B. K. FORD.

CONTAINER CLOSURE.

APPLICATION FILED SEPT. 30, 1914.

1,274,867. Patented Aug. 6, 1918.

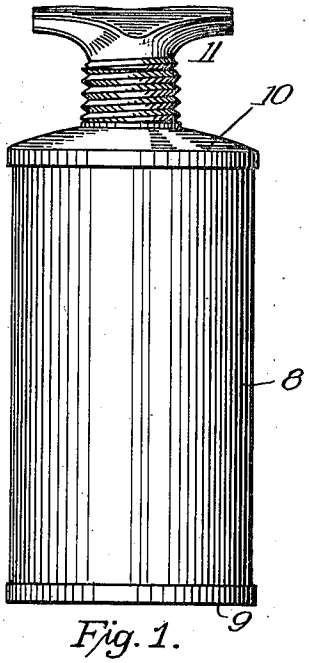


Fig. 1.

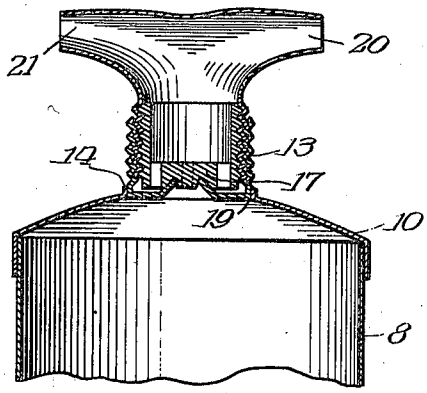


Fig. 2.

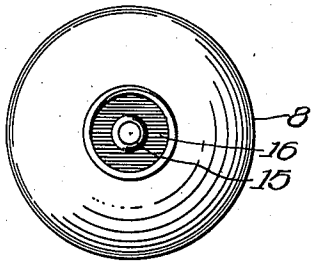


Fig. 4.

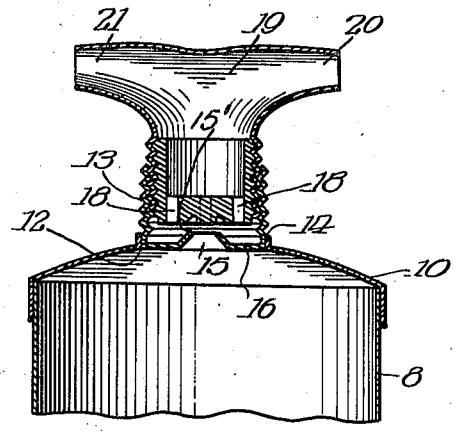


Fig. 3.

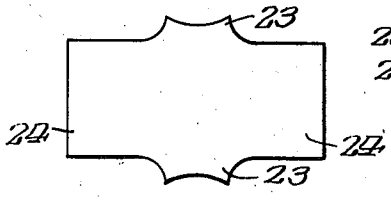


Fig. 5.

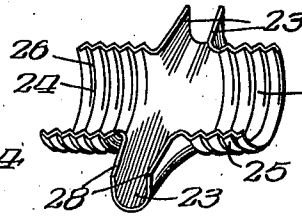


Fig. 6.

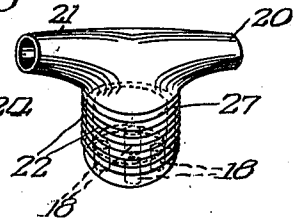


Fig 7.

Witnesses:

A. G. Barrett

J. C. Carpenter

Inventor:

Ben K. Ford

By

Munday Evarts Adcock & Clarke

Attorney's:

UNITED STATES PATENT OFFICE.

BEN K. FORD, OF OAK PARK, ILLINOIS, ASSIGNOR TO AMERICAN CAN COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

CONTAINER-CLOSURE.

1,274,867. Specification of Letters Patent. Patented Aug. 6, 1918.

Application filed September 30, 1914. Serial No. 864,212.

To all whom it may concern:

Be it known that I, BEN K. FORD, a citizen of the United States, residing in Oak Park, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Container-Closures, of which the following is a specification.

My invention relates in general to a closure for liquid and semi-gaseous containers and has more particular reference to containers for ether and other highly explosive volatile liquids.

