Sept. 21, 1965 J. ELIAS 3,207,176

VALVE DAM

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Fig. 1

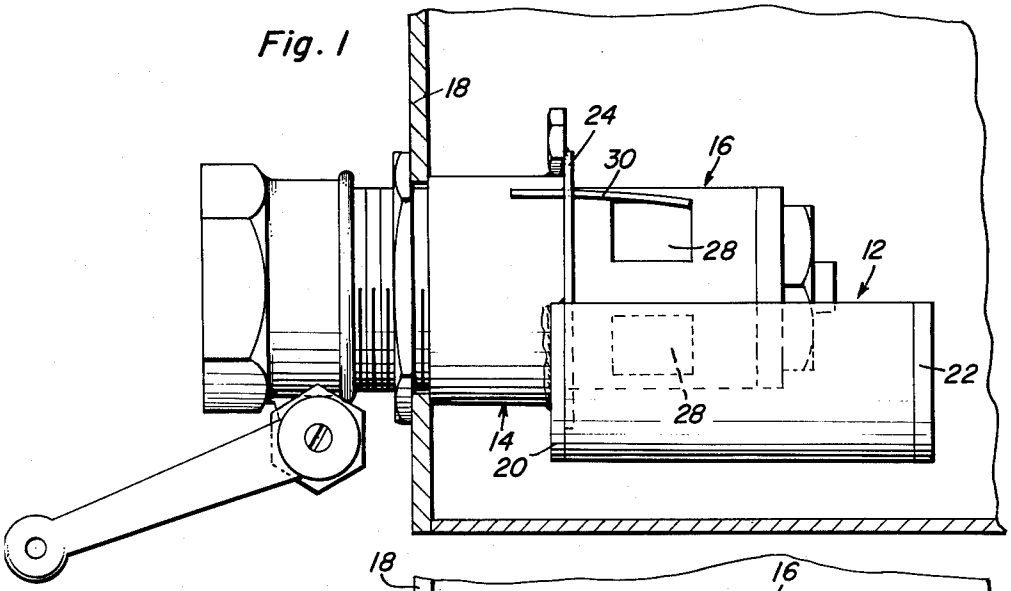


Fig. 2

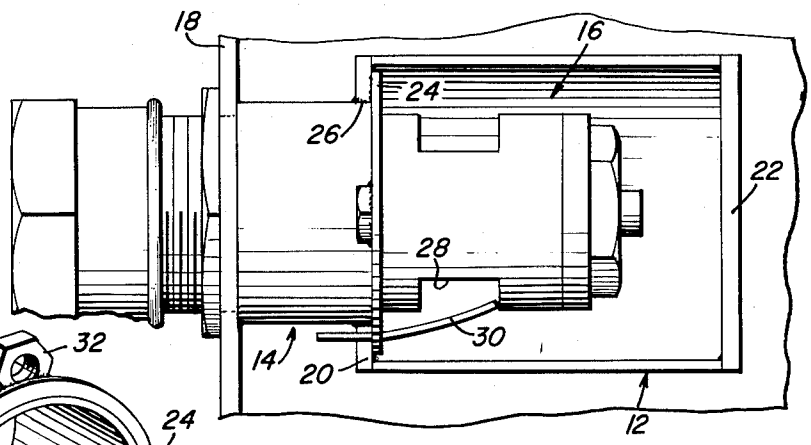
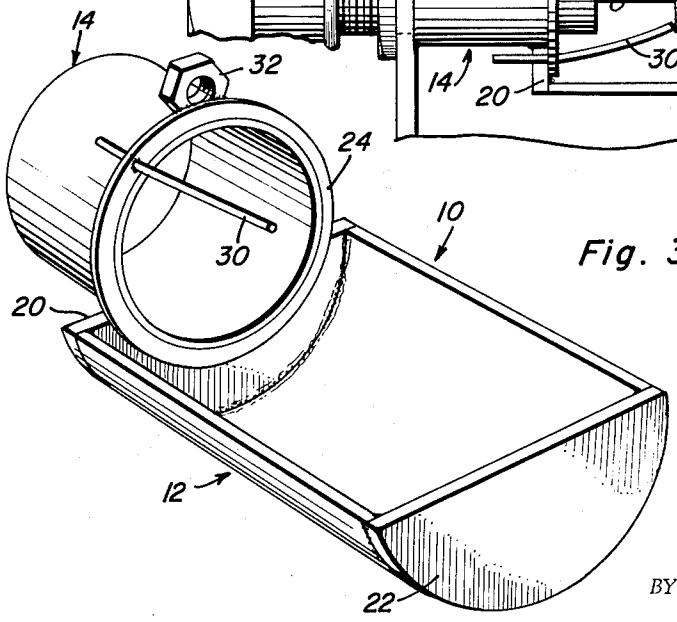


