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FLUID CONTAINER

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FIG. 1.

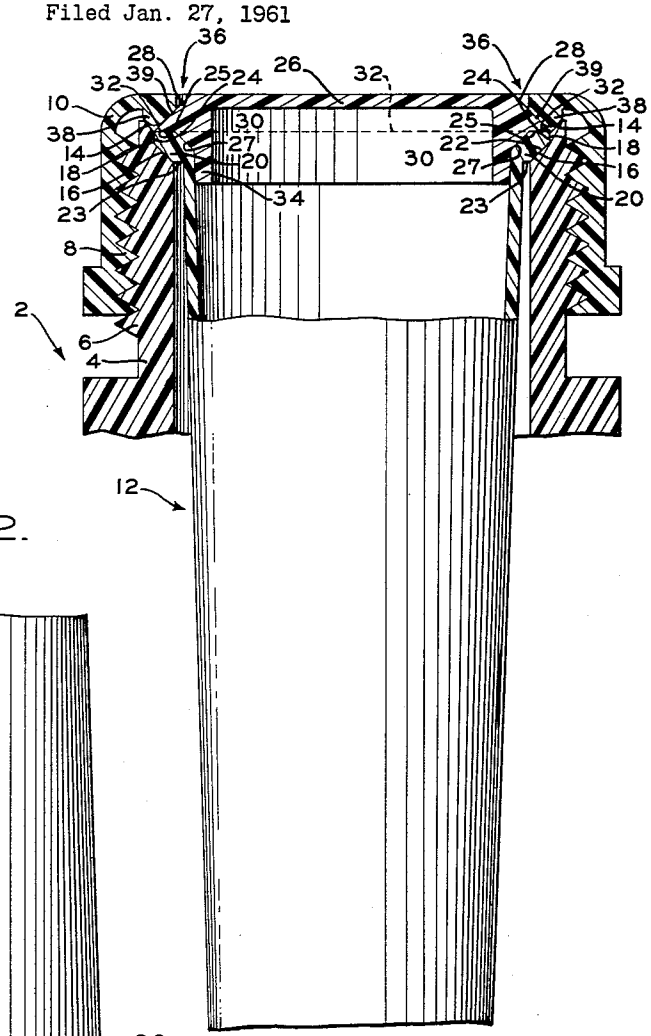
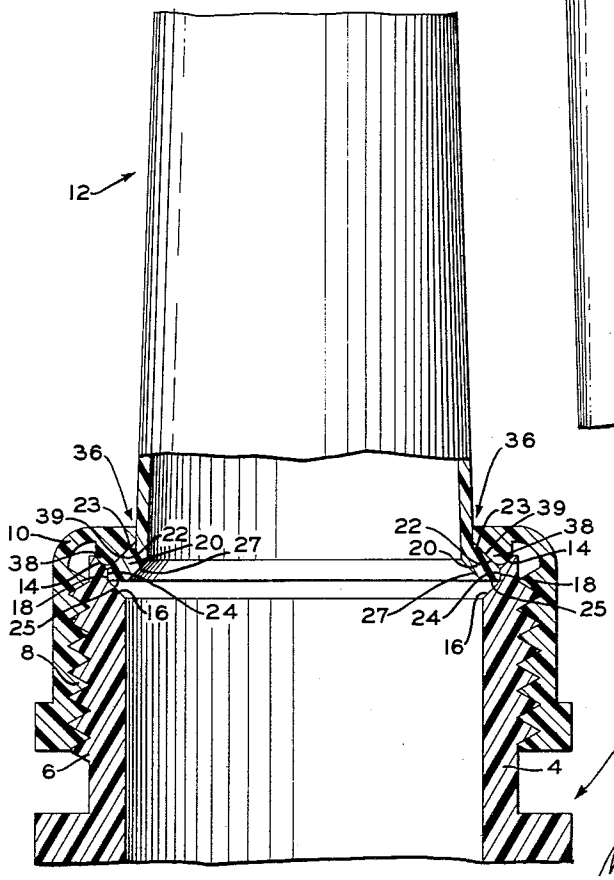


FIG. 2.



INVENTOR.
HAIM J. SHWISHA

BY
Morgan, Finnegan, Durham & Pine

ATTORNEYS

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FLUID CONTAINER

Haim J. Shwisha, 49 W. 12th St., New York 11, N.Y.

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This invention is related to a fluid carrying and dispensing can and more particularly is related to an improved gasoline can having superior characteristics.