Ether and the like must be handled with great care because of its well known anesthetic effect and because also of its high explosive power and high co-efficient of expansion. It is used for an anesthetic by being poured in a relatively small amount of gauze held in a wire frame or mask which is placed over the mouth and nose of the subject. From time to time more ether is added to the mask in order that the subject may be maintained in desired and anesthetized condition. It is extremely volatile and must be kept between the times that it is applied, as described, hermetically sealed from the atmosphere. This hermetic sealing should be done without the use of solder or the like by reason of the extremely high explosive power of ether.

It is a principal object of this invention to provide a container closure which can be opened and closed without the use of opening tools or implements and which may be hermetically sealed by merely turning the parts to closed position.

It is a further object of this invention to provide a closure of the character described, of simple and durable construction, capable of easy operation and of inexpensive production.

Other objects and advantages of the invention will be apparent as it is better understood from the following description when considered in connection with the accompanying drawing illustrating a preferred embodiment thereof.

Referring to the drawings,

Figure 1 is a side elevation of a container embodying my invention;

Fig. 2 is an enlarged partial vertical sectional view of the same showing the closure with the parts arranged in closed position;

Fig. 3 is a similar view showing the closure with the parts arranged in open position;

Fig. 4 is a top plan view of Fig. 1 with the stopper and pouring spout member removed;

Fig. 5 is a plan or diagrammatic view of a blank used to provide the pouring spout member shown in Figs. 1 to 4; Fig. 6 is a perspective showing this blank partly formed into the spout; and

Fig. 7 is a perspective showing the completely formed spout embracing the stopper member.

For the purpose of illustrating my invention I have shown it embodied in an ether can of cylindrical form. This can or container comprises a cylindrical side wall 8, a bottom 9, a top 10 and a closure generally designated in Fig. 1 as 11. The cylindrical body, bottom and top form no part of my present invention and may have any usual or preferred construction; the top 10, however, being provided with an enlarged central aperture 12 for the reception of the closure 11.

The closure 11 consists in the present instance of a pressed threaded neck 13 secured at its lower end at 14 in the opening 12. A partition 16 formed preferably integral with the neck 13 is provided across the bottom of the neck and this partition is provided with a central perforation 15, the material 151 of the partition about this opening being deflected upwardly for a purpose which will be hereafter disclosed. A combined stopper and spout member comprising a valve member or stopper of lead, cork or other soft material 17 having a recess in its top and perforated longitudinally as seen at 18, beneath said recess, the perforations 18 being disposed about the center of said stopper and out of vertical alinement with the perforation 15 in the partition, and a spout member 19 is provided to fit within the neck 13.

The spout member is preferably formed of a sheet of suitable metal, tin being well adapted for this purpose. This sheet of metal is formed to provide oppositely extending spouts 20 and 21 communicating with each other and forming a passageway extending across the top of the container, and portions 22 of the sheet are bent about the stopper 17 as shown in Fig. 7, these portions being pressed to form threads adapted to engage threads formed on the stopper and to engage also the threads of the neck 13.

The centrally disposed opening 15 is of appropriate dimension to permit it to be tightly closed by the central imperforate portion of the stopper 17 when the stopper is turned inwardly into engagement with the partition 16. The imperforate portion of this cork or the portion at its center serves to close the perforation 15 in the partition 16 so that a gas and liquid tight seal is provided. The upwardly deflected edge about the opening 15 cuts into the material of the stopper at each closing operation and forms a hermetic seal. When it is desired to use the contents of the container it is only necessary to turn the spout member 19, and through the spout member the stopper, to move the parts from the closed position shown in Fig. 2 to the open position shown in Fig. 3, lifting of the stopper bringing the apertures 18 into communication with the perforation 15. If the container be tilted with the parts arranged in this position the contents will run through the perforation 15, apertures 18 and out through the lower spout 20 or 21. The flow of this liquid can be controlled by closing with the finger the upper spout. The container may be filled or re-filled with ether or other liquid by merely removing the stopper entirely and pouring the material into the then open neck. The recess in the stopper 17 is merely for the purpose of lightening it if a heavy alloy of metal be used.

