Nov. 2, 1954 F. A. MAXWELL 2,693,389

DUMP CART MECHANISM

Filed March 8, 1949

FIG. 1

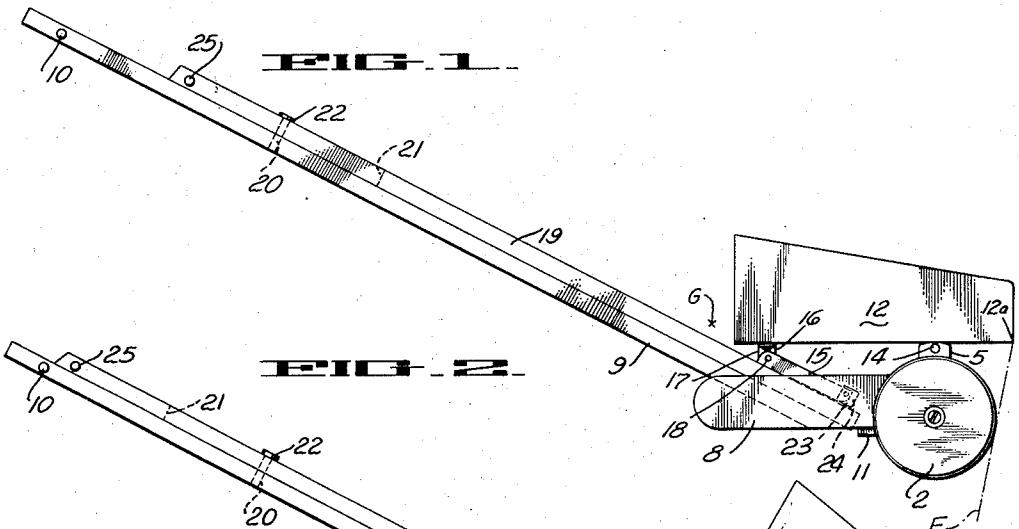


FIG. 2

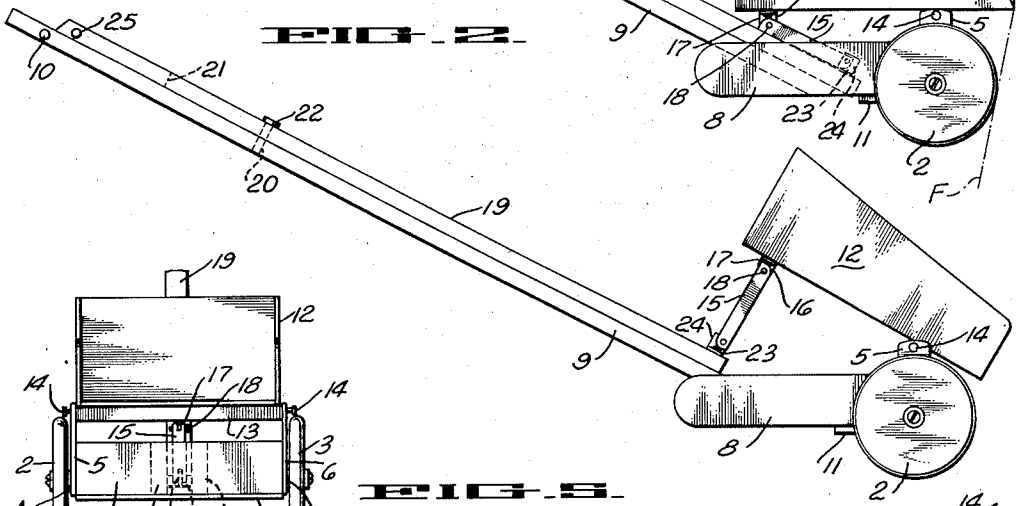


FIG. 5

FIG. 3

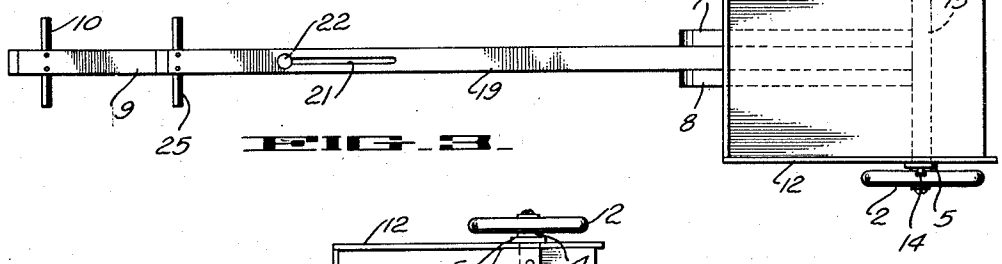
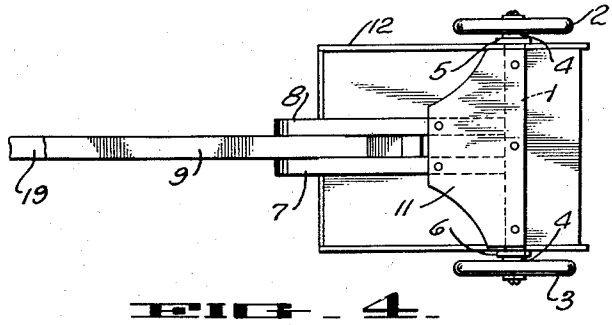


FIG. 4



INVENTOR.
FRANK A. MAXWELL
BY Joseph B. Gardner
atty.

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DUMP CART MECHANISM

Frank A. Maxwell, San Leandro, Calif.

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This invention relates to children's toy vehicles and particularly to those of the dump type. Vehicles such as wheeled carts, trucks and smiliar toys which duplicate the dumping action of the large trucks used by industry are very popular with small childern. They are likewise recommended by educators for they are stimulating to the imagination and when so designed as to perform the dumping operation easily and dependably despite the hard usage normally encountered, they give the child a great sense of satisfaction for doing a job which to him is equivalent to that performed by full size trucks. Accordingly, the nearer the dumping action of the toy truck or other vehicle may approach that of industrial size trucks the greater is the pleasure to be derived by the child.

In anlyzing the details of operation of a commercial dump truck, for example, in an effort to provide a counterpart for child use, one finds that two salient features must be incorporated if the miniature vehicle is to fully satisfy the child mind. The front end of the body portion of the vehicle must move upwardly from its normal position of rest on the vehicle frame and this operation must be controlled by the vehicle operator without changing his normal position of control with respect to the vehicle. These requirements hold regardless of the type of vehicle under consideration. Thus in certain prior art construction of which I am aware, the dumping action is as stated. However, the control of such action has been centered at or near the drivers' seat of such vehicle following the teaching of the commerical design.