Fig. 3



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VALVE DAM

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The instant invention is generally concerned with means for preventing the passage of water and/or other foreign matter which normally accumulates at the bottom of a fuel storage tank through the valve through which the fuel is removed.

More specifically, the instant invention is concerned with the provision of a dam structure which encloses the lower portion of the inner end of the valve in a manner so as to prevent direct communication between the valve ports and the lowest level of fuel, this level frequently and unavoidably containing undesirable foreign matter.

In bulk fuel storage tanks, the valve through which the fuel is introduced and removed is generally located from one to six inches above the bottom of the tank thus giving rise to the tendency for the high volume pumps to draw various foreign matter, sludge, and water, as accumulates at the bottom of the tank, through the valve. Further, the introduction of fuel through the valve tends to create a turbulence directly at the bottom of the tank thus agitating and stirring up any accumulated foreign matter. In order to avoid both the exhausting of this foreign matter along with the fuel, and the creation of any turbulences during the introduction of the fuel, the device of the instant invention is specifically provided so as to direct any incoming fuel upwardly into the interior of the tank away from the bottom, with any outgoing fuel being drawn from an open top enlarged pan-like receptacle within which the inner end of the valve is positioned, this receptacle being positioned above the bottom of the tank thus excluding the accumulated foreign matter.

A particular significant object of the instant invention is to provide a device which, while capable of effectively performing its functions, is both relatively simple in construction and capable of being quickly and easily installed.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a side elevational view of the valve dam comprising the instant invention installed upon that portion of a valve projecting inwardly of a bulk fuel storage tank, the valve dam being mounted on the valve which is in turn secured to the tank;

FIGURE 2 is a top plan view of the structure of FIGURE 1; and

FIGURE 3 is a perspective view of the valve dam and mounting collar therefor.

Referring now more specifically to the drawings, reference numeral **10** is used to generally designate the device comprising the instant invention. This device **10** consists basically of a valve dam **12** and a mounting collar **14** secured thereto and adapted for mounting the device **10** upon the inwardly extending portion of a valve **16** normally provided within bulk fuel storage tanks **18** adjacent the bottom thereof.

The dam portion **12** of the device **10** is generally semi-tubular in shape and includes two vertically extending end walls **20** and **22**, the upper edges of these end walls **20** and **22** being coplanar with the longitudinal edges of the semi-tubular portion of the dam **12**.

The mounting collar **14** is tubular in shape and includes, on its inner end, a peripheral radially projecting flange **24**. This tubular mounting collar or sleeve **14** is received within an arcuate recess **26** within the end wall **20** with the flange engaged against the inner surface of the end wall **20** and the collar or sleeve **14** welded so as to become in effect an integral part of the dam **12**.

