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(54) **Device for hose handling at a fuel delivery unit**

(57) A column for a fuel pump unit, comprising at least a hose storage space (6) in the column, a hose (5) whose one end is fixed in the hose storage space (6), an opening of the hose storage space (6), through which opening it is possible to pull out the hose (5), and a hose returning means which is adapted to return the hose (5)

to the hose storage space (6). The hose returning means comprises a movable control means (11; 20), through which the hose (5) runs, said control means (11; 20) applying on the hose (5) a force acting towards the hose storage space (6). The control means (11; 20) is adapted to provide support to the hose essentially along the entire circumference of the hose.

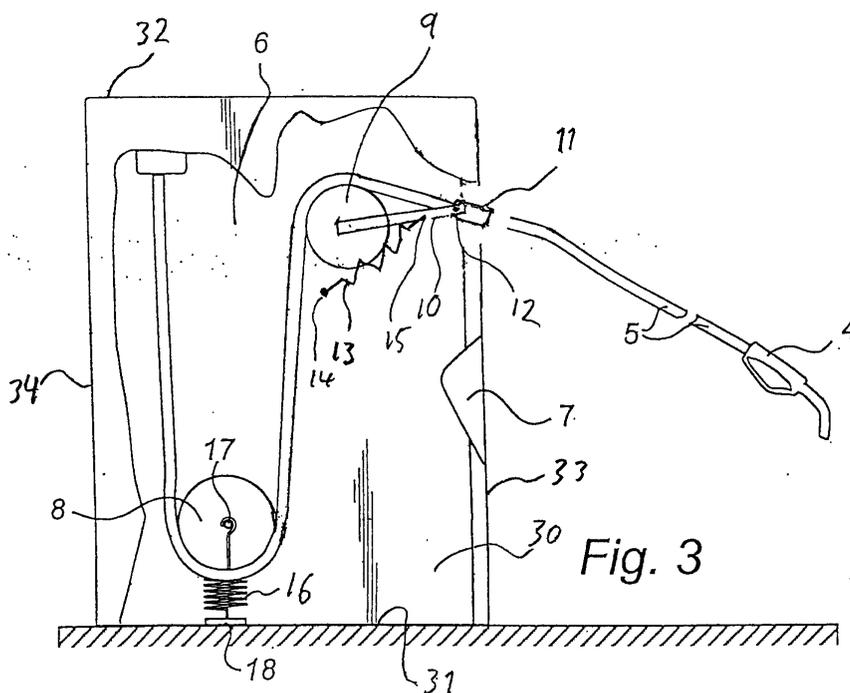


Fig. 3

## Description

### Technical Field of the Invention

**[0001]** The present invention relates to a column for handling a hose for a fuel pump unit.

### Background Art

**[0002]** A fuel pump typically comprises a pump part standing on the ground, a display part positioned above the pump part and showing the chosen type of petrol, cash readout, volume readout etc, and a column to which one or more petrol hoses are connected.

**[0003]** When the tank of a vehicle is to be filled up, the driver parks the vehicle beside the petrol pump and opens the cover or cap of the vehicle's petrol tank. Then the driver selects the desired type of petrol and places the pump nozzle mounted at the end of the hose in the inlet of the vehicle's petrol tank and puts in the desired volume of petrol.

**[0004]** In some types of payment procedures, it is necessary to pay before filling-up can be started. For instance, charge card payment must in most cases be initiated by means of a card and code in an associated terminal before the pump is activated.

**[0005]** A difficulty that may arise in connection with filling-up is that the hose does not reach to the vehicle if parked a distance from the petrol pump. The reason why the vehicle has not been parked sufficiently close to the pump may be difficulty in manoeuvring owing to a limited space round the petrol pump. It may also happen that the vehicle is first parked at a terminal for charge card payment and that the driver then realises that he cannot pay with a card. In such cases the hose is usually not long enough and the driver must move the vehicle once more, which is time-consuming, so that it stands close to the petrol pump. To allow the hose to reach to the vehicle, it is usually necessary for the driver to park his vehicle so that the side of the vehicle where the filler cap is positioned faces the petrol pump. It is not always known to a driver of an unfamiliar vehicle whether the filler cap is positioned on the left or right side. This may result in the driver by mistake parking the vehicle on the wrong side of the pump and thus not being able to fill up the tank without moving the vehicle to the other side of the petrol pump since the hose does not reach all the way round the vehicle.

**[0006]** One way of facilitating access to the petrol pump is to provide it with a longer hose. This may, however, cause problems since a longer hose may tend to land on the ground when not used and thus get stuck in or be damaged by passing cars or other vehicles. To prevent this, the column may be provided with some kind of returning mechanism for the hose.

**[0007]** A fuel pump with a returning mechanism for the hose is disclosed in Australian Patent 505071. In said patent, the hose is fixed to a vertically arranged flexible

spring which is arranged vertically from the upper side of the fuel pump. The hose extends from the fuel pump up to the mounting in the vertically arranged flexible spring and then to the nozzle with which the tank of the vehicle is filled with fuel. Such a returning mechanism prevents the hose from landing on the ground. However, the extra hose length that can be used is limited to the outward bending of the spring. Moreover there is a risk that something may get stuck in the hose hanging from the fuel pump up to the mounting in the spring. Besides it is difficult to arrange several hoses adjacent to each other since they will get tangled. Nowadays the most common solution is therefore to arrange the hose in a column in which the hose can be stored when not in use.

