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 [33] **France**  
 [31] **157,251**

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[54] **TRACK SHUNTING SYSTEM FOR MOVABLE PARTS FOLLOWING A GUIDING TRACK**  
 11 Claims, 18 Drawing Figs.

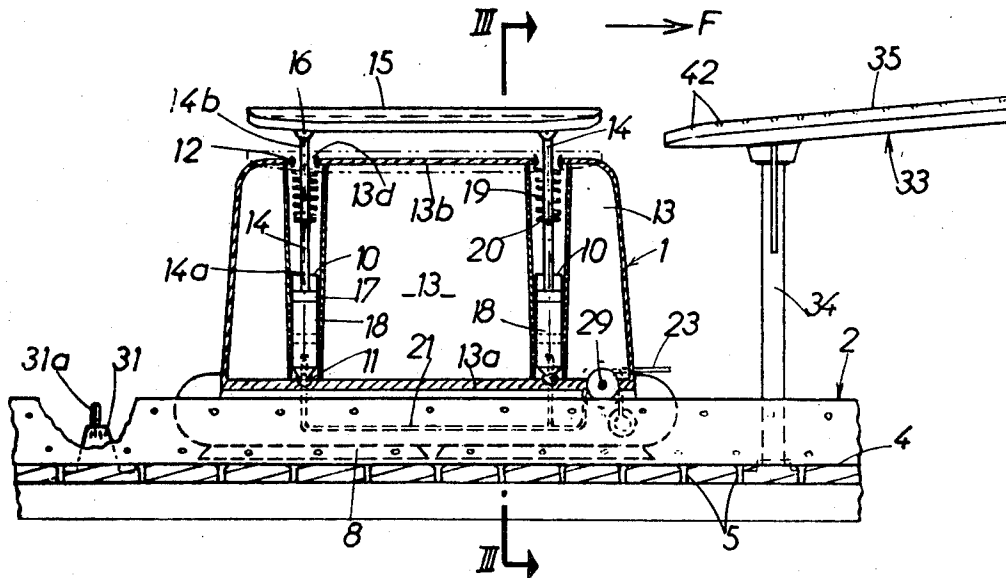
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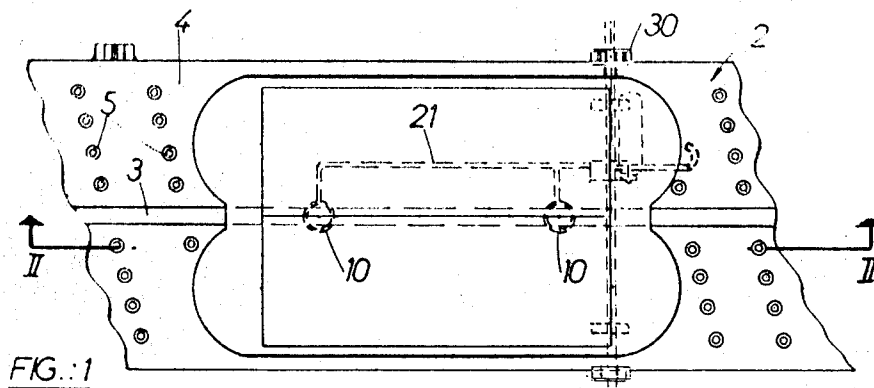
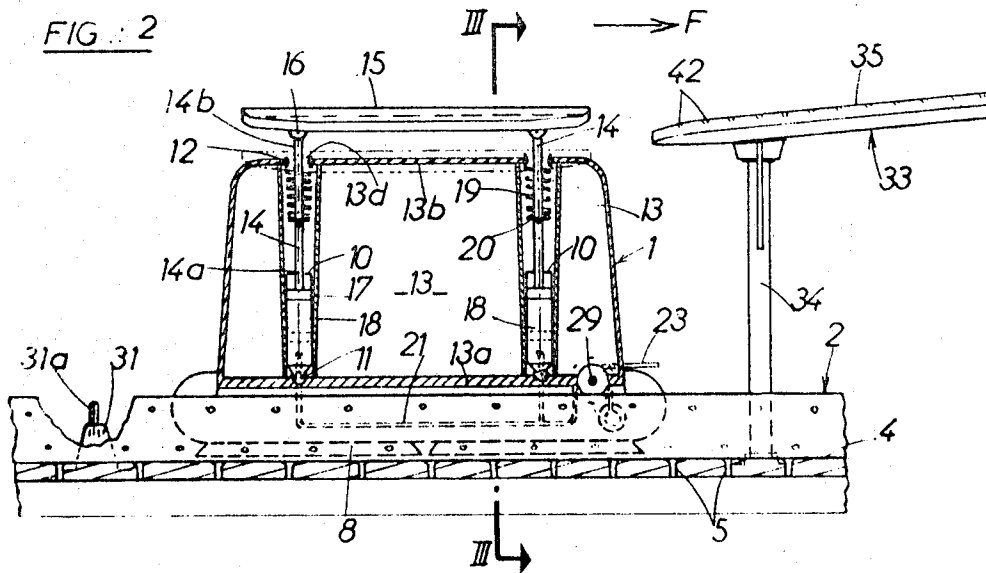
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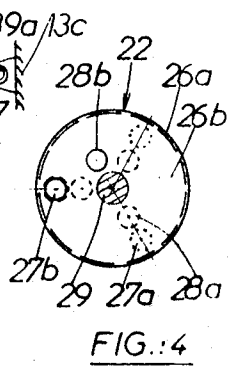
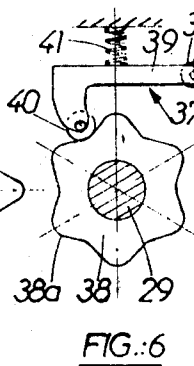
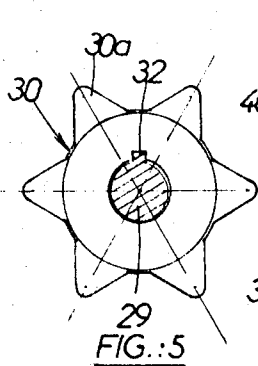
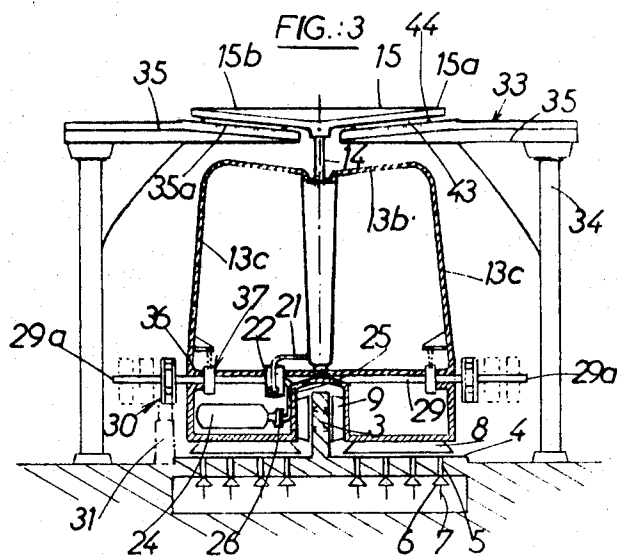
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**ABSTRACT:** A switching system for ground effect conveying tracks over which a vehicle or the like movable part is adapted to move over a compressed fluid cushion fed with fluid through flap valves which allow the desired sustaining and guiding energy to be released only in registry with the movable part passing over them. The switching system provides means for shifting the movable part off such a track and back onto the same or another main track through the agency of an auxiliary track lying above the location of the movable part which is free to rise above the main track it is following. The feed of guiding and sustaining fluid is cut off when the movable part arrives at a point registering with a predetermined auxiliary track while the latter engages the movable part by raising an auxiliary structure carried by said movable part and provided with a large surface subjected to the fluid jets produced by the auxiliary track and forming sustaining cushions equivalent to those provided by the first-mentioned track.

