

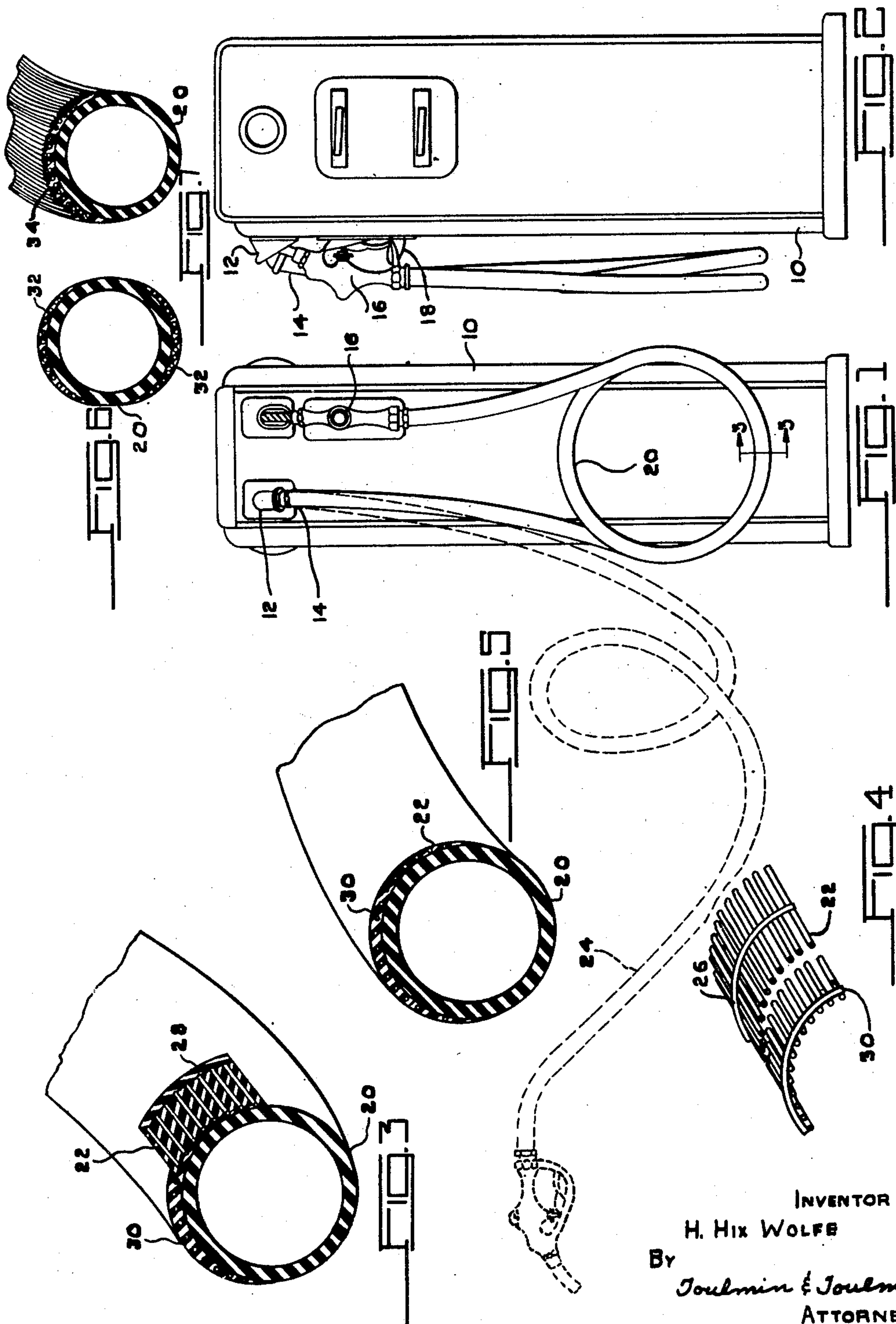
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HOSE FOR DISPENSING PUMPS

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HOSE FOR DISPENSING PUMPS

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This invention relates to hoses for dispensing pumps, and in particular to an arrangement for increasing the effective length of such a hose.

