(No Model.) 2 Sheets—Sheet 1.

W. H. BARLOW.

FOUR WHEELED DOG CART.

No. 487,942. Patented Dec. 13, 1892.

FIG. I.

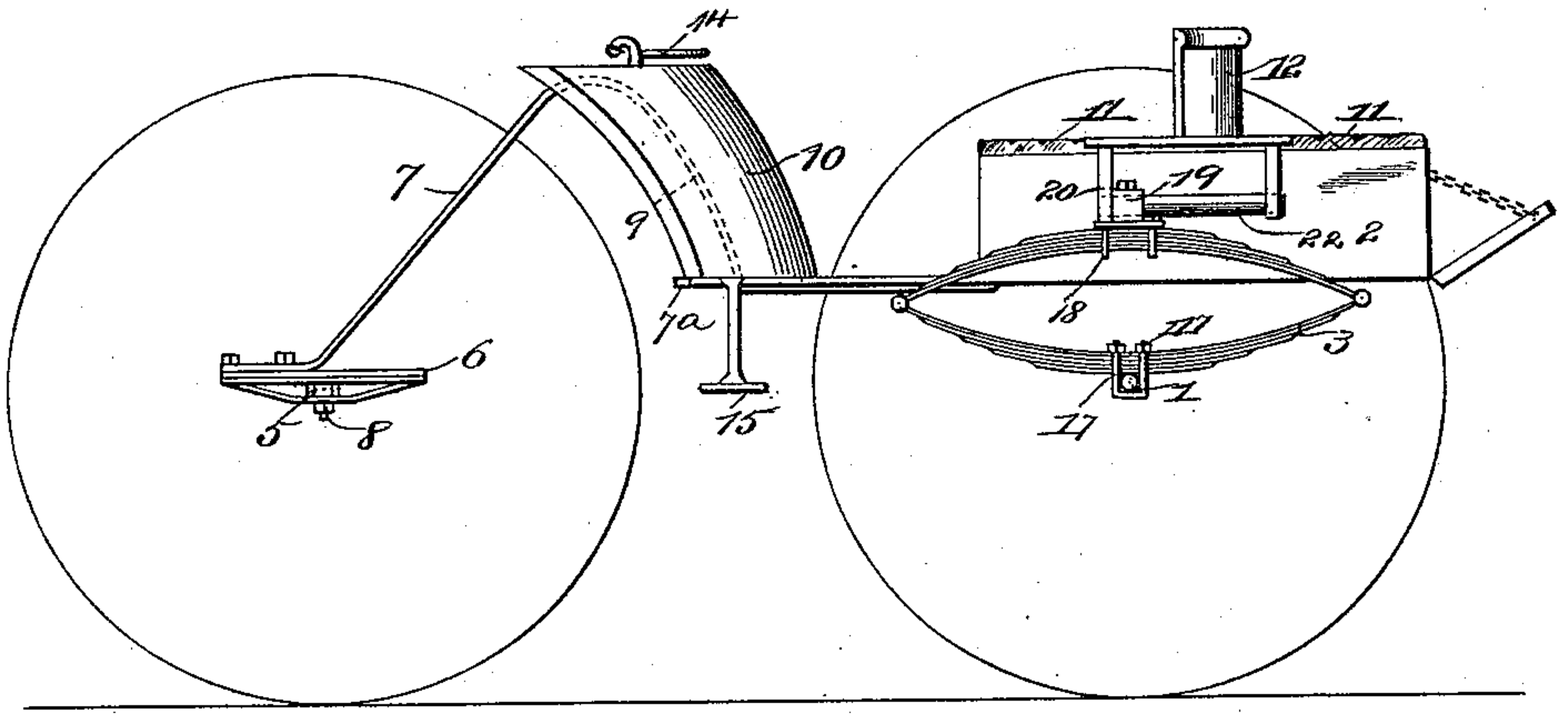
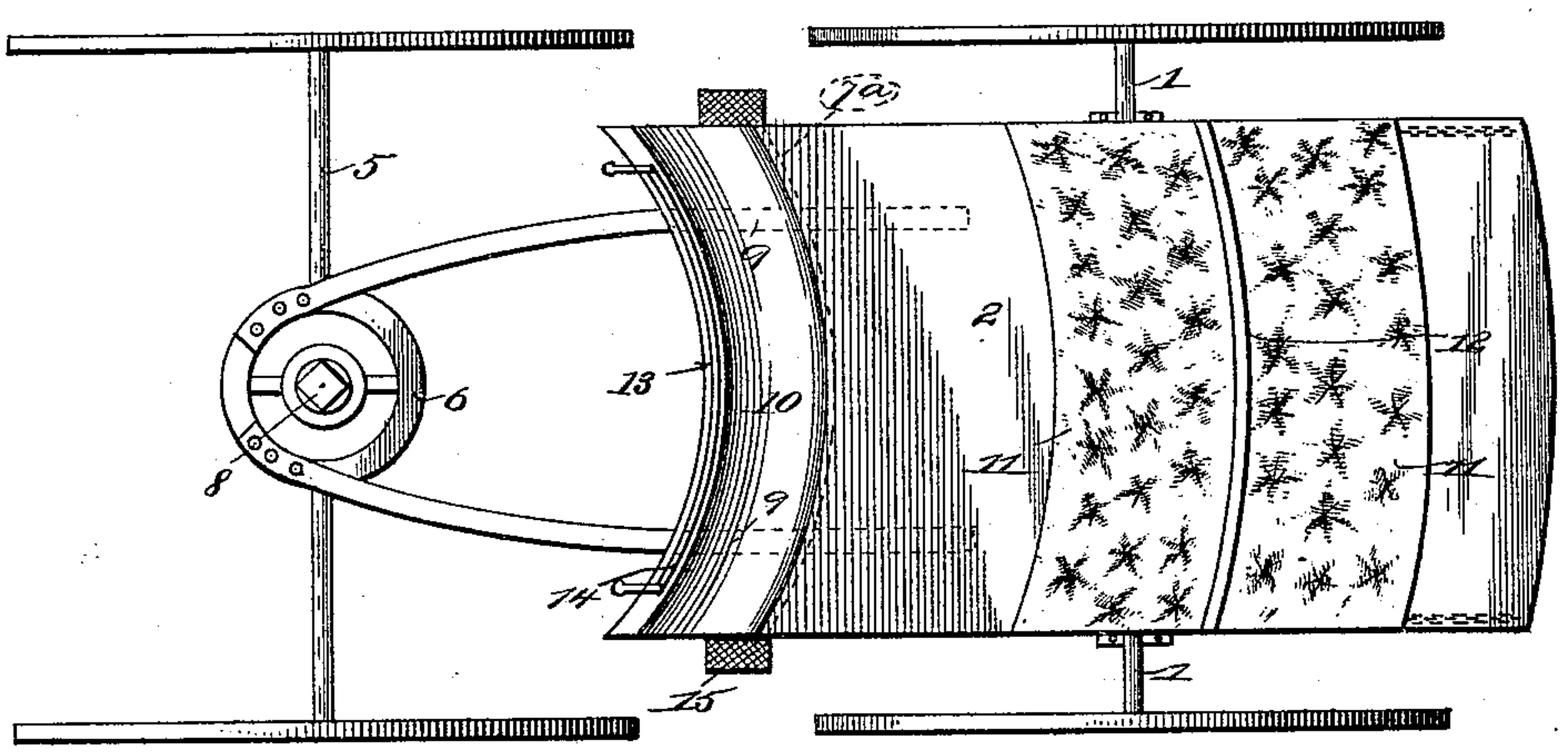


FIG. II.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. III.

