

PATENT SPECIFICATION



694,200

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No. 28337/50.

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Index at acceptance:—Classes 69(i), J5; and 136(i), 12(a:b:e).

COMPLETE SPECIFICATION

Improvements in Fuel Tanks for Power-assisted Pedal Cycles and like Vehicles

I, CYRIL GEORGE PULLIN, of "Dormer Gables," 160, Yardley Wood Road, Moseley, Birmingham, 13, a British Subject, do hereby declare the invention, for which I pray 5 that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to fuel tanks for 10 pedal cycles, invalid carriages, rickshaws, tradesmen's carriers, having a small internal combustion engine for assisting or replacing the normal human propulsion.

The improved tank according to the invention is characterised by its shape, which 15 includes two wells or deeper portions separated by a shallower portion, the connection of the fuel pipe by which the engine is fed being made at the bottom of one of these 20 wells, the other being blind.

As the fuel is consumed its level in the tank falls, and when it reaches the bottom of the shallow part between the two walls, the fuel in the blind well is isolated from 25 the outlet and forms a reserve, which, when the well containing the outlet has been emptied, can be transferred to the outlet well by merely tipping up the tank, or rather, when the tank is attached to a cycle 30 or the like vehicle, by tipping up the whole vehicle.

In this way a warning of impending fuel-shortage is provided without the introduction of an additional cock and piping for 35 bringing in the reserve supply.

The drawings accompanying the Provisional Specification filed the 20th November, 1950, illustrate two specific examples of fuel tanks according to the invention. In 40 the drawings:—

Figs. 1, 2 and 3 are respectively a side elevation, end elevation and plan of one such example; and

Figs. 4 and 5 are two perspective views of 45 a second example.

In Figs. 1 to 3 the tank T has a flat top and a curved base shaped to fit over the mudguard of a cycle wheel and furnishing

two wells W_1 , W_2 separated by a shallower portion S. An outlet pipe connection O is 50 provided at the base of well W_1 , well W_2 being blind.

The tank is further provided with a filling opening F and filler cap C which is self-venting.

The top of the tank serves as a baggage 55 carrier being provided with strap clips X; and for securing the tank to the frame of a cycle or like vehicle, blind nuts N are welded into the tank walls.

When the fuel level has fallen to the dotted 60 line L—L the fuel isolated in well W_2 cannot reach the outlet O, and when well W_1 is exhausted it can be replenished from the fuel in well W_2 by tipping up the vehicle to 65 which the tank is attached.

The tank illustrated in Figs. 4 and 5 is of generally similar construction, the details of the shape being slightly different, the same reference characters being used to de- 70 note corresponding parts. In this instance the strap clips X are on the underside, the filler cap C is not self-venting, a separate vent V being provided, and the attachments comprise an angle plate A, a pinch-clamp 75 P, and bolt-holes B in one pair of the strap clips X.

The vent in the filler cap C (Figs. 1 to 3) or the vent V (Figs. 4, 5) is preferably provided with a screw-down sealing element 80 to enable the machine to which the tank is fitted to be up-ended or turned upside down without spilling the fuel in the tank. Alternatively, the vents may have automatic means for sealing them when inverted, such 85 as a trapped ball which falls by gravity on to a seating to close the vent when the latter is inverted.

The improved tank as herein described may also be provided with means for secur- 90 ing a child's seat together with footrests or stirrups.

What I claim is:—

1. A fuel tank for pedal cycles and other vehicles normally propelled by human 95 power but having a small internal combus-

tion engine for assisting or replacing the human power, such tank being characterised by a shape which comprises two wells, one blind and the other having a connection
 5 at the bottom for a fuel delivery pipe feeding to the engine, said wells being separated by a shallower portion.

2. A fuel tank as claimed in Claim 1, constructed and operating substantially as
 10 herein described and as illustrated in Figs. 1 to 3 of the drawings accompanying the

Provisional Specification hereof.

