June 30, 1953 E. J. TASSET 2,643,783

ATTACHMENT FOR VELOCIPEDES

Filed Sept. 14, 1949 2 Sheets-Sheet 1

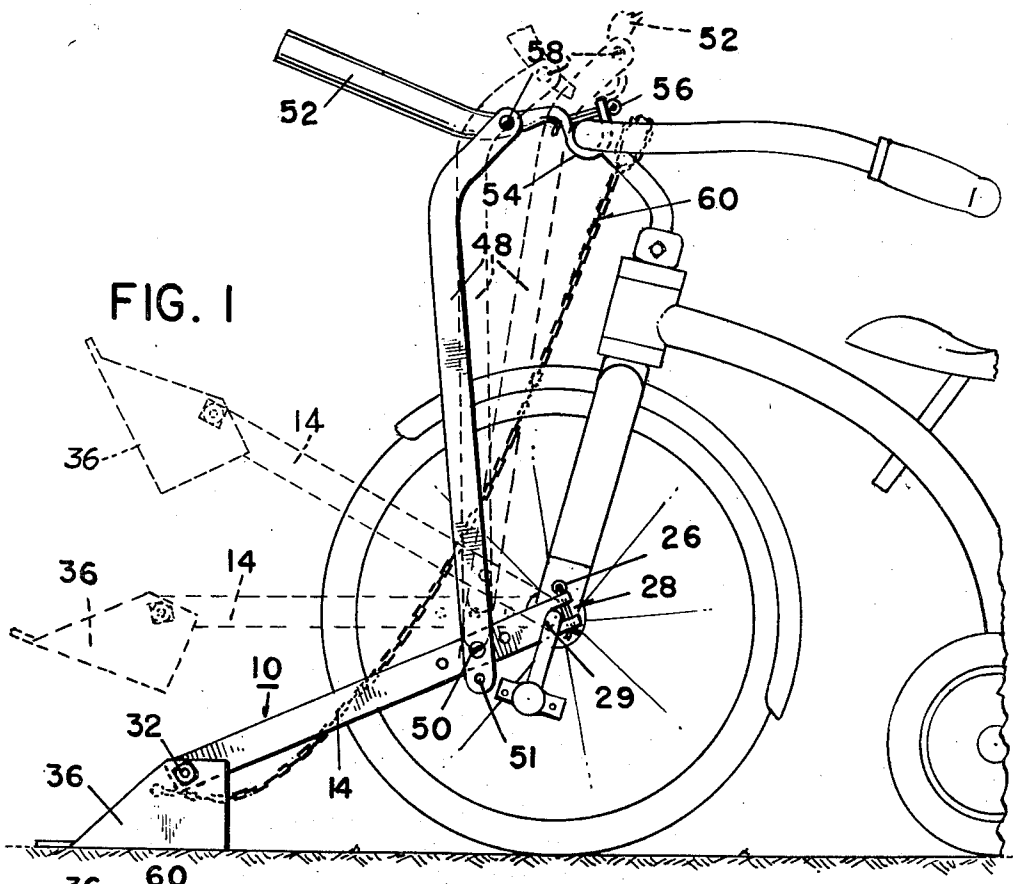


FIG. 1

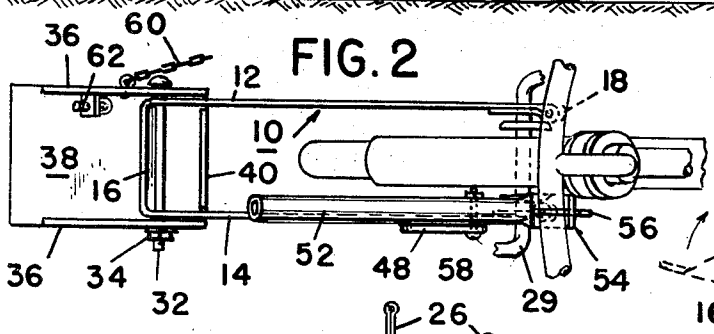


FIG. 2

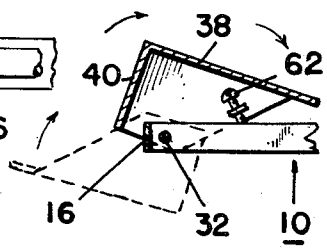


FIG. 3

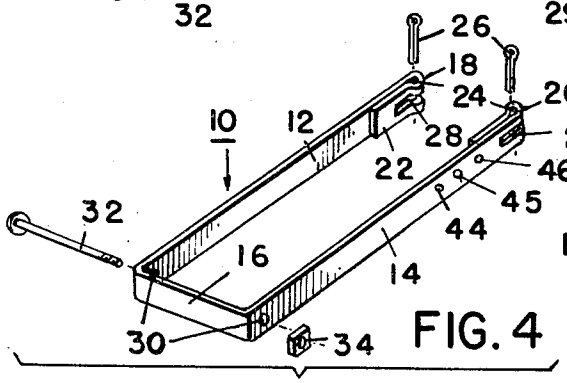


FIG. 4

Inventor
EVERETT J. TASSET,
By Nielsen and Hume
Attorneys

June 30, 1953 E. J. TASSET 2,643,783

ATTACHMENT FOR VELOCIPEDES

Filed Sept. 14, 1949 2 Sheets-Sheet 2

FIG. 5

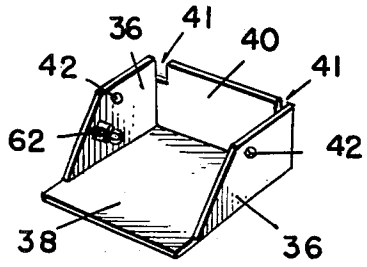


FIG. 6

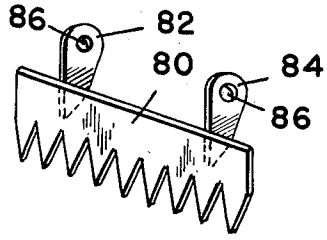


FIG. 7

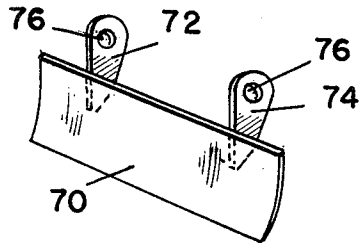


FIG. 8