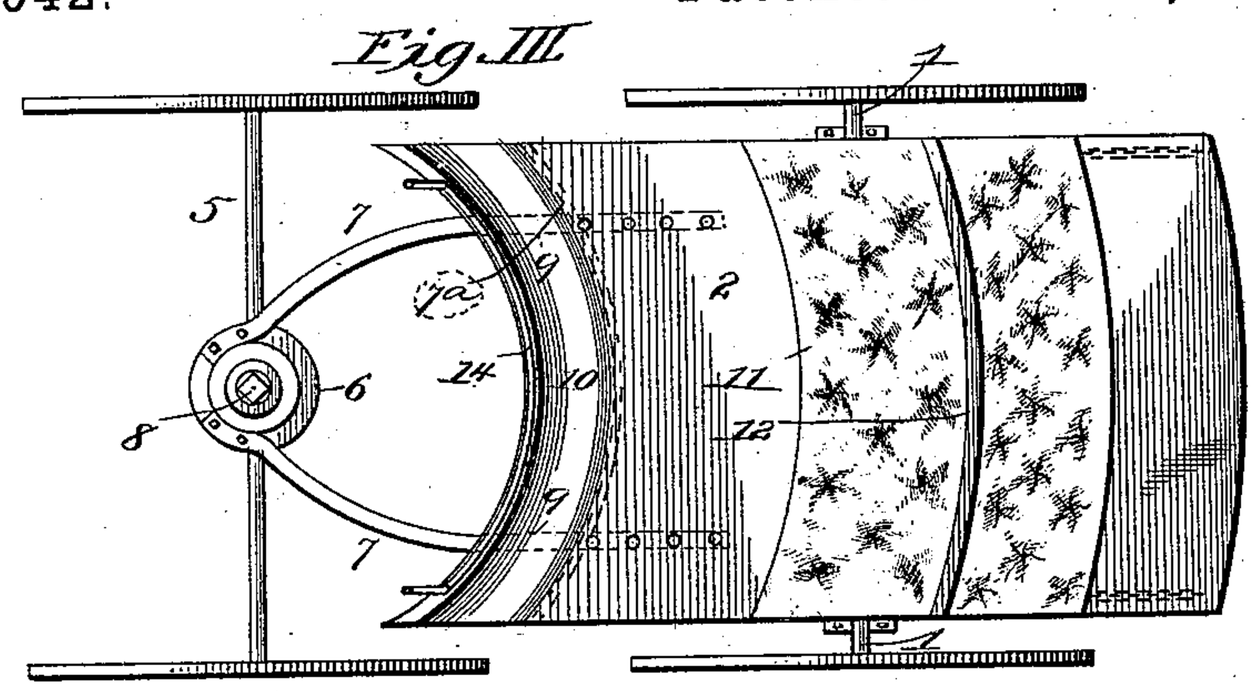


Fig. IV.