It has long been the practice to provide gasoline cans, which are adapted to carry and store a quantity of gasoline. These cans can be carried from place to place, and the gasoline therein can be dispensed at any convenient location. Typically, these cans have included spout means which are adapted to be directed and carried within the container and which can be reversed to extend outwardly from the container in order to dispense the gasoline from the can.

Prior art devices of this kind have been known for some time and have, in general, worked satisfactorily. One of the problems with prior devices is that they have not provided a simple, inexpensive and effective sealing when the can is being transported from place to place and the entire can is to be sealed, nor have they provided effective sealing between the container and the spout when the spout is directed outside of the container to dispense the fluid therein. Consequently, it has been the custom in these prior art devices to provide a plurality of gaskets, sealing rings or other similar sealing elements to insure proper sealing between the various elements. The use of these sealing means obviously increased the costs of the container and limited the effective sealing life of these containers to the sealing life of the gaskets and sealing rings.

In accordance with this invention means are provided for insuring effective sealing between the can elements. This means, as embodied herein, comprises novel sealing surfaces on the can, spout, sealing element and the cap member. These elements are provided with complementary bevelled, or frustro-conical and cylindrical mating surfaces which cooperate to achieve new and unobvious sealing results and substantially eliminate the need for gaskets, sealing rings and other sealing elements. Another advantage of the construction of the present invention is that mating surfaces eliminate the need for expensive and time consuming finishing or sizing operations.

Although the novel cooperating and mating surfaces of the present invention are effective irrespective of the materials used, it has been found that superior results are achieved when resilient, wear and corrosion resistant materials are used. Accordingly, as embodied herein, the container and flange of the present invention are made of nylon or polyethylene. On the other hand, the spout, cover cap and sealing element are made from a suitable plastic material such as polyethylene. This material has been found to be particularly advantageous where the fluid container carries gasoline. As explained subsequently, the cover cap is removably attached to a flange on the container. The use of these particular materials permits the cover cap to force the various sealing surfaces into tight, overall contact which is substantially leakproof. It will be apparent that the present invention is adapted to carry and dispense any type of fluid, although it is particularly adapted for carrying and dispensing gasoline. The novel combination of mating bevelled or frustro-conical surfaces and cylindrical surfaces, as embodied herein, provides a combination wherein an effective seal between the surfaces results irrespective of the position of the spout.

The invention consists in the novel parts, constructions, arrangements, combinations and improvements shown and described.

In view of the foregoing it is an object of this invention to provide an improved fluid carrying and dispensing can.

Another object of this invention is to provide an improved gasoline can having improved sealing characteristics.

Still another object of this invention is to provide an improved gasoline can including a container, a spout and cap member wherein the container and the spout have mating surfaces cooperating with the cap member for preventing leakage therebetween.

A further object of this invention is to provide an improved gasoline can including a container, and a spout wherein the spout and container include bevelled surfaces for preventing leakage therebetween.

A further object of this invention is to provide an improved gasoline can including a spout, cap member and sealing element wherein the spout, cap member and sealing element have cooperating surfaces thereon for preventing leakage therebetween.

A still further object of this invention is to provide an improved gasoline can including a container, a spout, a cap member and a sealing element wherein the spout, container and sealing element have bevelled or frustro-conical mating surfaces for preventing leakage therebetween.

A further object of this invention is to provide an improved gasoline can wherein a spout member can be directed inside of or outside of a gasoline can and wherein mating surfaces are provided for insuring effective sealing irrespective of the position of the spout.

Another object of this invention is to provide an improved fluid can wherein a spout member can be directed inside of or outside of a container and wherein bevelled and cylindrical mating surfaces are provided for insuring effective sealing irrespective of the position of the spout.

A further object of this invention is to provide an improved gasoline can having improved sealing characteristics wherein certain parts are made of polyethylene and certain of the parts are made of nylon or polyethylene.

Additional objects and advantages of the invention will be set forth in the description which follows, and in part will be obvious from the description, or may be learned from practice of the invention, the objects and advantages being realized and attained by means of the instrumentalities and combinations particularly pointed out in the appended claims.

The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate an embodiment of the invention, and together with the description, serve to explain the principles of the invention.

Of the drawings:

FIGURE 1 is a vertical section view of the present invention showing the spout located within the container.

FIGURE 2 is a sectional view similar to FIGURE 1 showing the spout member located outside of the container.

It is to be understood that both the foregoing general description and the following detailed description are exemplary and are not restrictive of the invention.

