ABSTRACT
A composite toy includes a first component vehicle and a vehicle accessory. The first component vehicle includes a chassis with wheels and an integral cab portion and a first coupling member configured for releasable coupling to another component vehicle. The vehicle accessory is configured for releasable attachment to the first component vehicle so as to create a new vehicle having a modified appearance relative to the first component vehicle. In an alternate embodiment, the composite vehicle further includes a second component vehicle including a chassis with an integral cab portion and a second coupling member configured for releasable coupling to another component vehicle either longitudinally or laterally.
COMPOSITE TOY VEHICLES

CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims the benefit of U.S. Provisional Patent Application Nos. 60/385,158 filed May 30, 2002; 60/423,310 filed Nov. 1, 2002; and 60/447,672 filed Feb. 14, 2003, all entitled “Magnetically Coupled Toy Vehicles”, the entire contents of which are incorporated by reference herein.

BACKGROUND OF THE INVENTION

The present invention relates generally to composite toy vehicles, such as toy cars, toy trucks, toy boats, toy trains, toy helicopters or the like and, more particularly, to composite toy vehicles formed from component toy vehicles releasably coupled to other component toy vehicles either longitudinally or laterally and component toy vehicle accessories connected thereto.

Toy trains and other vehicles that join together to be towed or pulled in play are well known. Many toy trains utilize clasps or clevis-type hitches to join the train cars together. The clevis-type hitches allow a range of motion, but they generally require the user to pull a lever or spring-loaded upper piece in order to open the clevis portion to separate the train cars. Additionally, the hitch arrangements are all for allowing a tow action.

Some toy vehicle sets have utilized magnets to join together individual vehicles. Generally the vehicles have a magnet at either end. Each magnet is nearly identical so the magnets must be able to rotate or move in some fashion in order to align with the opposite poles (North/South) of another vehicle’s magnet. Some of these vehicles had joined the magnets to the vehicles by chains or strings which allowed articulation similar to a hitch when pulling the vehicles, but does not allow for pushing the vehicles or pulling multiple vehicles as one composite unit more like a bus than a train or trailer.

What is needed but not provided for in the prior art is a composite toy formed of a combination of component toy vehicles and accessories using couplings or connectors which create a new overall toy or toy vehicle. What is also needed and not provided by the prior art is a composite toy vehicle made up of multiple toy vehicles that have similar coupling members capable of towing the multiple toy vehicles like a train in one configuration or pushing and pulling the multiple toy vehicles like one larger non-articulating toy vehicle in another configuration.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

The foregoing summary, as well as the following detailed description of preferred embodiments of the invention, will be better understood when read in conjunction with the appended drawings. For the purpose of illustrating the invention, there are shown in the drawings embodiments which are presently preferred. It should be understood, however, that the invention is not limited to the precise arrangements and instrumentalities shown.

In the drawings:

FIG. 1 is a front, left side perspective view of one possible composite vehicle formed of a plurality of component vehicles and component vehicle accessories in accordance with a first preferred embodiment of the present invention;

FIG. 2A is a front, left side perspective view of a composite vehicle formed of two component vehicles in accordance with a second preferred embodiment of the present invention;

FIG. 2B is an enlarged bottom view of two first component vehicles of FIG. 2A with a detail of the couplings in an extended position;

FIG. 2C is an enlarged bottom view of two first component vehicles of FIG. 2A with a detail of the couplings in a retracted position;

FIG. 3 is a perspective view of the plurality of component vehicles and component vehicle accessories which together form a composite vehicle kit in accordance with the first preferred embodiment of the present invention;

vehicles. The first component vehicle has a chassis which includes at least two wheels, each of the wheels having a lateral coupling configured for laterally coupling with another component vehicle. The second component vehicle having a chassis which includes at least two wheels, each of the wheels having a lateral coupling configured for laterally coupling with another component vehicle. When the first component vehicle is laterally coupled to the second component vehicle, a new vehicle is created having a modified appearance relative to the first and second component vehicles.

