

May 30, 1950

M. MARIN

2,509,603

STEERING OF PORTABLE REACTION MOTORS

Filed Feb. 24, 1945

2 Sheets-Sheet 1

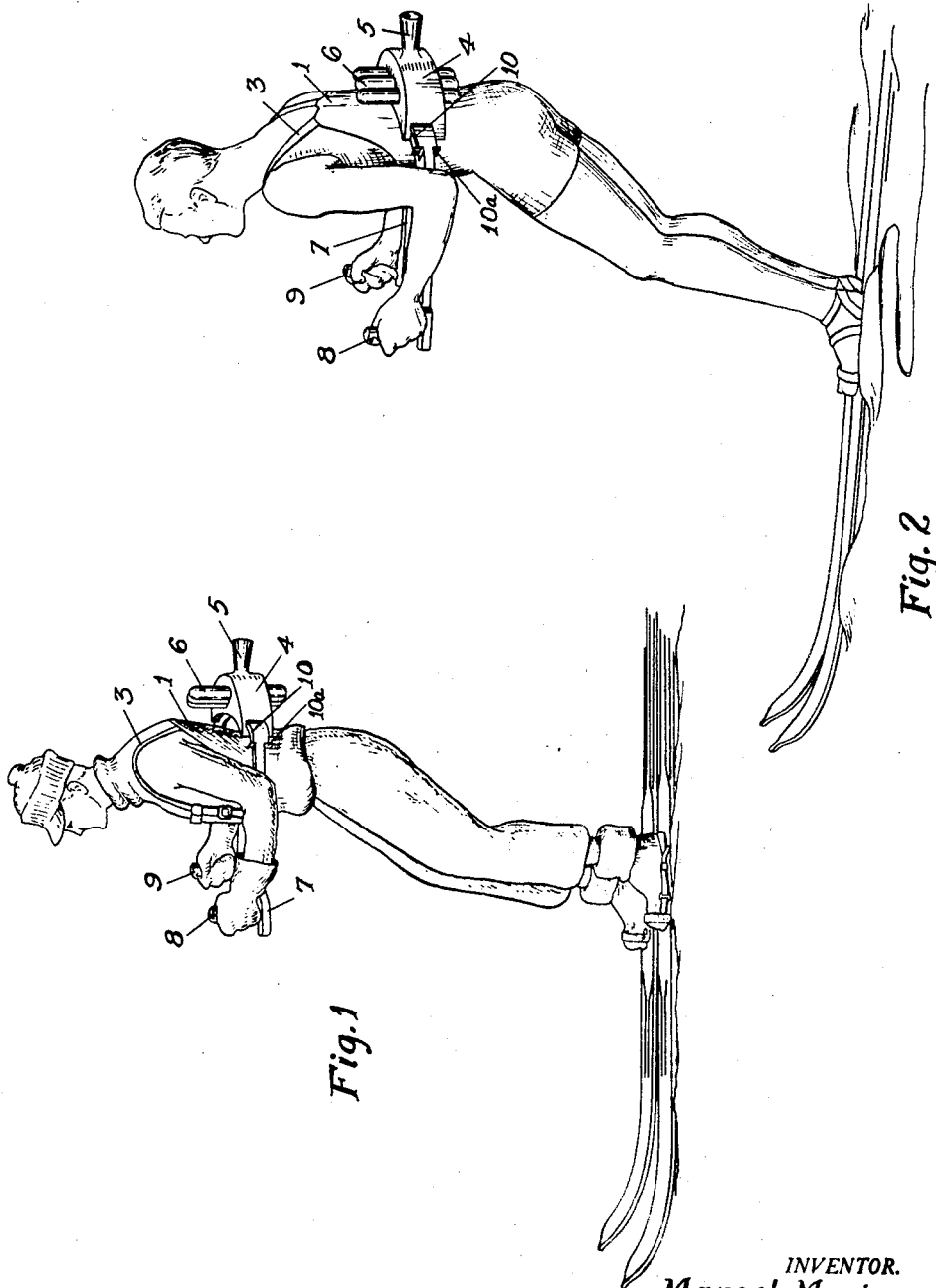


Fig. 1

Fig. 2

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2 Sheets-Sheet 2

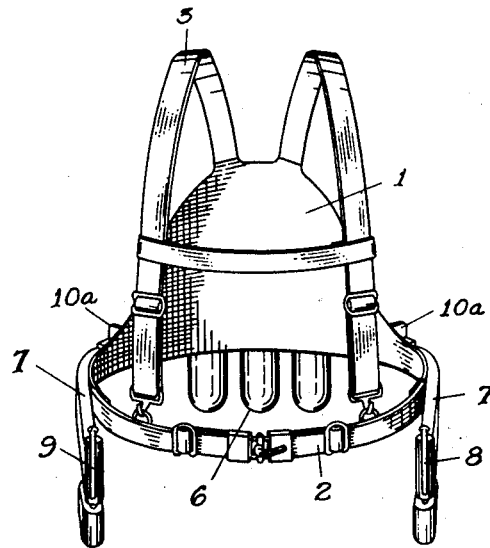


Fig. 5

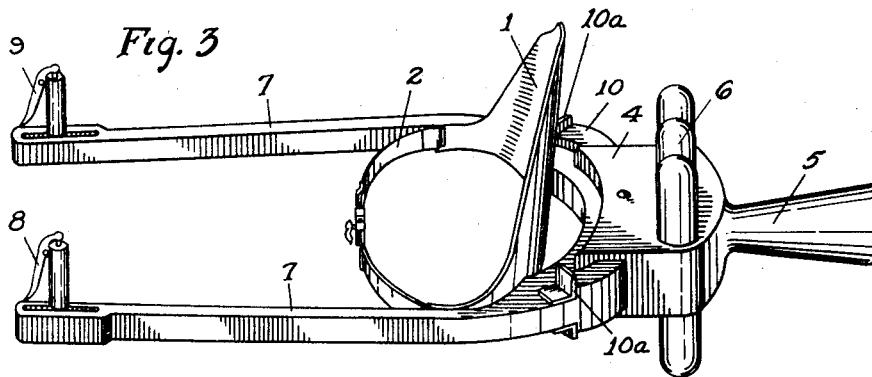


Fig. 3

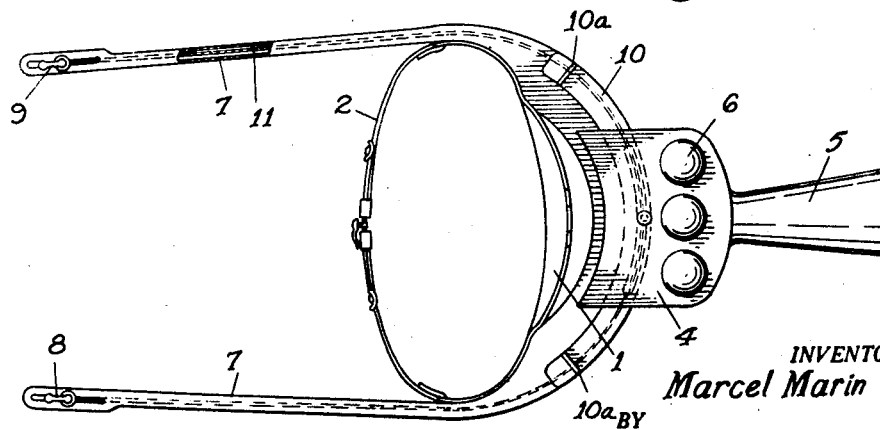


Fig. 4

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STEERING OF PORTABLE REACTION MOTORS

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2 Claims. (Cl. 60—35.54)

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The present invention relates to propelling devices and more especially low power propelling devices, in particular for locomotion of a single person.

The object of my invention is to provide a device of this kind which is very easy to fit and to handle.

According to an essential feature of my invention, the device includes a reaction jet propelling system and means for fixing in an easily detachable manner this system, together with the corresponding accessories (fuel tanks and so on), on the moving body, and in particular the person, that is to be propelled.

Other features of my invention will result from the following detailed description of some specific embodiments thereof.

Preferred embodiments of my invention will be hereinafter described with reference to the accompanying drawings, given merely by way of example, and in which:

Fig. 1 is a perspective view of a snow skier equipped with the propelling device according to the present invention;

Fig. 2 is a similar view corresponding to the case of a water skier;

Fig. 3 is an elevational view of a propelling device of the kind of that illustrated by Figs. 1 and 2;