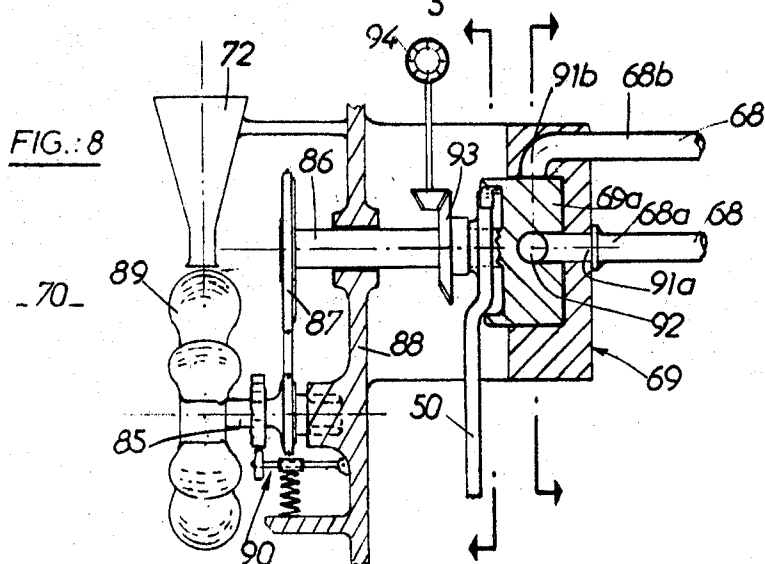
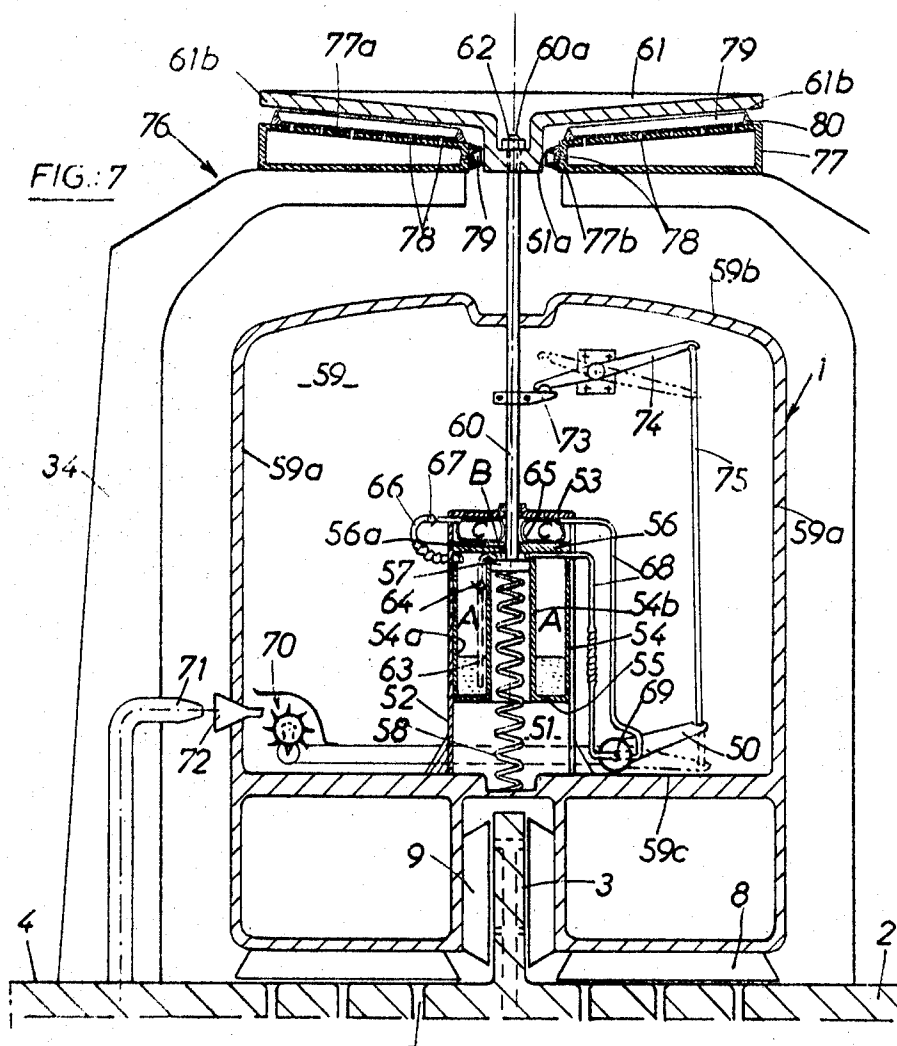


