Aug. 20, 1935. C. C. BLACKMORE 2,012,079

TOY VEHICLE

Filed Jan. 26, 1934 2 Sheets-Sheet 1

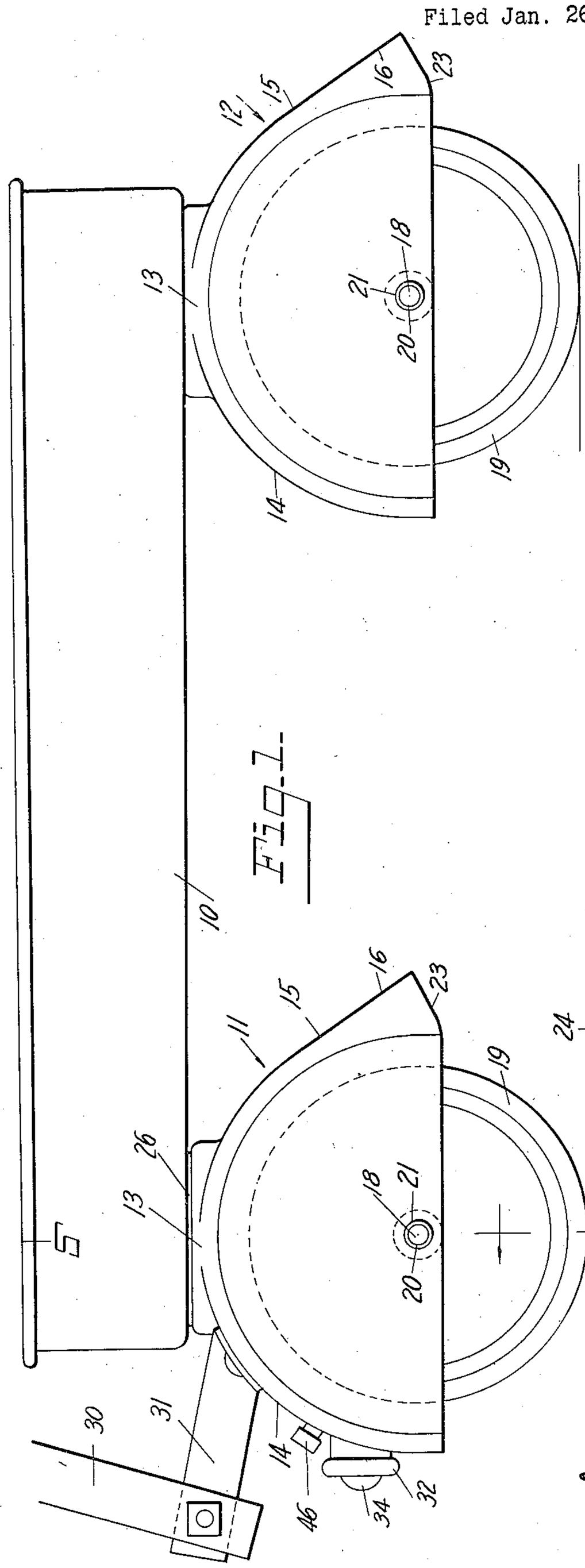

FIG. 1.

