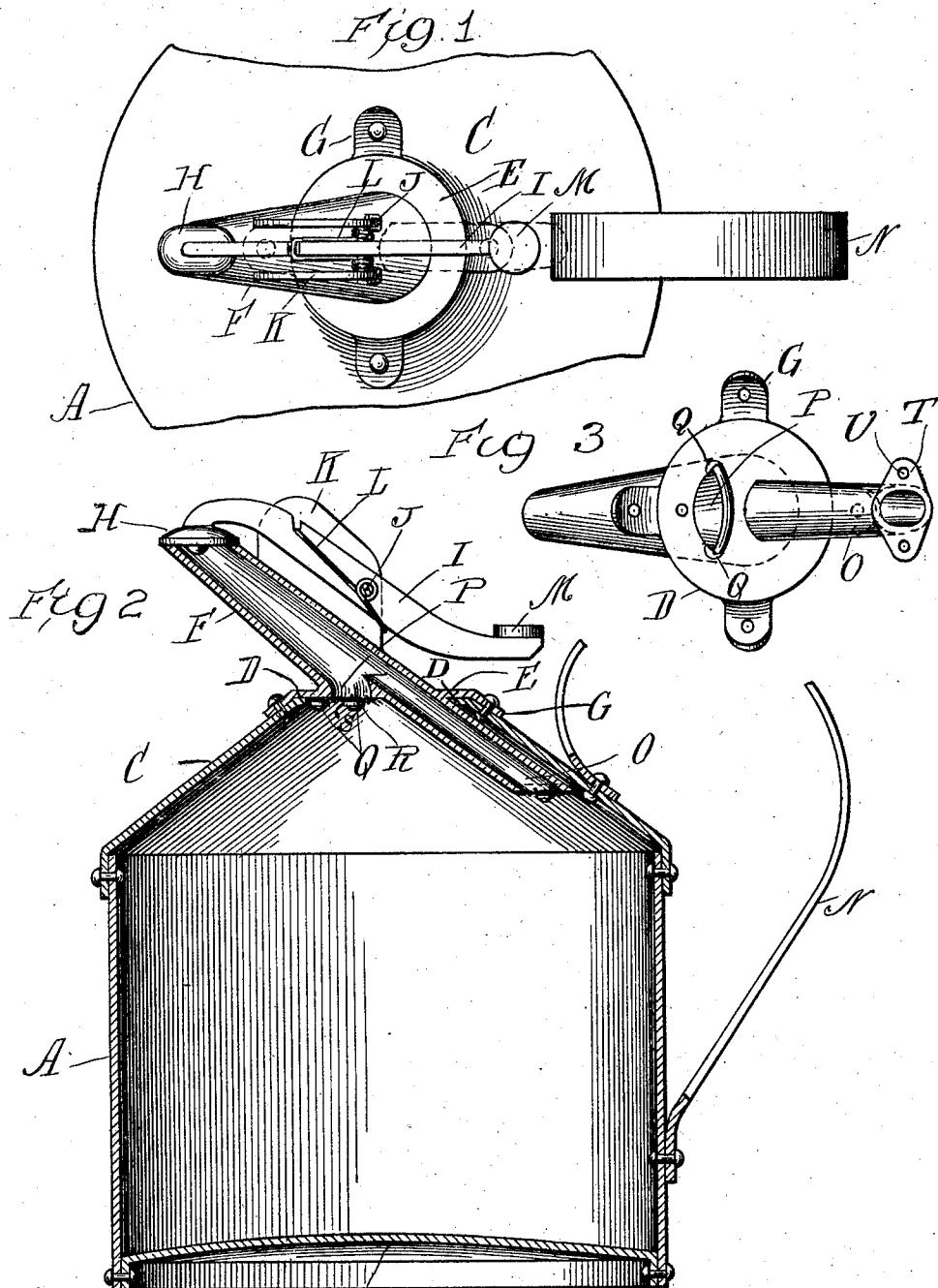


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SAFETY CAN FOR HYDROCARBON LIQUIDS.
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Att'y

UNITED STATES PATENT OFFICE.

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SAFETY-CAN FOR HYDROCARBON LIQUIDS.

986,429.

Specification of Letters Patent.

Patented Mar. 14, 1911.