3. A fuel tank as claimed in Claim 1, constructed and operating substantially as herein described and as illustrated in Figs. 4 and
 15 5 of the drawings accompanying the Provisional Specification hereof.

For the Applicant,
 TONGUE & BIRKBECK,
 Bank Chambers, 329, High Holborn,
 London, W.C.1,
 Chartered Patent Agents.

PROVISIONAL SPECIFICATION

Improvements in Fuel Tanks for Power-assisted Pedal Cycles and like Vehicles

I, CYRIL GEORGE PULLIN, of Dormer Gables, 160, Yardley Wood Road, Moseley, a British Subject, do hereby declare this invention to be described in the following statement:—

This invention relates to fuel tanks for pedal cycles and like vehicles, e.g., tri-
 25 cycles, invalid carriages, rickshaws, tradesmen's carriers, having a small internal combustion engine for assisting or replacing the normal human propulsion.

The improved tank according to the invention is characterised by its shape, which includes two wells or deeper portions separated by a shallower portion, the connection of the fuel pipe by which the engine is fed being made at the bottom of one of these
 35 wells, the other being blind.

As the fuel is consumed, its level in the tank falls, and when it reaches the bottom of the shallow part between the two wells, the fuel in the blind well is isolated from
 40 the outlet and forms a reserve, which, when the well containing the outlet has been emptied, can be transferred to the outlet well by merely tipping up the tank, or rather, when the tank is attached to a cycle or the
 45 like vehicle, by tipping up the whole vehicle.

In this way a warning of impending fuel-shortage is provided without the introduction of an additional cock and piping for bringing in the reserve supply.

50 The accompanying drawings illustrate two specific examples of fuel tanks according to the invention. In the drawings:—

Figs. 1, 2 and 3 are respectively a side elevation, and elevation and plan of one
 55 such example; and

Figs. 4 and 5 are two perspective views of a second example.

In Figs. 1 to 3 the tank T has a flat top and a curved base shaped to fit over the
 60 mudguard of a cycle wheel and furnishing two wells W_1 , W_2 separated by a shallower portion S. An outlet pipe connection O is provided at the base of well W_1 , well W_2

being blind.

The tank is further provided with a filling opening F and filler cap C which is self-
 65 venting.

The top of the tank serves as a baggage carrier, being provided with strap clips X; and for securing the tank to the frame of
 70 a cycle or like vehicle, blind nuts N are welded into the tank walls.

When the fuel level has fallen to the dotted line L—L the fuel isolated in well W_2 cannot reach the outlet O, and when
 75 well W_1 is exhausted it can be replenished from the fuel in well W_2 by tipping up the vehicle to which the tank is attached.

The tank illustrated in Figs. 4 and 5 is of generally similar construction, the details
 80 of the shape being slightly different, the same reference characters being used to denote corresponding parts. In this instance the strap clips X are on the underside, the filler cap C is not self-venting, a separate vent
 85 V being provided, and the attachments comprise an angle plate A, a pinch-clamp P, and bolt-holes B in one pair of the strap clips X.

The vent in the filler cap C (Figs. 1 to 90 3) or the vent V (Figs. 4, 5) is preferably provided with a screw-down sealing element to enable the machine to which the tank is fitted to be up-ended or turned upside down without spilling the fuel in the tank. Alternatively, the vents may have automatic
 95 means for sealing them when inverted, such as a trapped ball which falls by gravity on to a seating to close the vent when the latter is inverted.

