—3 of Fig. 2;

Fig. 4 is a perspective view of one of the clamp members employed to hold the seat or other load carrying platform on the attachment.

Figs. 5, 6, and 7 show several positions of the attachment on a conventional bicycle;

Fig. 8 illustrates the attachment mounted on a conventional form of chain-drive velocipede;

Fig. 9 illustrates the attachment mounted on a child's tricycle of common form;

Fig. 10 is a perspective view of an extension element for pivoted connection to the attachment whereby angular adjustment of the seat or load carrying platform relative to the attachment may be provided;

Fig. 11 is a plan view of the extension element illustrated in Fig. 10; and

Fig. 12 shows the attachment with the extension element mounted on a bicycle.

Referring to the drawings and Fig. 1 particu-

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larly, the attachment in accordance with one illustrative embodiment of this invention is designated generally by the numeral 20 and consists of a pair of parallel U-shaped side bars or brackets 21—21, each having one arm 22 considerably longer than the other arm of the U. A series of registering perforations 23 are provided throughout the U-portions of each of the brackets 23 and at least a part of the adjacent portion of arms 22. Brackets 21 are adapted to be placed on opposite sides of a suitable portion of the frame of a bicycle, tricycle or velocipede, as shown in Figs. 5 to 9 inclusive, and are clamped to the frame by means of two pairs of bolts 24—24 which extend through selected ones of the perforations 23. Both the outer ends of each of the bolts are threaded to receive wing nuts 25—25 (one each shown) by means of which the brackets 21 may be clamped tightly across the frame members. The pairs of openings 23 which are selected for the insertion of the pairs of bolts 24 are those which lie on opposite sides of spaced portions of the frame members so that the attachment will be firmly clamped to at least two spaced points on the frame members, and thereby locked thereto against displacement in any direction. This arrangement is illustrated in broken outlines in Fig. 1, which is an enlarged view of a portion of Fig. 5, illustrating the clamped connection of the brackets to the connecting group of rear frame members of a bicycle. It will be noted that the seat support tube 26, at the point where it passes downwardly between the upper arms of the brackets, is clamped between a pair of the bolts 24 while a second pair of the bolts 24 is clamped on opposite sides of the rear wheel fork 27, at a point which is spaced from the first point of clamping to the frame. It will be understood that the second pair of bolts may be inserted through brackets 21 on opposite sides of either of the longitudinal frame bars 28 or 29, if desired. Similarly, the second pair of bolts may be inserted on opposite sides of seat tube 26 at the point where it passes between the shorter arms of brackets 21. In any case, a sufficient number of bolts (at least three) will be employed to lock the attachment to at least two spaced points on the frame. These spaced points may either be on the same frame member or on different frame members enclosed between the brackets. The outer ends of arms 22 will also be provided with at least two spaced registering openings 30 and 30a through at least one of which will be inserted a bolt 31 provided with a pair of wing nuts 32 on the outside of arms 22 and another pair 33 on the inside of the arms 22, the pairs of nuts being employed to adjust the spacing of the outer ends of arms 22 and to lock the arms in the adjusted position. A pair of clamping bars 35—35 are adapted to be remov-

ably mounted transversely of the outer ends of arms 22, one of the clamps being placed across the upper edges of the arms and the other under the lower edges of the arms. The opposed faces of bar 35 are serrated at 36 to prevent slipping of the bars on arms 22, particularly in the sidewise direction. A bolt 37 is rigidly connected to the upper bar 35 and extends between arms 22 through a suitable opening in the lower bar 35 and is provided with a wing nut 38 on its lower end for clamping the bars tightly to the arms. Upper bar 35 is adapted to have mounted thereon a seat 39 which can be fastened to the upper bar in any suitable or desired manner. It will be understood that instead of a seat, a load-carrying platform or receptacle of any desired form may be similarly mounted on the upper bar 35.

Fig. 6 illustrates a mounting for the attachment whereby the seat is positioned on a bicycle between the operator's seat and the handle bars. In this example it will be noted that the brackets 21 are simply reversed from the position shown in Figs. 1 and 5 with the arms extending forwardly. Seat 39 is similarly reversed on the ends of arms 22. In this instance, one pair of locking bolts 24 are inserted on opposite sides of seat tube 26, while a second pair is inserted on opposite sides of seat tube 26 at a point thereon below the first pair. Obviously any other pairs of openings 23 spaced apart along the brackets may be employed which permit locking of the attachment to spaced points on the frame.

