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(54) Cycle road.

(57) Cycle roads are made energy generating and more comfortable by providing them with roof (25), walls (22), between wall and fair wind from the outer wind by walls which are made of blades (21). The outlet air goes through turbines (15). The blades can be supported by living trees and the roof can be made of the crowns of the trees.

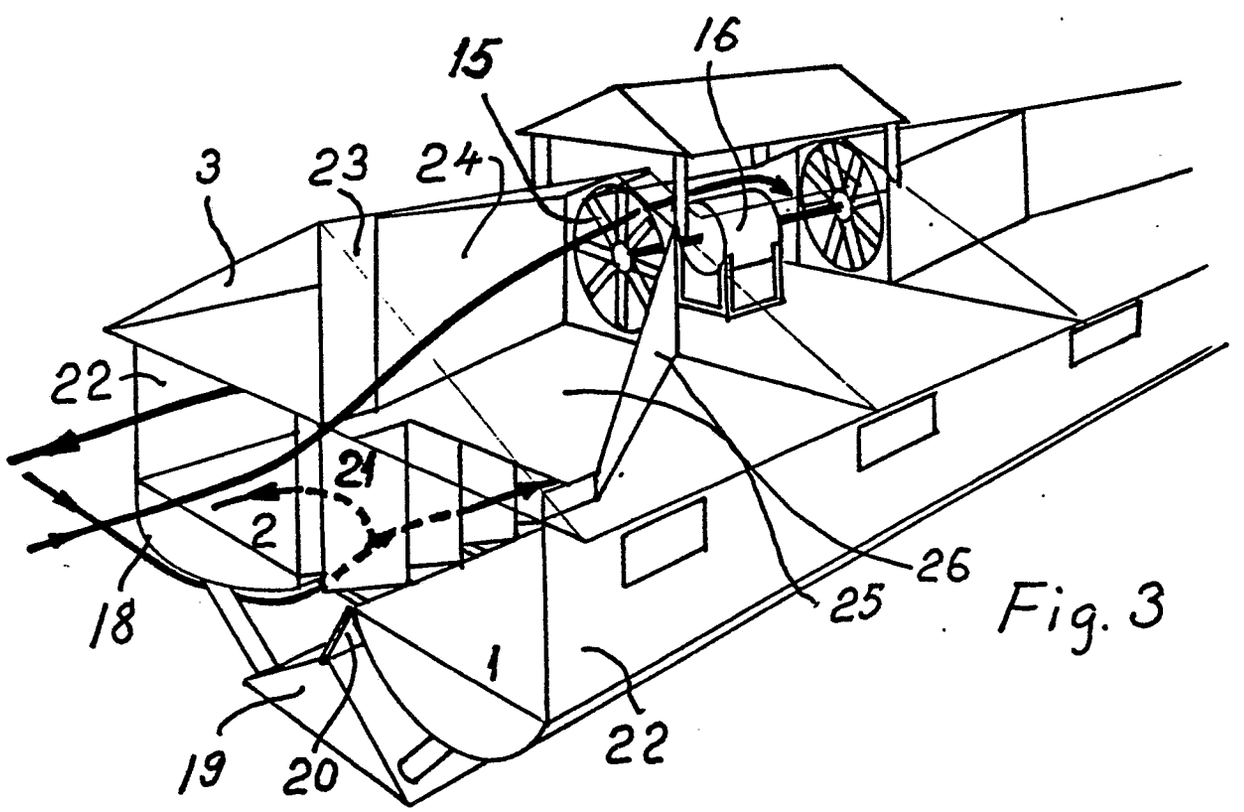

Fig. 3

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Cycle road

When cycling, the air drag is as a rule the largest friction loss especially when it is contrary wind. Precipitation is in nordic climate another problem. If the cycle road is provided with walls and roof these problems are eleminated. Futhermore in the tube, which thus is produced the air can be moved by means of the wind. This can be made in different ways.

One metod is shown in figure 1.

Figure 2 shows how exess air can give wind energy.

Figure 3 shows how the cycle road pass a bridge and how wind energy is received.

Figure 4 shows how living trees can be supports for blades, which guide the wind into the road.

Figure 5 shows blades supported by trees.

Figure 6 shows how flaps are put on the blades.

Figure 7 shows how roof are formed by the tree crowns.

In figure 1 is shown the right file 1 in the tube and that file which normally is the left file 2, but here is a roof over the right file. At the top there is a roof 3. The upper file has a outlet 4. The right wall of the right file is formed by oblique blades 5, which form chinks 6 through which the air can pass into the road. The left wall has oblique blades 7 and chinks 8. Air which goes into the tube is directed forward. The upper tube has walls, which are formed by blades 9 and chinks 10 and also blades 11 and chinks 12 on the other side. The function is very simple. If the wind is blowing cross the tubes the blades will direct the wind forward in the tubes. The wind does not go out through the opposite wall, not even if there is traffic in the tube because it goes in the same direction.