Reference will now be made to the present preferred embodiment of the invention which is illustrated in the drawings.

In accordance with this invention a gasoline can is provided wherein means are provided for storing and dispensing gasoline.

This means, as embodied herein, comprises a container 2 of any desired shape and which is preferably made of nylon or polyethylene. The container 2 includes a circular upstanding flange 4 having threads 6 on the outer circumference thereof which are adapted to be in threaded engagement with the threads 8 on the cover cap 10. The

spout member **12** can be located within (FIGURE 1) or without (FIGURE 2) the container as desired.

In accordance with this invention, means are provided for effective sealing of the device. As embodied herein, this means comprises mating surfaces on the container and the spout which cooperate with the cap member when fluid is being dispensed from the container; and, comprises mating surfaces on the container, the spout and the sealing element cooperating with the cap member when fluid is being transported from place to place.

As shown in FIGURE 1, the free end of the upstanding flange **4** is provided with a bevelled or frustro-conical outer surface **14**. Offset from and parallel to the frustro-conical surface **14** is another frustro-conical or bevelled inner surface **16** which has an angle of 45° preferably. The inner ends of the outer and inner surfaces are connected by a vertical or cylindrical surface **18**.

The spout member **12** includes a base **20** having a bevelled or frustro-conical surface **22** and a flat surface **23** intermediate the frustro-conical surface **22** and the spout **12**. A vertical or cylindrical surface **24** merges with the other end of the frustro-conical surface **22** and a plane surface or flat base **25**. The inner circumference of the spout is provided with a bevelled or frustro-conical surface **27**.

In accordance with this invention, means are provided for completely sealing the container. As embodied in FIGURE 1, this means comprises a sealing element **26**. The sealing element **26** includes bevelled or frustro-conical surfaces adapted to insure effective sealing of the container. Accordingly, the outer end of the sealing element has a frustro-conical or bevelled surface **28**. Radially inwardly spaced from the outer frustro-conical surface **28** is an inner frustro-conical surface **30** forming therebetween a lip **32**. The inner end of the sealing element **26** has a spout engaging portion **34**. It will be understood that since the spout has a conical shape that the portion **34** has a slight taper in the area of 2° and is, therefore, only substantially cylindrical.

In accordance with this invention means are provided for maintaining the container, the spout member and the sealing element in assembled sealing relationship. This means includes a cover cap **10** having an aperture **36** therein. The cover cap **10** includes a depending rounded abutment **38** merging with a tapered or frustro-conical surface **39**. It is clear that the bevelled or frustro-conical surface **14** on the flange and the bevelled or frustro-conical surface **28** of the sealing element are arranged to provide a tapered or V-shaped space therebetween. Consequently, when the cover cap **10** is threaded onto the flange the sealing element **26**, the spout member **12** and the container flange **4** will be maintained in tight sealing engagement.

With reference to FIGURE 1, it can be seen that when the device is assembled for transporting fluid the frustro-conical surface **22** and the cylindrical surface **24** of the spout member are in engagement with the inner frustro-conical surface **16** and cylindrical surface **18** of the flange member. The lip **32** of the sealing element is then placed in contact with the flat surface **25**. Thereafter, when the cap **10** is threadedly attached to the flange the abutment **38** will maintain the container in a completely sealed condition and the surface **39** on the cap will engage surface **28** on the sealing element **26**, Since these surfaces are complementary with each other. When the spout member, sealing element and cap cover are made of a suitable plastic such as polyethylene, these elements will be sufficiently resilient to prevent distortion caused by temperature differentials or manufacturing tolerances from negating effective sealing.

In accordance with this invention means are provided for preventing undesired leakage when the device is used to dispense the gasoline. This means is illustrated in FIGURE 2 wherein the spout member is shown directed outside of the container and comprises several of the

previously described mating surfaces, which, however, have had the positions changed.

Thus the cylindrical surface **24** of the spout member is in engagement with the cylindrical surface **18** of the flange member and the bevelled or frustro-conical outer surface **14** of the flange member forms a V-shaped space with the frustro-conical surface **22** of the spout member for receipt of the abutment **38** on the cover cap **10**. In this manner the cap cover through the abutment **38** forces the spout member and flange into tight engagement and serves to maintain the spout in sealing engagement with the container so that leakage will be prevented between these surfaces.

It is to be understood that the invention in its broader aspects is not limited to the specific elements shown and described, but also includes within the scope of the accompanying claims any departures made from such elements which do not sacrifice its chief advantages.

