Nov. 30, 1948. A. M. TETA 2,455,281

CONVERTIBLE TRICYCLE

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Fig. 1

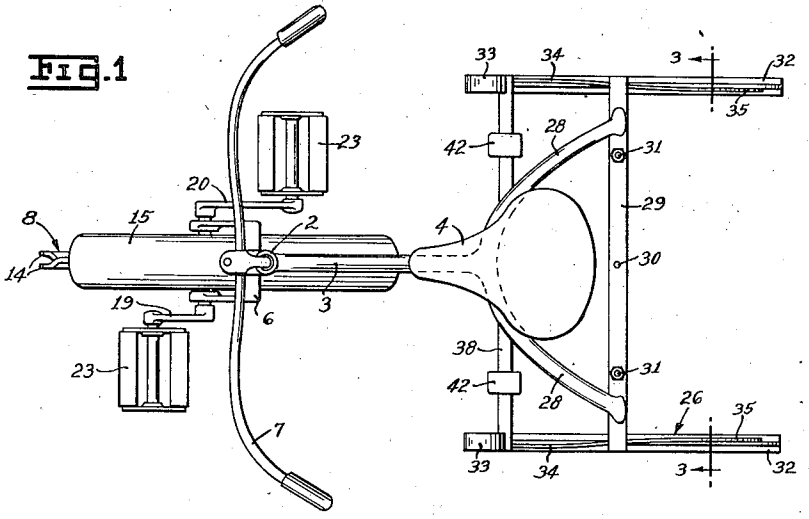


Fig. 4

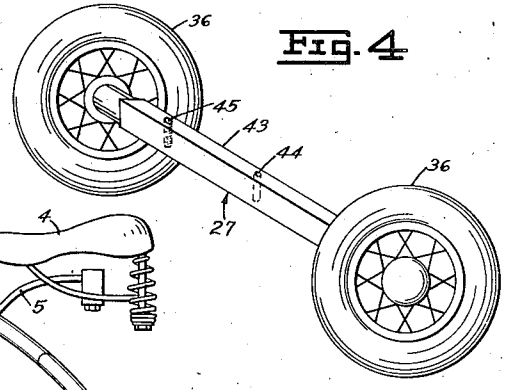
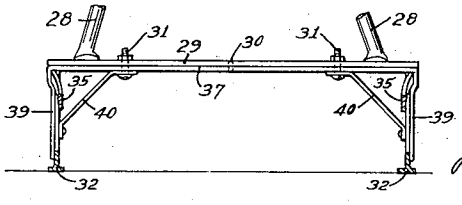


Fig. 2

Fig. 3



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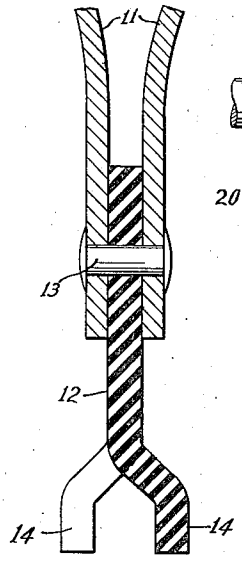


Fig. 7

Fig. 5

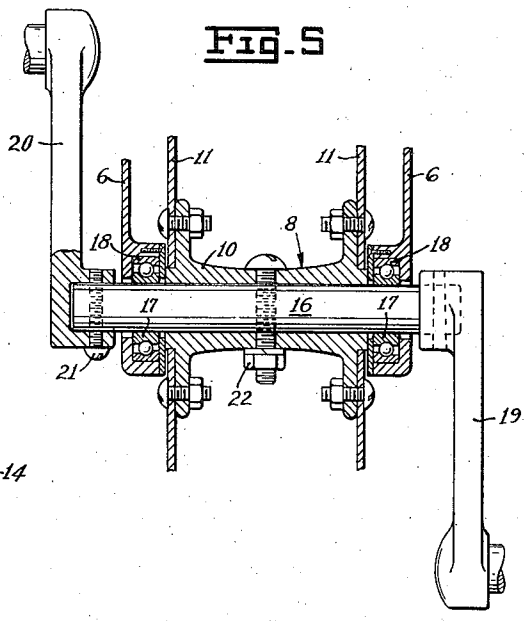


Fig. 8

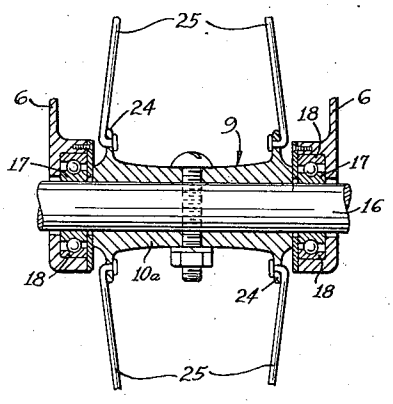
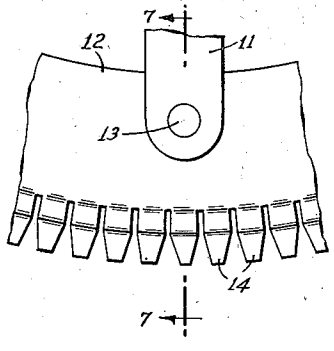