In the usual type dispensing pumps, such as are employed in filling stations, there is a flexible hose which has one end secured to the discharge pipe of the pump and which has a nozzle on its other end. Usually, the fluid outlet of the pump is adjacent the upper end thereof and there is a hook, also at the upper end of the pump, for receiving the nozzle. With the pump idle and the nozzle supported on its hook, the effective length of the hose is limited to that which will support the lowest end of the loop therein above the surface of the concrete platform on which the pump is mounted.

In many cases this length of hose is not sufficient for adequately servicing all cars and trucks which may come into the station. This is due to the fact that the tank openings of cars and trucks vary widely in their location and also because the cars and trucks are sometimes driven in on one side of the island on which pumps are placed and sometimes on the other. It will be apparent that it is very desirable to have the maximum length of hose available for a pump of this nature.

In connection with new dispensing equipment, the hose is sometimes mounted on a reel within the pump and can thus be drawn out to any desired length. While an arrangement of this type is satisfactory for new equipment, it has the disadvantage of being very expensive and difficult to install in old equipment.

The primary object of the present invention is the provision of a means for effectively increasing the length of a hose on a dispensing pump and accomplishing this without the use of reels, counter-weighted rollers, and similar devices within the dispensing pump proper.

Another object of this invention is the provision of a means for increasing the effective length of a hose for a dispensing pump in which the means is associated directly with the hose itself.

A still further object of this invention is the provision of a means for increasing the effective length of a hose for a dispensing pump in which the said means substantially prevents the hose from being dragged across the ground which would abrade the surface thereof and cause undue wear thereon.

These and other objects and advantages will become more apparent upon reference to the

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following description taken in connection with the accompanying drawings in which:

Figure 1 is a side elevational view of a dispensing pump having a hose thereon constructed according to this invention;

Figure 2 is a front view of the dispensing pump illustrated in Figure 1;

Figure 3 is a sectional view through the hose and is indicated by the line 3—3 on Figure 1;

Figure 4 is a view showing the construction of the spring member associated with the hose;

Figure 5 is a view similar to Figure 3 but showing the spring member mounted on the opposite side of the hose;

Figure 6 is a cross sectional view of a hose according to this invention showing a plurality of spring members mounted thereon; and

Figure 7 is a view similar to Figure 6 but showing the surface of the hose fluted or serrated in order to give it a good gripping surface.

Referring to the drawings, the dispensing pump is indicated in Figures 1 and 2 by the numeral 10, and this pump includes a discharge fitting 12 adjacent its top edge to which is secured a dispensing hose 14. The other end of the hose 14 has connected thereto the usual type dispensing nozzle 16 and a hook 18 is provided on the pump for supporting the said nozzle when not in use. This construction for the dispensing pump is substantially standard.

In order to increase the effective length of the hose 14 it hangs on the pump when not in use with a loop therein as indicated at 20 in Figures 1 and 2. The loop as shown comprises one and a half convolutions of the hose and under normal circumstances this is sufficient additional length, but it will be understood that there could be additional convolutions in the loop if desired in order to add still further to the effective length of the hose.

According to this invention the loop 20 in the hose is provided for by means associated with the hose itself. In this manner this invention can be applied either to new or existing equipment and without the necessity of altering the dispensing pump itself in any manner.

The means which are associated with the hose and which cause it to hang in the loop as shown is illustrated in Figures 3 and 4. Reference to these figures will reveal that the hose has associated therewith a plurality of longitudinally extending spring wires 22. These wires are normally bent to about the shape of the loop 20 and serve to pull the hose into that shape when there is no tension exerted on the said hose.

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The wires 22 are sufficiently strong, taken in multiple as shown, for drawing the hose into the loop but at the same time are sufficiently yielding that the hose can easily be pulled out for servicing a car as indicated by the dotted outline at 24 in Figure 1.

As will be seen in Figure 4 the wires 22 lay parallel with each other and are spaced apart and are formed into a lattice work by cross bars 26 which overlies the spring wires and are secured thereto as by welding, soldering, twisting together, or some other manner of making an integral connection.