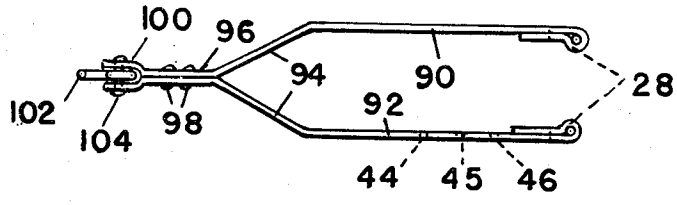
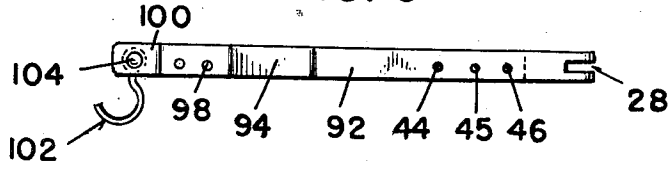


FIG. 9



Inventor
EVERETT J. TASSET,

By Nilson and Stume.

Attorneys

Patented June 30, 1953

2,643,783

UNITED STATES PATENT OFFICE

2,643,783

ATTACHMENT FOR VELOCIPEDES

Everett J. Tasset, Pratt, Kans.

Application September 14, 1949, Serial No. 115,693

9 Claims. (Cl. 214—131)

1

This invention relates to attachments for velocipedes, and, more especially, to a type of attachment which simulates earth-moving devices commonly associated with tractors, etc., which may be readily installed upon and removed from the standard form of tricycle.