In yet another aspect, the present invention is also a composite toy comprising a first component vehicle, a second component vehicle and a vehicle accessory. The first component vehicle includes a chassis with an integral cab portion and a first coupling member configured for releasable coupling to another component vehicle. The second component vehicle includes a chassis with an integral cab portion and a second coupling member configured for releasable coupling to another component vehicle. The vehicle accessory is configured for releasable attachment to one of the first and second component vehicles. When the vehicle accessory is releasably attached to one of the first and second component vehicles and the first component vehicle is coupled to the second component vehicle by the first and second coupling members, a new vehicle is created having a modified appearance relative to the first and second component vehicles.
FIG. 4 is a front, left side perspective view of another possible composite vehicle formed of a plurality of component vehicles and component vehicle accessories in accordance with an alternate of the first preferred embodiment of the present invention;

FIG. 5 is an enlarged left side perspective view of a component vehicle and component vehicle accessory in accordance with the preferred embodiments of the present invention; and

FIG. 6 is an enlarged perspective view of a pair of component vehicles with wheel to wheel couplings in accordance with the preferred embodiments of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Certain terminology is used in the following description for convenience only and is not limiting. The words “right”, “left”, “lower”, and “upper” designate directions in the drawings to which reference is made. The words “inwardly” and “outwardly” refer to directions toward and away from, respectively, the geometric center of the object discussed and designated parts thereof. The terminology includes the words above specifically mentioned, derivatives thereof and words of similar import. Additionally, the word “a” as used in the claims and in the corresponding portions of the specification, means “one or more than one” or “at least one.”

In the drawings, like numerals are used to indicate like elements throughout. Referring to the drawings in detail, there is shown in FIG. 3 a composite toy vehicle set 1400 in accordance with a first preferred embodiment of the present invention. The composite toy vehicle set 1400 includes a first component vehicle including a chassis with an integral cab portion 1485, a rear cab member 1452 and a rear cab member 1456. Preferably, the first component toy vehicle 1480 is a truck chassis having at least two wheels 1487, but preferably four wheels 1487. The wheels 1487 rotate freely on axles (not shown). The wheels 1487 also include a plurality of members 1487a, 1487b, which amount to a protrusion 1470 or a recess 1470a (FIG. 6) which is configured for laterally coupling with another component vehicle 1480 or 1580.

The composite toy vehicle set 1400 further includes a first component vehicle accessory 1410 that is configured for releasable attachment to the first component vehicle 1480 so as to create a new vehicle having a modified appearance relative to the first component vehicle 1480. Preferably, the first component vehicle accessory 1410 is the cab of a fire truck having a removable light bar 1412, doors 1410a, windows 1410b, and a grill 1410c. The first component vehicle accessory 1410 has the look of a big rig or tractor-type truck with red paint, stripes and emblems to look like a fire truck. The first component vehicle accessory or truck cab 1410 has first and second shells halve 1411a, 1411b which slide apart to reveal a center expansion space 1413 providing the truck cab 1410 with an overall larger width. Preferably the shell halves 1411a, 1411b are pulled apart solely by user force, but optionally a release mechanism or actuator may be employed to releasably latch the shell halves 1411a, 1411b either together, apart or both without departing from the present invention. When the truck cab 1410 is in a closed position, i.e., the shell halves 1411a, 1411b are pushed close together, the truck cab 1410 has the overall width similar to the first component vehicle 1480. When the truck cab 1410 is in an open position, i.e., the shell halves 1411a, 1411b are slid apart to reveal the center expansion spacer 1413, the truck cab 1410 has the overall width of about two first component vehicles 1480.

