TOY VEHICLE ADAPTED FROM A BEVERAGE CAN

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

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ATTORNEYS.
TOY VEHICLE ADAPTED FROM A BEVERAGE CAN

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This invention relates to a toy, and particularly to a toy vehicle such as a train, missile or wagon.

An object of this invention is to provide a toy vehicle in which the frame-body is formed by a soft drink, beer can, or any round or square container.

To implement this object, simple end brackets are provided that snap or fit in place over the rim of the can. Each end bracket supports two wheels.

In another form of this invention use is made of a simple wire device that in a unique manner frictionally grips the can at its end.

Another object of this invention is to provide devices of various types and shapes that may be attached or affixed to empty soft drink or beer cans or the like, whereby a toy vehicle can inexpensively be made.

Another object of this invention is to provide simple, inexpensive and compact devices that may be used by food or beverage manufacturers in connection with advertising promotions and the like.

This invention possesses many other advantages, and has other objects which may be made more clearly apparent from a consideration of several embodiments of the invention.

For this purpose, there are shown a few forms in the drawings accompanying and forming part of the present specification. These forms will now be described in detail, illustrating the general principles of the invention; but it is to be understood that this detailed description is not to be taken in a limiting sense, since the scope of the invention is best defined by the appended claims.

Referring to the drawings:

FIGURE 1 is a longitudinal sectional view of a toy vehicle incorporating the present invention, a portion of the can (shown in elevation) being broken away;

FIG. 2 is a vertical sectional view taken along the plane indicated by line 2—2 of FIG. 1;

FIG. 3 is a view similar to FIG. 1 but illustrating a modified toy vehicle;

FIGS. 4 and 5 are sectional views taken along planes indicated by lines 4—4 and 5—5 of FIG. 3;

FIG. 6 is a view similar to FIGS. 1 and 3 but showing another modified toy vehicle;

FIG. 7 is a vertical sectional view taken along a plane indicated by line 7—7 of FIG. 6;

FIG. 8 is a top plan view of another modified toy vehicle;

FIGS. 9 and 10 are sectional views taken along planes indicated by lines 9—9 and 10—10 of FIG. 8; and

FIG. 11 is a bottom plan view of the vehicle shown in FIG. 8.

In FIG. 1 there is illustrated a beverage can 10 that may for example be a 12-oz. beer can. Opposite ends of the can 10 have rims 11 utilized for purposes of attaching identical end brackets 12 which preferably are made of molded plastic material having characteristics of flexibility, resilience and strength, such as polyethylene. One end bracket will be described in detail, a description of one sufficing for both.

Bracket 12 is generally in the form of a cap having a flange 13 extending in one direction about the edges of a generally flat plate like part 14. This part 14 covers the end of the can and also has a rectangular portion projecting laterally or downwardly of the can. The upper portion 13a of the flange 13 is generally semi-circular. The sides 13b of the flange extend vertically downward in tangent relationship to the ends of its semi-circular part 13a. The bottom 13c extends between and joins the lower ends of the flange sides 13b.

The can rim 11 fits within the flange 13, the upper portion 13a conforming to the rim configuration. The lower wall 13c extends generally tangent the can rim 11.

In order to hold the bracket 12 on the end of the can, the flange 13 has inwardly directed latching or gripping tabs or projections 17 that provide inwardly directed recess segments fitting the rim of the can. One of the tabs 17 is on the bottom 13c of the flange 13 and at the point of tangency. Two of the tabs 17 are at the respective sides 13b and the fourth is at the top of the flange. Preferably the tabs 17 are so spaced from the base of the flange 13 so as frictionally to grip the can rim as well as to form a stop preventing separation of the parts.

The bracket 12 can be installed by flexing the bracket flange 13 over the can rim 11 until the tabs 17 snap in place. Removal is accomplished by flexure of the flange until the tabs are released from the rim.

Two wheels 18 are mounted at the respective lower corners of the bracket. In the present example, the wheels are recessed within the sides of the bracket. For this purpose, the flange 13 at each corner is inwardly offset or jogged, there being an inwardly extending horizontal part 13d and a downwardly extending vertical part 13e.

The flange also has an appendage 15f extending downwardly from the outer end of the horizontal part 13d to form with the vertical flange part 13e a clevis or yoke receiving a wheel 18.