It is among the objects of this invention to provide a device of this kind that is of simple yet durable construction which can be readily applied to and removed from the existing parts of velocipedes without the attachment of extraneous permanent fixtures, and which is positive in action, sturdy, and braced against unwanted movements. It is another object to provide an attachment of this type of simplified construction which may be put on and taken off of velocipedes without necessitating any alteration in the vehicle. It is a further object to provide an adjustment in which a number of simulated devices such as dump scoops, bulldozer blades, rakes, hoisting hooks, etc., may be interchangeably applied.

This invention will be more clearly understood by reference to the accompanying drawings in which:

Fig. 1 is a side elevational view of an attachment applied to a tricycle constructed in accordance with the present invention which shows the parts in the lowermost operational position in solid lines, and in the uppermost operational position in broken lines.

Fig. 2 is a fragmentary plan view of the device shown in Fig. 1.

Fig. 3 is a fragmentary vertical mid-sectional view showing the scoop in dumping position.

Fig. 4 is an exploded view showing the parts comprising the work-handling lever in perspective.

Figs. 5, 6 and 7 are views of implements which may be interchangeably associated with the lever illustrated in Fig. 4.

Fig. 8 is a plan view of a modified form of lever provided with a hoisting hook, while Fig. 9 is a side elevational view of this device as shown in Fig. 8.

In its preferred form, the invention comprises a bifurcated lever 10 which is composed of parallel legs 12 and 14 of some suitable material, such as sheet metal or strap iron, which are connected integrally at one extremity by a crosspiece 16 and at their opposite ends are formed into open bearings 18 and 20, respectively. The open bearings are formed by bending terminal portions 22 of the lever stock back upon itself so as to leave a vertical opening 24 in each for the reception of a retaining cotter pin 26 which fit

2

to close the open bearings. The bearings themselves are formed by openings 28 which are cut from the folded edge of the lever stock to a size which may be accommodated upon the axle 29 of a velocipede, as shown in Fig. 1. At the opposite end of the bifurcated lever, the legs 12 and 14 are provided with opposed openings 30 within which a headed pin 32 is adapted to pass for retention therein by a nut 34.

The scoop is composed of opposed side walls 36, a bottom 38, and a rear wall 40 which is notched at 41, Fig. 5, to accommodate the parallel arms 12 and 14 of the bifurcated lever 10. When properly positioned, openings 42 in the sides of the scoop are aligned with the openings 30 at the end of the bifurcated lever and permit the scoop to be fastened in pivotal relation to the latter by the insertion of the pin 32. A load in the scoop is poised by the bearing of the rear wall 40 of the scoop at the openings 41 therein upon the undersides of the legs 12 and 14 of the lever 10.

One of the legs 14 of the lever 10 adjacent its end containing the bearing 28 is provided with a series of holes 44, 45 and 46, which are adapted to effect pivotal engagement with a toggle link 48 which is connected thereto at its lower extremity by a pivot pin of appropriate size. The lower extremity of the toggle link is also provided with openings 50 and 51 for cooperation with the holes 44, 45 and 46, selectively to vary the leverage and range of movement of the bifurcated lever, and to allow adjustment to the size of the vehicle of association. This association of parts identifies the bifurcated lever 10 as a lever of the third class.

At its upper end, the link is connected to an actuating arm 52, which is conveniently fashioned out of a pipe section flattened at one end and formed into a bearing portion 54 within which the handle bar or other convenient element of the velocipede overlying the axle constituting the fulcrum of the bifurcated lever on the vehicle, is accommodated, and upon which it is retained by a cotter pin 56 disposed across the bearing 54 to close it. The pivotal connection 58 connects the upper extremity of the link 48 with the actuating mechanism 52, which thus becomes a lever of the second class. The relationship of parts is such that the pivot 58 orbits around the axis of fulcrum of the actuating arm 52 to a point remote from the pivotal connection 50 between the link 48 and the lever 10, and passes beyond dead center effectively to lock the parts in the raised position shown in broken lines,

Fig. 1. The velocipede may be pedalled around with the scoop in this position without impairment from the several parts, and without dragging.