The truck cab 1410 includes a releasable engagement device which is preferably similar to an integral connector-receiver 1511 such as the one shown in FIG. 5 thereby being interchangeable with other vehicle accessories (e.g., 1410, 1512, 1518). As shown here, the truck cab 1410 is expandable and has the appearance of a fire-truck, but need not be. The first vehicle accessory 1410 may have the appearance of a pickup truck cab, a tow-truck cab, a tractor-trailer cab, an off-road vehicle cab and the like without departing from the spirit of the invention.

The removable light bar 1412 has an independent internally mounted power source such as a battery (not shown) disposed within a base 1412a of the light bar 1412 and a separate on/off button (not shown) for energizing the light bar 1412 independent of other accessories. Preferably, the removable light bar 1412 flashes the bulbs or light emitting diodes (LEDs) to give the appearance of a real emergency vehicle light bar. The removable light bar 1412 includes a releasable engagement device for interchangeably installing the removable light bar 1412 at various locations on the composite toy vehicle set 1400, but preferably, the removable light bar 1412 is releasably installed on the truck cab 1410. The releasable engagement device is preferably similar to the integral connector-receiver 1511 such as the one shown in FIG. 5 thereby being interchangeable with other vehicle accessories (e.g., 1410, 1512, 1518).

The truck cab 1410 optionally includes a sound generator (not shown). Preferably, the sound generator is powered by a battery (not shown) and includes an integrated circuit (IC), sound processor and a speaker (not shown) of the known variety. But, the sound generator may be any form of electromechanical, electronic, or mechanical type sound generation device, without departing from the present invention.

The first component vehicle 1480 further includes an integral molded connector 1484 on its upper surface. Preferably, the body of the first component vehicle 1480 is molded or formed of a polymeric material. However, the body of the first component vehicle may be formed of other materials such as metal, wood, alloys and the like without departing from the present invention. The integral connector 1484 of the first component vehicle 1480 is configured to releasably engage a connector-receiver (not shown) on the bottom of the first component vehicle accessory 1410 (similar to the connector-receiver 1511 shown in FIG. 5).

Optionally, each first component vehicle 1480 includes stability posts 1483 protruding from one end of the vehicle 1480 and mating sockets 1483a at the other end of the vehicle 1480 which are generally aligned with the stability posts 1483 in order that the stability posts 1483 of one vehicle 1480 can align and mate with the receiving sockets 1483a of another vehicle 1480 when close coupled end-to-end. The stability posts 1483 prevent the vehicles 1480 from rotating when close coupled.

The composite toy vehicle set 1400 further includes a second component vehicle 1580 including a
chassis with an integral cab portion 1558, a front coupling member 1552 and rear coupling member 1558. The second component vehicle 1580 includes integral molded front and rear accessory connectors 1584a and 1584b. Preferably, the second component vehicle 1580 is a truck chassis having at least two wheels 1587, but may have four or more wheels 1587 without departing from the present invention. The wheels 1587 rotate freely on axles (not shown). The wheels 1587 also include lateral coupling members which are identical to the protrusion or recess explained with respect to the first component vehicle 1480 (shown in FIG. 6) and which are configured for laterally coupling with another component vehicle 1580 (1480). Preferably, the second component vehicle 1580 is about twice as long as the first component vehicle 1480.

[0027] Optionally, the second component vehicle 1580 includes stability posts 1583 protruding from one end of the vehicle 1580 and mating sockets 1583a at the other end of the vehicle 1580 which are generally aligned with the stability posts 1583 in order that the stability posts 1583 of one vehicle 1580 can align and mate with the receiving sockets 1583a of another vehicle 1580 when close coupled. The stability posts 1583 prevent the vehicles 1580 from rotating when close coupled. The stability posts 1583 of the second component vehicle 1580 may also mate with receiving sockets 1583a of the first component vehicle 1480 and the stability posts 1483 of the first component vehicle may likewise mate with the sockets 1583a of the second component vehicle 1580.