The stopper member is preferably formed from a single piece of metal as has been stated, and this piece may be cut to the shape of the blank shown in Fig. 5 in which the two oppositely extending relatively short and narrow wings 23 are subsequently to form the spouts 21 and 20 and the two wings 24 are to form the portions 22 embracing the cork 17. This blank is bent by being placed in a suitable die into the shape shown in Fig. 6 or so that all of the wings are given a semi-circular form. Partial threads 25 and 26 are formed in the two wider wings 24 by pressing the blank in suitable dies, the threads 25 in one wing 24 being pressed to coöperate with threads 26 formed in the other wing 24 to form a continuous thread 27 when the stopper or spout member is completed. With the blank pressed into the form shown in Fig. 6 it is only necessary to bend the two wings 24 about the cork 17 to complete the structure, the edges 28 of each wing 23 coming together to complete the two rounded spouts 20 and 21.

It will be manifest that a container embodying this invention may be cheaply constructed that it may be strongly and hermetically sealed for shipment and readily unsealed for use and that the container may be readily controlled in its delivery of liquid and may be easily and quickly closed after each use without the need of special tools or appliances.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing without further description, and it will be obvious that various changes may be made both in the form, construction and arrangement of the parts and in the manner of making and assembling them without departing from the spirit and scope of the invention or sacrificing any of its material advantages, the form hereinbefore described being merely a preferred embodiment thereof.

I claim:

1. A closure for a container comprising a threaded member adapted to be screwed into an open end of said container and having an aperture extending longitudinally thereof, and a partition provided with a perforation having an upwardly deflected edge and fixed beneath said member in position to limit the movement of said member, the perforation in said partition being out of alinement with the aperture through said member.

2. A closure for a container comprising a threaded member adapted to be screwed into a container and having longitudinally extending apertures therethrough disposed about its vertical center, and a partition located beneath said member and having a centrally disposed perforation provided with an upwardly extending edge, whereby inward movement of said member into contact with said partition will seal the apertures in said member from communication with the perforation in said partition.

3. A closure for a container provided with a pouring spout comprising a member adapted to be threaded into a container and having apertures extending longitudinally therethrough, said member having a pair of oppositely disposed passageways communicating with each other and with said apertures, one of said passageways forming a pouring spout and the other means for controlling the rate of flow of the contents of the container, certain of said apertures being respectively disposed at the same sides of the closure as are the said passageways to form a pouring aperture and an air aperture.

4. A closure for a container comprising a pair of outwardly extending tubular members, a stopper member connected thereto and having an aperture communicating with the interior of said tubular members, and a perforated partition for cutting off said aperture from communication with said container when the stopper is in closed position.

5. A closure for a container formed from a sheet metal plate bent at its middle por-

tions and having projections at the middle to provide oppositely extending tubular spouts, and also having its ends bent into tubular form and pressed to form external screw threads, and a stopper provided with an aperture and embraced by the screw-threaded portions.

6. A closure for a container formed from a sheet metal plate shaped to form a pouring spout having its ends bent and pressed spirally to form threads thereabout, the plate being bent to bring said ends together, and a stopper having an aperture therethrough and embraced within said threaded portions.

7. A combined stopper and spout for containers, comprising a threaded member made of two opposite portions fitted together, the middle and upper portion of said member being bent and joined together to form a spout portion, and an interior perforated stopper and valve member fitted and secured within the parts of said screw threaded member.

8. A sheet metal spout and stopper for containers consisting of a spout formed of a sheet metal plate bent at its middle portions to form a spout member and bent at its opposite sides and joined together to form a central screw threaded plug member, and a perforated valve member secured within the parts of said plug member.

9. A combined spout and plug closure for containers, formed of a single piece of sheet metal, the middle portions of which are bent and joined together to form spouts, and opposite portions of which are bent and joined together to form a screw threaded plug, and a perforated valve member secured within said plug.

10. The combination of a container having a central perforated partition, a screw threaded nozzle projecting from the periphery of said partition and a combined closure and spout having a screw threaded plug fitting said nozzle, a valve member eccentrically perforated and adapted to form a closure with said partition, and a spout member leading from said valve member.

Signed this 28th day of September, 1914, in the presence of two witnesses.

BEN K. FORD.

Witnesses:
ESTHER ABRAMS,
J. C. CARPENTER.