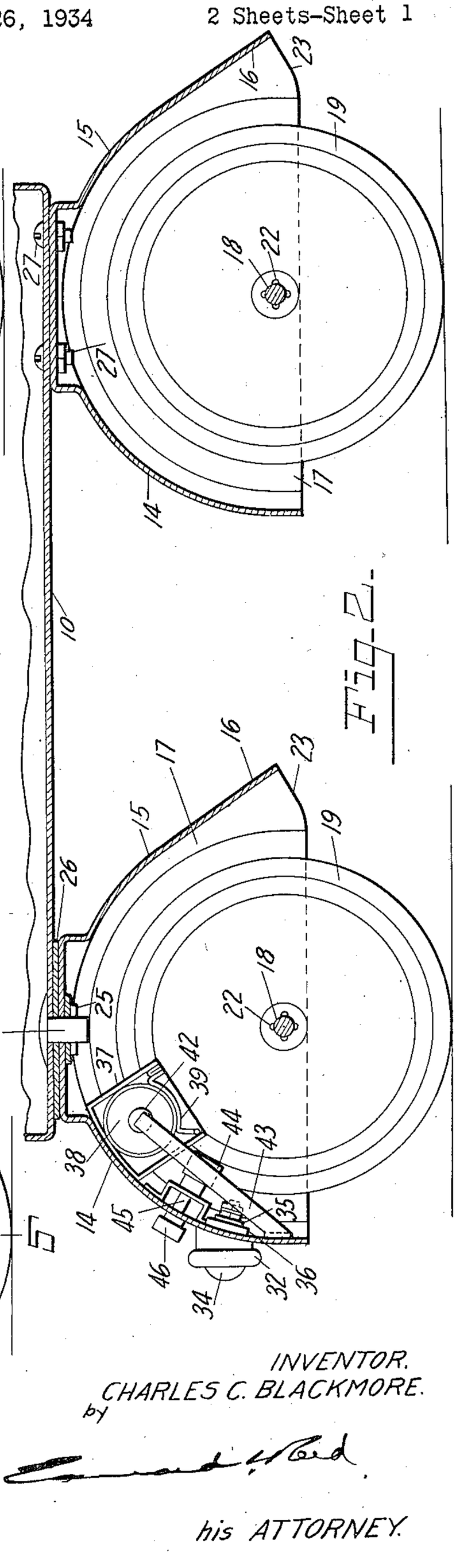

FIG. 2.

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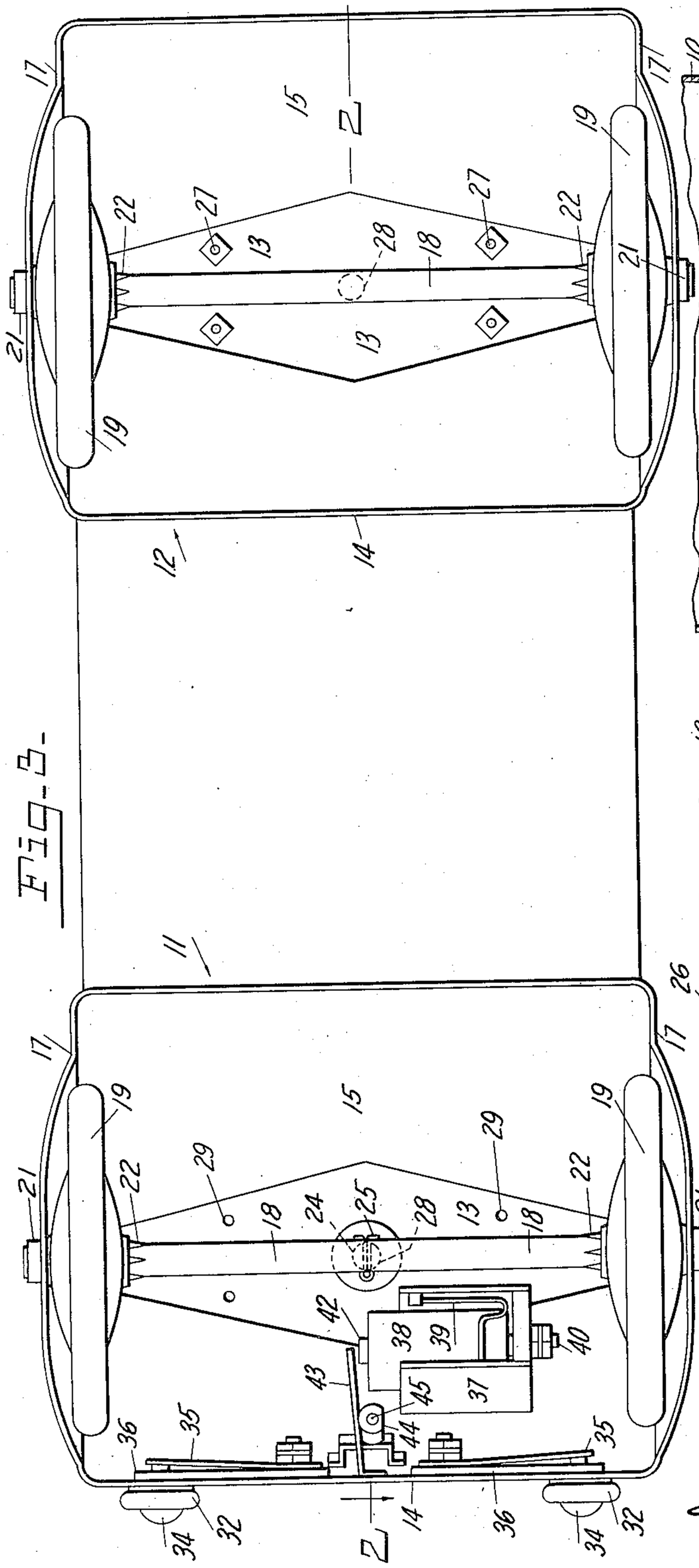

FIG. 2.