Fig. 6



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CONVERTIBLE TRICYCLE

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1 Claim. (Cl. 280—7.12)

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This invention relates to children's tricycles and, more particularly, to convertible tricycles. Its purpose is the provision of an improved construction of a child's tricycle to enable it to be readily changed over for operation on either the usual paved roadway or on ice and snow.

Convertible tricycles as heretofore constructed have been generally unsatisfactory for one reason or another. For example the use of pivoted skid members which could be swung into position to raise the wheels from the roadway is unsatisfactory on account of the poor sliding qualities of the skid members because of their contact with the road surface at a single point only. Such a device would be difficult to use on any but a smooth flat surface, like the frozen surface of a pond.

One of the objects of the present invention is to provide a convertible child's tricycle that does not require a smooth surface for its operation, but which will operate successfully on icy or snowy surfaces which may be comparatively rough, the tricycle therefore being capable of successful use on the ordinary ice covered roadway or sidewalk or on crusted snow.

Another object of the invention is to provide a construction of child's convertible tricycle which can be easily changed over so that the child itself can make the change.

The invention will be understood from a consideration of the accompanying drawings which indicate, by way of example, one embodiment of the invention. In these drawings:

Fig. 1 is a plan view of the tricycle arranged for operation on icy or snowy surfaces;

Fig. 2 is a view of the tricycle in side elevation;

Fig. 3 is a cross section taken on line 3—3 of Fig. 1;

Fig. 4 is a so-called perspective or projectional view of a rear wheel unit;

Fig. 5 is a cross sectional view of the front axle construction and is taken on line 5—5 of Fig. 2;

Fig. 6 is a fragmentary view showing a detail of the front wheel illustrated in Fig. 2;

Fig. 7 is a sectional view taken on line 7—7 of Fig. 6; and

Fig. 8 is a partial sectional view similar to Fig. 5 showing the hub of a rubber tired front wheel.

Referring now to the accompanying drawings, the improved tricycle of the invention comprises a frame indicated generally by reference numeral 1, having a steering head 2 and a rearwardly extending weight supporting portion 3 on which a saddle 4 is mounted by means of a bracket 5 which is adjustable supported on the rear frame member 3. Head 2 carries the usual steering fork which supports at its lower end the driving and steering wheel of the tricycle, and at its upper end the handle bars 7.

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The tricycle is provided with interchangeable front wheels, that is a toothed all metal front wheel 8 for operation on ice and snow covered surfaces, and a wheel indicated generally by numeral 9 and shown in Fig. 8 for use on ordinary roadways not covered with ice or snow. This wheel 9 is preferably provided with the usual rubber tire (not shown).

The toothed metal wheel 8 comprises a hub 10 (Fig. 5), sheet metal spokes 11 and an annular tire member 12 which may be attached to the spokes by rivets 13 and which is provided with serrations or teeth 14 throughout its periphery. Preferably alternate teeth 14 are offset in opposite directions as shown in detail in Fig. 7 in order to provide better gripping of the slippery road surface by cutting into and chipping away its ice or snow coating. The wheel is preferably provided with a mud guard 15 which is supported on the fork member 6 in the usual manner.

In order to interchange the two wheels, 8 and 9, the construction shown in detail in Figs. 5 and 6 may be used. Hub 10 of the ice wheel 8 is provided with a central bore through which a supporting and driving shaft or axle 16 passes with a sliding fit. Shaft 16 also receives on its outer end portions the inner races 17 of a pair of ball bearings, the outer races 18 of which are fixed to the lower ends of the respective arms of fork 6. Shaft 16 also makes a sliding fit with the bores of inner races 17 so that the shaft can be removed both from the ball bearings and from hub 10 when it is desired to change over the tricycle for operation on an ordinary roadway.

Shaft 16 is provided with a pedal crank 19 which is fixed to the shaft at one end, and at its opposite end it has a second pedal crank 20 which may be removed from the end of the shaft by taking out the holding screw 21. The driving connection with wheel hub 10 is made by a removable screw or bolt 22 passing through the central portion of the hub 10 and shaft 16. Pedals 23 are mounted on the ends of cranks 19 and 20.