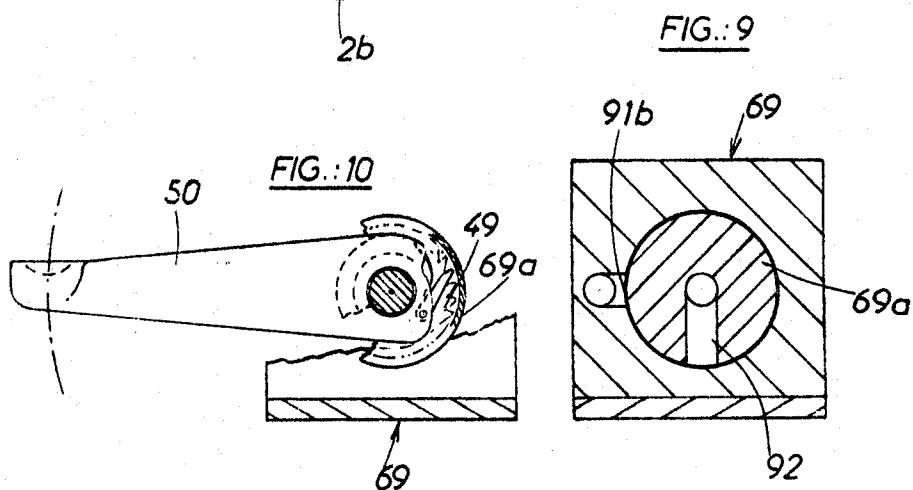
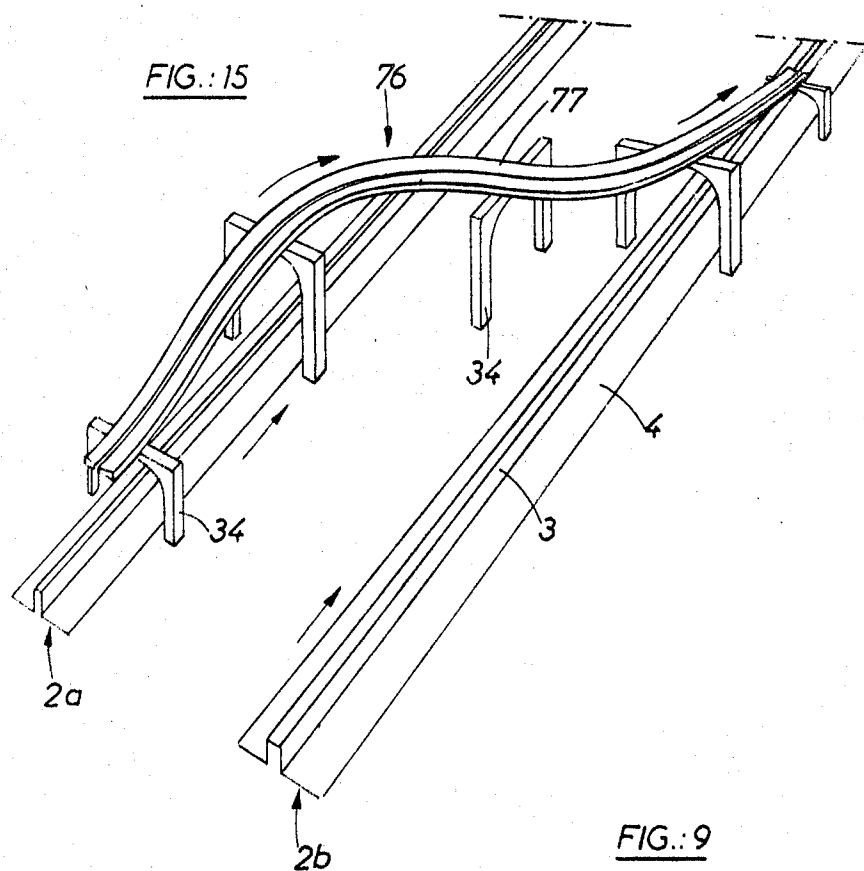


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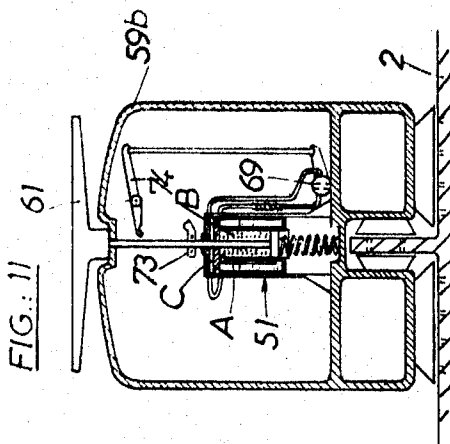
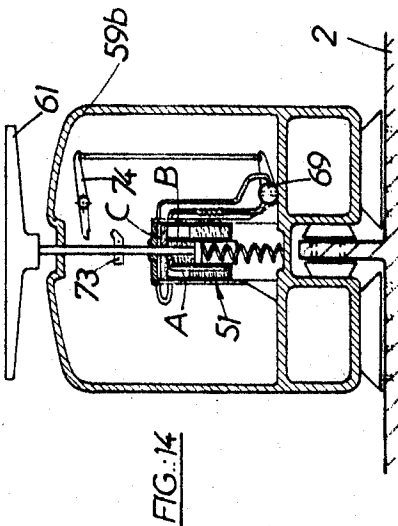
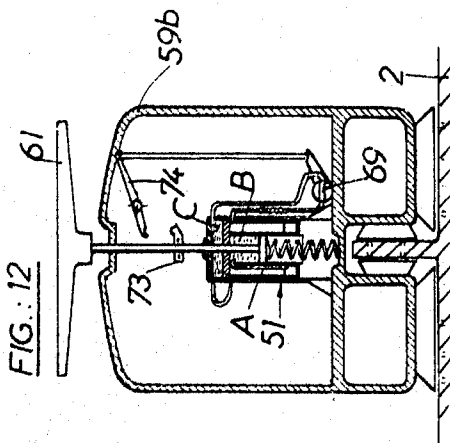
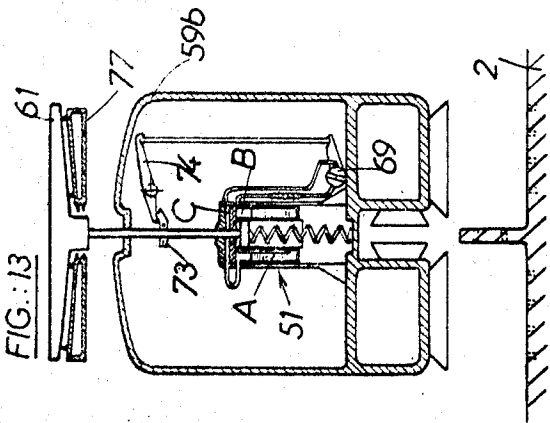