What is claimed is:

1. A container for containing and dispensing fluids comprising: a container having an opening at one end thereof, a first frustro-conical surface at one end of said container, a second frustro-conical surface, a cylindrical surface separating said first and second frustro-conical surfaces, said frustro-conical surfaces and said cylindrical surface being located at and in surrounding relation to said opening, a spout member having a frustro-conical surface at one end thereof, said frustro-conical surface on said spout engaging said second frustro-conical surface on said container when said spout is directed into said container, said cylindrical surface on said spout engaging said cylindrical surface on said container when said spout is directed outside of said container and cap means engaging said first frustro-conical surface and said spout means when spout is directed inside of and outside of said container.

2. A container for dispensing fluids comprising: a container having an opening at one end, a flange at one end of said container and integral therewith, a first frustro-conical surface at the free end of said flange, a second frustro-conical surface parallel to and offset from said first frustro-conical surface, a cylindrical surface intermediate said first and said second frustro-conical surfaces, said frustro-conical surfaces and said cylindrical surface being located at and in surrounding relation to the opening, a spout directed outside of said container and having a cylindrical surface in engagement with said cylindrical surface on said flange, said spout having a frustro-conical surface which forms a V-shaped space with said first frustro-conical surface, a cap removably engageable with said flange, said cap member having an abutment thereon which fits into said V-shaped space when said cap is in engagement with said flange and an opening therein through which said spout member extends.

3. A container for storing fluids comprising: a container having an opening at one end thereof, a flange at one end of said container and integral therewith, a first frustro-conical surface at the free end of said flange, a second frustro-conical surface parallel to and offset from said first frustro-conical surface, a cylindrical surface intermediate said first and said second frustro-conical surface said frustro-conical surfaces and said cylindrical surface being located at and in surrounding relation to said opening, a spout directed into said container and having a cylindrical surface in engagement with said cylindrical surface on said flange and having a frustro-conical surface in engagement with said second frustro-conical surface on said flange, and means including a cap member engaging the spout and said first frustro-conical surface and a sealing member engaging the internal surface of the spout for sealing the end of said spout and said container.

4. A container for storing fluids comprising: a container having an opening at one end, a flange at one end of said container and integral therewith, a first frustro-

conical surface at the free end of said flange, a second frustro-conical surface parallel to and offset from said first frustro-conical surface, a cylindrical surface intermediate said first and said second frustro-conical surface said frustro-conical surfaces and said cylindrical surface being located at and in surrounding relation to said opening, a spout directed into said container having a cylindrical surface in engagement with said cylindrical surface on said flange and having inner and outer frustro-conical surfaces, the outer frustro-conical surface being in engagement with said second frustro-conical surface on said flange, a sealing member having a frustro-conical surface in engagement with said inner frustro-conical surface on said spout and having another surface forming a space between it and said first frustro-conical surface on said flange, an apertured cap member removably attached to said flange and having an abutment adapted to fit within said space to cause sealing engagement between said flange, said spout and said sealing member.

5. A container for dispensing gasoline comprising: a polyethylene container having an opening and a polyethylene flange at one end thereof, a first frustro-conical surface at one end of said flange, a second frustro-conical surface on said flange, a cylindrical surface intermediate said first and said second frustro-conical surfaces, said frustro-conical surfaces and said cylindrical surface being located at and in surrounding relation to the opening, a spout member having a cylindrical surface in engagement with said cylindrical surface on said flange, a frustro-conical surface on said spout member forming a space between it and said first frustro-conical surface of said flange, a cap having an aperture therein through which said spout member extends adapted to removably engage said flange, said cap including an abutment having a frustro-conical surface thereon engaging said frustro-conical surface on said spout.

6. A container for dispensing and storing gasoline comprising: a container having an opening at one end, a first frustro-conical surface on said container, a second frustro-conical surface offset from and parallel to said first frustro-conical surface, a cylindrical surface intermediate said first and said second frustro-conical surfaces said frustro-conical surfaces and said cylindrical surface being located at and in surroundnig relation to the opening, a spout member adapted to be directed within or without said container, said spout having inner and outer frustro-conical surfaces thereon and a cylindrical surface adapted to engage said cylindrical surface on said container, and a cap having co-operating portions engaging said first frustro-conical surface and said spout and having an aperture therethrough for the spout, said cap being removably attached to said container for sealing said spout.

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