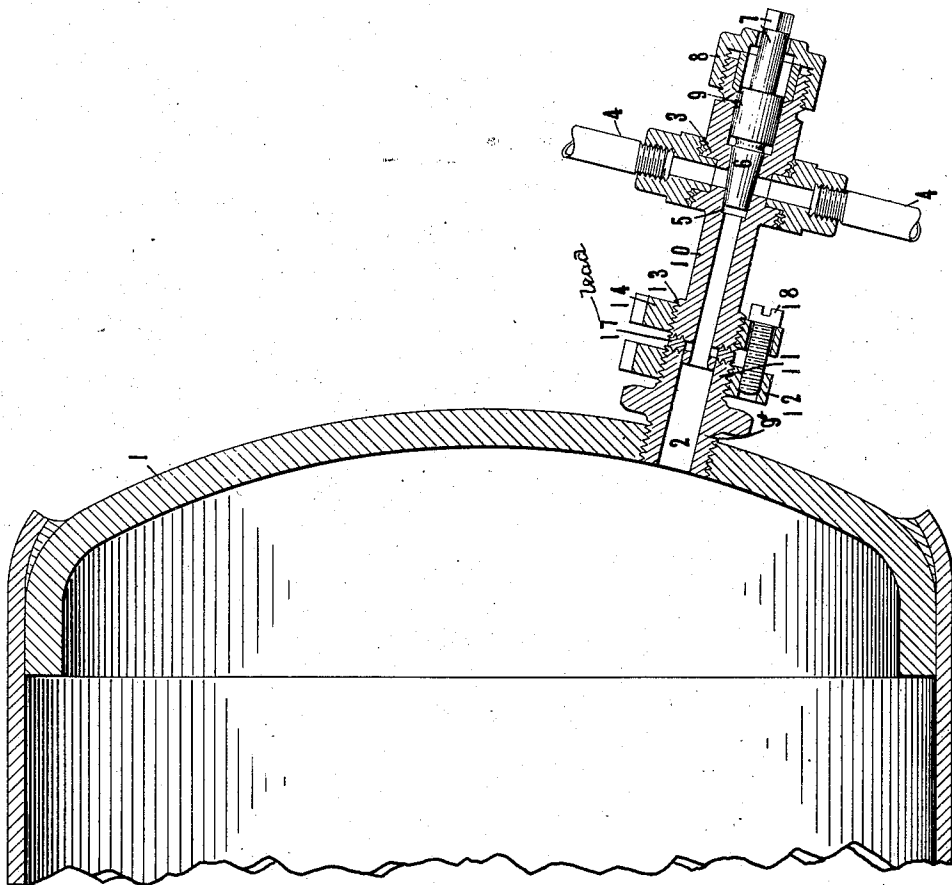


R. M. DIXON.
EMERGENCY SHUT-OFF FOR GAS HOLDERS.
APPLICATION FILED AUG. 7, 1907.

978,861.

Patented Dec. 20, 1910.
2 SHEETS—SHEET 1.

Fig. 1-



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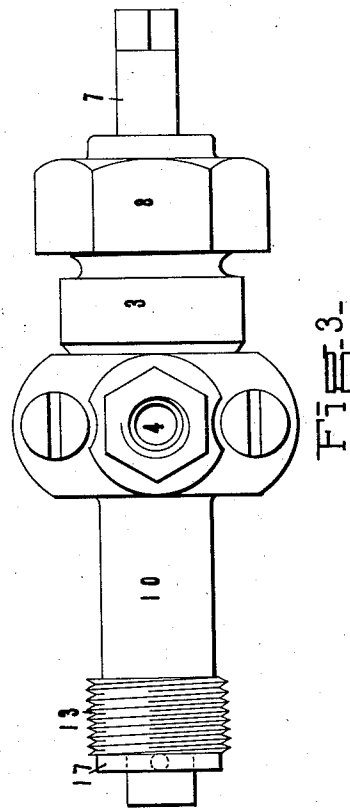
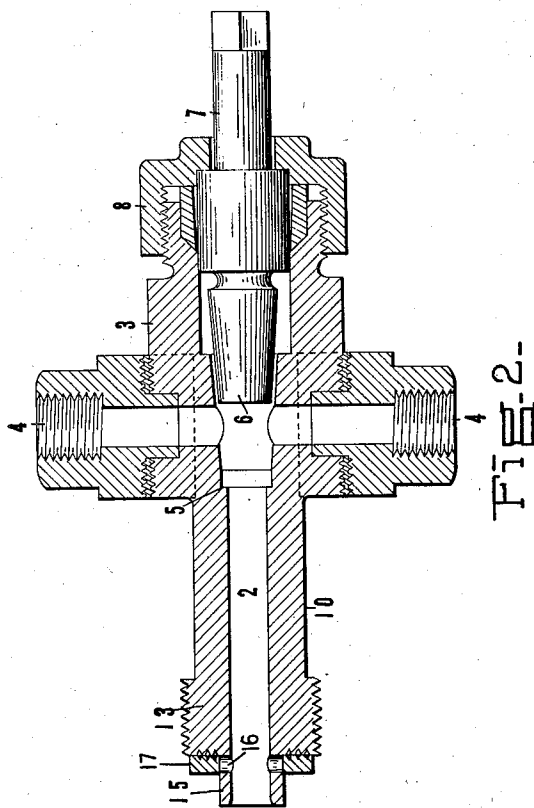
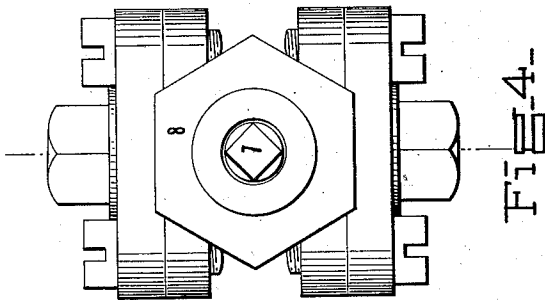
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2 SHEETS—SHEET 2.