The wheels 18 may be of simple molded plastic construction having the central apertures therethrough. For each wheel 18 there is a pin that provides an axle therefor. The pin 19 projects across the yoke or clevis formed by the flange parts, and is mounted at aligned apertures 29 and 21 in the flange parts 13e and 13f. The pin frictionally grips the flange apertures in order that it be held securely in place. To insure this result the apertures 20 and 21 have dimensions normally smaller than those of the pins.

The two brackets 12 provide, with the can 10, a simple four-wheeled toy vehicle.

In the forms illustrated in FIGS. 3, 4 and 5, a square can 30 is illustrated. Two identical end brackets 31 and 32 of molded plastic as in the previous form, are provided for opposite ends of the can 30. A description of one of the brackets suffices for both.

The bracket 31 is formed generally as an angle, having arms 33 and 34. The end of the can may be cornered in the bracket, the arm 33 extending substantially vertically upwardly and along the end of the can, and the arm 34 projecting over the rim 35 and along the bottom of the can.

In order to prevent separation of the bracket 31 from the can 30 by relative movement of the bracket in a direction perpendicular to the can end or from side to side of the can, the bracket 31 has two L-shaped flanges 36a and 36b at the ends of the bracket that extend along the sides of the can. Each flange has an inwardly facing groove or channel 37a and 37b respectively extending along the opposite sides of the angle arm 33. Opposite sides of the can rim 35 slide into the grooves 37a and 37b, and the bottom of the can rim 35 rests on the other angle arm 34. Preferably the beads 37a and 37b are so designed as to frictionally grip the can bead. However, the weight of the can 30 also maintains it seated in the bracket.

Integral lugs 39 and 40 respectively project beneath the side flanges 36a and 36b of the bracket 31. Pins 41 and 42 respectively frictionally gripped by the lugs
39 and 40 project outwardly therefrom, to provide axles for wheels 43 and 44. In the present example, the lugs 39 and 40 have downwardly opening recesses as at 45 (FIG. 3) to facilitate insertion of the pins 41. The flexible and resilient characteristics of the lug insure a good friction grip of the pins 41. The outer ends of the pins 41 may be provided with heads or other means for limiting outward movement of the wheels 43 and 44.

In the forms shown in FIGS. 6, 7, and 9, identical plastic end brackets 50 and 51 are provided that are generally similar to that illustrated in FIG. 1. Bracket 50 is generally in the form of an end cap having provisions for fitting the end of a rectangular can 52. The bracket 50 has a rectangular flange 53 extending on one side of a bracket wall 54 for receiving the end of the can 52. The flange 53 has tabs or projections 55 for engaging behind the rim 56 of the can 52, thereby locking the end bracket 51 in place. The tabs 55 preferably frictionally grip the can rim 56 when the parts are assembled, in addition to forming a stop for preventing separating movement.

The bracket 51 has two depending lugs 57 at opposite sides. Each lug has a recess 58 thereby forming a clevis or yoke for accommodating a wheel 59. Axle forming pins 60 on which the wheels are mounted, project across the recess 58 and are frictionally gripped at their ends by the lugs 57.

In the present instance the bracket 51 has a semi-circular strip 61 forming on each at the top of the bracket 51. The ends of the strip 61 join the upper corners of the rectangular flange 53. The area bounded by the semi-circular strip 61 and the upper portion of the flange 53 is open.

The semi-circular strips of the brackets 50 and 51 serve as a means for securing a piece of cardboard or plastic 62 that conceals the can 52. The cardboard 62 can be flexed from a flat rectangular configuration to an arched configuration generally defined by the peripheral contour of two brackets. Opposite edges of the cardboard 62 are gripped at grooves 63 formed in the brackets. Each bracket 63 extends on the inside of the bracket from the bottom of one lug 57 upwardly along the side portion of the flange 53, along the semi-circular strip 61, along the opposite side of the flange 53 to the other lug 57. The grooves 63 of the respective brackets hold the cardboard 62 in flexed configuration, and furthermore combine the cardboard between the brackets. The cardboard element 62 may be printed in any suitable fashion appropriate for the toy which it creates.

In the form illustrated in FIGS. 8, 9, 10 and 11, wheels 70 and 71 are located at the ends of a continuous device 72 made of a single piece of flexible resilient wire or rod. Stops 79 locate the wheels.