The air is driven forward in the tube as long as the wind comes from some side and also if it turns to fair wind outside. By bending the blades so that the outer part will be in right angle to the road almost all directions of the wind can give fair wind inside the tubes. If the tubes are to long the wind speed can be to high. Then the air will be tapped off as in fig. 2 and through tubes 13 and 14 it goes out and may pass a turbine 15, which for instance produce electricity in a generator 16.

If the cycle road pass a bridge the air will be taken into the tube from below as in fig. 3. Then the precipitation cannot come into the tube. The wind blowes below the carriageways 1 and 2 and is guided by inlet former (17 or) 18, wind catcher 19 and a valve 20 to go in from below between the carriageways up through oblique blades 21, so that the air goes into the two tubes, but in different directions. The tubes has right outer walls 22, between wall 23 and roof 3.

If the bridge is long the air must be let out at uniform distances. At the outlets wind turbines 15 and generators 16 can be placed. In the example shown the turbines are situated below the roof top and with horizontal axis in order to be as large as possible. Before the turbines the cross-section of the tube will be reduced by oblique wall 24, cealings 25 and oblique blades 26. The outlet for the air 27 is covered by a roof 28.

A special road can be made of living trees 30, which are planted in short rows as in fig. 4. Between the trunks are braded e.g. spinning material 31. This construction works for fair wind to side wind. With another placing of the trees the blades can be made as in fig. 5. It works well for all wind directions except for direct front and fair wind.

In order to work well for all directions the outer edges of the blades need to be turnable depending on the wind direction (fig. 6). A large wind vane 40 with a crank 41 and rod 42 move another rod 43 , which is connected to flaps 44 on every or every second blade. This means that when the flaps are loaded by strong wind the crank will stand in the dead locks and the vane then manage to keep the flaps in position. For side wind the position of the flaps are not as critical as for contrary wind. Then it does not matter if the vane does not manage to keep the flaps exactly correct.

The roof over the road can sometimes be obtained by pruning the crowns as in fig. 7. When this is not enough the tops and branches can be bent to each other and be fasten together by ropes.

Claims

1. Cycle roads containing files (11, 2), walls and roof where one or both walls consist of plane or bent blades (5, 7, 9, 11, 21, fig.4, fig. 5, fig. 6), which when they are hit by the wind direct it in the forward direction or which form an input suck due to ejecting action from the air, which is driven forward in the arosen tube (channel).

2. Cycle road as in claim 1 where both its forward and back directions has the both walls made of blades and where the one tube goes over the other (fig. 1).

3. Cycle road as in claim 1 and 2 in which the air is tapped off (13, 14) from the tubes to the turbines (15), which produce rotation energy, which eventually is converted to electric energy by a generator (16).

4. Cycle road as in claim 1 in which the wind through inlets (18, 19) and wind driven valve (20) goes from below in through a between wall made of blades (21), which distribute the air to two tubes in different directions and in which the other walls (22) and ceilings are smooth.

5. Cycle road as in claim 4 in which the air is tapped at equidistant points by means of a part of cealing (25) and cross- section reducing walls (24, 25) to turbines (16).

6. Cycle road as in claim 1 in which the side walls are made of blades supported by tree trunks (fig.4, fig. 5).

7. Cycle road as in claims 1 and 6 in which all or some of the blades are provided with flaps (44), which for instance are set by a vane (40).

8. Cycle road as in claim 6 in which the roof is obtained by tree crowns (fig. 7), which are pruned and bent over the road.

9. Cycle road as in claim 1, which is suited to a general vehicle, which completely or partly is driven forward by the air.

10. Cycle road as in claim 3 and 5 in which the air from the tubes are driving other tubes with or without walls made of blades.