[0028] The composite toy vehicle set 1400 also includes a second component vehicle accessory 1512 configured for releasable attachment to either the first or second component vehicles 1480, 1580, so as to create another new vehicle having a modified appearance relative to either vehicle 1480, 1580. The second component vehicle accessory 1512, similar to the first component vehicle accessory 1410, attaches to the second component vehicle 1580 by releasable engagement to one of the connectors 1584a, 1584b by the mating connector-receiver 1511 (FIG. 5) on the bottom of the second component vehicle accessory 1512. Preferably, the second component vehicle accessory 1512 has the overall appearance of a fire truck body in one perceived view when another vehicle accessory (e.g., 1410, 1512, 1518) is placed in front of the second component vehicle accessory 1512 and of a fire truck with a hoodless or cab-over body design in another perceived view when no other accessory (e.g., 1410, 1512, 1518) is obscuring the front end of the second component vehicle accessory 1512. Preferably the second component vehicle accessory 1512 is about half as long as the second component vehicle 1580 and is about the same length as the first component vehicle 1480 on which it can also be used.

[0029] FIG. 5 shows a portion of the second vehicle 1580 and the bottom of the second vehicle accessory 1512 where the second vehicle accessory 1512 is about to be releasably secured to the second vehicle by way of the integral connector 1584b on the second vehicle 1580 and the integral connector-receiver 1511 of the second vehicle accessory 1512. While a substantially triangular vehicle connector 1584b and a similarly shaped integral receiver connector 1511 are shown, other mating shapes and other connectors such as detents or tabs maybe used without departing from the present invention.

[0030] The composite toy vehicle set 1400 also includes a third vehicle accessory 1518 configured for releasable attachment to the second component vehicle 1580, so as to create another new vehicle having a modified appearance relative to the second component vehicle 1580. The third vehicle accessory 1518, similar to the first and second component vehicle accessories 1410, 1512, attaches to the second component vehicle 1580 by releasable engagement to one of the connectors 1584a, 1584b by a mating connector-receiver 1511 (similar to FIG. 5) on the bottom of the third vehicle accessory 1518. Preferably, the third vehicle accessory 1518 has the overall appearance of a fire truck body in one perceived view and a fire truck with a hoodless look in another perceived view. Preferably the third vehicle accessory 1518 is about two times as long as the second component vehicle accessory 1512 and is about the same length as the second component vehicle 1580. The third vehicle accessory 1518 can be mounted to span two first vehicles 1480 or two second vehicles 1580 or a combination thereof.

[0031] The truck cab 1410 may also releasably attach to the second component vehicle 1580 to create other different combinations of composite toy vehicles 1400. Each vehicle accessory 1410, 1512, 1518 is provided with its own connector(s) like connectors 1484, 1584 on their top sides to receive other accessories (e.g., 1410, 1412, 1512, 1518).

[0032] The composite toy vehicle set 1400 further includes a two-piece extension ladder 1522 having a first extension member 1522a and a second extension member 1522b which is in turn rotatably coupled to a detachable ladder base 1521. The extension ladder 1522 preferably slides into itself (i.e., the first extension member 1522a slides into the second extension member 1522b) such that in a down position the overall height of the extension ladder 1522 is about the overall height of the second extension member 1522b. The extension ladder 1522 further includes slidably extensible outriggers 1524 coupled to the ladder base 1521 by rotatable support members 1526 to provide stabilization for the extension ladder 1522 when the extension ladder 1522 is in an open or extended position and for aesthetic purposes. Once in the useable position, the rotatable support members 1526 rotate horizontally outwardly from the ladder base 1521 and then the outriggers 1524 slide downwardly to meet the ground or surface as is known in the art. The base 1521 includes a releasable engagement device which is preferably similar to the integral connector-receiver 1511 such as the one shown in FIG. 5 thereby being interchangeable with other vehicle accessories (e.g., 1410, 1412, 1512, 1518) and being capable of mounting atop other vehicle accessories such as 1512, 1518.