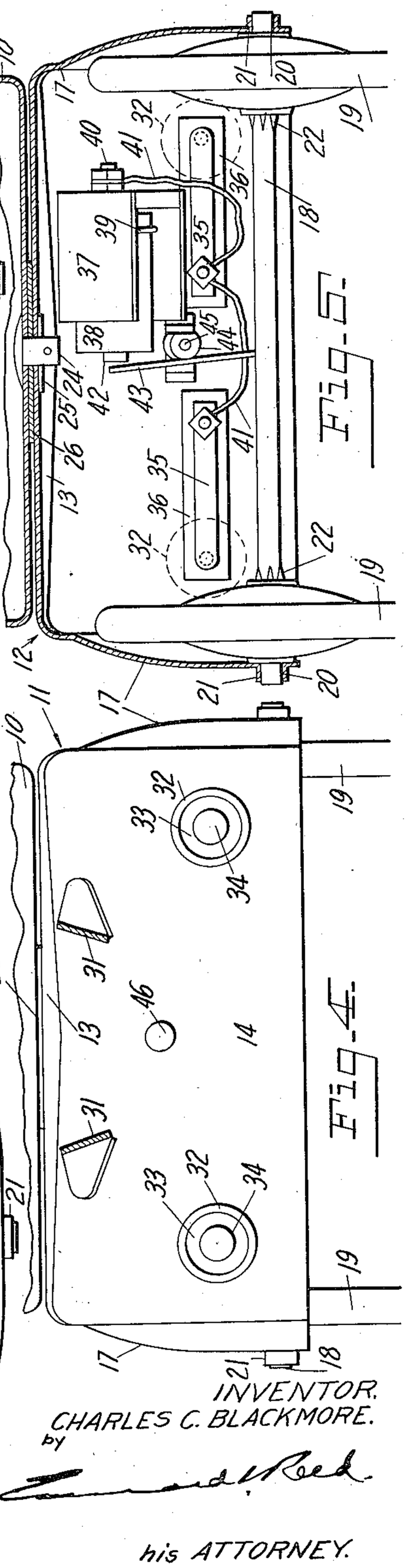

FIG. 5.

FIG. 3.

FIG. 4.

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Patented Aug. 20, 1935 2,012,079

UNITED STATES PATENT OFFICE

2,012,079

TOY VEHICLE

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Application January 26, 1934, Serial No. 708,340

10 Claims. (Cl. 280—87.5)

This invention relates to toy vehicles and more particularly to a running gear for such a vehicle.

One object of the invention is to provide such a vehicle with a body supporting structure which will be simple in construction, of a strong durable character and which may be produced at a relatively low cost.

A further object of the invention is to provide a supporting structure of such a character that the axle may be quickly and easily mounted therein in the assembling of the vehicle and will be firmly retained therein after the vehicle is assembled.

A further object of the invention is to provide such a supporting structure of a shape approximating the streamline construction employed in automobiles.

A further object of the invention is to provide such a supporting structure on which the headlights and their controlling devices may be mounted.

Other objects of the invention may appear as the apparatus is described in detail.

In the accompanying drawings Fig. 1 is a side elevation of a toy vehicle embodying my invention, showing the steering handle, partly broken away; Fig. 2 is a longitudinal sectional view taken on the line 2—2 of Fig. 3; Fig. 3 is a bottom plan view of a toy vehicle embodying my invention; Fig. 4 is a front end elevation of such a toy vehicle, partly broken away; and Fig. 5 is a transverse sectional view taken on the line 5—5 of Fig. 1, looking in the direction of the arrow.

In these drawings I have illustrated one embodiment of my invention and have shown the same as applied to a vehicle having the conventional toy wagon body but it will be understood that the invention may take various forms and may be embodied in toy vehicles of various kinds.

The particular toy vehicle here shown comprises a body portion 10 provided at its front and rear ends with supporting structures indicated as a whole by the reference numerals 11 and 12. These supporting structures are similar in construction and each comprises a hollow structure which is preferably approximately semi-circular in cross section and is provided with means for supporting the axle on which the vehicle wheels are mounted, these wheels being preferably arranged within the hollow structure. In the particular construction shown each supporting structure comprises an upper portion 13 which preferably has a flat upper surface arranged in supporting relation to the body. Diverging downwardly from this upper portion 13 is a forwardly curved front member or wall 14 and a rear member or wall 15, the upper portion of which is curved rearwardly and the lower portion of which, as shown at 16, is substantially straight and inclined with relation to the body. These downwardly diverging front and rear members are connected one to the other at their respective ends by end members 17 which are provided with means for supporting the axle 18 on which the wheels 19 are mounted. Preferably the supporting structure is formed from sheet metal and the several parts are firmly connected one to the other. If desired, the structure as a whole may be drawn from a single blank of sheet metal. The front and rear members 14 and 15 are spaced apart a distance substantially greater than the diameter of the wheels and the wheels are arranged within the hollow structure.