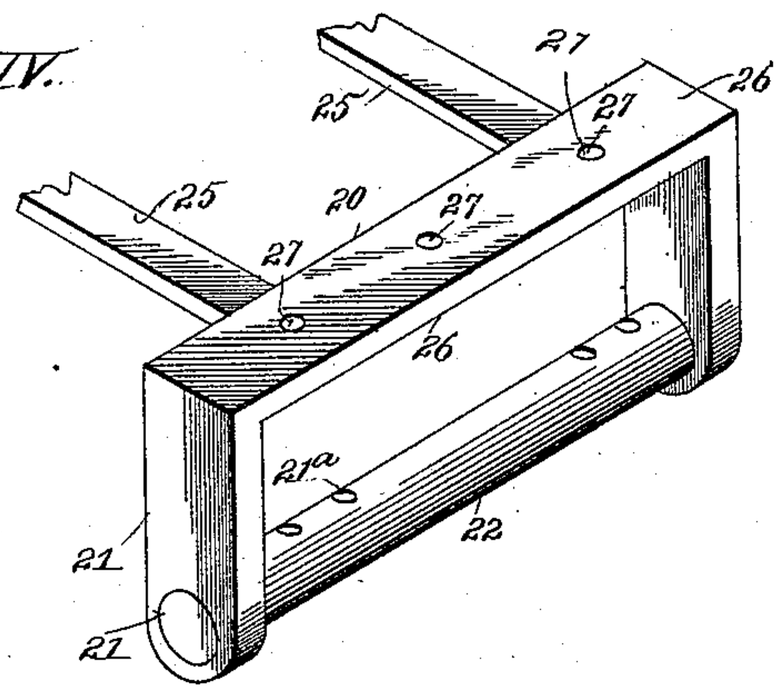
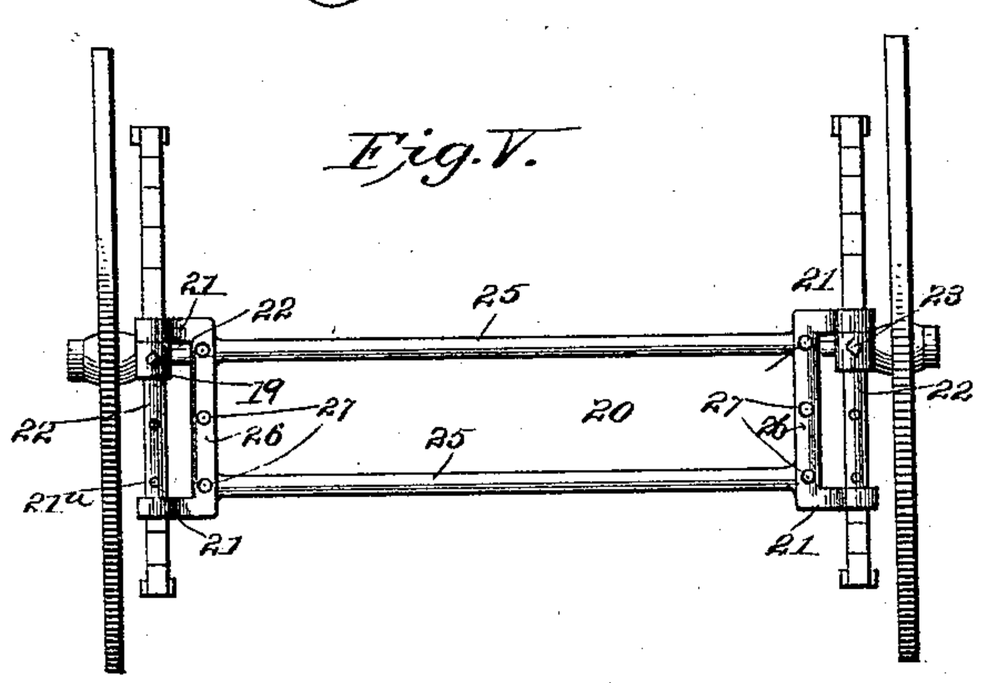


Fig. V.



Attest:
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Inventor:
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UNITED STATES PATENT OFFICE.

WILLIAM HENRY BARLOW, OF CHARLOTTESVILLE, VIRGINIA.

FOUR-WHEELED DOG-CART.

SPECIFICATION forming part of Letters Patent No. 487,942, dated December 13, 1892.

Application filed November 3, 1891. Serial No. 410,773. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HENRY BARLOW, a subject of the Queen of Great Britain, residing at Charlottesville, in the county of Albemarle and State of Virginia, have invented certain new and useful Improvements in Four-Wheeled Dog-Carts; and the following specification, taken in connection with the accompanying drawings, which form a part hereof, is a full, clear, and exact description of my improvements, such as will enable those skilled in the art to which they appertain to make and use the same.

My invention relates to the form of vehicle set forth in my former patent, No. 443,423, granted December 23, 1890, in which the load is balanced over the rear axle and a vertically and horizontally elastic undercut connection is provided between the rear and front axle; and its objects are to perfect the construction set forth in said patent to adapt the cart for carrying passengers on a front and rear seat without defeating the objects of my former patent and arrange the parts so as to reduce the length and distance between front and rear wheels and beautify the vehicle and make it more commodious for its size.