The wire 72 has an intermediate circular loop 73, the normal unflexed diameter of which is less than the diameter of a circular can 74 with which the device is intended to cooperate. Accordingly, by squeezing the wheels 70 and 71 together, the loop 73 is effectively enlarged and it may be passed over the rim 75 of the can 74. When the wheels 70 and 71 are released the loop 73 locks behind the rim 75.

A wire device 76 is similarly provided for the opposite end of the can 74. However, the wire devices 72 and 76 are different from each other in that they respectively provide opposite coupling parts whereby a series of vehicles so constructed can be coupled together as a train.

The device 72 as shown in FIGS. 8, 9 and 11 has, at the base of its loop, an angled offset portion 77 forming an upwardly extending projection accessible beyond the corresponding end of the can. The opposite wire device 76 has an offset 78 that extends in a general horizontal direction beyond the end of the can for reception of the projection 77 of a device 72 on a companion vehicle.

The inventor claims:

1. For use in combination with a beverage can or the like: a bracket made of flexible resilient material and having a flange for receiving the rim of the can; said flange having inwardly directed integral tabs for locking behind the can rim; said bracket having groove means located in the end surface of the flange for receiving the edge of a cardboard or plastic sheet extending in surrounding relationship to the can; and a pair of wheels carried by the bracket.

2. In combination with a beverage can having rims at opposite ends; a bracket for each end of the can, and having provisions for detachably interlocking with the can rim; a sheet of flexible material having lateral edges; said brackets each having grooves receiving the edges of in a flexible material and holding it in flexed surrounding relationship to the can; and a pair of wheels carried by each bracket.

3. In combination with a beverage can having rims at opposite ends: a flexible resilient cap of unitary molded material for each end of the can, each cap having a continuous flange surrounding the rim of the corresponding can end, and forming a shallow recess in which the entire rim is received, the end edges of the flange lying in a plane located adjacent but behind the can rim with the can rim seated in the recess, each cap having a series of tabs extending inwardly from the end edges of the cap flange to snap over and lock behind the can rim, each cap having a pair of spaced integrally formed projections extending laterally beyond the can, and a pair of operative wheels for each cap having coaxial axle means mounted by the respective projections.

4. In combination with a beverage can having rims at opposite ends: a flexible resilient cap of unitary molded material for each end of the can, each cap having a continuous flange surrounding the rim of the corresponding can end, and forming a shallow recess in which the entire rim is received, the end edges of the flange lying in a plane located adjacent but behind the can rim with the can rim seated in the recess, each cap having a series of tabs extending inwardly from the end edges of the cap flange to snap over and lock behind the can rim, each cap having a pair of spaced integrally formed projections extending laterally beyond the can, each cap providing a recess, coaxial axle pins for the projections of each cap and extending across the corresponding recesses, and an operative wheel mounted on each axle pin.

5. In combination with a beverage can having rims at opposite ends: a flexible resilient cap of unitary molded material for each end of the can, each cap having a continuous flange surrounding the rim of the corresponding can end, and forming a shallow recess in which the entire rim is received, the end edges of the flange lying in a plane located adjacent but behind the can rim with the can rim being in the recess, each cap having a series of tabs extending inwardly from the end edges of the cap flange to snap over and lock behind the can rim, each cap having an arcuate strip joined integrally to spaced portions of said flange and extending laterally of the can with the end edges of said strip and the end edges of said flange having connections forming a groove for receiving and the edge of a sheet of flexible material extending in surrounding relationship to the can, each cap having a pair of spaced projections opposite said strip and extending laterally beyond the can, and a pair of operative wheels for each cap having coaxial axle means mounted by the projections.

6. In combination with a beverage can having rims at opposite ends: a flexible resilient cap of unitary molded material for each end of the can, each cap having a continuous flange surrounding the rim of the corresponding can end, and forming a shallow recess in which the entire rim is received, the end edges of the flange lying in a
plane located adjacent but behind the can rim with the can end seated in the recess, each cap having a series of tabs extending inwardly from the end edges of the cap flange to snap over and lock behind the can rim, the said end edges of said flanges of said caps each having grooves for receiving and holding the respective opposite edges of a sheet of flexible material extending in surrounding relationship to the can, each cap having a pair of spaced projections opposite said strip and extending laterally beyond the can, and a pair of operative wheels for each cap having coaxial axle means mounted by the projections.

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