Fig. 7 illustrates still another position of the attachment on a bicycle whereby the seat or load-carrying platform is positioned forward of the handle bars. In this illustration, the directions of the brackets and seat 39 are the same as shown in Fig. 6, but the attachment is moved forward of the bicycle and clamped to the forward frame members, as shown.

Fig. 8 illustrates the attachment mounted to provide an auxiliary rear seat for a velocipede. In this case, both points of attachment of the brackets are at spaced points on a single frame member, namely, the seat tube 40 of the velocipede.

Fig. 9 illustrates the connection of the attachment to the single main frame member 41 of a tricycle.

From the various illustrations, above described, it will be seen that the attachment in accordance with this invention is of a universal nature, in that it can be readily adapted for mounting on any of the various types of vehicles described; in any desired position; and can be accommodated to any frame member or group of frame members commonly employed in such vehicles. It will also be seen that the attachment may be mounted without the use of any tools and without need for any degree of mechanical skill beyond that possessed by the average child.

Figs. 10 and 11 illustrate another embodiment in accordance with this invention which is designed particularly for accommodation to frames which do not readily lend themselves to the mounting of brackets 21 in a horizontal position.

This embodiment includes a pair of extension bars 42—42 having enlargements 43—43 at one end for connection to the outer ends of arms 22 of the attachment of the previously described embodiment. The outer ends of the extension bars are interconnected by a transverse adjusting bolt 44 having inner and outer adjusting wing nuts 45 and 46, respectively, which corre-

spond in form and function to bolt 31 and nuts 32 and 33 in the previously described embodiment. Enlargements 43 are preferably arcuate in shape and are provided at points spaced inwardly along the extension bars from the outer ends of enlargements 43 with registering holes for the reception of bolt 31 which is employed to pivotally connect the extension bars to the outer ends of arms 22. A series of registering holes 47 are arranged along an arc adjacent the outer edges of enlargements 43, and are adapted to register with holes 30a which are spaced inwardly of arms 22 from the holes through which bolt 31 is inserted. A bolt 48 having outside wing nuts 49—49 on its opposite ends is inserted through a registering pair of the holes 47 and holes 30a to thereby lock the extension bars rigidly to the ends of arms 22. By suitable selection of holes 47, the extension bars may be locked at any desired angle relative to arms 22. It will be understood that a seat or other load-carrying platform or receptacle may be mounted on extension bars 42 in the same manner as in the previously described embodiment.

Fig. 12 shows the modified embodiment mounted on the rear of a bicycle. This arrangement is provided to accommodate the mounting of the attachment to a frame in which, because of variations in form of the frame member, brackets 21 cannot be mounted so that arms 22 will be horizontal. As shown in Fig. 12, the brackets are mounted and attached to the frame members of the bicycle in such a way that arms 22 extend rearwardly and upwardly therefrom. By means of the pivoted connection between bars 42 and arms 22, the former may be rotated about bolt 31 as an axis until the bars are in the horizontal position, whereupon bolt 48 will be inserted through the appropriate holes 47 which are then in registration with holes 30a and the seat-carrying extension will then be firmly locked in the desired position.

Generally the number of holes 23 which will be provided in bracket 21 will be sufficient to perforate these brackets throughout the curved portion of their length and the adjacent portion of arms 22. These holes will preferably be evenly spaced but this is not essential. In any event the number of such holes will be such as to provide the maximum degree of flexibility in accommodating the attachment to various vehicle frames of different structural form. In every case, the number of bolts 24 which will be employed will be sufficient to provide at least two points at which the attachment may be secured to one or more of the frame members. Normally it will be preferable to use at least two pairs of bolts 24, each pair being arranged on opposite sides of one of the frame members, so that a firm lock will be provided on each side of the two spaced points on the frame member traversed by the pairs of bolts. However, the device may be mounted with sufficient rigidity in many cases by employing only three bolts. That is, one pair of bolts may be inserted on opposite sides of one point on a frame member, and a third bolt inserted adjacent a spaced point on the same or another frame member on the side thereof opposite the load. It will be understood that any number of bolts greater than three may be employed if desired. By use of bolts having adjusting nuts on both ends, the spacing between the brackets may be varied as desired to accommodate frame members of different dimensions, while permitting even or substantially equal extension of the ends

of the bolts on both sides of the attachment, so that a balanced arrangement is achieved.

It will be understood that brackets 21 and extension bars 42 may be made of flat strap metal, or of round, angular, or elliptical shape or of any other suitable structural shape.