[0033] The composite toy vehicle set 1400 further includes a removable search light 1414. The removable search light 1414 has an independent internally mounted power source such as a button battery (not shown) disposed within a base 1414a of the search light 1414 and a separate on/off button (not shown) for energizing the search light 1414 independent of other accessories. The removable search light 1414 also includes a releasable engagement device which is preferably similar to the integral connector-receiver 1511 such as the one shown in FIG. 5 thereby being interchangeable with other vehicle accessories (e.g., 1410, 1412, 1512, 1518). The releasable engagement device is for interchangeably installing the removable search light 1414.
at various locations on the composite toy vehicle set 1400, but preferably, the removable search light 1414 is releasably installed on the extension ladder 1522.

[0034] When the first component vehicle accessory 1410 is attached to the first component vehicle 1480 and the second component vehicle accessory 1512 is attached to the second component vehicle 1580 and the first component vehicle 1480 is longitudinally coupled to the second component vehicle 1580 by rear and front coupling members 1458, 1552, respectively, a new vehicle is created having a modified appearance relative to the first and second component vehicles 1480, 1580. Preferably, the new vehicle has the overall appearance of a large tractor-trailer style fire truck.

[0035] FIG. 1 shows one possible composite toy vehicle 1800 formed from a plurality of the first component vehicles 1480 and a plurality of the second component vehicles 1580 connected together longitudinally and laterally in a double-wide train of vehicles 1480, 1580 by front and rear coupling members 1452, 1458, 1552, 1558, and by lateral coupling members 1467a 1487b, 1587a or 1587b. A plurality of the second and third vehicle accessories 1512, 1518 are disposed on the double-wide train of vehicles 1480, 1580 with the truck cab 1410 mounted at one end of the double-wide train of vehicles 1480, 1580 to form one large composite toy vehicle 1800 having the overall appearance of a massive fire rescue vehicle. The composite toy vehicle of FIG. 1 further includes oversized truck wheels 1530 which releasably couple to the wheels 1487, 1587 of the first and second component vehicles 1480, 1580 by frictional engagement similar to the lateral releasable coupling of the wheels 1487, 1587. It is contemplated that a mounting plate (not shown) may be installed between either the wheels 1487, 1587 or the first and second component vehicles 1480, 1580 and the oversized truck wheels 1530 to provide extra height and/or stability. The composite toy vehicle 1800 further includes the two-piece extension ladder 1522, the removable light bar 1412, and the slidably extensible outriggers 1524. As shown here, the overall appearance is that of a fire truck, but the new vehicle may be a fire rescue vehicle, a water-pumper truck, a tanker truck, a ladder truck, an ambulance, an animal rescue vehicle, a highway patrol vehicle, a police vehicle, a harbor patrol vehicle, a tow-truck, a roadside assistance vehicle, an emergency vehicle and the like without departing from the present invention.

[0036] FIG. 4 shows another possible composite toy vehicle 1900, formed from a plurality of the first component vehicles 1480 and a plurality of the second component vehicles 1580, that are also laterally and longitudinally connected together in a double-wide train of vehicles 1480, 1580 by front and rear coupling members 1452, 1458, 1552, 1558, and by lateral coupling members 1487a or 1487b, 1587a or 1587b. A plurality of the second and third vehicle accessories 1512, 1518 are disposed on the double-wide train of vehicles 1480, 1580 with the truck cab 1410 mounted at one end of the double-wide train of vehicles 1480, 1580 to form one large composite toy vehicle 1800 having the overall appearance of a massive fire rescue vehicle. In this particular combination, at least one vehicle accessory 1518 spans two second vehicles 1580 to create a variant look.