**[0008]** A fuel pump with automatic return of the hose to the column is disclosed in EP-A1-0 379 742. In this prior-art construction, the hose extends in the column round a number of stationary small rolls and round a spring-loaded wheel which is vertically movable. The hose is fixed to the ceiling of the column at the rear side and is passed along the rear side down and round the wheel. From the wheel the hose is passed upwards at the front side to the rolls and then over the rolls to the rear side of the column. The hose is hanging freely down from the rolls and has thus been made to extend one turn in the column.

**[0009]** The spring load causes the hose to be pulled into the column after use, but also acts in a counteracting manner when pulling out the hose. The counteracting effect gives the drawback that it will be heavy work to pull out the hose, and it is therefore common that a driver does not utilise the advantages of a longer hose in terms of parking the vehicle further away from or on an optional side of the petrol pump. If the spring load is reduced for the purpose of reducing the counteracting force, the hose will not be pulled in just as efficiently and risks remaining outside the column after use.

**[0010]** A further example of such a construction is disclosed in EP-B1-0 255 979, which however also suffers from the above drawbacks as to returning action and counteracting force.

**[0011]** One more example of a similar construction is disclosed in NL-A-8 403 718. As is evident from the drawings of this publication, the construction comprises a vertically movable, spring-loaded wheel and a fixedly mounted wheel round which wheels the hose extends inside the column. The hose is fixed to the ceiling of the column and is passed along the rear side of the column down and round the movable wheel. From there the hose is passed up along the front side to the fixedly mounted wheel and then over the fixedly mounted wheel to the rear side of the column. The hose is hanging freely down from the fixedly mounted wheel and has thus been made to extend one turn in the column. Similar to the above constructions, also this one suffers from corresponding problems as to returning action and counteracting force.

**[0012]** An additional example of returning mechanism

is disclosed in PCT Application WO 00/15542. A problem of this returning mechanism is that the hose exits close to the ground, which means that the hose may easily be dragging on the ground. Besides, pulling out such a hose is a sluggish operation while at the same time the available hose length is small relative to the volume of the hose storage space.

**[0013]** A problem of all the hose-returning mechanisms described, in which the hose is returned by rolling in some way, is that the hose can be difficult to pull out at certain angles in relation to the fuel pump. As a result, it will be necessary to pull out and return the hose at a certain angle in relation to the fuel pump. Another problem is that they are relatively complicated and thus expensive.

**[0014]** There is thus a need for a device that allows pulling-out and returning of the hose largely independent of the angle of the hose in relation to the column.

#### Summary of the Invention

**[0015]** An object of the present invention is to provide a column intended for a fuel pump assembly, which column has a hose returning mechanism which is cheap and allows sufficient elongation of the hose part which is outside the column when pulling out the hose.

**[0016]** A further object of the present invention is to provide a column with a hose returning mechanism that allows pulling-out and returning of the hose largely independent of the angle in relation to the column.

**[0017]** Another object of the present invention is to provide an uncomplicated and inexpensive column with a hose returning mechanism.

**[0018]** It is also an object of the invention to provide a column from which the hose exits high above the ground, which makes it possible to pass the hose over a vehicle to the inlet of its petrol tank if this is directed away from the column.

**[0019]** The present invention aims at achieving at least one of these objects.

**[0020]** At least one of these objects is achieved with a column according to the invention, which has the features defined in the independent claim. Preferred embodiments are defined in the dependent claims.

**[0021]** A column for a fuel pump unit comprises according to the invention at least a hose storage space in the column, a hose whose one end is fixed in the hose storage space, an opening of the hose storage space, through which opening it is possible to pull out the hose, and a hose returning means which is adapted to return the hose to the hose storage space. A column according to the invention is characterised in that the hose returning means comprises a movable control means through which the hose runs, said control means applying on the hose a force acting towards the hose storage space, and said control means being adapted to provide support to the hose essentially along the entire circumference of the hose.

**[0022]** Such a column allows easy handling of the hose while at the same time it can be manufactured in a relatively uncomplicated manner. When a user pulls out the hose from such a column, the hose will be straightened out and thus give the user a greater range of operation from the column. By the hose running through the control means, which is adapted to provide support to the hose essentially along the entire circumference of the hose, it will be possible to pull out the hose at an essentially optional angle relative to the symmetry axis of the hose adjacent to the control means.

**[0023]** There are several ways of arranging a suitable control means according to the invention.

**[0024]** In a column according to an embodiment of the invention, the control means is pivotable at least about a pivot axis which is essentially perpendicular to the longitudinal axis of the hose. This makes it possible to turn the control means relative to the column as the direction in which the hose is pulled out changes.

**[0025]** It is in some cases desirable to have a sequentially operating hose returning means. In such a column it is desirable for the path of the hose outside the hose storage space to be elongated further in addition to the shortening that is provided by the straightening of the hose. According to one embodiment of the invention, the hose returning means also comprises an arm which at a first end is pivotally arranged in the hose storage space, the control means being pivotally suspended from the other end of the arm and a spring element being arranged to act on the control means and the arm towards the hose storage space. In such a column it is relatively easy to arrange a deflecting roller over which the hose is capable of running.

**[0026]** According to one embodiment of the invention, the hose is therefore adapted to run over at least a first deflecting roller which is mounted in the hose storage space. It is then possible to easily arrange the column so that the hose extends in a loop of a variable length.

**[0027]** It is advantageous to arrange the roller on the same pivot pin as the first end of the arm since it will then not be necessary to have a plurality of pivot pins. As a result, the column will be easier and less expensive to manufacture.