When it is desired to dump the scoop, a lanyard chain 60 is affixed in a convenient position on the scoop to cause it to be turned in clockwise direction as viewed in Fig. 1 to the dumping position in Fig. 3. A set screw 62 provides an adjustment whereby the extreme tilted position of the scoop when dumping may be selectively varied, so as to insure that it does not pass beyond the point where it will return to normal position by an unbalance of its own mass. Thus, when the lanyard 60 is released, the scoop returns from the dumping position of Fig. 3 to that shown in Fig. 1.

In Fig. 7 there is illustrated a bulldozer blade 70 having bearings 72 and 74 for insertion between the arms 12 and 14 of the bifurcated lever. Openings 76 in these bearings are adapted to align with the openings 30 in the lever 10 for accommodation of the pin 32 by which the bulldozer blade becomes rigidly attached to the lever.

Fig. 6, represents a rake attachment having bearings 82 and 84 and openings 86 for use in connecting the attachment to the bifurcated lever 10 in the manner of that already described in connection with the bulldozer blades.

In Figs. 8 and 9, there is illustrated a modified form of bifurcated lever in which the spaced legs 90 and 92 are provided with opposite offsets 94, and contiguous portions 96 which are held together by rivets 98. At its outer terminal, the legs are opened by offset portions 100 for the accommodation of a hook 102 which is retained within the opening by pin 104 which passes through openings in the terminal portions of the legs and an eye upon the end of the hook. The hook is thus free to swing and pivot in response to changes in position of the lever. The same type of half bearings 28 are provided at the extremity of the legs 90 and 92 of the lever shown in Figs. 8 and 9 as has already been described in connection with the bifurcated lever 10.

From the foregoing, it will be understood that the construction of this attachment is such as to permit its application to wheeled vehicles having different size wheels, and of different heights, without necessitating a modification of parts beyond that contemplated by shifting the pivotal point between the link 48 and the levers 10 and 90 by changing this within the limits of the openings 50 and 51 on the link, and openings 44, 45 and 46 on the lever arms.

It will also be seen that it is only necessary to remove the cotter pins 26 from the open bearings 28 of the bifurcated arms to permit these to be inserted upon the pedal axle 29 of a tricycle, after which the pins may be returned to their proper position in the vertical openings 24 to close the bearings. Correspondingly, the cotter pin 56 is removed to permit the insertion of the actuating arm 52 upon the handle bars of the tricycle, after which it is returned to close the bearing and to lock the parts in this relationship. The proper pivot point is selected between the link 48 and the lever 10 and the pivot pin is placed in position accordingly, after which the device is ready to be used. According to this arrangement, it takes but a matter of seconds to install the apparatus and to remove it when so desired. There is also great facility of interchangeability of the several implements permitted by removing the nut 34 and the pin 32 to allow for the association of the proper implements, after which the pin and nut are returned to proper position and the attachment is ready for further use. Any appropriate form of implement is within the contemplation of the invention.

From the foregoing, it will become apparent to those familiar with this field of invention that many modifications may be made within the letter of this disclosure without departing from the principles of the invention which are not to be limited by the details asserted herein for purposes of description, but are to be accorded the broadest interpretation compatible with the recitations of the appended claims.

I claim as my invention:

1. A velocipede attachment comprising a principal load-handling lever adapted to be fulcrumed upon the front axle of a vehicle, a load-handling implement carried upon the outer extremity of said lever, an actuating arm adapted to be fulcrumed in overlying position to said lever, and a toggle link connecting said lever and arm in toggle relationship, the relationship of parts constituting said lever as a lever of the third class and said arm as a lever of the second class.

