Jan. 12, 1954 S. JUNOD 2,665,522

TOY VEHICLE

Filed Nov. 27, 1951

Fig.1

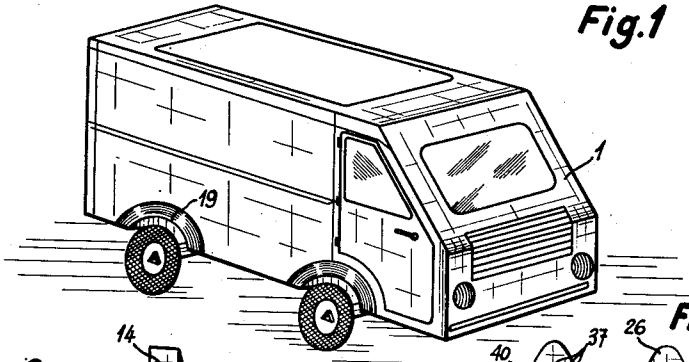


Fig.2

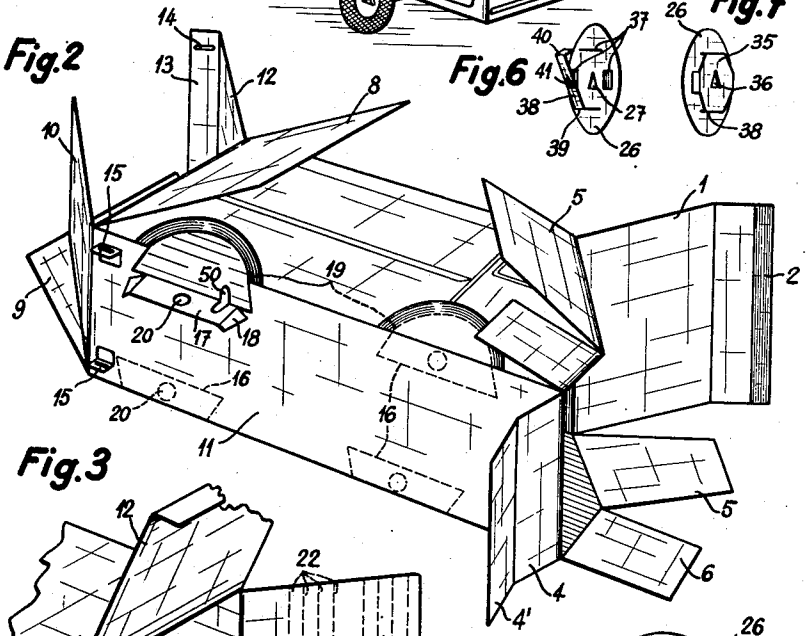
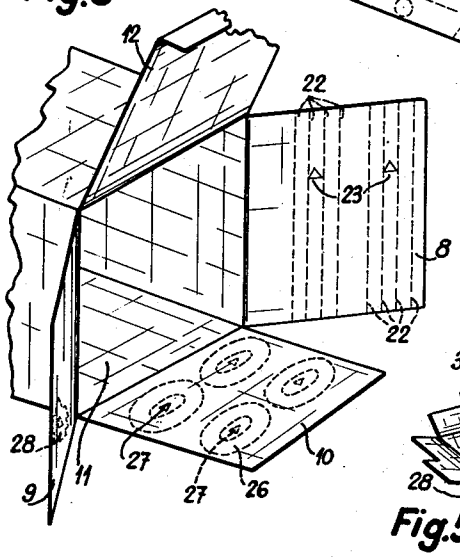


Fig.6

Fig.7

Fig.3



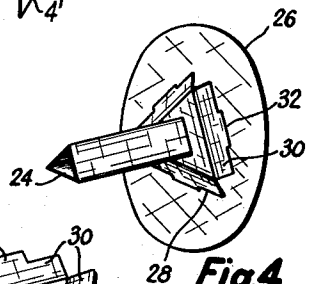


Fig.4

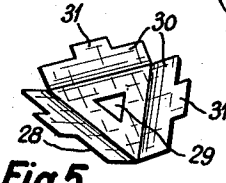


Fig.5

Inventor
Samuel Junod
By Robert E. Burns
Attorney

Patented Jan. 12, 1954

2,665,522

UNITED STATES PATENT OFFICE

2,665,522

TOY VEHICLE

Samuel Junod, Geneva, Switzerland

Application November 27, 1951, Serial No. 258,346

Claims priority, application Switzerland
April 30, 1951

3 Claims. (Cl. 46—221)

1

My invention has for its object a toy assuming the general shape of a truck or the like vehicle body and containing at least detachably the running gear that the child handling the toy will subsequently secure in its operative position on the body of the vehicle.