[0037] Referring to FIG. 2A, a composite vehicle 20 in accordance with a second preferred embodiment includes a first component toy vehicle 80 that has the overall shape of a truck chassis including an integrally molded cab 86 located proximate the first end 82a, an integrally molded connector 81, a front coupling member 82, a rear coupling member 88 and wheels 87. The wheels 87 rotate freely on axles (not shown). The wheels 87 also include lateral coupling members 87b which amount to a protrusion or recess (not shown) which is configured for laterally coupling with another component vehicle 80 (180), similar to the embodiment shown in FIG. 5. In the presently preferred embodiment, the first component vehicle 80 is not powered by motors, springs or gears. However, it is contemplated that the first component vehicle 80 further includes a motor and battery or spring for powering at least one drive wheel. Preferably, the body 82 and wheels 87 are formed of a molded polymeric material. But, the body 82 and wheels 88a may be formed in other fashions such as etching, carving and the like and of other materials such as wood, metal, ceramic and the like. The body 82 and wheels 88a preferably include carved or molded details such as treads, windows, flares and the like to give the first component vehicle 80 a more realistic look.

[0038] Optionally, the first component toy vehicle 80 includes stability posts 83 protruding from one end of the vehicle 80 and mating sockets 83a at the other end of the vehicle 80. The receiving sockets 83a are generally aligned with the stability posts 83 in order that the stability posts 83 of one vehicle 80 can align and mate with the receiving sockets 83a of another vehicle 80 when close coupled. The stability posts 83 prevent the vehicles 80 from rotating when close coupled.

[0039] The composite vehicle 20 further includes second component toy vehicle 180 in a body 182 with a first end 182a and a second opposing end 182b. The second component toy vehicle 180 includes a front coupling member and a rear coupling member 158 for engaging coupling members 52, 58, 152, 158 of other toy component vehicles 80, 180.

[0040] The second component toy vehicle 180 also has the overall shape of a truck chassis including an integrally molded cab 186 proximate the first/front end 182a, integrally molded connectors 181a, 181b, and wheels 187. The wheels 187 rotate freely on axles (not shown). The wheels 187 also include lateral coupling members 188b which amount to a protrusion 187b or a recess (not shown) which is configured for laterally coupling with another component vehicles 180 (80). In the presently preferred embodiment, the second component vehicle 180 is not powered by motors, springs or gears. However, it is contemplated that the second component vehicle 180 further includes a motor and battery or spring for powering at least one drive wheel. Preferably, the body 182 and wheels 188a are formed of a molded polymeric material. But, the body 182 and wheels 188a may be formed in other fashions such as etching, carving and the like and of other materials such as wood, metal, ceramic and the like. The body 182 and wheels 188a preferably include carved or molded details such as gages, tanks, fans, treads, windows, flares and the like to give the second component vehicle 180 a more realistic look. The second component vehicle 180 possesses similar attributes regarding materials of construction and appearance as compared to the first component vehicle 80, but preferably, the second component vehicle 180 is about as twice as long as
the first component vehicle 80 so that it can mate laterally (side to side) or longitudinally (end to end) with first component vehicle 80.

[0041] Optionally, the second component vehicle 180 includes stability posts 183 protruding from one end of the vehicle 180 and mating sockets 183a at the other end of the vehicle 180. The receiving sockets 183a are generally aligned with the stability posts 183 in order that the stability posts 183 of one vehicle 180 can align and mate with the receiving sockets 183a of another vehicle 180 when close coupled. Further, the receiving sockets 183a are preferably spaced and aligned to mate with the stability posts 83 of the first component toy vehicle 80 and vice versa. The stability posts 183 prevent the vehicles 80, 180 from rotating when close coupled.

[0042] When the first and second component toy vehicles 80, 180 are used in combination, they form another composite toy vehicle 20 which can be configured to couple longitudinally but extensible (FIG. 2A) or through a more closely adjoined longitudinally mechanical union (e.g., FIG. 2C). FIG. 2A shows that when the front coupling member 152 of the second component vehicle 180 engages the rear coupling member 58 of the first component vehicle 80 and the coupling members 58, 152 remain in the extended position, the front coupling member 152 of the second component toy vehicle 180 remains releasably connected to the rear coupling member 52 of the first component toy vehicle 80, for example by magnetic attraction or the like.