**[0028]** According to one embodiment of the present invention, the hose returning means also comprises a spring element which at one end is fixed to the control means and at its other end is controlled in a control point in the wall of the hose storage space which is opposite to the opening of the hose storage space. The spring element acts on the control means towards the control point.

**[0029]** By pulling the control means towards the control point using a spring element, it is possible to let the control means be pivotable about any pivot axis.

**[0030]** According to one embodiment of the invention, the hose storage space is defined by two side walls, a base, a ceiling, a front wall, in which the opening is formed, and a rear wall opposite to the front wall. The

hose is fixed to the ceiling closer to the opening in the front wall than to the rear wall.

**[0031]** By having the fixing point closer to the opening than to the rear wall, it will be relatively easy to shorten the range of the hose merely by returning the hose in a loop which extends backwards to the rear wall of the hose storage space.

**[0032]** By arranging, according to an embodiment of the invention, the control point in the rear wall, a maximal shortening of the loop is obtained.

**[0033]** According to one embodiment, the spring element is fixed at a fixing point which coincides with the control point.

**[0034]** However, if the spring element is fixed at a fixing point at a distance from the control point, the advantage will be obtained that the control means is allowed to be moved a longer distance than in the preceding case when the same amount of force is applied to the control means. By having the control point and the fixing point separated, it is thus possible to vary the length of the spring element without varying the distance between the control point and the control means.

**[0035]** According to an embodiment of the invention, the control means consists of a ring or sleeve. It is relatively easy and uncomplicated to make a ring or sleeve which at the same time is sufficient to control the hose in all directions. The axial length of the ring or sleeve can be varied optionally.

**[0036]** It is, of course, desirable that the friction between the ring and the hose be low, which is achieved, for instance, if the ring is made of plastic. Examples of usable plastics are Teflon (PTFE), nylon and polyethylene. It goes without saying that the ring can be made of some other material as long as low friction between the ring and the hose is provided.

**[0037]** According to an alternative embodiment, the control means consists of a plurality of rollers on which the hose is guided when it runs through the control means independent of the angling direction of the hose in relation to the longitudinal axis of the hose adjacent to the control means. This is a considerably more complicated solution but has the advantage that the friction between hose and control means can be made lower.

**[0038]** According to an embodiment of the present invention, a hose returning means is arranged in addition to the control means, which hose returning means operates sequentially with the control means. For instance, the second deflecting roller is arranged to be spring-loaded.

**[0039]** Of course, the above features can be combined in the same embodiment.

**[0040]** The invention will now be described in more detail with reference to the accompanying schematic drawings which by way of example illustrate embodiments of the invention. The same reference numerals have been used for equivalent components in the different drawings.

## Brief Description of the Drawings

### **[0041]**

- 5 Fig. 1 is a front view of a fuel pump assembly.  
 Fig. 2 is a side view of the interior of a hose storage space according to an embodiment of the invention.  
 Fig. 3 and Fig. 4 correspond to Fig. 2, but illustrate other positions of the hose.  
 10 Figs 5 and 6 illustrate correspondingly the interior of the hose storage space for a different embodiment of the invention.  
 Fig. 7 is a cross-sectional view of a control means according to an alternative embodiment of the invention.  
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## Detailed Description of the Preferred Embodiment

- [0042]** As is evident from Fig. 1, the main components of the fuel pump assembly are a column 1, a pump housing 2 and a display unit 3. The fuel pump assembly is connected to an underground fuel container (not shown). When filling up the tank of a vehicle, the fuel is pumped from the underground container by means of a pump P which is located in the pump housing 2, and from there to the column 1 and out to a nozzle 4 via a hose in the form of a fuel hose 5. When filling-up does not take place, the fuel hose 5 is accommodated in a hose storage space 6 and the nozzle 4 is inserted in a nozzle boot 7.  
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- [0043]** As is evident from Fig. 2, the fuel hose 5 is connected to the fuel piping of the fuel pump assembly in the upper and, relative to the user, rear portion of the hose storage space 6. The fuel hose 5 extends from a first deflecting roller 9 to the nozzle boot 7 after being passed downwards round a second deflecting roller 8 which is positioned in the lower and, relative to the user, rear portion of the hose storage space 6. From the second deflecting roller 8, the fuel hose 5 is passed upwards in the hose storage space 6 and supported by the first deflecting roller 9 which is located in the upper and, relative to the user, front portion of the hose storage space 6. From the first deflecting roller 9, the fuel hose 5 is hanging down in a bend and deflects upwards once more since the nozzle 4 arranged at the end of the fuel hose 5 is inserted into the nozzle boot 7 which is positioned approximately in the middle of the column 1 in the vertical direction and at the side of the column 1 which is the front side relative to the user. An arm 10 is at a first end pivotable about an axis which is shared with the first deflecting roller 9. At the other end of the arm, a control means in the form of a sleeve 11, through which the hose 5 can run, is pivotally arranged on a pivot axis 12. The arm 10 is spring-loaded by means of a spring element 13, which acts on the arm which in turn acts on the sleeve 11 and the hose 5 towards the storage space 6. The second deflecting roller 8 is spring loaded and adapted to be moved in the vertical direction when  
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pulling out and returning the fuel hose 5. The movement and function of these two components will now be described in more detail.