Fig. 4 is a plan view corresponding to Fig. 3;

Fig. 5 is a corresponding front view.

The propelling device according to my invention is particularly intended to ensure or facilitate locomotion of a person, whatever be the way in which the displacement of this person takes place, but more especially when this person is carried by a vehicle, for instance a pair of skis, a sleigh, roller skates, a bicycle, a light car, a small boat, etc.

As above stated, this propelling device includes, according to my invention, a reaction jet propelling system, and means for detachably fixing this system, together with the accessories that may be attached thereto, to the moving body to be displaced.

For practical purposes, the device in question may be constructed according to many embodiments which differ from one another:

a. Either by the particular nature of the reaction jet propelling system, which may be of any known type (rocket, reaction motor and generally any device making use, for direct propulsion, of the inertia of a fluid), with a source of energy which may itself be constituted, for instance, by a liquid or solid fuel, a controlled

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combustion explosive, a controlled vaporization compressed matter, etc.;

b. Or by the position of said propelling system, which may be mounted either directly upon the person the displacement of which is to be ensured, or upon the vehicle (skis, skates, bicycle, boat, etc.) on which this person is travelling; the relative position of the system with respect to the thrust center of the whole being, in each case, suitably chosen (so as to pass at the front or at the rear of said center, or, eventually, substantially through said center).