[0043] FIGS. 2B-2C show one possible mechanical coupling 50 configured for use with any of the preferred embodiments described herein, with number reference to the component vehicle 80 shown in FIG. 2A for convenience. The mechanical coupling 50 includes a stationary protruding member (here, the front coupling member) 52 having an engageable ridge in the form of protruding circumferential rim or ring 54 and a dome-shaped end piece 56. The mechanical coupling 50 also includes a retractable member (here, the rear coupling member) 58 having a dome-shaped end piece 60 for engaging the dome-shaped end piece 56 of the stationary protruding member 52. The retractable member 58 further includes an outer sleeve 62 having a plurality of resilient fingers 63 for engagement with the engageable ridge 54 of the stationary member 52. The outer sleeve 62 defines a central bore 67 sized to receive a free end of the stationary protruding member 52. The retractable member 58 also includes a stalk 64 in sliding relationship with the outer sleeve 62 having a proximal end 64a and a distal end 64b. The retractable member 58 is seen in an extended position in FIGS. 2A-2B and a retracted position in FIG. 2C. The dome-shaped end piece 60 is affixed to the proximal end 64a of the stalk 64. The retractable member 58 further includes a spring 66 located partially within the outer sleeve 62 proximate the distal end 64b of the stalk 64 which biases the stalk 64 outwardly (in the proximal direction). The spring 66 is retained between a shoulder (not shown) of stalk 64 and an inner retaining wall of a component vehicle 80 (see FIGS. 2B-2C). Preferably, the spring 66 is a steel coil-type spring. Preferably, the outer sleeve 62, the stationary member 52 and the stalk 64 are formed of a molded, polymeric material. But, the outer sleeve 62, the stationary member 52 and the stalk 64 may be formed of other materials such as wood, metal, ceramics and the like without departing from the present invention. As described herein, the stationary protruding member 52 is the front coupling member 52 and the retractable member 58 is the rear coupling member 58, but either the front or the rear coupling members 52, 58 may be the stationary protruding member or the retractable member without departing from the present invention. Optionally, one of the two dome-shaped end pieces 56, 60 is at least partially formed of a magnetic material and the other of the two dome-shaped end pieces 56, 60 is at least partially formed of a non-magnetic, magnetically attractive material for coupling in an extended position (see for example, FIG. 2A). Of course other mechanical couplings 50 and/or connectors could be utilized without departing from the broad inventive scope of the present invention.

[0044] In use, the mechanical coupling 50 allows operation with the retractable member 58 in either the extended position (FIG. 2B) or the retracted position (FIG. 2C) for enabling longitudinal coupling of component vehicles 80 (180). When the protruding stationary member 52 engages the retractable member 58 and the retractable member 58 remains in the extended position, the protruding stationary member 52 will remain connected to the retractable member 58 by mechanical engagement, such as by magnetic attraction (FIG. 2A), or by a rotatable link such as a ball and socket as is known in the art. When the protruding stationary member 52 engages the retractable member 58 and the retractable member 58 moves to the retracted position by the force of a user, the protruding stationary member 52 is retained at least partially within the outer sleeve 62 by the biasing force of the plurality of resilient fingers 63 on the engageable ridge 54 (FIG. 2C).

[0045] From the foregoing it can be seen that the present invention comprises composite toy vehicles formed from component toy vehicles releasably coupled to other component toy vehicles either longitudinally or laterally and component toy vehicle accessories connected thereto. It will be appreciated by those skilled in the art that changes could be made to the embodiments described above without departing from the broad inventive concept thereof. It is understood, therefore, that this invention is not limited to the particular embodiments disclosed, but it is intended to cover modifications within the spirit and scope of the present invention as defined by the appended claims.

We claim:

1. A composite toy comprising:

a first component vehicle including a chassis with wheels and an integral cab portion and a first coupling member configured for releasable coupling to another component vehicle; and

a vehicle accessory configured for releasable attachment to the first component vehicle so as to create a new vehicle having a modified appearance relative to the first component vehicle.