Such known designs have been faulty in their latter aspect, since the problem was solved from the adult rather than the child point of view. In pull toys such as two wheeled carts or four wheeled wagons, for example, the child would have to leave his position in front of the vehicle to operate whatever cranks, etc. located usually in front of the body to effect the dumping operation. While the miniature vehicle would therefore be a simplified facsimile of a full size vehicle in the eyes of an adult, from the standpoint of operation the necessary change in position would subtly make known to the child that his dump vehicle did not perform the same operation in the same way and his regard for the toy would suffer accordingly.

It is therefore an object of this invention to provide a toy vehicle of the dump type in which the dumping operation is controlled from the normal position of the child in front of the vehicle.

It is another object of this invention to provide a toy vehicle of the dump type in which the dumping operation is controlled by means which is closely adjacent the handle or other means provided for moving the vehicle.

Another object of the invention is to provide a toy vehicle of the dump type in which the child may vary the angle of inclination of the vehicle body without changing his position with respect to the vehicle.

Another object of the invention is to provide a toy vehicle of the dump type in which the body will remain at a selected angle of inclination after movement thereto.

A further object of the invention is to provide a toy vehicle of the dump type in which the control means for the dumping operation extends parallel to and closely adjacent the vehicle handle and includes no projecting parts which might interfere with the movement of the vehicle or constitute a hazard for the child.