**[0044]** When a user intends to use the fuel pump assembly, he removes the nozzle 4 from the boot 7 and pulls the fuel hose 5 outwards. In this operation, the sleeve 11 will be pivoted about its axis 12 towards the user since the fuel hose 5 will abut against the first deflecting roller 9 and pull the sleeve 11 outwards. The hose length obtained in this operation is the length that was positioned in the downward loop from the first deflecting roller 9 to the nozzle 4.

**[0045]** To return the hose 5, the arm 10 is, as mentioned above, provided with a spring 13 which is adapted to return the arm 10 and the sleeve 11 mounted thereon and, thus, the hose 5 to its initial position (see Fig. 2) after use. The spring 13 is a tension spring whose one end is fixed at a fixing point 14 in the interior of the hose storage space 6 and whose other end is fixed at a fixing point 15 which is positioned on the arm 10 between the sleeve 11 and the common pivot axis of the first deflecting roller 9 and the arm 10. When pivoting the arm 10 upwards, the perpendicular distance between the pivot axis 12 and the power line of the spring 13, i.e. the moment lever, will be shortened. The spring 13 stores the energy that is necessary for pulling out the hose 5 in the form of potential energy. By selecting the suitable relative positions of the fixing points 14 and 15 in relation to the pivot axis 12, and also selecting the spring constant of the spring 13, it is possible to achieve solutions where the hose returning force is optimised as regards return of the hose 5 and the required pulling-out force is optimised as regards user-friendliness. For instance, in the positions where the user has the least favourable working position, it may be ensured that the counteracting force exerted by the return spring 13 is as small as possible, while it may be ensured that the returning force is as great as possible in the last part of the return movement to ensure that the hose 5 is returned into the hose storage space 6.

**[0046]** When the hose 5 has been pulled out to the position shown in Fig. 3, further pulling out of the hose 5 will make the roller 8 move essentially vertically upwards as illustrated in Fig. 4. In this vertical movement of the roller 8, an additional hose length is obtained, which can be used to pull the hose to a slightly incorrectly parked vehicle or round a vehicle to the other side to reach the tank connection of the vehicle. The roller 8 is connected to a spring 16 which is stretched when pulling out the hose 5. The spring 16 which is a tension spring is connected at one end to a fixing point 17 which accompanies the roller 8 and at the other end to a fixing point 18 which is fixed relative to the hose storage space 6. The spring 16 stores the work that is necessary to pull out the hose 5 in the form of potential energy. Since the vertical movement of the roller 8 in cooperation with the movement of the arm 10 straightens out the hose 5, a great hose length is obtained relative to the work that is

necessary to pull out the same.

**[0047]** The manner in which the fuel pump assembly is intended to be used will now be described. The driver who intends to fill up the tank of his vehicle drives to the side of the fuel pump assembly. The driver then chooses the type of fuel and removes the nozzle 4 from the boot 7. When pulling out the hose 5, first the arm 10 will be pivoted towards the user. In this pivoting motion, the spring 13 will store the work that is required in the form of potential energy. If the nozzle 4 reaches the tank connection of the vehicle, the filling-up is started. If the vehicle is parked so that the nozzle 4 does not reach the tank connection of the vehicle, the driver will pull the hose 5 further, and as a result the arm 10 will possibly be pivoted further, but above all the roller 8 will be moved vertically upwards. Also in this case, the spring 16 will store the work that is required in the form of potential energy. When the filling-up is completed, the driver will remove the nozzle 4 from the tank connection of the vehicle and let the hose move back as first the spring 16 of the roller 8 and then the spring 13 of the arm 10 return the hose 5 to the hose storage space 6. Owing to this sequential effect between the arm 10 and the roller 8 both when pulling out and returning the hose 5, it is possible to optimise the return function while at the same time the construction can be made very user-friendly.

**[0048]** Figs 5 and 6 show a different embodiment of the present invention. The embodiment as shown in Fig. 5 and Fig. 6 is simpler and less expensive than the embodiment first described. As is evident from Fig. 5, the fuel hose 5 is connected to the fuel piping of the fuel pump assembly at the upper, and in relation to the user, front portion of the hose storage space 6. The hose 5 is passed downwards through a control means in the form of a sleeve 20 which is connected to a spring element 21 which extends via a control point 22, which is arranged on the rear wall of the hose storage space, up to a fixing point 23. After the sleeve 20, the hose extends in a loop downwards and further up to a nozzle 4 which is arranged at the end of the hose and which is inserted in the boot 7 on the front side of the column. The spring element 21 acts with a spring force on the sleeve 20 inwards to the control point 22. By the spring element 21 extending from the control point 22 further to a fixing point 23 at a distance from the control point 22, it is possible to vary the spring force by varying said distance, in addition to changing the spring constant of the spring element 21.

**[0049]** When a user is to fill up the tank of his vehicle using the nozzle 4, he removes the nozzle from the boot 7 and pulls the hose 5. When the user pulls out the hose, the spring element 21 will be stretched while at the same time the hose 5 runs through the sleeve 20 so that the sleeve 20 comes closer to the mounting of the hose 5 in the ceiling. By allowing the hose 5 to run through the sleeve 20, the total hose length which is allowed to be outside the column will be available by applying a considerably smaller force than in the case of the hose be-

ing directly fixed to the spring element since the point in the hose where the spring element 21 is fixed would then have to be moved a longer distance than the sleeve 20 has to be moved in a column according to the invention.