The attachment in accordance with this invention is adapted to be readily attached or removed from the supporting vehicle frame, and it is evident that it can be mounted in almost any position desired on widely varying types of frames.

It will be understood that numerous changes and alterations may be made in the details of the embodiments herein described without departing from the scope of the appended claims but within the spirit of this invention.

What I claim and desire to secure by Letters Patent is:

1. An auxiliary load-carrying attachment for the frame of a vehicle such as a bicycle, tricycle or the like, comprising, a pair of parallel bracket members spaced apart to enclose between them a portion of said frame, said bracket members being of generally U-shape with one arm longer than the other and having the outer end of the longer arm free of attachment to said frame, means for clamping said bracket members to at least two spaced points on said frame, and a load supporting means mounted on said longer arms.

2. An auxiliary load-carrying attachment for the frame of a vehicle such as a bicycle, tricycle or the like, comprising, a pair of parallel bracket members spaced apart to enclose between them a portion of said frame, said bracket members being of generally U-shape with one arm longer than the other, means for clamping said bracket members to at least two spaced points on said frame, an extension member pivotally connected to said longer arms, means for locking said extension member to said longer arms in an angularly adjusted position relative thereto, and a load-supporting means mounted on said extension member.

3. An auxiliary load-carrying attachment for the frame of a vehicle such as a bicycle, tricycle or the like, comprising, a pair of parallel bracket members spaced apart to enclose between them a portion of said frame, said bracket members being of generally U-shape with one arm longer than the other and having the outer end of the longer arm free of attachment to said frame, a plurality of registering openings spaced along said bracket members, at least two pairs of bolts adapted to be inserted transversely of said bracket members through selected spaced pairs of said openings, nuts on said bolts to clamp said bracket members to said frame, and a load-supporting means removably mounted on said longer arms.

4. An auxiliary load-carrying attachment for the frame of a vehicle such as a bicycle, tricycle or the like, comprising, a pair of parallel bracket members spaced apart to enclose between them a portion of said frame, said bracket members being of generally U-shape with one arm longer than the other and having the outer end of the longer arm free of attachment to said frame, a plurality of registering openings spaced along said bracket members, at least two pairs of bolts adapted to be inserted transversely of said bracket members through selected spaced pairs of said openings, the selected pairs of openings being such as will span spaced portions of said frame, nuts on said bolts to clamp said bracket

members to said frame, and load supporting means removably mounted on said longer arms.

5. An auxiliary load carrying attachment for the frame of a vehicle such as a bicycle, tricycle or the like, comprising, a pair of parallel bracket members spaced apart to enclose between them a portion of said frame, said bracket members being of generally U-shape with one arm longer than the other and having the outer end of the longer arm free of attachment to said frame, a plurality of registering openings spaced along said bracket members, at least two pairs of bolts adapted to be inserted transversely of said bracket members through selected spaced pairs of said openings, the selected pairs of openings being such as will span spaced portions of said frame, nuts on said bolts to clamp said bracket members to said frame, a pair of spaced bars extending transversely across the upper and lower edges of said longer arms, bolt means for removably clamping said bars to said longer arms, and a load supporting means mounted on the upper one of said pair of bars.

6. An auxiliary load carrying attachment for the frame of a vehicle such as a bicycle, tricycle or the like, comprising, a pair of parallel bracket members spaced apart to enclose between them a portion of said frame, said bracket members being of generally U-shape with one arm longer than the other, a plurality of registering openings spaced along said bracket members, at least two pairs of bolts adapted to be inserted transversely of said bracket members through selected spaced pairs of said openings, nuts on said bolts to clamp said bracket members to said frame, an extension member pivotally connected to the outer ends of said longer arms, means to lock said extension member to said arms in an angularly adjusted position relative thereto, and a load-supporting means removably mounted on said extension member.

7. An auxiliary load carrying attachment for the frame of a vehicle such as a bicycle, tricycle or the like, comprising, a pair of parallel bracket members spaced apart to enclose between them a portion of said frame, said bracket members being of generally U-shape with one arm longer than the other, a plurality of registering openings spaced along said bracket members, at least two pairs of bolts adapted to be inserted transversely of said bracket members through selected spaced pairs of said openings, nuts on said bolts to clamp said bracket members to said frame, an extension member comprising a pair of parallel bars pivotally connected to the outer ends of said longer arms, means to lock said extension member to said arms in an angularly adjusted position relative thereto, and a seat removably mounted on said extension member.

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