2. The composite toy according to claim 1, wherein the first coupling member is provided on at least one of the chassis wheels and is configured for laterally coupling with another component vehicle.

3. The composite toy according to claim 2, further comprising:
a second component vehicle having a chassis which includes at least two wheels each having a lateral coupling configured for laterally coupling with another component vehicle,

wherein when the vehicle accessory is releasably attached to one of the first and second component vehicles and the first component vehicle is laterally coupled to the second component vehicle to create a new vehicle is created having a modified appearance relative to the first and second component vehicles.

4. The composite toy according to claim 1, further comprising:

a second component vehicle having a second coupling member configured for releasable coupling to another component vehicle,

wherein when the vehicle accessory is releasably attached to one of the first and second component vehicles and the first component vehicle is coupled to the second component vehicle by the first and second coupling members, a new vehicle is created having a modified appearance relative to the first and second component vehicles.

5. The composite toy according to claim 4, wherein the vehicle accessory is capable of being simultaneously releasably attached to the first and second component vehicles.

6. The composite toy according to claim 1, further comprising one of an extension ladder, a removable search light, and a remode pole light bar.

7. The composite toy according to claim 1, wherein the vehicle accessory includes an internally mounted power source.

8. The composite toy according to claim 1, wherein the vehicle accessory has a light.

9. The composite toy according to claim 1, wherein at least one of the first component vehicle and the vehicle accessory has a sound generator.

10. The composite toy according to claim 1, wherein the new vehicle is one of a fire-truck, a fire rescue vehicle, a water-pumper truck, a tanker truck, a ladder truck, an ambulance, an animal rescue vehicle, a highway patrol vehicle, a police vehicle, a harbor patrol vehicle, a tow-truck, a roadside assistance vehicle and an emergency vehicle.

11. The composite toy according to claim 1, wherein the vehicle accessory is one of a pickup truck cab, a tow-truck cab, a tractor-trailer cab, and an off-road vehicle cab.

12. The composite toy according to claim 1, further including an expandable cab accessory.

13. The composite toy according to claim 1, further including extendable outriggers.

14. The composite toy according to claim 1, wherein the chassis further includes an integral connector configured to releasably engage a connector-receiver on the vehicle accessory.

15. A composite toy comprising:

a first component vehicle having a chassis which includes at least two wheels, each of the wheels having a lateral coupling configured for laterally coupling with another component vehicle; and

a second component vehicle having a chassis which includes at least two wheels, each of the wheels having a lateral coupling configured for laterally coupling with another component vehicle,

wherein when the first component vehicle is laterally coupled to the second component vehicle, a new vehicle is created having a modified appearance relative to the first and second component vehicles.

16. The composite toy according to claim 15, further comprising:

a vehicle accessory configured for releasable attachment to one of the first and second component vehicles,

wherein when the vehicle accessory is releasably attached to one of the first and second component vehicles and the first component vehicle is laterally coupled to the second component vehicle, a new vehicle is created having a modified appearance relative to the first and second component vehicles.

17. The composite toy according to claim 16, wherein the vehicle accessory is capable of being simultaneously releasably attached to the first and second component vehicles.

18. A composite toy comprising:

a first component vehicle including a chassis with an integral cab portion and a first coupling member configured for releasable coupling to another component vehicle; and

a second component vehicle including a chassis with an integral cab portion and a second coupling member configured for releasable coupling to another component vehicle; and

a vehicle accessory configured for releasable attachment to one of the first and second component vehicles,

wherein when the vehicle accessory is releasably attached to one of the first and second component vehicles and the first component vehicle is coupled to the second component vehicle by the first and second coupling members, a new vehicle is created having a modified appearance relative to the first and second component vehicles.

19. The composite toy according to claim 18, wherein the vehicle accessory is capable of being simultaneously releasably attached to the first and second component vehicles.