Another object of the invention is to provide a child's dump cart of the character described which is adapted to stand on end with the draw bar in substantially vertical position so as to facilitate storage of the cart.

A still further object of the invention is to provide a child's dump cart which is extremely simple in construction, low in cost and yet operates with a high degree of effectiveness.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of the preferred form of the invention which is illustrated in the drawing accompanying and forming part of the specification. It is to be understood, however, that variations in the showing made by the said drawing and description may be adopted within the scope of the invention as set forth in the claims.

Reference is now made to the drawing in which

Figure 1 is a side elevational view of the dump cart of this invention with the dump body in lowered position,

Figure 2 is a side elevational view similar to Figure 1 but showing the cart body in elevated or dumping position,

Figure 3 is a plan view of Figure 1,

Figure 4 is a view similar to Figure 3 but taken from the underside of Figure 3 and with the outer end of the handle portion broken away, and

Figure 5 is an end elevation of my improved dump cart and is taken from the right side of Figure 1.

The invention will be more readily understood by first considering the chassis, as it may be termed, of the dump cart with the use of this term applying to these portions of the vehicle which support the body later to be described. Attention is directed therefore to Figure 4 which shows a laterally disposed axle **1** on which are rotatable wheels **2** and **3** upon cylindrical terminal portions thereof as will readily be understood. In the interest of economy of manufacture and hence the utilization of wood rather than metal in so far as possible, I prefer to make the axle **1** rectangular as viewed from the rear of the cart (Figure 5) in order to simplify the union thereto of contiguous parts now to be detailed. The axle terminal portions, therefore, are preferably made as dowels inserted into suitable recesses with which the axle **1** is provided.

Inwardly of the axle terminal portions referred to above and spaced from the wheels **2** and **3** by suitable means such as washers **4** are upright members **5** and **6** which serve to pivotally support the body of the cart as will later be described. Upright members **5** and **6** are generally rectangular as viewed in side elevation (Figure 1) and are of somewhat greater width than the axle **1** in order to provide a sturdy body pivot that will not be subject to splitting in normal use. Such members are suitably united to the parallel side portions of axle **1** (Figure 5) for a major portion of their length as by nailing with a considerable upper portion thereof remaining unobstructed to leave unhampered the dumping action of the body.

Extending normally from the axle **1** in spaced relation and midway of the wheels **2** and **3** is a pair of guide members **7** and **8** which also are suitably united to the axle **1** as appears from Figure 4. Guide members **7** and **8** are of generally rectangular shape and for improved appearance have their end portions remote from the axle **1** rounded as is apparent from Figure 1. The vertical extent of guide members **7** and **8** is sufficient to provide a passageway that is normal with respect to the wheels **2** and **3**, of length approaching the length of the guide members and also of appreciable height. Disposed longitudinally therein at a suitable angle of inclination is a handle or tongue **9** for the dump cart which snugly fits the sides of the guide members **7** and **8** and is rigidly united thereto. A bar **10** in the form of a dowel is extended through the opposite sides of the remote end of the handle **9** to facilitate pulling the cart.

As a further reinforcement to rigidly unite the guide members **7** and **8** and the axle **1** there is provided the lower plate **11** (Figure 4) extending between the wheels **2** and **3** and also forwardly and rearwardly of the axle **1**. It will be seen therefore that the guide members **7** and **8**

are held in their uniformly spaced relation at all times. Such spacing is important as will later appear in insuring easy operation of the dumping feature of the invention now to be described.

Disposed above the dump cart chassis is a dump body **12** of usual box-like configuration. Body **12** rests on a transversely extended bar **13** which is securely united to the bottom wall of the body by suitable means and is disposed between and in alignment with the upper ends of upright members **5** and **6** previously referred to. Suitable pins or other pivotal means **14** connect the ends of the bar **13** with the adjacent ends of members **5** and **6** so that the body **12** may tilt upwardly and downwardly about such pins.