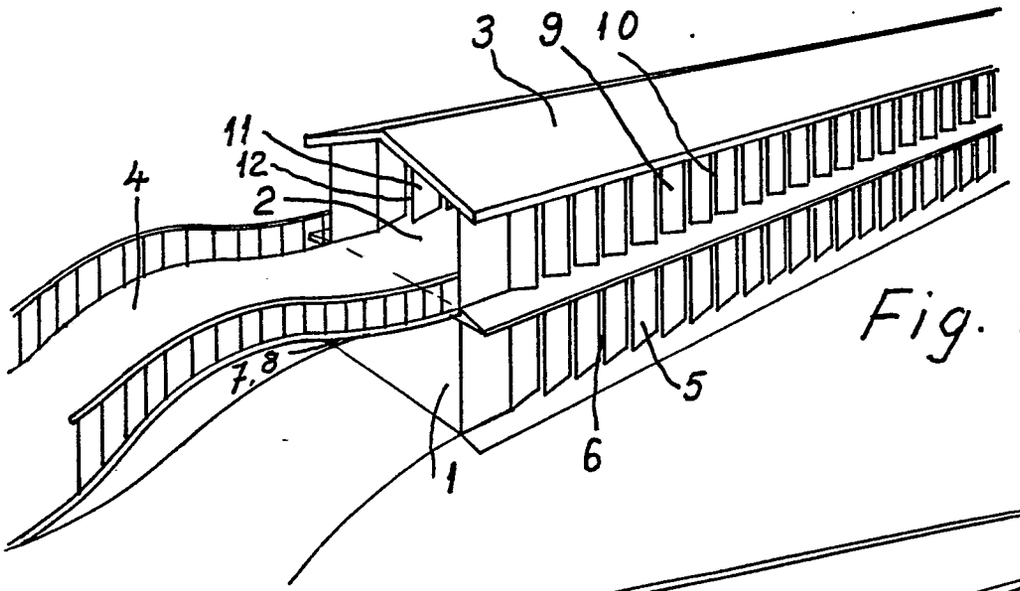

Fig. 1

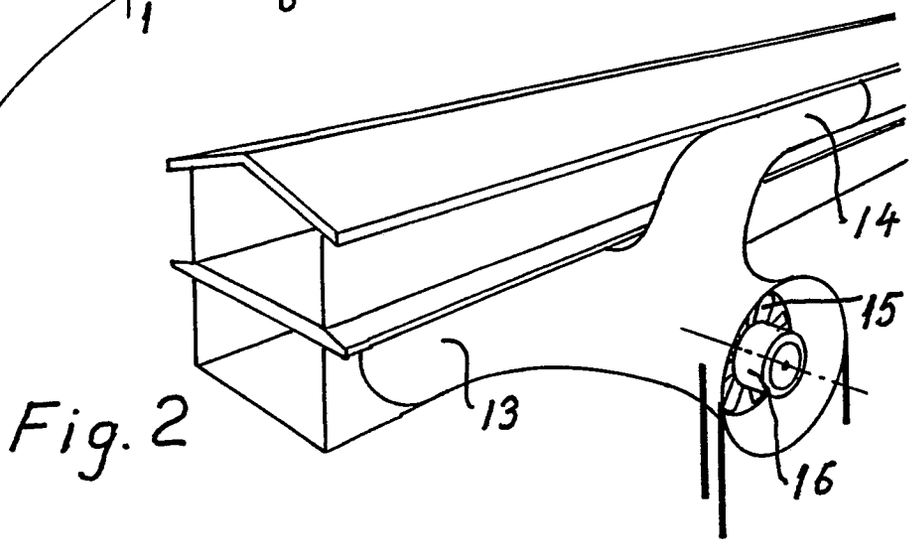

Fig. 2

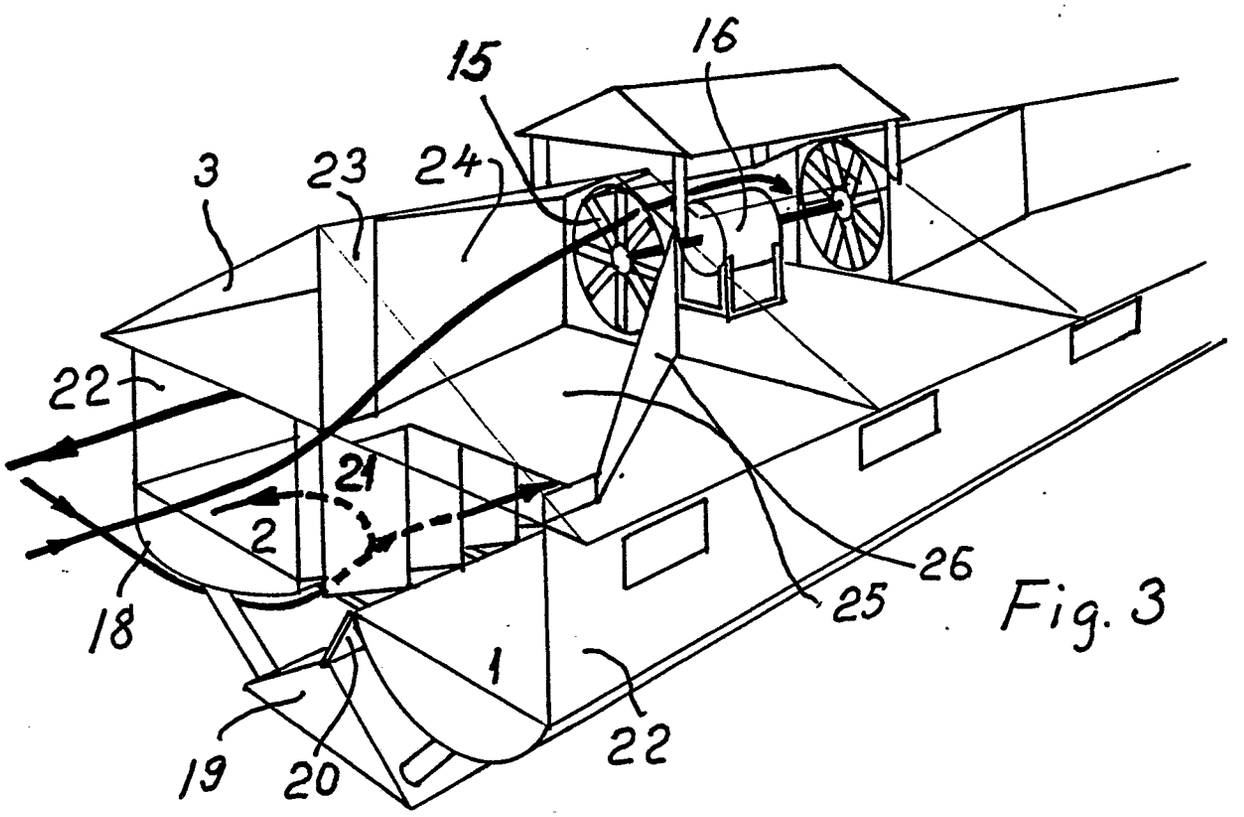

Fig. 3

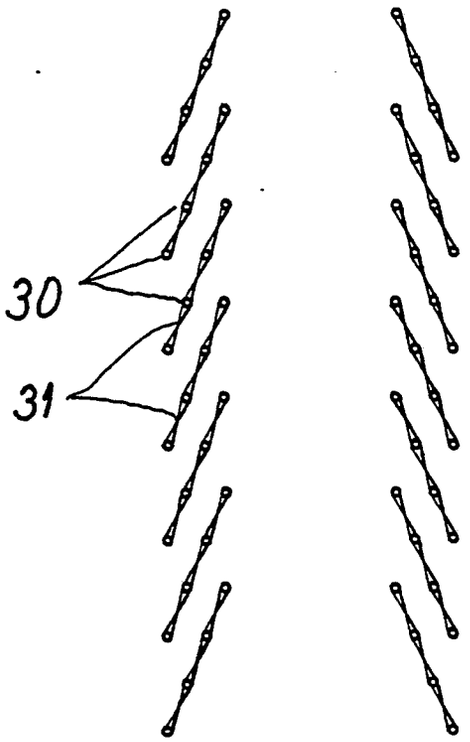