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To all whom it may concern:

Be it known that I, FREDERICK J. BECKER, citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Safety-Cans for Hydrocarbon Liquids; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has for its object to provide a safety or non-explosive can or receptacle for volatile combustible liquids such as benzene, gasoline, alcohol, sulfuric ether and the like, the object being to provide a device of this character which may be filled and emptied from a single spout and in which pressure resulting from generation of gases or vapor due to heat is relieved and in which, furthermore, all parts are so secured together as to be capable of withstanding a relatively high temperature, and consists in the features of construction and combinations of parts hereinafter fully described and claimed.

In the accompanying drawings illustrating this invention: Figure —1— is a fragmentary top plan view of a can or receptacle constructed in accordance with my invention. Fig. —2— is a central vertical section of the same. Fig. —3— is a bottom plan view of the spout when removed from the can.

I am aware that a number of cans or receptacles for containing combustible liquids, such as those above-named, have been provided and that in several thereof a single spout for filling and discharging liquids is employed, but, so far as I am informed, such cans have not been equipped in certain details with means for permitting free passage of liquid in one direction and air in the opposite direction, nor have such cans, so far as I am informed, been constructed with a view to resisting high temperatures, such for example, as would be capable of melting solder.

The object of my invention resides in providing means for readily assembling the various parts of the device by means other than solder and in the provision of means whereby a free inlet for air above the level of the liquid in the receptacle is attained in such manner as to prevent interference

therewith by the flow of the liquid being discharged, and, further in the provision of means whereby the valve stem is protected from injury by accidental dropping of the can.

The body A of the receptacle is of the usual cylindrical type made of sheet metal and provided with an inverted dished bottom B and conical top C, the latter being provided in its apex with a central opening, the latter being preferably surrounded by a narrow horizontal flange D. Upon said flange D the similar annular horizontal flange E of the spout F is adapted to rest, said flange E being provided with a plurality of projections G which rest upon the conical portion of the top C and are adapted to be riveted to the latter. A sealed joint between the flanges D and E is effected by soldering or brazing the same together in any well-known manner. The spout F extends at an angle to the plane of the flange E and, in the instance illustrated, said angle approximates 45 degrees. Said spout is tapered so as to contract the same at its delivery end, the latter being trimmed off on a horizontal plane and affording a seat for the valve H which is rigid with the ogee-curved stem I, the latter being pivotally secured between its ends by means of the pin J between parallel projections K on said spout. A spring L coiled about said pin J on opposite sides of said valve stem I engages said projections K at its free ends and at its middle portion engages said valve stem I to maintain the valve H normally closed. At its other end said valve stem is equipped with a thumb plate M disposed adjacent the handle N of the receptacle and which is adapted to be depressed to open said valve H. The said projections K project above the highest point in the said valve stem I and in the event that the receptacle is dropped said projections serve to prevent a blow being administered to said valve stem to bend or otherwise distort the same. Below said flange E is a tubular extension O of said spout F but of smaller diameter and area. The lower portion of the wall of said tubular extension O projects into the spout F at a point higher than the plane of said flange E and forms one wall of the opening P through which liquid is adapted to be discharged from the receptacle, said opening lying in the plane of said

flange E. Adjacent said opening P there are cast integral with the flange E rivet lugs Q which are adapted to enter similarly located openings in the wire gauze R covering said opening P and which are adapted to be spread at their free ends to secure said gauze in place. Washers S are preferably inserted to rest upon said gauze and be engaged by the rivet heads to secure said gauze more firmly in position, that is, engage the same over a greater area. At its free end the said tubular extension O is provided with oppositely disposed flanges T each of which is provided with an opening to receive rivets U by means of which the gauze V is secured in place to cover the lower end of said tube.

In operation the liquid is discharged from the opening P but as the latter is of smaller area than the delivery end of the spout and the free flow of liquid is further retarded by its passage through the gauze covering said opening, it is impossible for a sufficient amount of liquid to flow from the receptacle to equal the delivery capacity of the discharge end of the spout and thus a free passage for incoming air to replace discharged liquid is assured. The incoming air passes through the spout following the upper wall thereof and passing thence through the tubular extension O into the receptacle above the level of liquid in the latter.