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EMERGENCY SHUT-OFF FOR GAS-HOLDERS.

978,861.

Specification of Letters Patent. Patented Dec. 20, 1910.

Application filed August 7, 1907. Serial No. 387,463.

To all whom it may concern:

Be it known that I, ROBERT M. DIXON, residing at East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Emergency Shut-Offs for Gas-Holders, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to gas supply systems but is more especially directed to gas lighting systems employed in connection with railway cars or like structures.

One of the objects of the invention is to reduce to a minimum the danger of fire originating from gas lighting systems or the propagation of fire therefrom in the event of railway accidents or in case of an accidental breakage in the distributing pipes of the gas lighting systems in railway cars.

Another object of the invention is to provide means in a gas lighting apparatus of the above character whereby communication may be quickly and effectively closed between the source of supply and the gas distributing pipes.

A further object of the invention is to provide means in a gas lighting system of the above character for automatically allowing the gas to escape from the supply tanks which are usually placed underneath railway cars in the event of the cars taking fire, the heat generated from which might otherwise cause the tank to explode.

Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combination of elements, and arrangement of parts which will be exemplified in the construction hereinafter set forth and the scope of the application of which will be indicated in the following claims.

In the accompanying drawings wherein I have illustrated one of the preferred embodiments of my invention, Figure 1 is a view thereof in section showing a portion of a gas supply tank. Fig. 2 is a similar view on a larger scale taken through the gas supply conduit showing the shut off valve in normal position. Fig. 3 is an elevational view of the parts shown in Fig. 2. Fig. 4 is an end elevation of the supply conduit and valve mechanism.

Similar reference characters refer to similar parts throughout the several views of the drawings.

Referring now to the drawings Fig. 1 shows an end portion of a gas supply tank adapted to be suspended beneath the floor of a railway car or like structure and is adapted for furnishing a supply of illuminating gas to the lamps or other gas utilizing devices located within a car. In the present instance the gas passes from tank 1 through a conduit 2 which conducts the gas through a fitting 3 to the distributing conduits 4, the latter conducting the gas to the lamps within the car as will be understood.

Owing to the danger of fire occurring as in the event of railway accidents which sometimes cause a breakage of the distributing pipes within the car, I have provided means whereby the flow of gas may be quickly shut off from said distributing pipes, thus reducing to a minimum the liability of the flames being fed by gas escaping from said pipes or other gas fixtures in case of breakage or other disarrangement from any cause whatever. In order to attain this object in the present instance, I provide a valve seat 5 interiorly of conduit 2, said valve seat in the present instance being tapered as shown. Coöperating with this seat is a correspondingly tapered plug valve 6 the stem 7 of which extends through a cap piece 8 threaded exteriorly of fitting 3. Valve stem 7 is provided with an integral, circular raised portion 9 adapted to be guided interiorly of fitting 3, the arrangement of the parts being such that a blow directed against stem 7 will cause valve 6 to be projected inwardly against its seat thus closing the flow of gas from supply conduit 2 to the distributing pipes 4. Valve 6 also operates to close the passageway through the distributing pipes 4 and thus prevents escape of gas there-through should other supply tanks be connected in series with the distributing pipes.

Conduit 2 in the present instance is comprised of a pair of sections 9' and 10, section 9' comprising a nipple threaded into the supply tank and exteriorly threaded at 11 to receive clamp collar 12. Section 10 is, in the present instance, a part of fitting 3 and its opposite end is threaded at 13 to receive a clamp collar 14. Section 10 has a teat 15 entering section 9' which is

provided with a plurality of openings 16 which are located between the adjacent ends of the sections. Interposed between sections 9' and 10 of conduit 2, in the present instance, is collar 17, formed of lead or other fusible material, said collar encircling teat 15 and covering the opening 16 thereof and is clamped between the sections of conduit 2 by means of clamp screws 18 extended between collars 12 and 14. In the present instance collar 17 is shown as being provided with a plurality of annular projections which extend into correspondingly formed depressions in the end of sections 9' and 10 of conduit 2, such construction better insuring against leakage of gas.