FIG. 15

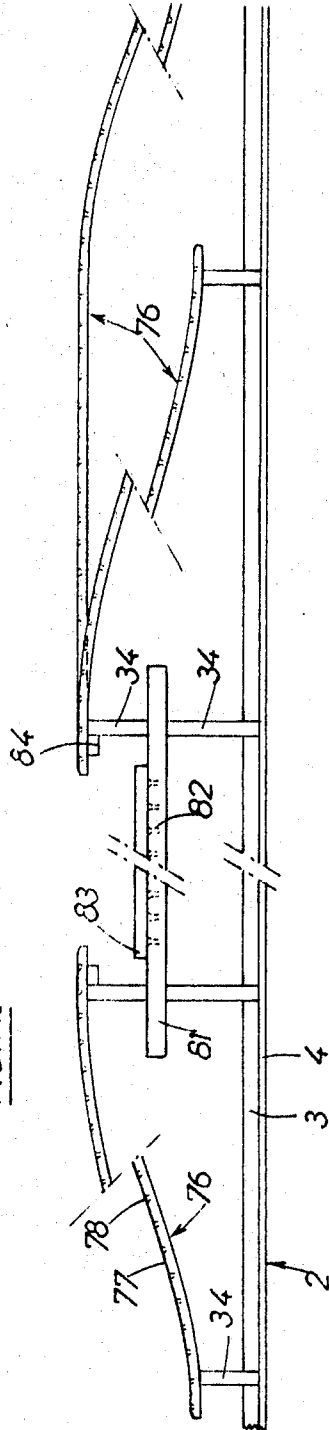
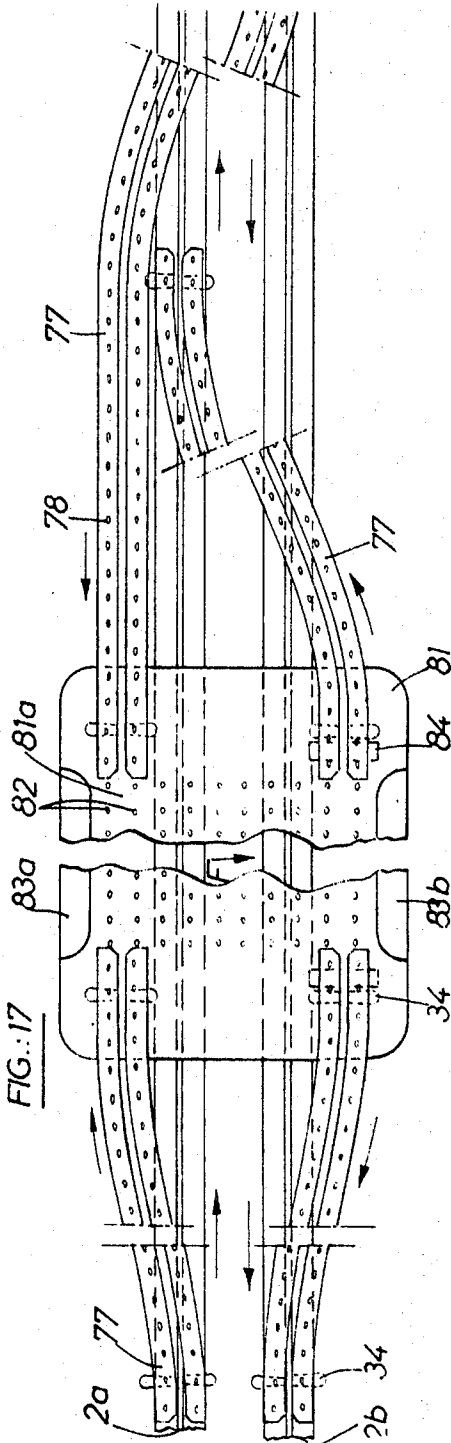
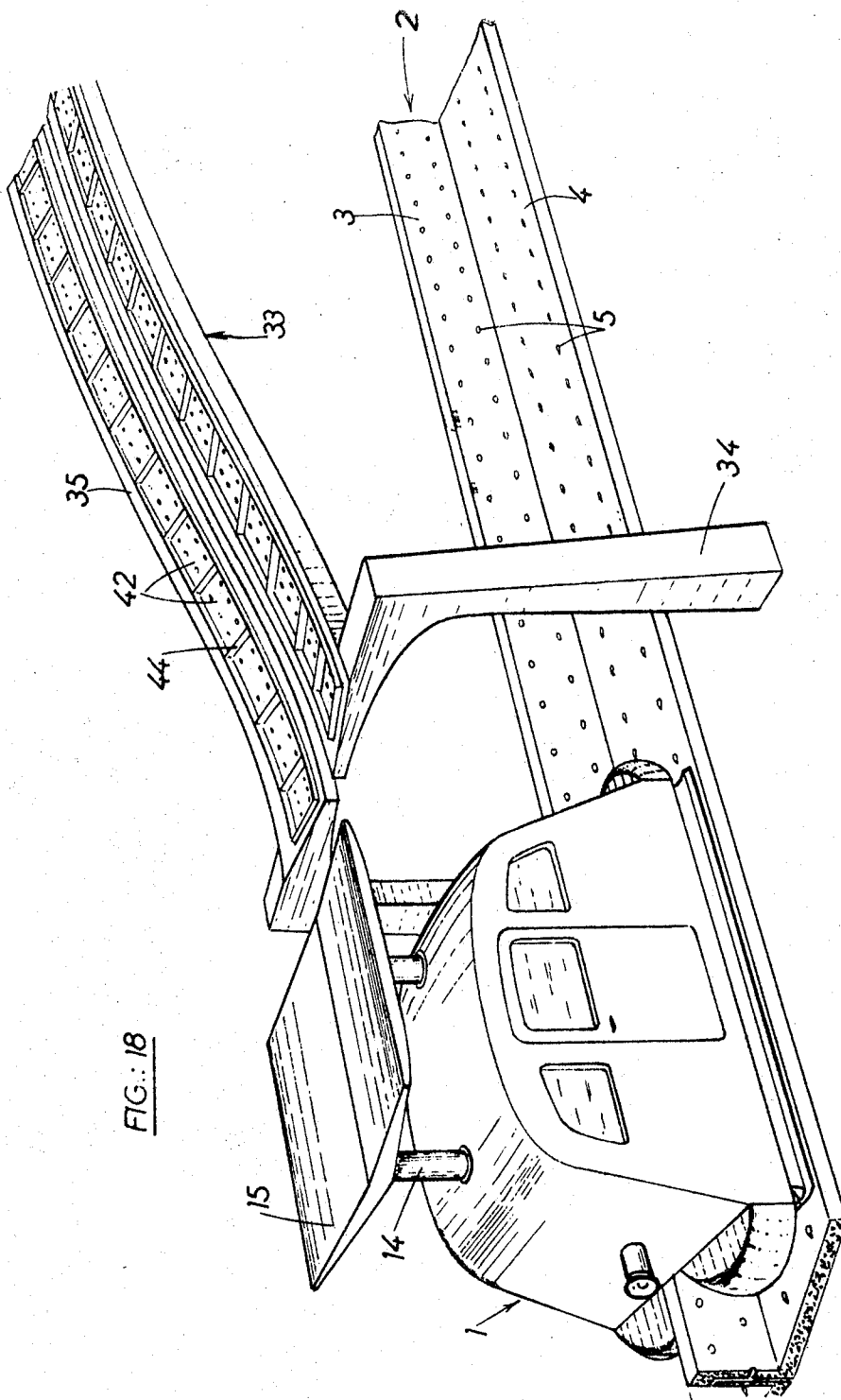


FIG. 17







## TRACK SHUNTING SYSTEM FOR MOVABLE PARTS FOLLOWING A GUIDING TRACK

My invention relates to movable parts following a guiding and/or sustaining track. Such movable parts or vehicles are generally associated with at least two parallel tracks for progression and return. It is also possible for a plurality of tracks to start from a same point in different directions. Furthermore the loading, unloading and/or parking of the movable parts should be executed preferably on a specially designed track located away from the main circulation tracks in order not to disturb the traffic. The present invention has for its object a track-shunting system which allows a distribution of the movable parts between a number of different tracks. The invention is more particularly applicable to the case of ground effect machines without being limited thereto and a particularly interesting application thereof resides in incorporating it with ground effect transportation means for machines guided along a track the cross section of which is in the shape of an inverted T.