The improved tank as herein described
 100 may also be provided with means for securing a child's seat together with footrests or stirrups

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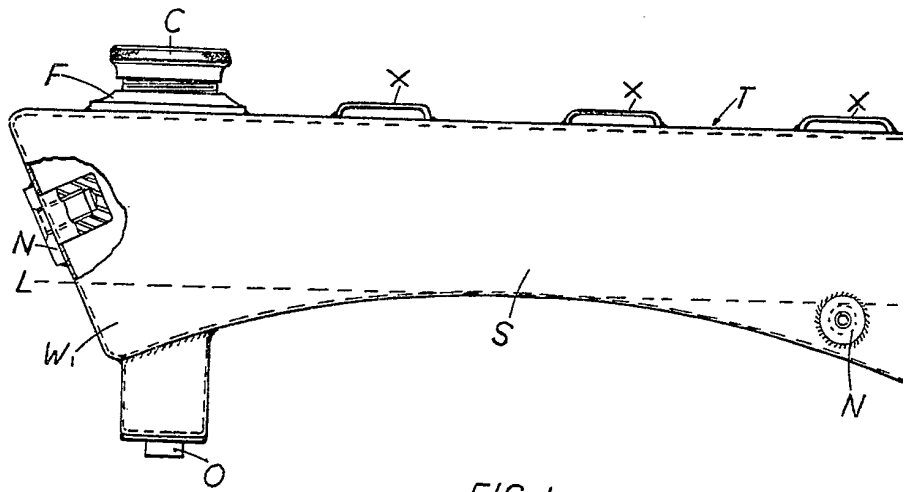


FIG. 1

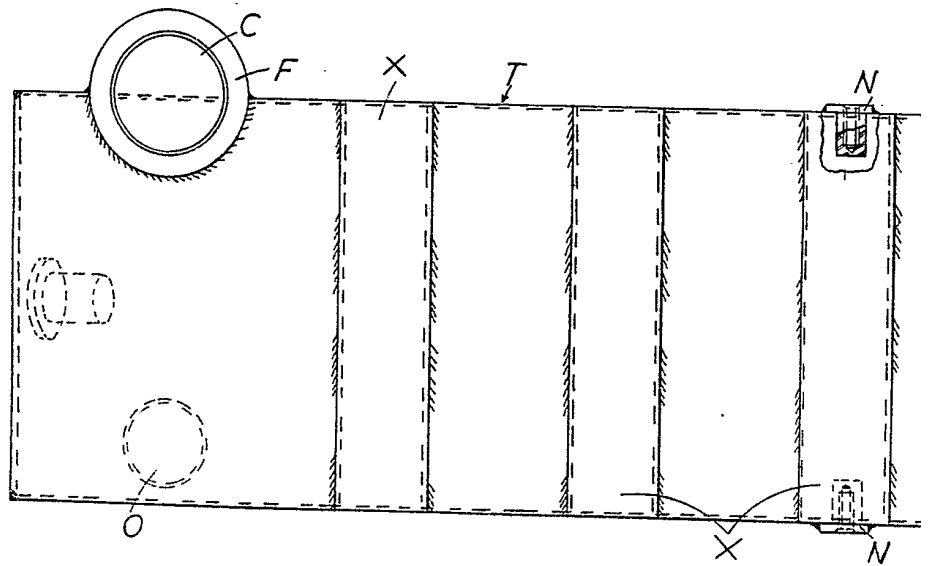
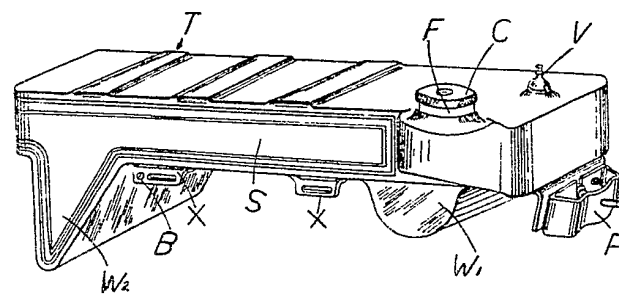