Wheel 9 for operation on ordinary roadways is provided with a hub 10a which has a central bore of the same diameter as the hub 10, and is provided with apertured flanges 24 for the usual steel spokes 25 which are secured at their outer

ends to the usual rim (not shown) for a pneumatic or other rubber tire.

The tricycle is also provided with interchangeable rear running gear structures, one a sled structure indicated generally by reference numeral **26**, and the other a wheeled running gear indicated generally by numeral **27**. In order to removably attach either of these running gear structures to the tricycle, the rear frame portion **3** has two diverging legs **28** at the lower ends of which is secured an attachment member **29** in the form of a horizontal cross-bar. Cross-bar **29** is provided at its center with a dowel pin **30** and two holes for receiving bolts or cap screws **31**.

Sled structure **26** comprises two sled runners **32** having their forward ends curved upwardly as shown at **33** and riveted or otherwise secured to upper side members **34** which extend in parallel relation to and vertically spaced from runners **32**, and have downwardly curved rear portions **35**, the lower ends of which are fixed adjacent the rear ends of the runners. The height of the members **34** above the runners is approximately equal to the radius of the rubber tired wheels of the wheeled running gear **27**. The two runners **32** are tied together by two parallel cross-bars **37** and **38** shown more particularly in Figs. 3 and 1 respectively. Cross member **37** is located approximately at the center between the front and rear of the sled structure **26** and its opposite ends are preferably turned downwardly to form vertical legs **39** between the runners **32** and the upper side members **34**. Angle braces **40** may be placed between the legs **39** and cross member **37** to stiffen the structure. Similarly the front cross member **38** has its outer end portions bent downwardly to form vertical legs **41**. This cross member may also be provided with pads **42** upon which the rider may rest his feet while coasting.

The cross member **37** is arranged to fit beneath cross-bar **29** with dowel pin **30** entering an aperture at the center of cross member **37**, at which point the threaded apertures provided in cross member **37** will be brought into registry with the cap screws **31** which may be inserted therein to secure the sled structure to the tricycle. If desired in order to give the sled structure **26** a limited pivotal movement with respect to cross-bar **29**, the cap screws **31** may be left loose, that is not turned up tight, and dowel pin **30** may be fitted loosely in its aperture in cross member **37**, two nuts being used on bolts **31**.

The wheeled running gear structure **27** shown in Fig. 4 comprises an axle **43** having at flat upper surface and shown in Fig. 4 as being made of square stock. The opposite ends of axle **43** terminate in suitable bearings for the two rubber tired wheels **36**. The central portion of the axle is provided with an aperture **44** for dowel pin **30** and two tapped holes **45** (only one of which may be seen in Fig. 4) for the reception of the two cap screws **31**. Axle **43** is secured to cross-bar **29** of the tricycle frame in the same way as described in connection with the sled structure **26**, except that the cap screws are screwed home in order to hold axle **43** immovably to cross-bar **29**.

It will be understood that when coasting with the sled running gear **26** on the tricycle, the child may stop his forward movement by pressing backwardly on the pedals **23**, or by placing his feet on the road surface if such braking effect can be produced that way.

By means of the present invention there has been provided a convertible tricycle of such simple construction that the child user of the tricycle can remove the sled running gear **26** and substitute the wheeled running gear **27** at will, since it is only necessary to remove the two cap screws **31** from the cross member **37** or the axle **43**, whichever is on the tricycle, and then apply the other running gear structure and insert the two screws. This completes the conversion of the rear end of the tricycle and the front end is converted just as simply by removing the two screws **21** and **22**, crank **20** and shaft **16**, and substituting the other front wheel and then replacing the parts just mentioned.

While the invention has been described in connection with a single embodiment of it, it will be understood that changes may be made in the construction and arrangement of the various parts without departing from the spirit of the invention or exceeding its scope as set forth in the appended claim.

I claim:

A child's convertible tricycle comprising a frame having a steerable driving wheel at the front, and a horizontal cross-bar extending from side to side of said frame at the rear, a wheeled running gear structure and a sled runner structure to be used interchangeably with said tricycle frame, each of said structures having a cross member on which said cross-bar is adapted to rest, spaced fastening devices to secure said cross-bar to one of said cross members, said fastening devices being adapted to produce either a firm engagement between said parts or a limited pivotal movement therebetween to enable said fasteners to be adjusted to allow a limited pivotal movement of the sled runner structure to take place.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
249,122	Uster	Nov. 1, 1881
369,224	Batchelder	Aug. 30, 1887
1,209,398	Converse	Dec. 19, 1916
2,390,484	Woginrich	Dec. 4, 1945