However without widening the scope of the invention as defined in the accompanying claims, it is possible to apply it to movable parts cooperating for instance with mechanical conveying means such as endless belts or with a track with the interposition of wheels.

According to the invention, the movable part is provided with auxiliary guiding and sustaining means which are independent of the normal sustaining and/or guiding means and are adapted to cooperate with at least one auxiliary guiding and/or sustaining track which latter is wholly independent of the normal guiding and/or sustaining track. Said auxiliary means are actuated when required so as to make the movable part move off the circulation track engaged by it, the auxiliary guiding track directing it towards a predetermined point selected for instance on another track or onto an unloading or parking area.

Preferably the auxiliary guiding and/or sustaining means are constituted by at least one extension pivotally secured to the movable part and adapted to move away from the latter so as to cooperate with auxiliary guiding and sustaining arrangements. According to an embodiment of the invention, said extension is actuated by telescopic or the like jacks which allow its positioning in a so-called collapsed position for which it allows normal progression of the movable part or else in a so-called active or displayed position for which it is adapted to cooperate with the auxiliary guiding and/or sustaining arrangements. The pivotal extension of the movable part is advantageously shaped so as not to produce any substantial drag when in its collapsed position. It is advantageous to provide for this purpose a housing within the body of the movable part so that said extension may be enclosed therein for instance after the manner of an aircraft landing gear.

Preferably, the means controlling the pivotal extension are operated automatically by means distributed along the track and adapted to cooperate with selecting means carried by the movable part. Said selecting means may be adjusted at the start in accordance with the running diagram provided for the movable part so as to resort only to certain predetermined auxiliary guiding tracks. Preferably means may be provided in order that the energy urging said extension away from the movable part may be recovered automatically by the passage of the movable part along an auxiliary track.

According to a preferred embodiment, the surfaces of the pivotal extension facing the auxiliary guiding and sustaining arrangements may advantageously cooperate with the latter through the agency of compressed fluid cushions the confining walls of which may advantageously be carried by said auxiliary arrangements. In such a case, the compressed fluid may be fed through the agency of passageways provided through such auxiliary arrangements and connected with at least one container. It is of advantage in such a case to provide suitable members such as flap valves for the closing of said

passageways when it is no longer necessary to resort to the compressed fluid cushions.

According to a modification, the walls confining the compressed fluid cushions may also be carried by the pivotal extension, the feed being then obtained by means of passageways passing through said extension.

It is of advantage for the auxiliary guiding and/or sustaining arrangements to be designed in a manner such that the movable part cooperating with the latter through the agency of the pivotal extension may move gradually away from the track and be released with reference to the latter. The movable part cooperates only with the auxiliary arrangements guiding it towards a parking area or towards another track. The association between the movable part and the track it is to follow subsequently is obtained according to the reverse procedure, and auxiliary guiding and/or sustaining arrangements urging gradually the movable part towards the track.

In the accompanying drawings:

FIG. 1 is a view from above of a first embodiment of the invention

FIG. 2 is a sectional view through line II-II of FIG. 1

FIG. 3 is a sectional view through line III-III of FIG. 1

FIGS. 4 to 6 show on a larger scale structural details

FIG. 7 is a sectional view of a further embodiment

FIGS. 8 to 10 show on a larger scale structural details of the latter

FIGS. 11 to 14 illustrate diagrammatically the location of the different parts of the embodiment illustrated in FIG. 7 during the successive operative stages

FIG. 15 is a diagrammatic perspective view of a track executed in accordance with the invention

FIGS. 16 and 17 illustrate diagrammatically a track equipped with unloading and parking areas

FIG. 18 is a perspective view of a movable part associated with cooperating tracks

Turning to FIGS. 1 to 3, the movable part 1 includes a cab 13 adapted to convey a load, constituted by passengers for instance, and adapted to move over a track 2 the cross section of which in the example illustrated is in the shape of an inverted T including a medial upstanding web 3 adapted to guide the movable part and associated with lateral carrier flanges 4.

The track illustrated is an active track incorporating a pipe fed with compressed fluid out of a compressor or the like supply and delivering said fluid through discharge ports located within the track through the agency of containers communicating with said pipe through passageways which may be gauged throughout or else show a variable cross section. Said track has already been described in the U.S. applications 795,495 and 795,526.

In the example illustrated, the nozzles 5 are closed by flap valves 6 illustrated diagrammatically in FIGS. 3 and which are opened when the movable part 1 runs over them.

The track 2 encloses containers 7 distributed in alignment along the track. The movable part 1 bears on the track 2 with the interposition of a plurality of sustaining cushions 8 and of guiding cushions 9. In such a conveying system, the movable part is propelled for instance by suitably directed jets of compressed fluid escaping out of the nozzles 5.

As illustrated in FIGS. 1 to 6, the movable part 1 includes two telescopic jacks 10 the body of which is pivotally secured to the lower wall 13a of the cab 13 through a ball and socket joint 11. Each jack 10 is adapted to actuate a rod 14 to the free upper end 14b of which there is secured a movable member 15 by a pivotal connection 16. Passageways 13d formed in the upper wall 13b of the cab are provided with rubber or the like plugs 12 which allow the rods 14 to execute slightly lateral and longitudinal movements. The movable member 15 includes two lateral extensions 15a and 15b the part played by which will be disclosed hereinafter. The lower end 14a of each rod 14 is rigid with a piston 17 adapted to move inside a container 18 formed in the jack body. A spring 19 surrounding the rod 14 bears against the upper wall 13b of the cab 13 and against studs 20 radially rigid with the rod 14

so that said spring urges the movable member 15 towards the upper wall 13b. The containers 18 of the jacks may be fed with compressed fluid so as to exert on the piston 17 a thrust opposing the pressure of the spring 19. To this end, the preferably yielding pipes 21 are connected with a distributing valve 22. The latter provides a connection between the pipes 21 either with an exhaust pipe 23 or else with a suitable supply of fluid 24 through the agency of a channel 25 and pressure releasing means 26. In the example illustrated, said supply of compressed fluid is constituted by a cylinder of liquified gas.

The distributing valve 22 includes, as illustrated in FIG. 4, a stationary disc 26a provided with two series of holes. The first series includes three holes 27a communicating with the channel 25 and located at the same distance from the center of the disc 26a along radial lines spaced substantially by 120° from each other. The second series of holes includes three holes 28a located on the same radial axes as the holes 27a but at a distance from the center less for instance than that of said holes 27a, with reference to said center, said holes 28a communicating with the exhaust pipe 23. A disc 26b coaxial with the disc 26a and adapted to revolve substantially in contacting relationship with the latter is provided with two holes 27b and 28b located at the same distance respectively from the center of the disc as the holes 27a and 28a along radial axes forming with each other an angle of 60°. The disc 26b is adapted to rock through 60° so as to set in alternation the hole 27b or the hole 28b in registry with a corresponding hole 27a or 28a. The valve 22 sets thus in alternation the container 18 in communication with the supply of compressed fluid 24 through the agency of the channel 25 or with the exhaust pipe 23.