[0050] The force acting on the hose can be varied in one or more of the following ways. The length of the spring element can be varied, its spring constant can be selected, the location of the control point can be varied, and the distance between the control point 22 and the fixing point 23 can be varied. A person skilled in the art will easily arrive at the correct parameters by a few simple tests as the invention has now been presented.

[0051] According to one embodiment, the sleeve 20 is made of plastic, but of course it is possible to use some other material, such as a metal. The essential thing is that the friction between the hose 5 and the sleeve 20 is sufficiently low for the hose 5 to run easily through the sleeve 20. For example, the sleeve 20 is made of Teflon, nylon, polyethylene, brass or steel, but it can also be made of some other material. A person skilled in the art will find a suitable material in the light of the above description of the invention.

[0052] It will be appreciated that many modifications of the embodiment described are feasible within the scope of the invention which is defined in the appended claims.

[0053] For instance, the suspension of the sleeve from an arm according to Figs 1-4 can be combined with the hose running merely through the sleeve, according to the embodiment in Figs 5 and 6, without passing a deflecting roller.

[0054] Correspondingly, the suspension of the sleeve from a spring element according to the embodiment in Figs 5 and 6 can be combined with the use of two deflecting rollers according to the embodiment in Figs 2-4, for sequential pulling-out of the hose.

[0055] Moreover, for instance the tension springs can be replaced with an optional spring or another element having the corresponding function, such as some kind of coil-spring-loaded fairlead, rubber band or the like. The springs can also be replaced with a weight. In most cases, a weight requires somewhat more space but, on the other hand, results in the same counteracting load during the entire pulling-out of the hose.

[0056] According to an alternative embodiment, one and the same spring is used to return both the arm and the first deflecting roller. In this case, the sequential effect can be obtained, for example, by the arm and the roller being connected to the spring with a different degree of extension of the spring. The arm can, for instance, be secured to one end of the spring while the roller is secured to the spring by means of a hook which is arranged on the spring and engages the roller after the spring has been stretched by a certain length.

[0057] The hose storage space can be a more or less open space instead of the shown space which is relatively closed. The important thing is that the hose is returned to a position where it cannot be touched by pass-

ing vehicles or the like.

[0058] The sleeve can be replaced with some other construction such as a plurality of supporting rollers as shown in Fig. 7. Fig. 7 is a cross-sectional view of how the hose 5 runs through the control means with a plurality of supporting rollers 24.

[0059] An advantage of the embodiments according to the invention is that the hose 5 exits high above the ground and thus can be passed over a vehicle so that the nozzle 4 reaches the tank connection of the vehicle also when the vehicle is parked so that the tank connection faces away from the column.

[0060] Moreover the constructions described allow that a very large part of the hose 5 can easily be pulled out of the column and be made available to the user.