As will be appreciated from FIGURES 1 and 2, the collar **14** is both of a size and shape so as to be snugly received over the valve **16** with the outer or rear end of the sleeve **14** engaged against the inner surface of the tank **18** about the valve **16** and with the innermost portion of the valve **16** being received within the dam **12** in spaced relation thereto, the dam **12** extending to approximately mid-height on the valve **16**. By such an arrangement, it will be noted that the valve ports **28** either face generally upwardly into the main portion of the tank **18** or generally downwardly into the dam **12**, there being no direct path between the bottom of the tank **18** and the valve ports **28** thus requiring that the fuel be drawn either from the upper portion of the tank or from the fuel in the dam **12** which must first spill over the edges thereof, and as such, effectively excluding any of the normally accumulated foreign matter which is frequently found at the bottom of such storage tanks.

The device **10** is fixed to the valve **16**, in addition to the collar **14**, by an elongated rod or bar **30** which possesses a substantial degree of longitudinal rigidity and a slight lateral resiliency. This bar **30** is rigidly affixed to the collar flange **24** and projects therefrom at an angle generally inward in a manner so as to require an outward flexing of this rod or bar **30** upon engagement of the valve **16**. Referring again to FIGURES 1 and 2, it will be appreciated that the bar **30** is of a length so as to resiliently engage within one of the ports **28** in the valve **16** when the end of the sleeve **14** abuts against the inner surface of the tank wall thus, until the bar **30** is physically flexed outwardly, fixedly retaining the device **10** on the valve **16**.

It will now be appreciated that a highly novel though relatively simple device has been defined for both effectively preventing the creation of a turbulence upon the introduction of fuel into a bulk storage tank, and simultaneously preventing the mixing and withdrawing along with the fuel of any of the water or other foreign matter which frequently accumulates at the bottom of such storage tanks. In providing these advantages, it will also be appreciated that the device in no way restricts the flow to and from the valve because of the orientation of the dam relative to the valve ports. Also of significance, as referred to supra, is the fact that the device can be both quickly and simply installed and automatically locked in position, it being contemplated that an enlarged loop, which may be in the form of a nut **32**, be welded to the collar **14** in a manner so as to project upwardly therefrom so as to facilitate the installation of the device by means not illustrated or constituting a part of this invention.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. For use on a tank valve, a valve dam, said dam including a bottom, upstanding peripheral walls, and an open top, a mounting collar extending through a portion of said walls and rigidly fixed thereto for engagement about the tank valve so as to locate a portion of the valve within the dam, and means for automatically locking the dam and collar on the valve.

2. For use in regulating the flow to and from a tank valve, a valve dam and a mounting collar for mounting the dam on the valve, said dam being semi-tubular in shape and having a pair of end walls terminating substantially coplanar with the longitudinal edges of the semi-tubular portion, one of said end walls including an opening therein, said mounting collar being rigidly fixed to said one of said end walls within said opening, said collar projecting outwardly from said dam.

3. The device of claim 2 including an elongated bar rigidly secured to said collar and extending inwardly of the dam at an angle thereto, said bar being laterally resilient to a slight degree.

4. The device of claim 3 including a tool-engaging loop secured to the collar and projecting upwardly therefrom.

5. In combination with a tank valve having peripherally spaced ports about the inner end portion thereof, a valve dam, said dam including a bottom, upstanding peripheral walls, and an open top, a recess formed downwardly from the upper edge in one of the walls, a mounting collar fixed within said recess and extending outwardly from said dam, said valve being located within the collar with the inner end portion of the valve having the lower portion thereof located within the dam and spaced from the bottom and walls thereof, and a lock rod rigid with the collar and engaged within one of said ports in a manner so as to prevent a removal of the dam and collar from the valve.

6. In combination with a tank valve having at least one peripheral port, a valve dam, said dam including a first end wall engaged with the valve rearward of the port, a second end wall positioned forward of the port, and a bottom and sides interconnecting the end walls, said bottom and sides being spaced laterally outward from the valve, the upper edges of the sides defining an open top, and means on the dam for releasable locking engagement within said port in a manner so as to prevent removal of the dam from the valve.

7. The device of claim 1 wherein said means includes an elongated bar rigidly secured to said collar and extending inwardly of the dam at an angle thereto, said bar being laterally resilient to a slight degree.

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