In the example illustrated, the rotation of the disc 26b is controlled by the following mechanism: a shaft 29 rigid with the disc 26b extends substantially in transverse relationship with reference to the movable part and in parallelism with the bearing surface of said movable part. The ends 29a of said part 29 project outside the movable member 1 beyond the lateral walls 13c of the cab 13. Said shaft is carried over the lower wall 13a of the cab by bearings 36.

Toothed wheels 30 illustrated on a larger scale in FIG. 5 and including each in the example illustrated six teeth 30a may slide over the ends 29a of the shaft 29 and be positioned at a variable distance from the movable part. The wheels 30 may drive the shaft 29 as provided by feathers 32 carried by the corresponding ends 29a. It is possible to adjust the position of the wheels 30 on the ends 29a from the inside of the cab 13 through the agency of means which are not illustrated. Projections 31 extending as yielding members 31a are distributed alongside the track so as to cooperate with the teeth 30a of the toothed wheels 30 when said wheels and projections are located in the same transverse plane. The projections 31 extend along the track at different distances from the medial plane of the track. A positioning mechanism 37 provides for the rotation of the shaft through only 60° at each engagement of a projection 31 with a wheel 30. Said mechanism 37 illustrated on a larger scale in FIG. 6 includes a wheel 8 provided with six teeth 38a and rigid with the shaft 29. A lever 39, of which one end is secured to a lateral wall 13c of the cab through a pivotal connection 39a while its other end carries a roller 40 subjected to the pressure of a spring 41, engages the teeth 38a through said roller 40. For each angular shifting, the roller passes over one tooth 38a. The force exerted by the spring prevents the roller from passing over more than one tooth 38a so that the shaft 29 turns only by 60°.

The auxiliary sustaining and guiding means 33 are advantageously located at those points where the movable part is to leave the track. Said means include posts 34 distributed on either side of the track and to which are secured two carrier members 35. The surfaces 35a of said carrier members facing away from the track 2 are subjected to the production of a fluid passing out of the nozzles 42 adapted to be closed by flap valves and fed with compressed fluid by containers distributed along the track and which may be the same as the above-mentioned containers 7 for instance. Said nozzles 42 are fed when-

ever a movable part is about to reach them. The surfaces 15b on the side of the movable member 15 facing the track 2 are adapted to cooperate with the surfaces 35a of the carrier member 35 with the interposition of compressed fluid cushions 43 defined by preferably yielding confining walls 44 secured to the carrier members 35 or to the surface 15b of the movable member 15.

The surfaces 35a slope with reference to a horizontal plane and form the two sides of a triangle with a horizontal line and thereby they ensure the correct positioning of the movable member 15. According to a modification, it is possible to resort to substantially vertical auxiliary guiding surfaces which are not illustrated.

The spacing between the carrier members 35 and the surface over which the movable part moves increases gradually with the progression of the movable part over the track in the direction of the arrow F.

The operation of the system disclosed is as follows:

As the movable part moves nearer the area where it is desired to shunt it onto another track, one of the toothed wheels 30 cooperates with the projection 31 located ahead of the auxiliary guiding and sustaining means and also at a predetermined distance from the medial vertical plane of the track, said distance corresponding to the actual position assumed by the wheel 30a. The containers 24 and 18 are then interconnected and the telescopic jacks 10 are actuated so as to shift the movable member 15 away from the wall 13b of the cab 1. The raised movable member 15 cooperates then with the carrier members 35. The movable member 1 is thus sustained and guided by the auxiliary means 33.

By reason of the speed assumed by the movable part 1 itself and/or of the action of the suitably directed jets of compressed fluid produced by the nozzles 42, said movable part progresses over the auxiliary means 33 and moves gradually off the track 2. It may be led by said means 33 either onto another track or else towards a parking area for instance. When the movable part is again associated with a track 2 for instance and passes off the auxiliary means 33, a projection 31 cooperates with a tooth of the wheel 30 so as to actuate the distributing valve 22 which connects then the container 18 with the exhaust pipe 23. Consequently, the movable member 15 moves back towards the upper wall 13b of the cab under the action of the springs 19 so as to return into its starting position.

In the case where the nozzles 42 cooperate in the progression of the movable part the surfaces 15b of the movable member on the movable part are provided with preferably streamlined blades which are not illustrated and which cooperate with the jets of fluid produced by said nozzles 42 so as to exert a propelling force on said movable member 15.

The location of the wheels 30 on the ends 29a of the shaft 29 is defined before the movable part starts in conformity with its running diagram. In order to increase the range of adjustment and taking into account the number of holes 27 and 28, it is possible to locate projections 31 and wheels 30 to either side of the movable part.

When no wheel is located in the same plane as a projection 31, the distributing valve 22 is not actuated and the movable member 15 remains in the position occupied at the start. Consequently either the movable member 1 continues progressing over the track 2 without making use of the auxiliary means 33 in the case where the movable member 15 is in its collapsed position at the start or else the movable part 1 makes use of all the auxiliary sustaining and guiding means 33 lying across its path if the movable member 15 is in its raised active position at the start.

FIGS. 7 to 14 illustrate a second embodiment of the invention. Said figures show a movable part 1 including a cab 59 adapted to move over a track 2 including a medial guiding up-standing web 3 and lateral carrying flanges 4. The movable member carrying the reference number 61 can be actuated by two mechanisms 51. Each mechanism 51 includes guiding members 52 of which the lower ends are secured to the lower wall 59c of the cab while their other ends carry a cover 53. A

chamber 54 or container A adapted to move inside the guiding members 52 includes two endless walls 54a and 54b which are advantageously cylindrical, the cylinder formed by the former wall having a larger diameter than that formed by the wall 54b. An annular bottom 55 closes the lower end of the interval between said cylinders while a piston 56 closes its other, upper end. The space extending between the two cylindrical walls 54a and 54b, the bottom 55 and the piston 56 define thus the container A. Inside the cylinder 54b, a piston 57 is subjected to the action of the spring 58 bearing on the lower wall 59c of the cab. Said piston 57 is adapted to move fluidtightly within the cylinder 54b. The surface of the piston 57 facing away from that subjected to the action of the spring 58 carries a cylindrical rod 60 passing through the piston 56, the bottom 53 and the upper wall 59b of the cab above which it extends outside the movable part. The passageway provided inside the piston 56 for the rod 60 encloses a fluidtight packing 56a. The free end 60a at the upper end of the rod 60 carries the movable member 61 through a preferably pivotal connection 63. Said movable member 61 is thus held fast by two rods 60 rigid with the two mechanisms 51 carried by the movable part.