According to a main object of my invention, the toy has a running gear including at least one axle, wheels and members for holding the wheels in position on the axle, said wheel-holding members having at least one central perforation adapted to register with the cross-section of the axle and carrying connecting parts adapted to engage the corresponding wheels whereby the child may use said wheel-holding members for mounting the wheels perpendicularly to the axle.

I have illustrated by way of example in accompanying drawings two preferred embodiments of my invention. In said drawings:

Fig. 1 is a perspective view of a toy in the shape of a truck, the running gear being mounted in its operative position;

Fig. 2 is a perspective view of the body of the truck laid sideways with its terminal flaps in their open position;

Fig. 3 illustrates the rear end of the body with the corresponding flaps;

Fig. 4 is a partial view of an axle carrying a wheel;

Fig. 5 shows a wheel-holding member;

Figs. 6 and 7 are perspective views of a wheel-holding member intended for use in a second embodiment of my invention.

The cardboard toy illustrated in Fig. 1 assumes the shape of a truck body provided at its front end with a cover the upper part of which is sloping and is constituted by a flap 1 closing the truck body. This flap 1 carries along its free edge and on its inner surface an adhesive strip 2, whereby said flap is secured to the lower closing flap 4 when the truck body is mounted on its wheels to form a complete toy truck. The body is also provided at its front and to either side thereof with two pairs of lateral flaps 5 and 6. During the formation of the truck out of the blank sheet including the above mentioned flaps, the two lower flaps 6 are folded over each other perpendicularly to the side walls of the body after which the lower flap 4 is closed over said superposed flaps 6, the oblique extension 4' of said lower flap then engaging the gap between the side walls of the package forming the body of the truck so as to prevent said walls from meeting each other, which would make the truck body collapse. This being done, the upper lateral flaps 5 are folded over each other on the outside of the above mentioned extension 4' and in contact therewith. Lastly, the large front flap or cover 1 is folded over the system including the

2

folded flaps 5 and over the lower section of the lower flap 4, the adhesive strip 2 on said large flap 1 being glued to said lower section of the flap 4.

The flaps 1, 5 and 6 form the normal opening and closing means for the truck which is intended to serve for packaging goods. At the rear end of the truck body are located two lateral flaps or panels 8 and 9, an inner panel 10 forming an extension of the bottom 11 of the body and lastly an outer cover or flap 12 the outer edge of which extends in the shape of a folded lug 13 adapted to be glued to the bottom of the body so as to close the latter.

On the bottom 11 of the body are drawn four trapezoids 16 the large bases of which are parallel to the sides of the truck body. The trapezoids define the cutting and folding lines along which the child may form lugs 17 folded at 90° underneath the bottom of the body and provided with stiffening edges at 18. The sidewalls of the body are to be cut along arcuate lines 19 that are surrounded by drawn lines simulating the mudguards. The child will provide in each lug 17 a circular perforation 20 along a previously drawn and embossed line whereby a system of two opposite lugs 17 is provided, the perforations 20 in which form associated bearings for the prismatic axle to be described hereinafter.

Turning to Fig. 3, it is apparent that the inner lateral flap 8 is provided with two series of four dotted lines 22 arranged in equidistant parallel relationship, and between the medial lines of each series is drawn an equilateral triangle 23. The flap 8 is to be cut along the outer lines of each series of lines 22 so as to produce two flat strips that it is sufficient to fold twice along the medial lines 22 so that the opposite edges of the strips come into contact, this providing two prismatic axles the cross-sections of which assume the shape of an equilateral triangle as illustrated in Fig. 4. The lines 22 form the ridges of the assembled prism designated by the reference number 24 in Fig. 4.

To obtain more resistant axles, it is possible to provide series of five or more equidistant parallel lines 22, which allows obtaining a double thickness for one or more of the lateral surfaces defining the hollow prismatic axle.

Four equal circumferences 26 drawn on the lower flap 10 and partly cut out before use, correspond to the external outlines of the truck wheels. An equilateral triangle 27 is drawn at the centre of each circumference 26 and defines the central perforation that is to be executed in the wheel to allow the latter to be mounted over the prismatic axle 24 the triangular cross-section of which fits inside said perforation.

The second lateral rear flap 9 (Fig. 3) carries,

when folded onto a plane surface, the outline of the wheel-holding members 28 one of which is shown separate in Fig. 5. Said wheel-holding member 28 the general shape of which is triangular, is provided with a central perforation 29 adapted to correspond with the triangular cross-section of the prismatic axle 24. The sides of the central triangular part of the member 28 are associated with lugs 30 that may be folded obliquely with reference to the plane of the central part and that include each a tenon 31 adapted to engage a slot 32 in the wheel 26 (Fig. 4). The wheels 26 are thus held in planes perpendicular to the axis of the axle 24 through their triangular perforations 27 and through the bearings provided by the wheel-holding members 28 fitted over the axle 24. By reason of the polygonal outline of the axis, the wheels 26 revolve in unison with the latter which is in its turn guided in its rotation inside the circular perforations 20 forming bearings in the lugs 17. The wheels 26 and the members 28 are fitted over the ends of the axle 24 previously inserted in the lugs 17, until the triangular bases of the members 28 abut against the bearings 17 if said members 28 are mounted on the inside of the wheels.