By so binding together the wires 22 the ends thereof are prevented from digging into the rubber of the hose but at the same time full flexibility of the spring member is retained for permitting the hose to be extended to service a car.

As will be seen in Figure 3 the spring members are preferably imbedded in a crescent shaped rubber like part 28 which is applied to the rubber like hose 14 and bonded thereto as by vulcanizing.

In practice, the hose can first be formed by building up on a mandrel and then partially cured. Thereafter, the spring member is combined with its crescent like rubber carrier and assembled with the partially cured hose. Thereafter the entire unit may be wrapped and vulcanized according to the usual procedures in the art.

Figure 3 illustrates the spring member as extending around the inner part of the loop 20 in the hose. The length of the spring part will be such that it will be extended at least around the loop 20 and part way along the straight portion of the hose at either end of the loop. However, it may be desirable for the spring member to extend from end to end of the hose and in such case it can also be used for grounding the hose nozzle.

The spring member can also be mounted around the outside of the loop 20 as indicated at 30 in Figure 5. The arrangement of Figure 5 is otherwise identical with that of Figure 3.

In certain instances wherein the hose is particularly heavy there may be a spring member mounted on each side of the hose as indicated at 32 in Figure 6. While Figure 6 shows the spring members mounted inside and outside the loop in the hose it will be apparent that they could be displaced 90 degrees so as to lie on either side of the loop in the hose.

The characteristics of the surface of the hose in any of the foregoing modifications can be modified in order to provide for a good grip thereon by fluting or serrating such surface as indicated by the numeral 34 in Figure 7. Such fluting or serrating could be formed in the crescent shaped carrier for the spring part prior to its vulcanization on the hose, or could be formed on the hose during vulcanization, or cut thereon afterward.

In any case, this invention provides for a simple means for increasing the effective length of the hose. The hose construction arrived at is relatively simple and inexpensive and has long life due to the fact that the spring member is directly bonded to the hose and has its end parts protected to prevent them from abrading any part of the hose.

This invention is adapted for being applied to either old or new equipment and therefore involves the minimum of trouble and expense in effecting a conversion. Due to the resilient

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nature of the spring member or members associated with the hose, no difficulty is experienced in stretching the hose out its full length, but at the same time there is sufficient strength in the spring members that it will normally maintain the hose above the ground level and thereby prevent undue wear or abrasion thereof.

It will be understood that this invention is susceptible to modification in order to adapt it to different usages and conditions and, accordingly, it is desired to comprehend such modifications within this invention as may fall within the scope of the appended claims.

I claim:

1. As a new article of manufacture; a hose of rubber like material adapted for use with dispensing pumps and having a means at one end for connection with a pump and means at the other end for connection with a nozzle, a crescent shaped rubber like member vulcanized to one side of said hose and extending longitudinally thereof, and a plurality of spring wires in said member extending the length thereof and operable to cause said hose to hang with a loop therein when suspended from its ends on said pump.

2. As a new article of manufacture; a hose of rubber like material adapted for use with dispensing pumps and having a means at one end for connection with a pump and means at the other end for connection with a nozzle, a crescent shaped rubber like member secured to the inner side of said hose and extending longitudinally thereof, a plurality of spring wires in said member extending the length thereof and operable to cause said hose to hang with a loop therein when suspended from its ends on said pump, and cross members extending over and secured to said spring wires to form a lattice work.

3. As a new article of manufacture; a hose of rubber like material adapted for use with dispensing pumps and having a means at one end for connection with a pump and means at the other end for connection with a nozzle, a crescent shaped rubber like member secured to the outer side of said hose and extending longitudinally thereof, a plurality of spring wires in said member extending the length thereof and operable to cause said hose to hang with a loop therein when suspended from its ends on said pump, and cross members extending over and secured to said spring wires to form a lattice work.

4. As a new article of manufacture; a hose of rubber like material for use with a dispensing pump having means at one end for connection with said pump and means at the other end for connection with a nozzle, a pair of crescent shaped rubber like members vulcanized to opposite sides of said hose and extending longitudinally thereof, and a plurality of spring wires in each of said members extending the length thereof and operable to urge said hose into a looped position when suspended from its ends.

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