The surface of the movable member 61 facing the track includes a central section 61a the lateral surfaces of which are substantially perpendicular to the surface 4 over which the movable part progresses and two lateral extensions 61b which are slightly sloping with reference to said surface.

The space separating the pistons 57 and 56 inside the cylinder 54b forms a container B the volume of which varies with the position of the piston 57. A pipe 63 connecting the two containers A and B passes fluidtightly through the cylindrical wall 54b in the vicinity of the piston 56, while the end of said pipe 63 opening into the container A lies adjacent the bottom 55. A nonreturn valve 64 inserted in the pipe 63 allows the fluid to pass out of the container A into the container B. A deformable bag 65 of a variable volume is inserted between the cover 53 of the guides 52 and the piston 56 so as to surround the rod 60 without touching the latter. This bag 65 forms a third container C.

A pipe 66 connects fluidtightly the containers C and A and includes a nonreturn valve 67 which allows the fluid to flow from the container C towards the container A. A yielding pipe 68 connects fluidtightly the containers C and B and is provided with a valve 69 fitted for instance on the wall 59c of the cab.

The opening of the valve 69 is controlled in the example illustrated by a blade wheel 70 which is set in motion by a jet of compressed fluid sent out by at least one nozzle 71 suitably fitted alongside the track and controlled by the movable part when it nears it the jet of fluid impinging into collecting means 72 carried by the movable part 1. The closing of the valve 69 is controlled by a stud 73 secured to the rod 60 and actuating during the shifting of said rod a lever 74 secured to the cab 59 and connected with the valve 69 by means of a linkage 75 and of a lever 50.

In the case of a movable member adapted to move indifferently in either direction and since the front section of the movable part is adapted to act as its rear section and reversely, it is possible to provide two nozzles 71 located to either side of the track 2 instead of only one.

Auxiliary sustaining and guiding means 76 incorporating carrier members 77 are advantageously located at those points where it is necessary to shunt the movable part off the track. The carrier members 77 are subjected to projection of fluid over their surfaces 77a and 77b by means of nozzles 78 adapted to be closed by flap valves and receiving compressed fluid passing out of containers distributed alongside the track.

The feeding of said nozzles is controlled by the nearing of the movable part. The surfaces 61a and 61b of the movable member 61 may under the action of the mechanism 51 cooperate with the surfaces 77a and 77b of the carrier members 77 through the agency of compressed fluid cushions 79 the preferably yielding confining walls 80 of which are carried by said members 77. The spacing between the carrier mem-

bers 77 and the track 2 varies as the movable part progresses over the track.

The operation of said arrangement is as follows:

When the movable part reaches the area where it is to engage a different track, the movable member 61 lies slightly above the wall 59b of the cab (FIG. 11). The container A encloses oil or the like liquid together with a preferably compressed gas such as nitrogen. The container B is entirely filled with liquid while the container C is empty, the bag 65 being flattened. The spring 58 is then compressed.

A nozzle 71 sends a jet of fluid onto the blades 70 so as to open the valve 69. The pressure of the gas and the thrust exerted by the spring 58 urges the liquid contained in the container B and part of that carried by the container A through the pipe 68 so as to fill completely the container C which was empty. The spring 58 expands and the movable member 61 moves away from the wall 59b of the cab (FIGS. 7 to 12). The stud 73 engages the lever 74 and the movable member 61 may then cooperate with the carrier member 77 and since the movable part is sustained and guided by the auxiliary means 76 it continues progressing by reason of the speed acquired by it and/or of the action of the compressed fluid jet produced by the nozzle 78 cooperating then with reacting members which are not illustrated, carried by the surfaces 61a and 61b of the movable member 61. The movable part moves thus gradually away from the surface over which it was moving that is off the track.

The weight of the cab exerted on the bag 65 through the agency of the piston 56 causes the container C to empty and to send the liquid contained in it into the container A through the pipe 66. The bag 65 is crushed and the cab moves slightly away from the movable member 61 and at the same time the stud 73 actuates the lever 74 and closes the valve 69 (FIG. 13).

The movable part cooperates only with those guiding members 76 corresponding to the track with which it is to be associated. When the movable part has reached said track, the auxiliary means 76 stop operating and release the movable member 61.

The gas contained in the container A and which is compressed by the liquid fed out of the container C acts against the pressure of the spring 58 and causes the movable member 61 to return towards the upper wall 59b of the movable part (FIG. 14). A part of the liquid carried by the container A enters the container B through the pipe 63 and fills it completely. The movable part continues progressing along the track onto which it has been shunted while the mechanism 61 is set again so as to be ready for a further change of track. The pipe 63 may include in addition to the valve 64 a further valve which is not illustrated and which may adjust the movement of the movable member 61 towards the wall 59b of the cab. Said valve may be controlled in its turn by nozzles such as 71 which would then not act on the blades 70.

FIGS. 8 to 10 illustrate an embodiment of the bladed wheel 70 controlling the operation of the valve 69 when subjected to the impact of a fluid jet passing out of the nozzle 71 the feeding of which with compressed fluid may be controlled by the approach of the movable part. Said FIGS. 8 to 10 show two shafts 85 and 86 which are interconnected by a speed-reducing gear 87 and are carried by a support 88. A bladed wheel 89 and positioning means 90 similar to the arrangement described with reference to FIG. 5 are rigid with the shaft 86 and provide for a rotation of the wheel 89 through an unvarying angle at each impulse. The positioning means 90 may as well be fitted on the shaft 86. In the body of the valve 69 there may rotate a bush 69a rigid with the end of the shaft 86 and inside which is provided a bent passageway 92 of which a section extends along the rotary axis while the other section is substantially perpendicular to said rotary axis. A channel 91a formed in the body of the valve 69 along the rotary axis thereof connects the end 68a of the pipe 68 with said bent passageway 92. A further channel 91b formed in the body of the valve in a direction substantially perpendicular to the ro-

tary axis may for a given angular position of the bush 69a connect the bent passageway 92 with the channel 91b opening into the end 68b of the pipe 68. A gear 93 controlled by a mechanism 94 housed within the cab allows the shaft 86 to turn under manual operation. The closing of the valve is controlled by the lever 50 which causes the bush 69a of the valve 69 to revolve in a direction opposed to the direction of rotation produced by the blade wheel 89.

The lever 50 and valve 69 (FIG. 10) cooperate through the agency of a catch system 49 which cannot drive the lever 50 when said valve 69 revolves under the action of the blade wheel 89.

The operation of the mechanism controlled by the blades 70 is as follows:

When the movable part starts, the valve 69 is positioned by the controlling mechanism 94 in a manner such that the valve is opened only after a number of angular movements, three for instance, produced by the passage of the movable part in front of three nozzles such as 71. The movable part passes first in front of the first two nozzles 71 located along the track without engaging the auxiliary sustaining and guiding means. When it reaches the third nozzle 31 the valve which turns for the third time connects the cooperating ends 68a and 68b of the pipe 68 which causes the movable member 61 to rise whereby the fluid carried inside the container A may pass into the container C. The movable part engages then the auxiliary means 76 and is led onto a different track.