2. A velocipede attachment comprising a principal load-handling lever having parallel branches adapted to be fulcrumed in spaced relation upon a dirigible axle of the vehicle, a load-handling implement carried upon the outer extremity of said lever, an actuating arm adapted to be fulcrumed in overlying position to said lever, and a toggle-link connecting said lever and arm in toggle relationship, to constitute said lever as a lever of the third class and said arm as a lever of the second class.

3. A velocipede attachment comprising a principal load-handling lever having parallel branches, one extremity of said branches having open bearings for the reception of an axle of the vehicle of association, means for closing said bearings about the axle, the other extremity of said branches having means to receive and support a work implement, an actuating arm, a link connecting said arm and lever to define second and third class levers, respectively, and means for adjusting the effective length of said link in relation to the leverage of said lever.

4. A velocipede attachment comprising a principal load-handling lever having an open bearing for the reception of an axle of the vehicle of association, an actuating arm for raising and lowering said lever, means connecting said lever and arm so that at one extremity of movement of the arm, the lever is in ground-engaging position, and at the other extremity of movement of said arm the lever is in elevated position, said connecting means and arm being effective to retain the lever in elevated position at the extreme position of the arm, said lever and arm being levers of the third and second classes, respectively.

5. A velocipede attachment comprising a U-shaped boom member having pedal axle engaging bearings at the outer extremities of the legs of the U, work-implement attaching means at the closed end of the U, means for actuating said boom, said means including a lever of the second class pivoted upon a handle bar of the velocipede having a toggle-like linkage connected to said boom for fixing said boom in elevated position, said boom being a lever of the third class.

6. The invention of claim 5 in which said axle-engaging bearings are open at one side with pin means for closing said side.

7. The invention of claim 5 in which said second class lever has a fulcrum comprising an open-sided bearing adapted to receive the handle bar of said velocipede for attachment thereto, and pin means for closing the open-side of said bearing to enclose said element.

8. Attachment for velocipedes comprising a bifurcated lever having dirigible axle accommodating bearings at each extremity of its furcations, a work-performing implement carried by said lever at its end opposite said bearings, an actuating arm adapted to be pivoted upon an overlying element of said velocipede, said arm being adapted for rotation in a vertical plane within which elements of said bifurcated lever are adapted to move when the lever is fulcrumed on the axle of association, a toggle link connecting said lever and arm, and being pivoted to the latter so as to be disposed upon the same side of the fulcrums of the lever and arm, respectively, in one operational extreme position, the pivotal connection between said arm and link being adapted to pass over and beyond the axis of its fulcrum in relation to the pivotal connection between said lever and link at the opposite extreme operational position to maintain the lever against return to the first position.

9. In combination with a velocipede having a leading dirigible pedal axle and wheel associated therewith, a forked boom in straddling relation to the wheel, said boom having fulcrum bearings in engagement with the axle at opposite sides thereof, a crank fulcrumed upon the dirigible control element for the pedal axle, a link connecting said boom and crank in toggle relationship wherein the throw of said crank is substantially greater than the throw of said boom, said boom constituting a third class lever, said crank constituting a second class lever, and a work-performing device carried adjacent the outer extremity of said boom.

EVERETT J. TASSET.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,827,541	Opperman	Oct. 13, 1931
1,901,555	Firestone	Mar. 14, 1933
2,398,964	Rogers et al.	Apr. 23, 1946
2,415,014	Luebbers	Jan. 28, 1947
2,455,692	McDunnah	Dec. 7, 1948
2,463,803	Pilch	Mar. 8, 1949
2,478,084	Brown	Aug. 2, 1949
2,488,695	Upton	Nov. 22, 1949

FOREIGN PATENTS

Number	Country	Date
10,858	Great Britain	May 7, 1912