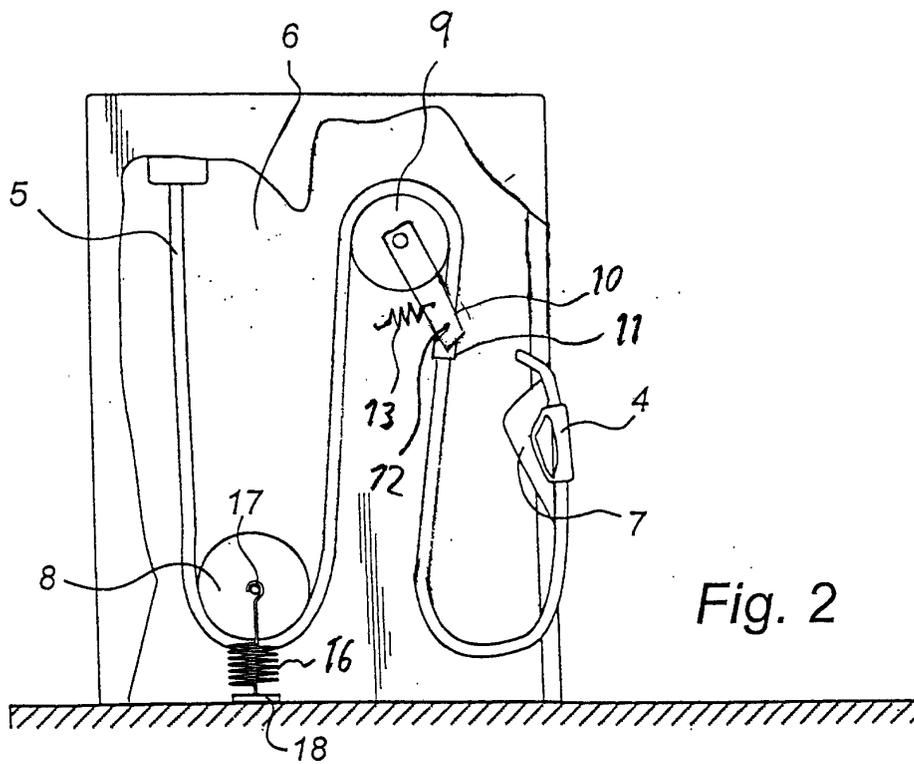
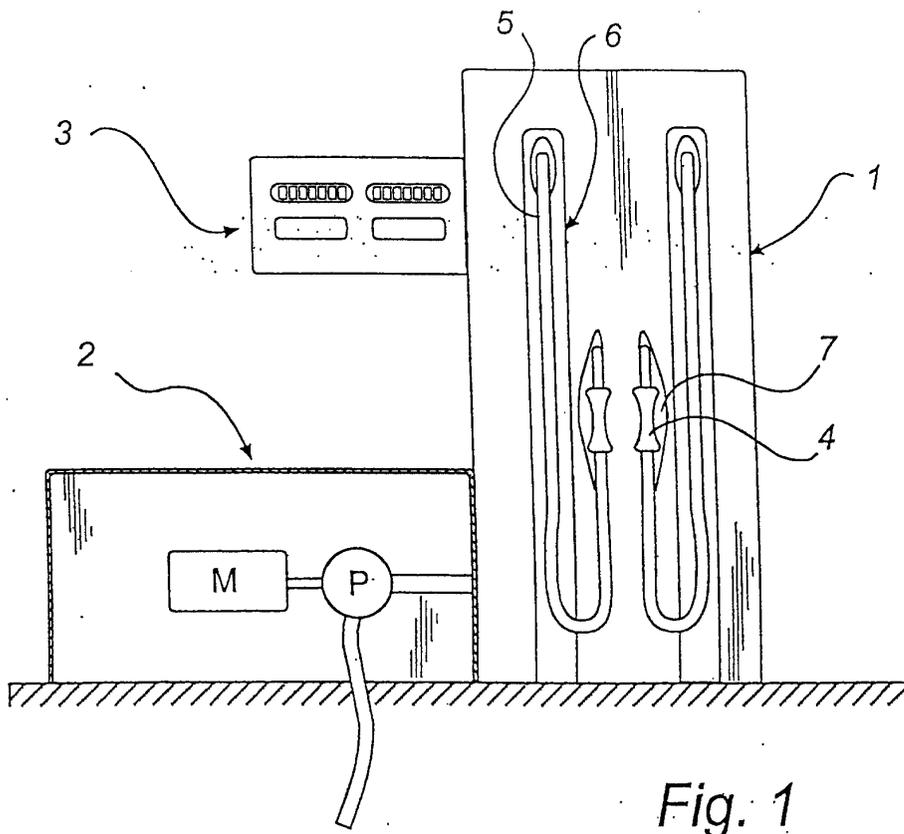
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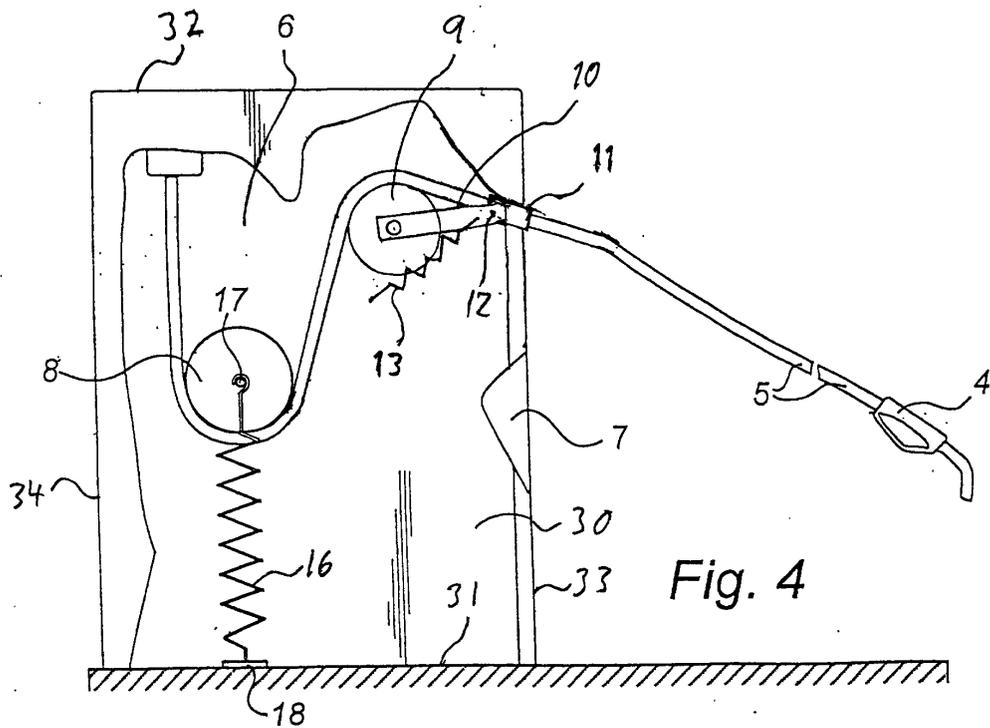
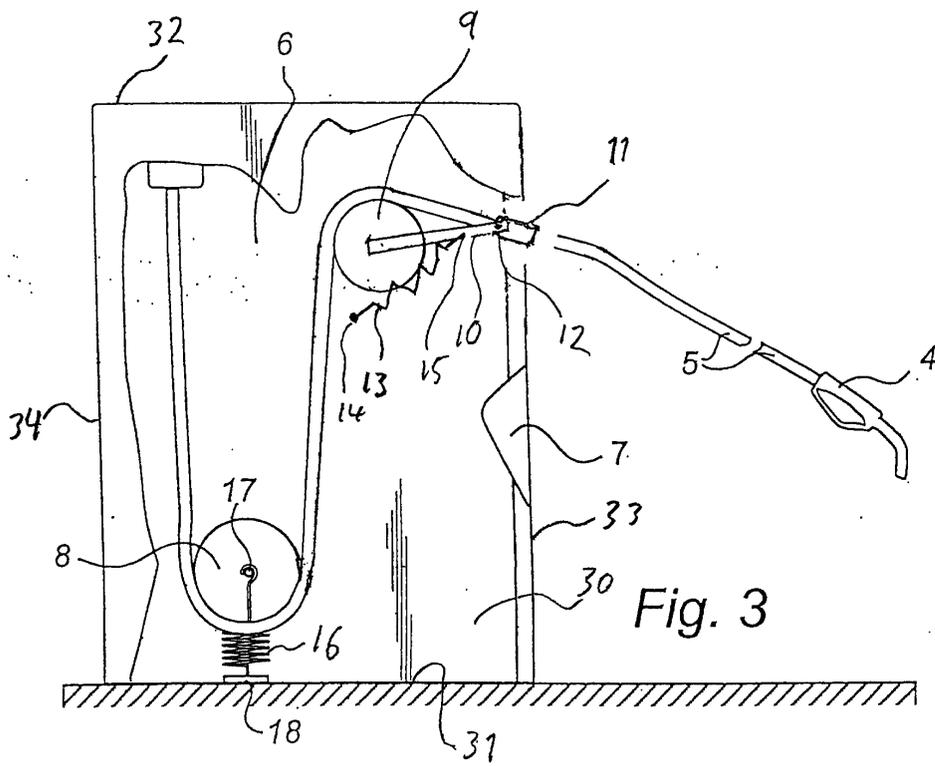
1. A column for a fuel pump unit, said column comprising at least
  - a hose storage space (6) in the column,
  - a hose (5) whose one end is fixed in the hose storage space (6),
  - an opening of the hose storage space (6), through which opening it is possible to pull out the hose (5), and
  - a hose returning means which is adapted to return the hose (5) to the hose storage space (6), **characterised in that** the hose returning means comprises a movable control means (11; 20) through which the hose (5) runs, said control means (11; 20) applying on the hose (5) a force acting towards the hose storage space (6), and said control means (11; 20) being adapted to provide support to the hose essentially along the entire circumference of the hose.
2. A column as claimed in claim 1, in which the control means (11; 20) is pivotable at least about a pivot axis which is essentially perpendicular to the longitudinal axis of the hose.
3. A column as claimed in claim 1 or 2, in which the hose returning means also comprises an arm (10) which at a first end is pivotally arranged in the hose storage space (6), the control means (11; 20) being pivotally suspended from the other end of the arm and a spring element (13) being adapted to act on the arm (10) and the control means (11; 20) towards the hose storage space (6).
4. A column as claimed in claim 3, in which the hose (5) is adapted to run over at least a first deflecting roller (9) which is mounted in the hose storage space (6).
5. A column as claimed in claim 4, in which the first