The wheel supporting means may be of any suitable character but, as here shown, each end member is provided with an axle receiving opening 20 forming a socket for the axle, and, preferably provided with an outwardly extending boss 21. The axle is of such a length that when inserted in the sockets its ends will lie adjacent to the outer ends of the respective bosses 21, and it is provided at points spaced from the respective ends thereof with stops 22 to limit the inward movement of the wheels with respect thereto, these stops being preferably provided by forming lugs on the axle itself. In assembling the wheels and axle on the supporting structure the wheels are mounted on the axle, inserted between the end members of the supporting structure and one end of the axle inserted in its supporting socket. The end members are then spread apart to permit the other end of the axle to be sprung into the socket in the other end member. When released the end members will spring into firm engagement with the outer central portions or hubs of the wheels and the latter will be confined between the end members and the respective stops 22, within the hollow supporting structure. While the end members have sufficient resiliency to permit the axle to be sprung into the sockets it is of such stiffness that considerable force is necessary in order to spread the end members apart and consequently after the device has been assembled the axle will be firmly retained in the end members without danger of being displaced when the vehicle is in use. The wheels are usually spaced apart a distance slightly greater than the width of the body and, if desired, the front and rear members of the supporting structures may be of

a length approximately equal to the width of the body and the end members may be embossed or curved outwardly to receive the wheels.

As has been stated, the lower portions of the rear members of the supporting structure are arranged substantially in an inclined plane and the rear edges of the end members conform to the shape of the rear member but the rear member terminates slightly above the lower edges of the end members and has its rear corner cut away, as shown at **23**, so as to impart thereto a rearwardly extending point. The curved shape of the front member and the pointed shape of the end members impart to the supporting structure as a whole a shape somewhat similar to a streamline construction, thus in a measure simulating the appearance of a streamline automobile, which is pleasing to children and which enhances the sales value of the toy.

The upper portions of the supporting structures may be secured in supporting relation to the body in any suitable manner. In the particular toy vehicle here shown the front wheels alone constitute steering wheels and the upper portion of the front supporting structure is pivotally connected to the bottom of the body by a pivot pin **24** extending through the body and through the upper portion of the supporting structure and secured therein by a cotter pin **25**. If desired, a spacing member or washer **26** may be interposed between the supporting structure and the bottom of the body. The rear supporting member is rigidly secured to the bottom of the body, preferably by bolts **27**. However, in the present construction the two supporting members are identical in construction and the upper parts of both supporting structures are provided with central openings **28** for the pivot pin **24** and with bolt holes **29** for the bolts **27**, thus enabling either supporting structure to be mounted at either end of the vehicle. In the event the invention is applied to a toy vehicle in which both the front and rear wheels have steering movement the supporting members may both be mounted for pivotal movement and may be connected one to the other by connecting members or bars in the manner shown in my copending application Serial No. 689,738, filed September 16, 1933.

The vehicle may be propelled and steered in any suitable manner. In the present instance a propelling and steering handle **30** is pivotally mounted on a bracket **31** which is rigidly secured to the front wall of the supporting member for the front wheels, so that the handle may be either extended in front of the vehicle or tilted rearwardly above the bed in the usual manner for a coaster wagon.

It is also desirable that a toy vehicle of this kind should be provided with headlights and means for illuminating the same and I have utilized the front supporting structure as a support for the headlights and the battery and controlling device therefor. In the present construction the front wall of the supporting structure is provided with forwardly extending bosses **32** in imitation of headlight reflectors and are provided with lamp sockets **33** which extend through the front wall and are adapted to receive the bases of small incandescent lamps **34**. Each socket is grounded on the front wall of the supporting structure and the rear contact on the base of the lamp projects beyond that front wall and engages a resilient contact member **35** which is mounted on the front wall but insulated therefrom, as shown at **36**. The supporting structure is provided within the same with any suitable means for supporting a dry cell and, as here shown, a hollow structure or housing **37** is secured to the front wall of the supporting structure and is adapted to receive the dry cell **38**, which is retained therein by a clip **39**. The terminal at one end of the cell engages a contact **40** mounted in one end of the housing **37**, and this contact is connected by conductors **41** with the yieldable contact members **35** with which the lamp bases engage. Means are provided for connecting the terminal **42** at the opposite end of the dry cell with the front wall of the supporting structure, upon which the lamp sockets are grounded, and, as here shown, a resilient contact member **43** is mounted on the front wall in electrical contact therewith and is movable into and out of engagement with the terminal **42**. Any suitable means may be provided for controlling the position of the contact member **43** but, in the present instance, I have utilized a rotary cam **44** mounted on a stud **45** which is rotatably mounted in the front wall and provided on its outer end with a handle or knob **46** by means of which it may be rotated. The contact member **43** is so arranged that its resiliency will normally tend to move the same into contact with the terminal **42** of the dry cell and when the flat portion of the cam is in engagement with the contact member the latter will engage the terminal but when the cam is rotated to bring the cylindrical portion thereof into engagement with the contact member the latter will be moved out of engagement with the terminal of the dry cell. In this manner the circuit may be closed through the lamps at the will of the operator and the only wires necessary are the short leads from the rear contact member **40** to the resilient contact members **35**.