It is essential that cans of this nature shall not only be equipped with sufficiently fine mesh gauze or other foraminated metal covering all openings to prevent back-fire into the same but that in the event of fire in a building and consequent subjection of the receptacle to high temperatures the gases and vapors generated shall be permitted to escape to prevent explosion due to high pressure and further that the melting of any solder from the joints shall not release the parts joined thereby from such secure engagement with each other as to provide an opening of sufficient area to permit back flash into the same. Hence I provide on my said can an outwardly opening valve which will yield to pressure within the can and also provide means for effectively riveting all parts of the device securely together.

To enable the device to be made very cheaply and at the same time very strong and durable it is essential that the same be cast in a single piece of a malleable material such as soft brass and that all unnecessary labor such as punching or boring holes be avoided as far as possible while at the same time adequate means for securing the gauze in place over the openings with ease and rapidity be supplied. Owing to the fact that each opening through the flange E affords opportunity for leakage and further that said flange should be of as small di-

ameter as possible to economize soldering I have provided the rivet lugs cast integral with the whole spout and bordering the discharge opening, said lugs being so arranged as to insure their ready withdrawal from the mold. By means of said lugs I not only save the labor incidental to boring holes and inserting rivets and the subsequent necessity for soldering around said rivets to insure sealed joints but also save additional space which would in this instance be required for the accommodation of said rivets. It will be noted that two of said rivet lugs are practically semi-cylindrical, the flat walls thereof being flush with the side portions of the wall of the discharge opening.

In order that the valve be always maintained normally seated distortion of the stem thereof should be prevented and to this end the projections on the spout are provided and made to project above the highest point in said stem so that in the event that the can is dropped the said projections will receive all blows which otherwise might distort said stem. It will be noted that the said projections also reinforce and protect the spout from distortion.

I claim as my invention:

1. In a receptacle of the kind specified, an inlet and discharge spout mounted upon the can body and communicating with the latter at its point of connection therewith, a straight tubular extension on said spout extending into the can body and communicating with said spout at a point higher than the latter's point of communication with said can body, foraminated metal disposed at the points of communication of said spout and said tubular extension with said can body, and an outwardly opening, normally closed spring actuated hand operated valve controlling the delivery end of said spout.

2. In a receptacle of the kind specified, an inlet and discharge spout angularly disposed and mounted on the can body, a straight tubular extension on said spout of smaller diameter than the latter projecting into the can body in substantial alinement with said spout and communicating with the latter between its ends, said spout communicating with said can body at its point of connection therewith and at the innermost end of said tubular extension, the latter, when said can is tilted for discharging the contents thereof, constituting a passage for air into said can above the liquid level therein.

3. In a receptacle of the kind specified, an angularly disposed inlet and delivery spout, a pair of parallel projections integral therewith and extending upwardly therefrom, a valve seated on said spout, a stem thereon passing between said projections and pivotally secured thereto between its ends, and a spring engaging said valve-stem and said

projections to maintain said valve normally closed, the uppermost ends of said projections disposed at a higher elevation than the uppermost portion of said valve.

5 4. In a receptacle of the kind specified, an angularly disposed spout mounted thereon, the lower end portion thereof being of smaller diameter than the exposed end portion, an annular flange on said spout between
10 its ends resting upon the can body around an opening therein and secured thereto, said spout communicating with said can body in the plane of said flange and at its lower extremity, rivet lugs cast integral with said
15 spout and bordering the orifice in the plane of said flange, foraminated metal covering said orifice and secured by said rivet lugs, and a normally closed spring-pressed valve controlling the delivery end of said spout.

20 5. In a receptacle of the kind specified, an angularly disposed spout mounted thereon, the lower end portion thereof being of smaller diameter than the exposed end por-

tion, an annular flange on said spout between its ends resting upon the can body
25 around an opening therein and secured thereto, said spout communicating with said can body in the plane of said flange and at its lower extremity, rivet lugs cast integral with said spout and bordering the orifice in
30 the plane of said flange, foraminated metal covering said orifice and secured by said rivet lugs, flanges on the lower extremity of said spout foraminated metal secured to said flanges and covering the said lower extrem-
35 ity, and a normally closed spring-pressed valve controlling the delivery end of said spout.

In testimony whereof I have signed my name in presence of two subscribing witnesses. 40

FREDERICK J. BECKER.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