When the propelling system in question is directly adapted to the body of the person the locomotion of which is to be ensured, for instance at waist height (fixation to the feet or any other part of the body being not excluded), I preferably make use of a kind of harness 1 adapted to fit on the body and fixed, in an adjustable manner, through suitable binding means, such as a belt 2 and shoulder straps 3.

In the drawings, which have been made in the case of the vehicle being constituted by a pair of skis (adapted to run either on snow, Fig. 1, or on water, Fig. 2), the propelling system is shown in a diagrammatic fashion, the fuel chamber being shown at 4 and the nozzle at 5. The fuel tank, or any other tank and equivalent means, may be either rigid with the propelling means (for instance at 6), or carried separately, with suitable conduits connecting it with the propelling means.

It seems advantageous, in order more intimately to secure the device with the body of the skier, to provide the harness with arms such as 7, the ends of which are to be tightly held by the hands of the skier. These arms advantageously carry the control means 8, 9 of the propelling means (means for controlling the working of said propelling means, etc.).

Such a system, with which the propelling force is applied approximately at the center of gravity of the person the displacement of which is to be ensured, seems capable of complying in the best possible manner with the requirements of practice, while ensuring a maximum freedom of movement.

The same advantages would appear in the case of the propulsion of a boat, a bicycle, etc., it being well understood that the propelling system might be fixed directly on this boat, bicycle, or other vehicle. In all cases, its fixation would be extremely simple and easy, since there is no connection to be provided with propelling parts such as wheels, screw propellers, etc. and

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it suffices to fix the apparatus in position for obtaining the desired propulsion.

In particular, it is possible for the person making use of the device to exchange it for another one, according to the power to be obtained or to the length of travel that is being considered. Advantageously, the fuel tank or any tank intended to contain the propelling fluid, is made separate from the whole, so that it may be chosen of a size corresponding to said length of travel. My invention therefore includes the use, on devices of the kind above referred to, of detachably mounted and interchangeable tanks. In particular, these tanks may be constituted by tubes, such as shown at 6, in Figs. 1 and 2, in variable number.

Whatever be the particular construction that is used, means may be provided, according to my invention, to facilitate the negotiating of turns.

Such means may act by modification of the position of the propelling means with respect to the body of this person, and in particular with respect to the center of gravity or center of thrust thereof.

It will be readily understood that, in the case of propelling means mounted directly on the body of the person, this modification of the relative position of the propelling means with respect to said body will cause the latter to assume the momentaneous position that is adapted to the negotiating of the turning, and further permits of overcoming the action of the centrifugal force.

In the embodiment of my invention illustrated by the drawing, the propelling unit is adapted to slide on a support 10, this displacement being obtained through the action of one of the controls 8, 9. Thus, as illustrated in the drawings, the fuel chamber 4 is slidably mounted upon the support 10 which is equipped with stops 10a at each end thereof for limiting the movement of the reaction unit. Handles 8 and 9 are longitudinally movable in the slots shown, and are connected by any suitable means, as by cables 11 extending within arms 7, to chamber 4. As handles 8 and 9 are alternately moved forward and backward, the chamber 4 will be slid along the arc of support 10.

Whatever be the particular embodiment of the invention that is chosen, I obtain a propelling device particularly well adapted to the purpose for which it is intended, since the person using it can choose the type of motor best adapted to the utilization to be considered, and the device can be fitted in a practically instantaneous way.

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In a general way, while I have, in the above description, disclosed what I deem to be practical and efficient embodiments of the present invention, it should be well understood that I do not wish to be limited thereto as there might be changes made in the arrangement, disposition and form of the parts without departing from the principle of the present invention as comprehended within the scope of the accompanying claims.

What I claim is:

1. A device for the surface propulsion of a person which comprises, in combination, a harness adapted to be secured to the body of said person, an arcuate guiding support carried by said harness behind the back of said person, a jet propulsion motor movable along said support, and means operative by said person for controlling the position of said motor with respect to said support.

2. A device for the propulsion of a person which comprises, in combination, a harness adapted to be secured to said person including an arcuate guiding support adapted to be located behind the back of said person and at a distance therefrom and two arms arranged to extend frontwardly from the ends of said guiding support on either side of the body of said person, reaction jet propelling means slidably mounted on said guiding support, control means for adjusting the position of said propelling means along said arcuate guiding support and means mounted upon the front ends of said arms for the manual operation of said control means.

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