deflecting roller (9) is mounted on the same pivot pin as the first end of the arm (10).

6. A column as claimed in claim 1 or 2, in which the hose returning means also comprises a spring element (13) which at one end is fixed to the control means (11; 20) and at its other end is controlled in a control point (22) in the wall of the hose storage space (6) which is opposite to the opening of the hose storage space, the spring element acting on the control means (11; 20) towards the control point. 5  
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7. A column as claimed in claim 6, in which the hose storage space is defined by two side walls (30), a base (31), a ceiling (32), a front wall (33), in which the opening is formed, and a rear wall (34) opposite to the front wall (33), the hose (5) being fixed to the ceiling (32) closer to the opening than to the rear wall. 15  
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8. A column as claimed in claim 7, in which the control point (22) is arranged in the rear wall (34).
9. A column as claimed in claim 6, 7 or 8, in which the spring element (21) is fixed at a fixing point (23) which coincides with the control point (22). 25
10. A column as claimed in claim 6, 7 or 8, in which the spring element (21) is fixed at a fixing point (23) at a distance from the control point. 30
11. A column as claimed in any one of the preceding claims, in which the control means (11; 20) is a ring.
12. A column as claimed in claim 8, in which the ring is made of plastic. 35
13. A column as claimed in any one of claims 1-10, in which the control means (35) consists of a plurality of rollers (24) on which the hose (5) is guided when it runs through the control means independent of the angling direction of the hose in relation to the longitudinal axis of the hose adjacent to the control means (35). 40  
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14. A column as claimed in any one of the preceding claims, in which a second hose returning means (16, 17, 18) is arranged, which operates sequentially with the control means. 50

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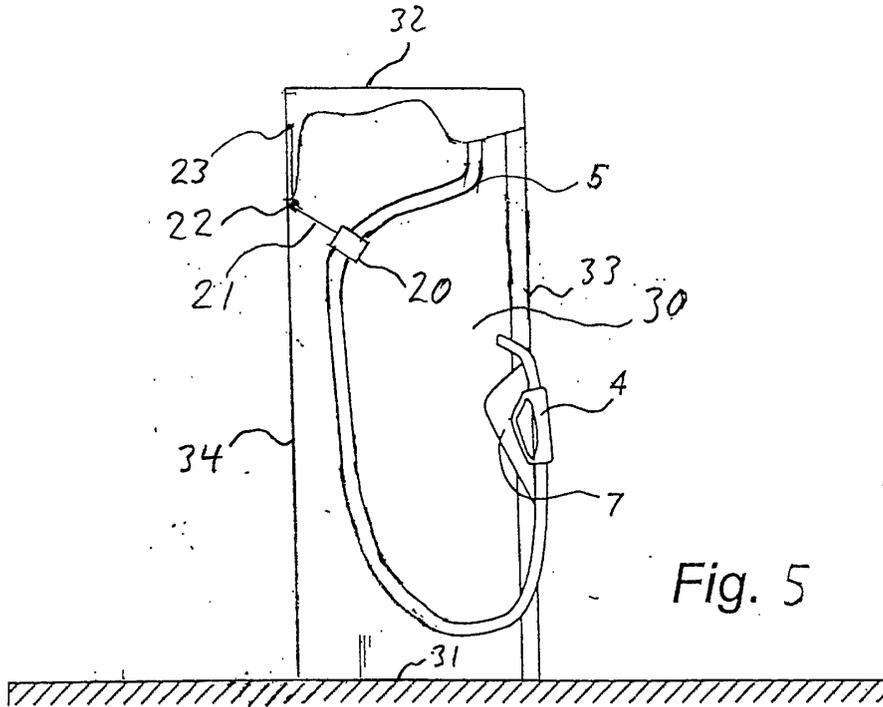