To effect tilting of the body **12** and thereby accomplish the desired dumping of the contents carried thereby, there is pivotally connected to the underside of the bottom wall of the body a link **15** by means of a block **16** having a centrally projecting ear **17**. The latter is transversely apertured to receive a pin **18**, for example, which also passes through the adjacent end of link **15** which is bifurcated to straddle the ear **17** as is clearly apparent from Figure 5. While the foregoing connection of the body **12** with link **15** is preferred due to its ease of manufacture and assembly, other connecting means may readily be employed.

For moving the link forwardly and upwardly to raise the forward portion of body **12**, there is provided the elongated control member **19** which may rest in superposed relation on the handle **9** with its outer end terminating adjacent the bar **10** of the latter and preferably just short thereof. Control member **19** is constrained to move back and forth in line with the longitudinal prolongation by means of the lateral guiding provided by the guide members **7** and **8** between which its lower end is disposed and also by a pin **20** upwardly projecting from handle **9** intermediate its ends. Pin **20** as is apparent from Figures 1 to 3 extends through a longitudinal slot **21** provided in the control member **19** and is retained therein by a headed portion **22** snugly engaging the portions of the control member separated by slot **21**.

Connection of the lower end of control member **19** to the lower end of link **15** is made by means similar to that provided at the upper end of said link and comprises the block **23** carried by member **19** and which includes a centrally disposed, upstanding ear **24** which is pivoted to the bifurcated lower end of link **15** as is clearly shown in Figs. 2 and 5. A bar **25** similar to bar **10** is provided at the outer end of control member **19** to enable the latter to be moved forwardly and backwardly and thus effect dumping of the body **12**.

The overhang of the anterior portion of the body is so proportioned that the cart may be upended to rest upon the wheels **2** and the rear end **12***a* of the body bed. In this position the tongue **9** will extend in a substantially vertical position thus diminishing the amount of floor space necessary for storage of the cart. In Figure 1 a dotted line F indicates the floor and its relative position to the upended cart which will rest upon the rear end **12***a* of the body **12** and the wheels **2** and **3**. The cart will be stable in this position because the center of gravity G will then lie in a vertical plane which intersects the floor between the supporting parts.

From the foregoing description of a preferred embodiment of my invention it will be apparent that there has been provided a child's toy vehicle of the dump type that is easily operated from the normal standing position of the child in front of the vehicle. The frictional mounting of the control member **19** makes possible the tilting of the body **12** through any desired angle of elevation in which position it will remain until lowered. Of course, it is possible to make the elevating components for the body interfitted loosely so that lowering is effected by the weight of the body alone. It may be noted that in either arrangement the body is in a stable, elevated position when fully elevated as shown in Figure 2.

While the foregoing description relates to what I deem to be the best embodiment of my invention, it will be apparent that numerous modifications are possible, particularly in the location and type of link **15** employed and also the control member therefor. Also a four wheeled vehicle such as a wagon or truck of any desired conformity, or even a single wheeled vehicle such as a wheelbarrow could be provided with the dumping features of this invention instead of the simple cart structure illustrated.

I claim:

1. In a toy vehicle of the dump type having a chassis for supporting a body thereabove, a pair of lower guide members extending forwardly and centrally of said chassis and an elongated handle having one end disposed between said members and the other end extending forwardly of said chassis, a control member, having its lower end disposed between said guide members and extending in parallel and adjacent relation with said handle for a major portion of the length of the latter, means interconnecting said handle and member for permitting the latter to move in parallelism with the former, and a link pivotally interconnecting said member and said body whereby the latter may be moved into dumping position by movement of said member.

2. In a two-wheeled toy cart of the dump type having a chassis for supporting a body thereabove, a pair of lower guide members extending forwardly and centrally of said chassis and an elongated handle having one end disposed between said members and the other end extending forwardly and upwardly from said chassis, a control member having its lower end disposed between said guide members and extending in parallel and adjacent relation with said handle and terminating proximate the end thereof, a pin and longitudinal slot connection between said handle and said member, and a link pivotally interconnecting said member and said body whereby the latter may be moved into dumping position by movement of said members.

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