FIG. 4



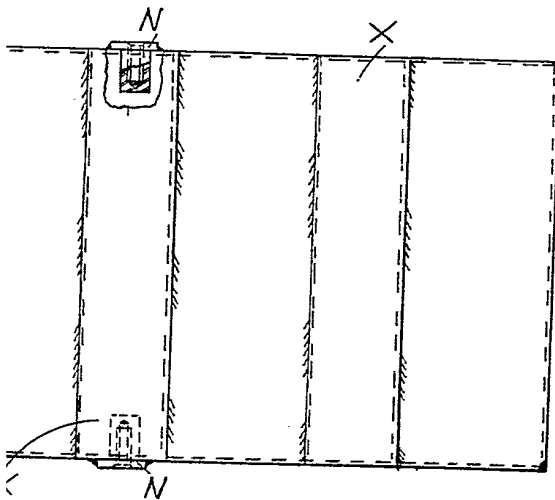
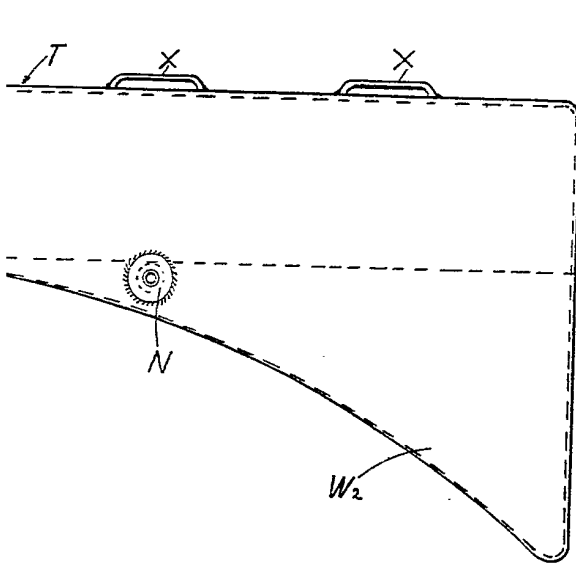


FIG. 3

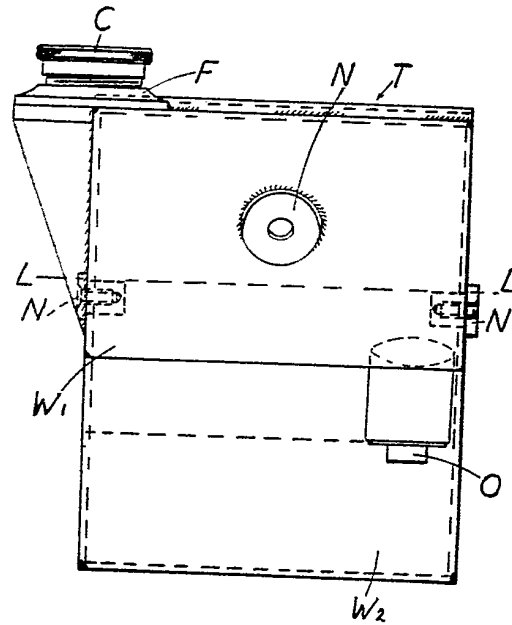


FIG. 2

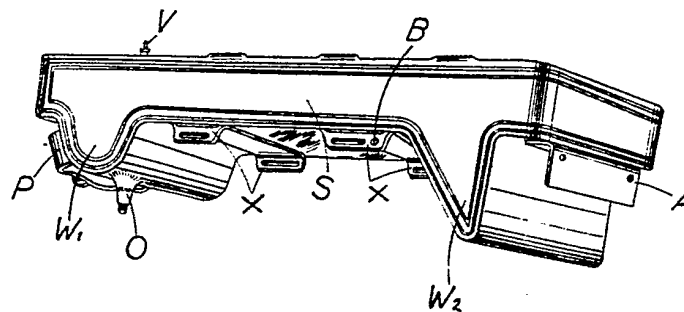
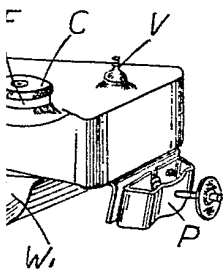


