March 6, 1951 H. H. WOLFE 2,544,120

HOSE FOR DISPENSING PUMPS

Filed Jan. 8, 1948

Fig. 1

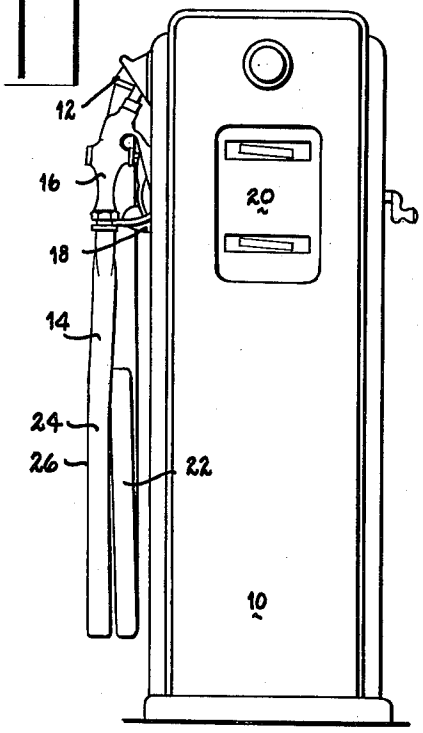


Fig. 2

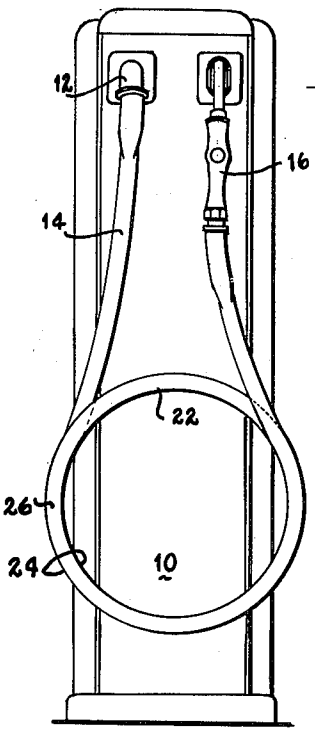


Fig. 5

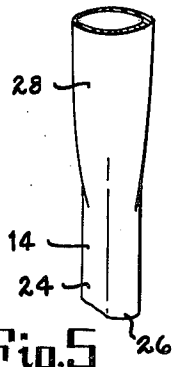


Fig. 3

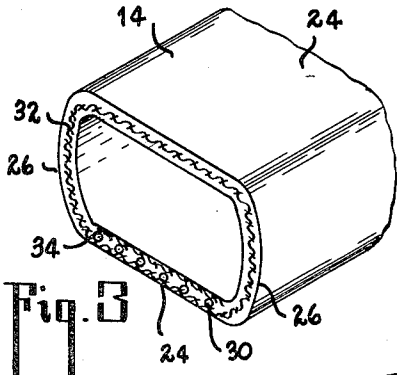


Fig. 4

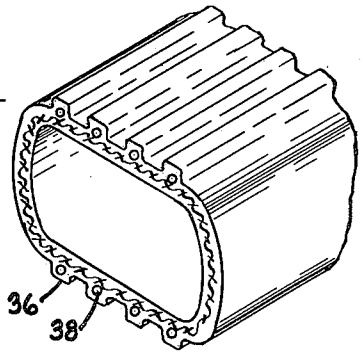
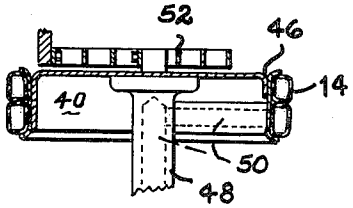


Fig. 6



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Patented Mar. 6, 1951 2,544,120

UNITED STATES PATENT OFFICE

2,544,120

HOSE FOR DISPENSING PUMPS

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Application January 8, 1948, Serial No. 1,137

3 Claims. (Cl. 138—61)

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This invention relates to hoses for dispensing pumps, and particularly to hoses having an improved configuration for imparting qualities to the hose which are lacking in the usual round type hose.