Fig. 5

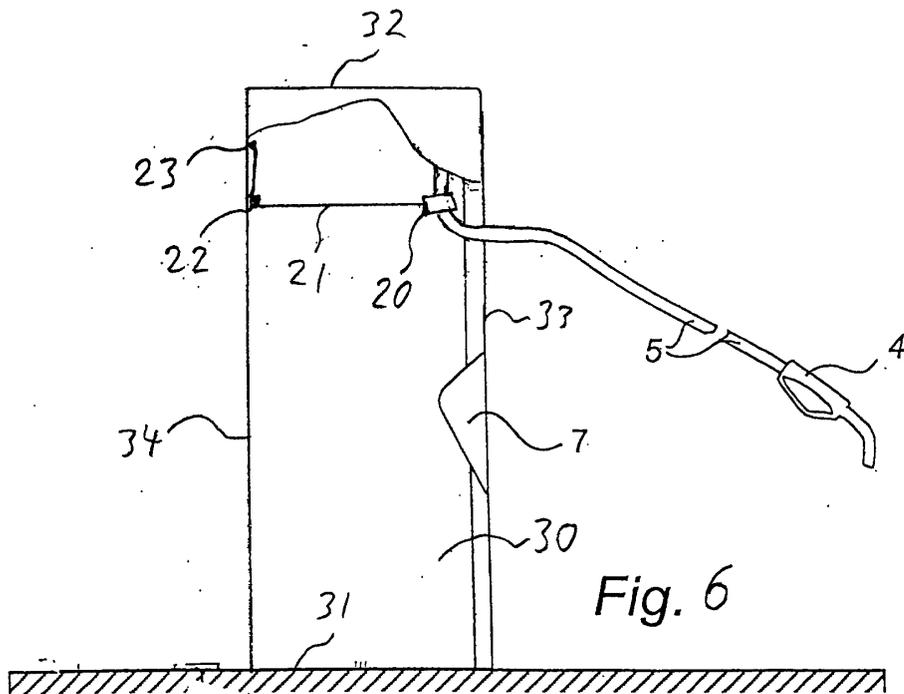


Fig. 6

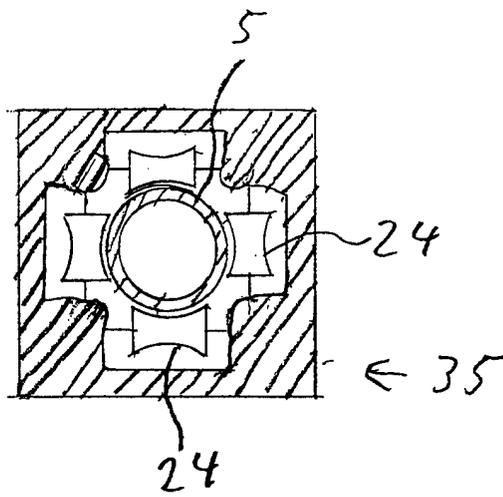


Fig 7



European Patent  
Office

EUROPEAN SEARCH REPORT

Application Number  
EP 03 44 5015

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	DE 198 41 819 A (DRESSER EUROPE SA) 16 March 2000 (2000-03-16) * the whole document *	1,2,6,7, 11,13	B67D5/365
X	DE 297 11 594 U (SCHWARTE WERK GMBH) 4 September 1997 (1997-09-04) * page 3, line 18 - line 28; figure 1 *	1,2,6,7, 9,11,13	
X	DE 10 14 452 B (GILBERT & BARKER MFG CO) 22 August 1957 (1957-08-22) * column 3, line 1 - line 47; figures 1,3,7,8 *	1,2,6,7, 11,13 3-5	
A	EP 0 694 499 A (SCHEIDT & BACHMANN GMBH) 31 January 1996 (1996-01-31)		
A	SE 501 833 C (A C A FOERVALTNING KB) 22 May 1995 (1995-05-22)		
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		13 May 2003	Müller, C
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

EPO FORM 1503 03 82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 03 44 5015

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on  
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13-05-2003

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
DE 19841819	A	16-03-2000	DE 19841819 A1	16-03-2000
DE 29711594	U	04-09-1997	DE 29711594 U1	04-09-1997
DE 1014452	B	22-08-1957	NONE	
EP 0694499	A	31-01-1996	EP 0694499 A1	31-01-1996
			AT 134359 T	15-03-1996
			DE 59400129 D1	18-04-1996
			ES 2085810 T3	01-06-1996
			GR 3019802 T3	31-07-1996
SE 501833	C	22-05-1995	SE 501833 C2	22-05-1995
			SE 9401518 A	22-05-1995

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82