Fig. 4

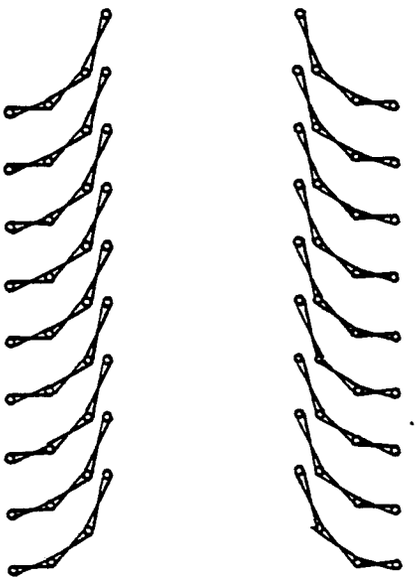

Fig. 5

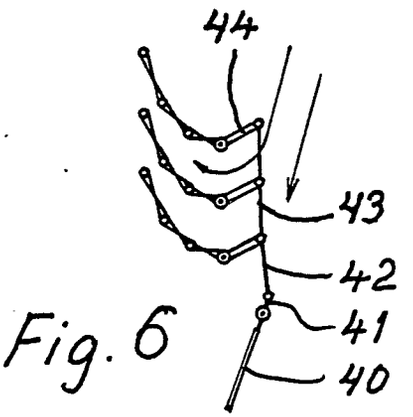

Fig. 6

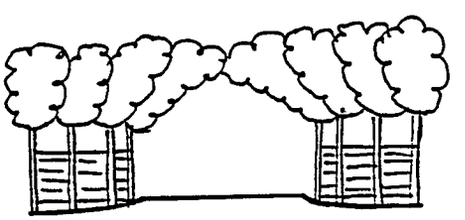

Fig. 7