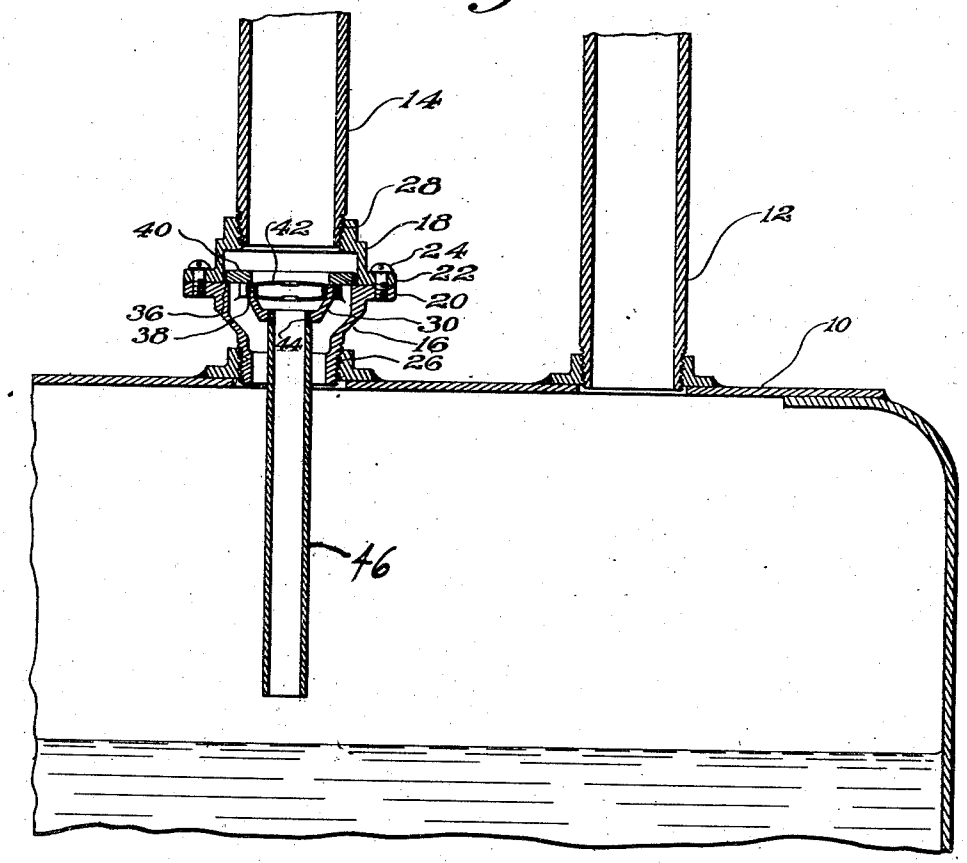
Jan. 10, 1939. G. K. CROSSLEY 2,143,476

AUDIBLE SIGNAL DEVICE FOR LIQUID TANKS

Filed Sept. 15, 1936

Fig. 1



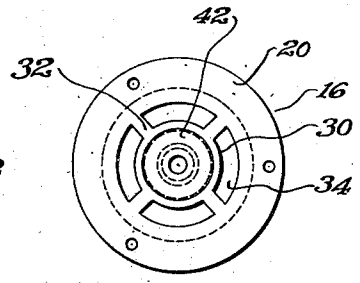


Fig. 2

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UNITED STATES PATENT OFFICE

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AUDIBLE SIGNAL DEVICE FOR LIQUID TANKS

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Application September 15, 1936, Serial No. 100,868

1 Claim. (Cl. 137—111)

The present invention relates to audible signal devices more particularly adapted for installation in household fuel tanks and the like.

As is well known to those skilled in the art, tanks of this sort are ordinarily located in the basement of a residence, and the problem of filling such tanks without overflow renders the employment of some type of reliable indicating device desirable if not essential.

The object of the present invention is to improve and simplify audible signals for this purpose in a manner to facilitate installation and produce a rugged and economical construction.

With this and other objects in view, the features of the invention consists in certain novel features of construction, combinations and arrangements of parts hereinafter described and claimed, the advantages of which will be obvious to those skilled in the art from the following description.

In the accompanying drawing illustrating the preferred form of the invention, Fig. 1 represents a side elevation partly in section of the improved audible signal installed in the usual vent of a fuel tank; and Fig. 2 is a detail illustrating the lower part of the signal housing removed and exposing the ported valve seat for venting excess pressure.

The present invention may be embodied in a household tank indicated at 10, having the usual filler pipe 12 and vent pipe 14 extending into the top of the tank. The present construction is designed to be inserted within the vent pipe either directly or by cutting away a section of the vent if the tank installation has already been made.

Essentially the device comprises a split housing having two parts 16 and 18 connected through peripheral flanges 20 and 22 joined by screws 24. The lower section of the housing is externally threaded at 26 to be inserted directly in the threaded vent opening of the tank, and the upper section is internally threaded at 28 to be connected with the outwardly threaded portion of the vent pipe. The construction of the housing in two parts serves a dual function, first because it permits the employment of different size threaded connections, as for example, the use of a vent pipe and opening of different diameters, and in addition it may facilitate installation by disconnecting the two parts of the housing and connecting them separately to the tank and vent pipe, respectively.

The lower housing section 16 is provided with an inner head portion 30 supported by integral arms 32 which encompass ports 34, as indicated in Fig. 2. The lower section when assembled with the upper section has an internal ledge 36, which in conjunction with the upper face 38 of the member 30 forms a valve seat loosely supporting a flat valve disk 40. The hollow head portion 30 is provided with an audible whistle 42, which compels gases or vapors passing through the head to sound the whistle. The lower end of the head is threaded at 44, and is rigidly connected with the standpipe 46.

The operation of the construction is substantially as follows. After the audible signal is inserted in the upper portion of the fuel tank and the operation of filling is commenced, the discharge of air or vapor due to filling is compelled to pass outwardly through the depending pipe 46 and sound the whistle 42. This audible signal continues until the liquid level has risen to a point where the lower open end of the standpipe is trapped. Thereafter continued discharge of vapors due to filling is discontinued and the audible signal ceases. The length of the pipe is such as to provide an audible alarm zone in the upper end of the tank and indicates upon discontinuance of the whistle that filling has been substantially completed. So long as the disk 40 remains seated, the bulk of the air and vapors are vented through the whistle. Any undue pressure created within the tank, however, which should be vented and which may be due to either rapid filling, clogging of the whistle, or any other reason, is bypassed about the whistle by lifting of the flat disk 40 which creates an opening directly into the vent pipe through the ports 34. This bypassed vent also serves to relieve pressure within the upper part of the tank if filling is continued substantially after the lower end of the standpipe 46 has been trapped by the liquid level.

What is claimed is:

An audible signal device for liquid tanks comprising a housing connected with the vent opening of a tank, a fixed standpipe projecting downwardly into the tank from the housing, a whistle connected to the upper end of the standpipe, a vent around the standpipe, and a sliding valve normally closing the vent and designed to be elevated by pressure within the tank to bypass about the whistle.

GEORGE K. CROSSLEY.