FIG. 15 shows two tracks 2a and 2b including a medial upstanding guiding web 3 and transverse carrying flanges 4. Auxiliary sustaining and guiding means 76 with their carrier members 77 allow a movable part progressing along one of the tracks 2 the track 2a for instance to leave the latter and to engage the other track 2b. The carrier members 77 of the auxiliary means 76 extend in a direction leading gradually away from the surface over which the movable part progresses, so that the latter may leave the track 2a for instance and slow down. The auxiliary means 76 are then deflected away from the track so as to come nearer the track 2b, the carrier members 77 remaining at the same distance from the surface over which the movable part moves and then moving nearer the said surface so as to allow the movable part to engage the track 2b and resume speed.

FIGS. 16 and 17 illustrate a loading, unloading and parking area for the movable parts and allow the three types of operations to be performed on different sections of said area.

Said figures show two tracks 2a and 2b and four auxiliary sustaining and guiding means 76 with their carrier elements 77 receiving fluid jets from the nozzles 78, said auxiliary means 76 leading to a platform 81 carried above the tracks 2 by posts 34. The arrows drawn along the tracks 2 and the auxiliary means 76 show the direction along which the movable parts progress over said tracks and auxiliary means. It is apparent that there are two auxiliary means 76 leading to the platform 81 and passing off the corresponding tracks 2a and 2b while two further auxiliary means 76 starting from the platform 81 lead to the corresponding tracks 2a and 2b.

The platform 81 includes an area 81 receiving fluid from nozzles 82 fed with compressed fluid from containers which are not illustrated, said nozzles being closed by flap valves when required. The movable part may progress over said fluidized area 81a. An unloading platform 83a and a loading platform 83b carried by the main platform 81 are positioned along the area 81a. The auxiliary means 76 at the entrance are provided with safety arrangements 84 controlling the closing of the nozzles 78 or opposing their opening whenever a movable part moves over the corresponding track 2 in the vicinity of the platform 81. The nozzles 82 provided on the platform 81 in registry with the auxiliary means 76 are directed so as to brake or accelerate the movable parts according as to whether the auxiliary means 76 considered lead to the platform 81 or away from said platform.

On the other hand, all the nozzles 82 on the platform 81 are directed so as to drive the movable part transversely in the direction of the arrow F OF FIG. 17.

The operation of said arrangement is as follows:

A movable part passing over the track 2a for instance engages an auxiliary means at the entrance side and stops when it reaches the platform 81 alongside the platform 83a.

The movable part held thus in position along the platform 83a throughout the duration of its unloading is then released and is directed along the arrow F towards the platform 83b where it is loaded. When the loading has been performed, the movable part engages auxiliary means 76 leaving the platform so that said movable part passes off the platform 81 and may engage again for instance the track 2a which it had left previously, the safety system 84 preventing such a movement away from the platform 81 if another movable part is already moving over the track 2a. The movable part leaving the platform 83a after unloading may, if required be parked in the central section 81a of the area 81 through means which are not illustrated so as to allow for instance other movable already parked parts to move towards the tracks 2a or 2b.

FIG. 18 is a perspective view of a movable part 1 engaging a track 2 and reaching the auxiliary sustaining and guiding means.

The whole system disclosed in accordance with the invention requires no driver within the cab of the movable part. It is however possible to provide for a manual control such as that illustrated at 94 of the jacks or the like means acting on the movable member during the progression of the movable part, in which case the driver selects directly those auxiliary sustaining and guiding means which the movable part is to engage. This possibility of resorting to a driver is a safety factor. Similarly, the compressed fluid cushions for guiding and/or sustaining the movable part may be fed from compressed fluid supplies carried by the actual movable part.

What I claim is:

1. A tracked fluid cushion transportation system of the kind comprising:

a ground effect machine, and

a main continuous track having an operative track surface designed for bearing said machine against downward displacement thereof and for guiding the same against sidewise displacement thereof while allowing unrestricted displacement of said machine both longitudinally of and upward from said track, said track being of the fluidic type comprising a multiplicity of elemental nozzles distributed on said operative track surface, and machine proximity responsive valve means controlling said nozzles, said valve means being biased to an obturating rest position and moving to an opening work position in response to proximity of said machine, wherein the improvement comprises:

an auxiliary track section spaced from said main track and having an end portion extending in the same general direction as an adjacent portion of said main track, said auxiliary track section being, likewise to said main track, of fluidic type and designed for bearing said machine, and a controllable auxiliary flanged structure fitted on said machine and designed for alternatively supporting the same, said auxiliary structure being adjustable to a retracted position wherein it clears said auxiliary track end portion as said machine moves over said main track adjacent portion and to an extended position wherein it engages said auxiliary track end portion in fluid cushion relationship therewith as said machine moves over said main track adjacent portion, whereby machine bearing strain is transferred from said main track to said auxiliary track section.

2. A transportation system as claimed in claim 1, wherein said auxiliary structure is in the shape of a T including a depending leg and an overtopping generally horizontal flange which is adapted to overlap said auxiliary track section when in said extended position, and wherein said auxiliary track section comprises a continuous longitudinally extending slot for the free passage of said depending leg.

3. A transportation system as claimed in claim 2, wherein said T-shaped auxiliary structure is adjustable to a lowered

retracted position wherein said flange lies below said auxiliary track end portion, and to a raised extended position wherein said flange lies above said auxiliary track end portion.

4. A transportation system as claimed in claim 3, wherein said T-shaped auxiliary structure is slidably mounted on said machine for substantially vertical displacement.

5. A transportation system as claimed in claim 1, further comprising a fluid actuated jack operatively connected to said auxiliary structure to adjust the position thereof, and a rotary valve controlling said jack.

6. A transportation system as claimed in claim 5, further comprising jet means positioned on said main track ahead of said adjacent portion thereof, and turbine means on said machine actuatable by said jet means as said machine passes by the same, said rotary valve being under the control of said turbine means.

7. A transportation system as claimed in claim 5, further comprising spigot means positioned on said main track ahead

of said adjacent portion thereof, and means on said machine for selectively sensing said spigot means as said machine passes by the same, said rotary valve being under the control of said sensing means.

8. A transportation system as claimed in claim 7, wherein said spigot means comprise a toothlike member, and said sensing means comprise a toothed gear positionable to engage said member.

9. A transportation system as claimed in claim 8, further comprising a pawl means for angularly locating said toothed gear.

10. A transportation system as claimed in claim 1, wherein said main track has an inverted T-shaped cross section with a guide upright.

11. A transportation system as claimed in claim 1, wherein said auxiliary track section has a truncated V-shaped cross section with branches of wide angular aperture.

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