In a modification, the members 28 may form hub caps and they are mounted in this case on the outside of the wheels. Correspondingly, the bottom 11 of the body is provided with projections 50 as shown in Fig. 2 that are cut out before the folding of the lugs 17. These projections acting as stops prevent the projecting parts of the tenons 31 on the wheel-holding members projecting beyond the inner surface of the wheels 26 from engaging the lugs 17 when the axle revolves. The inner surfaces of the wheels abut against said projections, without preventing the rotation of the axles, in the case of an axial sliding of the latter.

It will be remarked that the running gear and also the perforations therein may not only be drawn on the covers or flaps 8, 9 and 10 but may already be cut out partly and held temporarily in position by bridge members that are easily severed when required.

In the second embodiment illustrated in Figs. 6 and 7, the wheel-holding member includes an outer disc 35 perforated at 36 to match the cross-section of the axle, three connecting lugs 37 adapted each to engage a slot in the corresponding wheel 26 and a transverse bearing element 38. This latter element is constituted by a fourth lug that is longer than the first three lugs and that is bent at its ends 39 and 40 so as to lie in register with the inner surface of the wheel and to form a further bearing element provided with a perforation 41 adapted to carry the axle 24 with some friction.

When the running gear is completely mounted, each bearing element 38 serves for suitably spacing the bearing lug 17 with reference to the actual wheel 26, the disc 35 located on the outside of the wheel assuming substantially the appearance of a wheel hub cap.

Instead of being constituted by a fourth lug on the disc 35, the transverse bearing element 38 may constitute an independent twice folded member provided with terminal lugs engaging slots formed in the wheel.

What I claim is:

1. In a toy vehicle entirely made of a folded cardboard sheet, comprising a vehicle body having a flat bottom, the provision of a plurality of bearing flaps arranged in pairs downwardly extending from corresponding cut out parts of said bottom, said bearing flaps including a main portion provided with a circular perforation, as well as end portions folded back and contacting said bottom for stiffening purposes, the circular perforations of each pair of said flaps having a common centre line, hollow prismatic axles rotatably carried in said circular perforations, disc shaped wheels provided with a central, polygonal opening through which the end portions of said prismatic axles are frictionally engaged, wheel-holding members fastened to said axles, a lug and slot connection between each wheel-holding member and the corresponding wheel, for holding said wheel at right angles to the prismatic axle thereof.

2. In a toy vehicle made of a folded carboard sheet, comprising a vehicle body having side walls and a flat bottom, the provision of at least two bearing flaps downwardly extending from the said bottom, said bearing flaps including a main portion provided with a circular perforation, the ends of said flaps being folded back and contacting said bottom for stiffening purposes, the circular perforations in said flaps being coaxial, prismatic axles rotatably mounted in said perforations, disc-shaped wheels provided with eccentric slots and having a central, polygonal opening engaged by the prismatic axles, wheel-holding members comprising a flat main portion provided with a central perforation matching the cross-section of said axles at their ends, said wheel-holding members carrying lateral offset lugs extending from said main portion and partially engaged in said slots of the wheel for holding said wheels at substantially right angles to their axle.

3. In a toy vehicle entirely made of a folded carboard sheet, comprising a vehicle body having a flat bottom, the provision of a plurality of bearing flaps arranged in pairs downwardly extending from corresponding cut out parts of said bottom, said bearing flaps including a main portion provided with a circular perforation, as well as end portions folded back and contacting said bottom for stiffening purposes, the circular perforations of each pair of said flaps having a common centre line, hollow prismatic axles rotatably carried in said circular perforations, disc shaped wheels provided with a central, polygonal opening and fastening slots, said wheels being engaged by their polygonal opening on the end portions of said axles, a wheel holding member frictionally fastened to said axles, at one side of each wheel, said wheel holding member being constituted by a perforated disc carrying lateral folded lugs projecting with reference to the plane of the disc and frictionally engaging the wheel slots, one of said connecting lugs on the disc extending to the other side of the wheel, the extension being bent twice to form a perforated transverse bearing for the axle.

SAMUEL JUNOD.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
806,872	Clark	Dec. 12, 1905
1,585,649	Carley	May 25, 1926

FOREIGN PATENTS

Number	Country	Date
178,534	Great Britain	Apr. 18, 1922
449,832	Germany	Sept. 28, 1927