Having thus described the structural features constituting my invention, the operation thereof which should to a large extent be obvious is substantially as follows: The normal position of valve 6 is shown in Fig. 2 of the drawings in which position a free and uninterrupted flow of gas may take place between the supply conduit and the distributing pipes. In the event however of a breakage of the pipes which constitute the lighting system within the car valve 7 may be quickly forced against its seat and the supply of gas cut off by a blow directed against the end of stem 7. Should the car for any reason take fire the heat generated thereby might cause an abnormal pressure in the gas supply tank, but in this event the heat would cause collar 17 to be fused thus allowing the gas to escape through openings 16 between sections 9' and 10 of conduit 2 directly to the atmosphere beneath the car.

It will accordingly be seen that I have provided an apparatus well adapted to attain, among others, all the ends and objects above enumerated in an exceedingly simple yet efficient manner, by means of which the supply of gas may be instantly cut off from the distributing pipes of railway cars without the necessity of manipulating screw operated valves, it being merely necessary for a by-stander or other person to grasp any object that may be on hand and direct a blow against the stem of the shut off valve.

In practice the exterior portion of the stem will be squared or otherwise shaped to receive a turning instrument, as shown, so that the same may be readily opened by merely oscillating the same backward and forward whereby the pressure of the gas will force the same from its seat. By reason of the provision of the fusible collar between the sections of the distributing conduit, in the event of the occurrence of heat conditions such as would have a tendency to cause the supply tank to explode the pressure will be automatically relieved.

As many changes could be made in the

above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

Having thus described my invention what I claim is new and desire to secure by Letters Patent is:

1. In a gas lighting system, in combination, a pressure supply tank, a gas supply conduit leading therefrom, and a valve in said conduit for closing same adapted to be closed by external pressure exerted in a direction parallel to the axis thereof.

2. In a gas lighting system, in combination, a pressure supply tank, a supply conduit leading therefrom, a straight-thrust valve in said conduit adapted to control the passage of gas from said supply tank, and a stem extending from said valve in all positions thereof exteriorly of said conduit and adapted to receive a thrust in a direction parallel to its axis, whereby said valve will be forced against its seat.

3. In apparatus of the class described, in combination, a pressure supply tank, a gas supply conduit leading therefrom, one or more gas distributing conduits communicating with said supply conduit, a valve seat formed in said supply conduit, a straight thrust plug valve for coöperating with said valve seat, and a stem extending from said valve in all positions thereof without said conduit and adapted to be engaged from a position exterior thereto, whereby said valve may be forced against its seat.

4. In apparatus of the class described, in combination with the gas supply tank and distributing conduits, a sectional conduit connecting said tank with said distributing conduits, and a section of fusible material clamped between the sections of said conduit, said fusible section constituting a section of said conduit.

5. In apparatus of the class described, in combination with the source of gas supply and distributing conduits, a sectional conduit connecting said source of supply with said distributing conduit, means for manually closing the flow of gas from said conduit to the distributing conduit, and automatically operated means clamped between the sections of said conduit for allowing the gas to escape laterally from said conduit to the atmosphere.

6. In apparatus of the class described, in combination, a gas supply tank, a sectional conduit leading therefrom, the sections of which are clamped together, a fusible collar interposed between the sections of said conduit and forming a portion of said conduit, distributing pipes leading from said con-

duit, and a valve for closing the flow of gas from said conduit to said distributing pipes.

7. In apparatus of the class described, in combination, a gas supply tank, a gas supply conduit leading therefrom, said gas supply conduit being comprised by a plurality of sections clamped together with a ring of fusible material clamped therebetween, one or more distributing pipes leading from said supply conduit, a valve seat formed in said supply conduit, and a straight thrust plug valve cooperating with said seat to shut off the supply of gas from said distributing pipes, and capable of manipulation from a position exterior to said conduit.

8. In apparatus of the class described, in combination, a pressure supply tank, a gas supply conduit leading therefrom, a valve seat formed within said conduit, a straight-thrust valve located within said conduit and cooperating with said valve seat to shut off

the flow of gas through said conduit, and a stem extending from said valve in all positions thereof exteriorly of said conduit, said stem having a raised portion which cooperates with said conduit to guide said valve to its seat when said raised portion moves toward said seat.

9. In apparatus of the class described, in combination, a gas supply tank, a fitting connected to said tank, a second fitting clamped to said first fitting and having a perforate teat projecting thereinto, and a fusible member clamped between said sections and adapted normally to close said perforations.

In testimony whereof I affix my signature, in the presence of two witnesses.

ROBERT M. DIXON.

Witnesses:

G. R. JEWETT,
E. E. ALBEE.