In present day filling stations there is an increasing problem in connection with servicing cars and trucks due to the fact that longer lengths of dispensing hoses are required than formerly was necessary. This is due to redesigning of cars and trucks and also to changes in size and configuration of the dispensing pumps.

In the usual type pump the available length of hose is that which will hang in a loop from the pump outlet adjacent the top at one side thereof and a hook also placed at the top of the said one side and adapted for receiving the nozzle on the free end of the hose. As pumps of this type become shorter and more compact due to improved design the available length of hose in such a loop materially decreases.

Several arrangements have been devised for increasing the effective length of the dispensing hose to enable cars and trucks to be adequately serviced at all times. Among these arrangements are those which provide for a coil or loop of the hose inside the pump case and those which provide for an extra coil in the length of hose which hangs between the aforementioned outlet and the nozzle hook at the outside of the pump.

While arrangements of this type are generally satisfactory with regard to providing additional length of hose required, a problem always encountered in connection with these methods is that of bending the hose in a short enough radius to accomplish the object of increasing its effective length without consuming too much bulk. Hoses of this nature are generally circular in cross section and are relatively stiff in order to withstand the pressure to which they are subjected and to be resistant to abrasion and kinking when in use.

The particular object of the present invention is to provide a hose so formed that it may be employed with the aforementioned arrangements for increasing its effective length and without requiring a bulky structure.

A still further object is the provision of a hose for a dispensing pump which is so shaped that the hose is highly flexible in at least one plane.

Another object is the provision of a dispensing hose so shaped that it is highly flexible in at least one plane of bending thereof, but which at the same time maintains its full cross sectional area.

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 front elevation of a typical dispensing pump having a hose associated therewith constructed according to this invention;

Figure 2 is a view of the pump shown in Figure 1 looking from the left hand side thereof and showing how the hose hangs in a coil between the fluid outlet for the pump and the nozzle end thereof when suspended on the nozzle hook;

Figure 3 is an end elevational view showing one form of hose constructed according to this invention;

Figure 4 is similar to Figure 3 but showing another form of hose;

Figure 5 is a fragmentary perspective view showing the configuration which the hose may take at its ends; and

Figure 6 is a fragmentary view showing an arrangement wherein the hose is mounted on a reel within the pump.

Referring to the drawings, the dispensing pump indicated therein comprises a casing 10 and at the top thereof at one side is a fluid outlet 12 from which is suspended a dispensing hose generally indicated at 14.

The dispensing hose has a nozzle 16 on its free end adapted for engagement on a hose hook 18 when the said hose is not in use. The dispensing pump includes the usual auxiliaries such as an internal fluid meter and a computing device connected therewith which indicates the price and quantity of the fluid delivered as by means of the indicating dials 20.

According to one manner of increasing the effective length of the dispensing hose it may hang in a coil as at 22 between the fluid outlet 12 and the nozzle hook 18. This coil may comprise one convolution as shown, or more if desirable or necessary. This convolution may be thrown into the hose in any manner either by internal or external spring means, but it is preferred to accomplish this result by means of spring member extending longitudinally along the length of the hose and imbedded therein as will become more apparent hereinafter.

In any case, due to the stiffness of the hose, a coil of this type may be formed therein only with some difficulty and in any case the coil will be of a rather large size. Also, since the hose is relatively stiff the spring means required for forming the coil therein are also stiff and thus when it is desired to draw the hose out for use considerable pull must be exerted thereon.

According to this invention the coil is thrown

into the hose more easily and to a smaller diameter, and the arrangement is such that the hose can be more easily drawn out for use by flattening the hose on its opposite sides thereby to give it greater flexibility in a plane parallel to the flattened sides.