To these ends my invention consists, first, in arranging the dash-board, body, and seat in arcs of circles concentric with the king-bolt, which pivotally secures the undercut spring connection with the front axle, and, second, in making in combination with the undercut spring connection a suitable rear-axle-shifting device.

My invention further consists of certain other novel features in the construction of parts in carrying out my invention, all of which will now be fully described with reference to the accompanying drawings, in which—

Figure I is a side elevation of my improved vehicle having two seats, each arranged to accommodate two persons seated side by side, and means whereby the rear axle may be shifted beneath the body. Figs. II is a plan view of the same. Fig. III is a plan view similar to and on a smaller scale than Fig. I, showing a larger vehicle, each seat of which is adapted to accommodate four persons seated side by side. Fig. IV is a detail view illustrating a portion of one form of the axle-shifting frame. Fig. V is a detail plan illustrating the application of another form of shifting-frame.

Like figures of reference indicate the same parts throughout the several views.

1 represents the rear axle, over which the body 2 is balanced through the medium of suitable springs 3 in the manner presently to be described.

5 represents the front axle, having the fifth-wheel 6, and 7 are bars forming the upwardly-curved spring connection between the front and rear portions of the vehicle. These bars are connected at their rear ends to the body and at their front ends to the upper part of the fifth-wheel, which is secured to the front axle by means of the king-bolt 8. These spring-bars are formed and attached to the body in substantially the same manner as set forth in my former patent; but I prefer to form them by welding or rolling the plates or bars forming the springs into integral spring-bars, making them thick at the crown of the arch and thinner towards the ends, thus saving the expense and labor of fastening the plates with clips, as incidental to the manufacture of springs formed of a series of plates or laminæ. There may be one, two, three, or any number of these spring-bars, though two are found most desirable for general use.

9 represents portions of the spring-bars 7, which are curved to form the frame for the dash-board 10, the dash-board being constructed of any suitable material, such as leather, sheet-iron, papier-maché, compressed wood, or other pulp, celluloid, or other such materials. The dash is curved longitudinally out over the spring-bars, so as to lie close to them and be secured thereto.

7ª represents a circular guard placed around the forward edge of the body where the curved spring connection joins onto the same, and this guard serves to receive the impact of the wheel if it should happen to strike in turning.

11 is the seat, and 12 the back to the seat.

The dash-board 10, seat 11, back 12, and forward end of the body are shaped in arcs of circles concentric with the king-bolt 8. The dash-board and front end of the vehicle-body are extended to the sides, so as to be of equal width with the remainder of the body, and the springs are preferably connected to

the dash-board and forward portion of the body inside of their outer edges, first, because this has been found to be the most desirable point for obtaining the proper amount of curvature to the springs, and, second, because the outer edges of the dash and forward part of the vehicle-body will extend farther forward, and thereby conceal the portions of the springs and reduce the space between the body and front wheels and make a more shaply and compact vehicle. However, in constructing vehicles of a very narrow gage I find it desirable to connect the spring-bars to the body at the outer edges, first, because the framework of the body would be on the outer edges, and, second, because it is necessary to have the spring-bars curve outwardly somewhat to produce the desired result. In some cases it is desirable to have the dash extend a little each side of the outer edges of the body.

13 is the spacing and bracing cross-bar, preferably formed concentric with the dash-board and clamped to the springs and upper edge of the dash by suitable clips. By prolonging the screws of these clips the lamp-irons may be fixed under the nuts thereof. In the case of a leather dash this cross-bar may itself constitute the upper bar of the frame on which the leather is stitched. This cross-bar may, however, be made straight, and in that case it would not in the concentric form of vehicle constitute the upper portion of the dash.

By forming the forward end of the vehicle and the dash in arcs of circles concentric with the circle of rotation of the front wheels the body is brought nearer to the front wheels and made more compact and ample room is afforded for the turning of the vehicle. By arranging the seat in an arc of a circle concentric with the dash more room is afforded in a vehicle of the same width.