While I have shown and described one embodiment of my invention I wish it to be understood that I do not desire to be limited to the details thereof as various modifications may occur to a person skilled in the art.

Having now fully described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a toy vehicle comprising a body, a supporting structure having a top portion in supporting relation to said body, end portions extending downwardly from said top portion, and front and rear portions connecting said end portions one with the other, said end portions having alined sockets, an axle mounted in said sockets, and wheels carried by said axle between said end portions, said end portions being resilient to permit said axle to be sprung into said sockets.

2. In a toy vehicle comprising a body, a supporting structure substantially semi-circular in cross section, closed at its ends and of a diameter greater than the diameter of the vehicle wheels, said structure having supporting connection with said body, and wheels having supporting connection with the end walls of said structure.

3. In a toy vehicle comprising a body and wheels therefor, a supporting structure having a part above said wheels in supporting relation to said body, having other parts arranged respectively in front of and to the rear of said wheels and converging upwardly to the first mentioned part, and having parts connecting said front and rear parts one with the other on the outer sides of the respective wheels, and means for supporting said last mentioned parts on said wheels.

4. In a toy vehicle having a body, an axle, and wheels mounted on said axle, a supporting

structure comprising end portions having means for supporting said axle, each of said end portions having a curved part extending in front of said wheels and a substantially pointed part extending to the rear of said wheels, front and rear portions connected with the front and rear edges of said end portions, and an upper portion connected with said front, rear and end portions and having supporting connection with said body.

5. In a toy vehicle, having a body, an axle, and wheels mounted on said axle, a supporting structure comprising end portions on the outer sides of the respective wheels and having means for supporting said axle, each end portion having a curved part extending in front of said wheels and a substantially pointed part extending to the rear of said wheels, front and rear portions connected with the front and rear edges of said end portions, and an upper portion connected with said front, rear and end portions and having supporting connection with said body.

6. In a toy vehicle comprising a body and wheels therefor, a hollow supporting structure having an upper portion in supporting relation to said body and having end walls extending downwardly from said upper portion near the respective sides of said body and provided with means for supporting the same on said wheels, each of said end walls extending substantial distances to the front and to the rear of the axes of said wheels, said hollow structure also having front and rear walls secured respectively to the front and rear edges of said end walls.

7. In a toy vehicle, comprising a body and wheels therefor, a hollow supporting structure extending for substantially the full width of said body and having an upper portion in supporting relation thereto and also having front, rear and end walls secured to and extending downwardly from said upper portion and connected one to the other, and means for supporting said end walls on said wheels.

8. In a toy vehicle comprising a body, and wheels therefor, a hollow supporting structure having an upper portion in supporting relation to said body and also having front and rear portions extending downwardly from said upper portion with their lower edges spaced a substantial distance one from the other, said structure also having end portions extending downwardly from said upper portion on the outer sides of the respective wheels and secured to said front and rear portions, and means for supporting said end portions on said wheels.

9. In a toy vehicle comprising a body, and a supporting structure having a top portion extending across said body in supporting relation thereto, end walls extending downwardly from said top portion, and front and rear portions connecting said end portions one with the other, an axle supported by said end portions, and wheels carried by said axle adjacent to the respective end portions.

10. In a toy vehicle comprising a body and wheels therefor, a hollow body supporting structure mounted on said wheels, connected with said body for movement about a vertical axis with relation thereto and open at its lower side only, a headlight mounted on said structure exteriorly thereof for movement therewith about said vertical axis, a support for a dry cell mounted on said hollow structure within the same, means carried by and arranged within said hollow structure and including a switch for connecting said dry cell with said headlight, and an actuating device for said switch having a part arranged exteriorly of said structure.

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