The hose will thus have the configuration substantially as illustrated in Figure 3 wherein the flattened sides are indicated at **24** and these sides are interconnected by the curvilinear side portions **26**. It is preferable to form the hose in such a manner that the cross sectional area in the flattened part is not less than would be provided in a circular hose. Due to the fact that the pump fluid outlet and the nozzle are more conveniently made to a circular configuration, it probably is preferable to form the ends of the hose circular as indicated at **28** in Figure 5. This can be accomplished by properly shaping the mandrel on which the hose is originally formed.

In connection with the hose arrangement illustrated in Figures 1 and 2 the hose may have imbedded therein the longitudinally extending spring members **30** which are imbedded in one of the flat sides of the hose and which are of a length to extend at least around the coil of the hose. The spring members are so flexed that when the nozzle is placed in position on the nozzle hook as at **22** the coil will be formed in the hose.

For the purpose of adding strength to the hose it will preferably include a fabric layer **32** extending completely therearound and imbedded in the material of the hose and in order to add additional strength to the side of the hose including the spring members **30**, there may be provided a breaker strip **34** also of fabric material and on the opposite side of the members **30** from the fabric strip **32**.

Figure 4 illustrates still another form of the hose wherein there extend longitudinally therealong and on the flat sides thereof the protuberances or ridges **36**. These ridges give the hose a good gripping surface and also prevent excessive wear on the flat sides thereof but without decreasing its flexibility in the plane of its major transverse axis. The ridges **36** may at the same time be employed for receiving longitudinal strength members or spring members **38**.

As mentioned before, the hose of this invention is also specially adapted for being received on a reel internal of the pump housing. Such a reel is indicated at **40** in Figure 6 and the hose **14** is shown as coiled thereon. A reel of this type is mounted on a column **48** and a fluid passage as at **50** conducts the fluid being pumped to the hose **14**.

Any mechanical arrangement desired may be made of the reel and in the arrangement illustrated a torsion spring **52** is utilized for biasing the reel in its takeup direction. It will be apparent that the reel in Figure 6 can be made substantially smaller with the flat shape hose than would be possible if the hose were round in cross section. This is due to the fact the hose shown in Figure 6 is highly flexible in a vertical plane and thus easily wraps around the reel.

Although it is not illustrated, it will be apparent that the hose is also adapted for being formed in a depending loop within the pump with a central counterweight means applied thereto for urging the said loop toward its maximum length position. An arrangement of this type would be similar to that illustrated in Figure 6 except that the additional length of hose within the pump casing would be carried in the depending loop rather than wound up on a reel.

For the sake of clarity the parts in Figures 3 and 4 which have been cut through have not been shown with section ruling thereon, but it will be understood that they are formed of rubber or rubberlike material in the usual manner of constructing such members.

It will be apparent from the foregoing that this invention provides for a hose for a dispensing pump which can be formed in substantially the same manner as the usual type hose, that is, upon a mandrel, but that the hose has greatly increased flexibility in at least one plane thereby particularly adapting it to arrangements and devices for increasing the available length of the hose associated with the pump through the use of suspended coils and loops, and reeled in portions 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 rubberlike hose for dispensing pumps, said hose being substantially flat at two diametrically opposite parts for high flexibility in a plane parallel with said parts, longitudinally extending spring means in one of said flat parts for urging said hose to hang in a coil when suspended from its ends, and fabric means in said hose for giving it longitudinally inextensibility.

2. As a new article of manufacture, a rubberlike hose for dispensing pumps, said hose being substantially flat at two diametrically opposite parts for high flexibility in a plane parallel with said parts, longitudinally extending spring means in one of said flat parts for urging said hose to hang in a coil when suspended from its ends, fabric means in said hose for giving it longitudinally inextensibility and passing said spring means on one side, and a fabric breaker strip in said hose on the other side of said spring means.

3. As a new article of manufacture, a hose for a dispensing pump having a generally rectangular cross section, longitudinally extending ridges along the wider sides of said hose, and spring means extending longitudinally of said hose and in the said ridges on at least one side thereof and operable to urge said hose into a coil when suspended from its ends.

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