14 is the rein-holder, and 15 is the step, constructed in any preferred manner.

The vehicle can be of any desired width to seat more or less persons, and may be arranged with a back seat in addition to the seat shown, as illustrated in my former patent.

It is desirable for the better working of this style of vehicle that the weight of the body should be approximately balanced over the rear axle, and in that style of these vehicles which is constructed to carry passengers on a back seat the weight of the body constantly changes with the change of occupants. It is therefore very desirable in the above-named style of vehicle to have simple and efficient means for shifting the body and axle relatively. For this purpose I have devised a novel means for shifting the rear axle longitudinally under the body, so that the weight of the body can always be approximately balanced over the rear axle.

The springs 3, which are illustrated as elliptical, are secured to the axle 1 by clips 17 in the customary manner. To the upper half of each of these springs 3 is secured by suitable clips 18 a socket-piece 19, which is formed with an eye 19^a, a base-plate 19^b, and a screw-threaded perforation 19^c. Extending out from the sides of or else underneath the body-frame 2 are the ends of the shifting-frame 20, having ends 21, with sockets formed in their adjacent faces and solid bars 22, of steel or any other suitable material, supported between the socket-pieces 19 at the opposite sides of or underneath the body parallel with said sides or bottom; or said bars may be formed integral with the shifting-frame. The socket-pieces 19 are mounted on the bars 22 by passing said bars through the eyes 19^a before the parts are put together, and by means of these the body is supported over the axle and the axle can be shifted longitudinally under the body to get the weight of the body approximately balanced over the axle. Several forms of the shifting-frame will be hereinafter described. The bars 22 are provided with a series of perforations 22^a, which are adapted to register with the perforations 19^c of the socket-pieces 19, so that the set-screws or pins 23 can be passed through said socket-pieces and rods and hold the body in any adjusted position.

The operation of the device is obvious from the description and illustrations. If found necessary, the front axle may be slightly swelled at the center, as shown in the drawings, to allow of a larger king-bolt.

I have found that a vehicle constructed as above described possesses all the superior advantages of my former patent, and in addition it is a more handsome and commodious vehicle, and can be used to carry persons on front and rear seats and still permit the operation of the vehicle with all the results aimed at in my patent above referred to.

The vehicle is very convenient and satisfactory to be used as a one-horse sulky for breaking horses.

In Fig. IV the shifting-frame 20 has its arms 21 projecting downward, and opposite ends of said frame are joined by parallel connecting-bars 25, the cross-piece 26, from which ends 21 project, being perforated at 27 for the reception of screws or bolts, by which the sliding frame is connected to the cart-body. Fig. V represents a similar form, differing only in that the projections 21 extend laterally and in about the same plane with the cross-pieces 26. This form, as well as that shown in Fig. IV, may be attached to the bottom of the cart-body, or it may be let in so that the cross-bars 25 shall rest just beneath the seat.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. A cut-under four-wheeled vehicle having a dash and a seat arranged in circles concentric with the king-bolt, substantially as set forth.

2. A four-wheeled dog-cart having a body balanced over the rear axle, the upwardly-curved spring-bar connection between the

front and rear parts of the vehicle, and a dash and seat arranged in circles concentric with the king-bolt, substantially as set forth.

3. In a vehicle, the combination of the front axle, the body having the upwardly and forwardly curved spring-bar connection with said front axle, the rear axle over which the body is substantially balanced and which supports said body mainly and the shifting connections located at the sides of the body by which said body and rear axle are secured together and which transmits the load from the one to the other, said shifting connections consisting each of a socket-piece secured to one of the parts to be connected and a sliding frame secured to the other of said parts, substantially in the manner and for the purpose set forth.

WILLIAM HENRY BARLOW.

Witnesses:
HERBT. WINGFIELD,
J. C. MCKENNIE.