FIG. 5

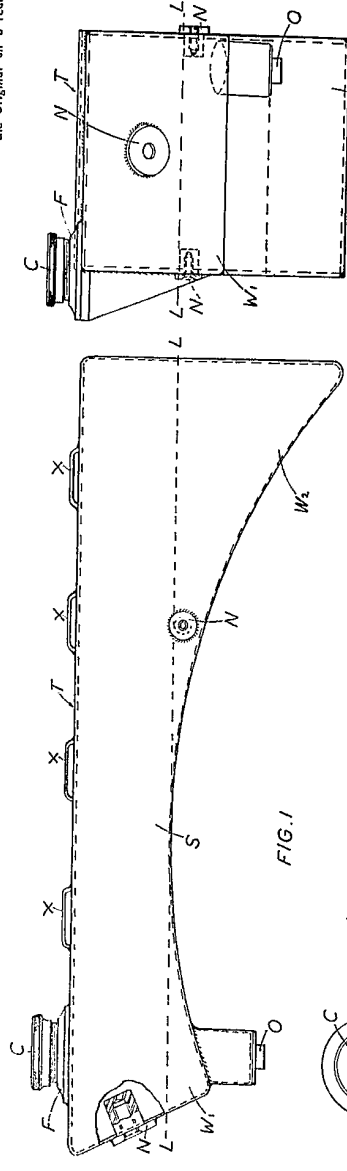


FIG. 2

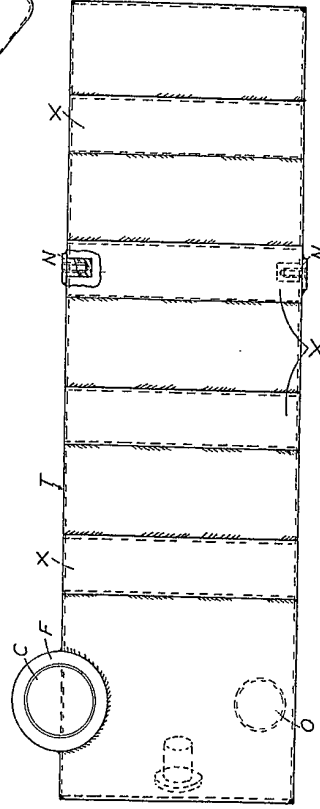


FIG. 3

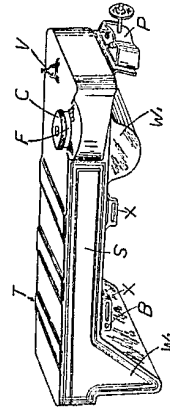
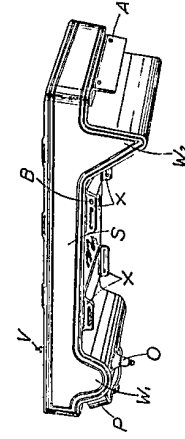
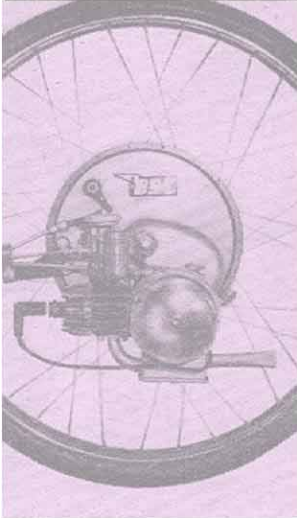
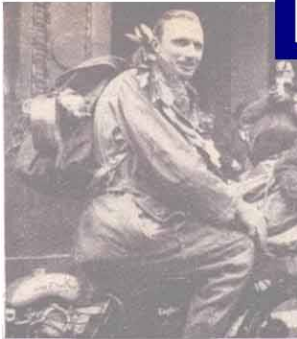


FIG. 4

FIG. 5



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