Feb. 26, 1929.

1,703,205

G. T. PEARSONS

FIRE FIGHTING DEVICE

Filed Aug. 12, 1922

3 Sheets-Sheet 1

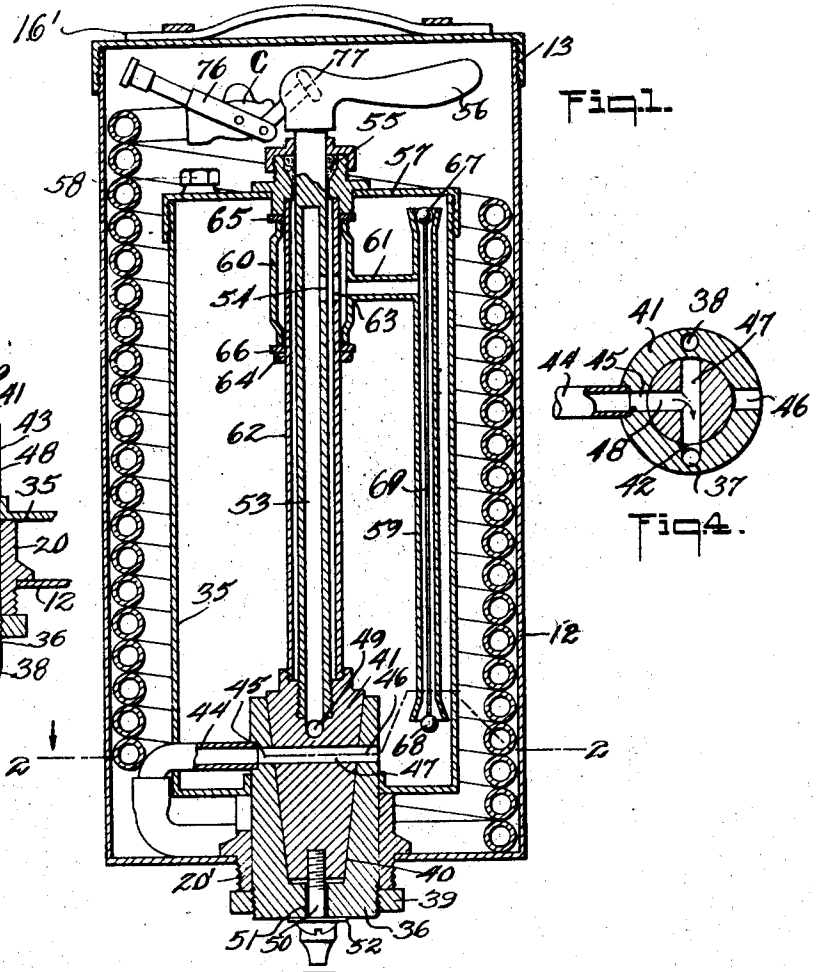


Fig 1.

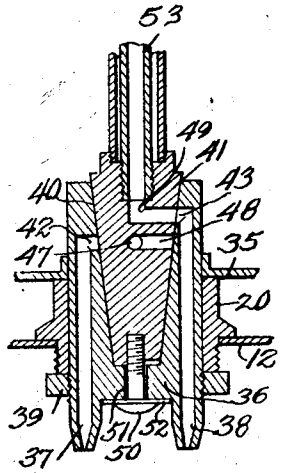


Fig 3.

Fig 4.

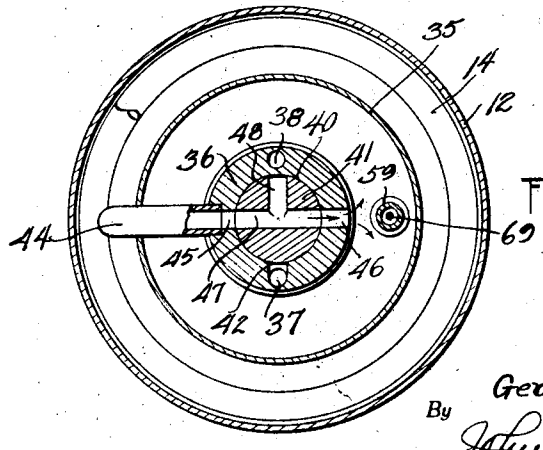


Fig 2.

Inventor:
George T. Pearsons
By
Attorney

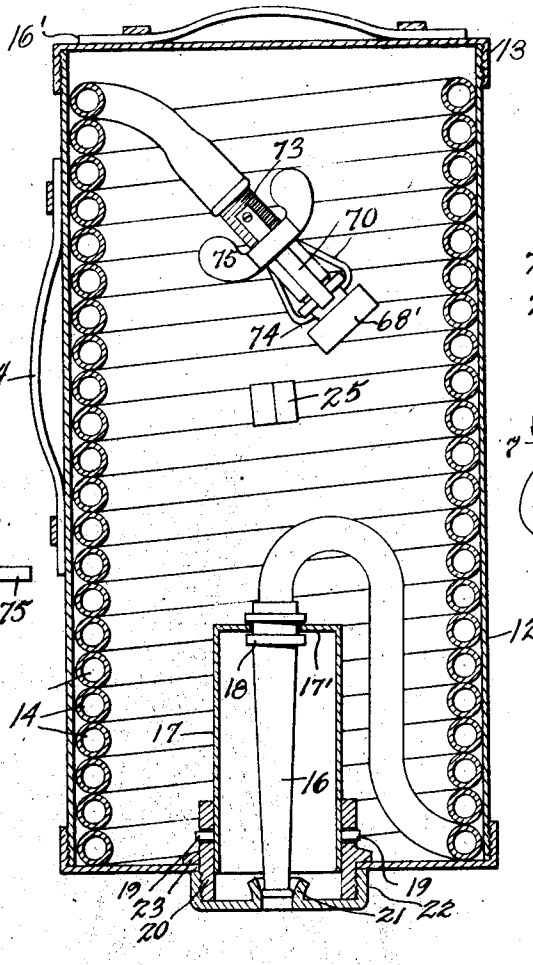
Feb. 26, 1929. 1,703,205

G. T. PEARSONS

FIRE FIGHTING DEVICE

Filed Aug. 12, 1922 3 Sheets-Sheet 2

Fig. 5.



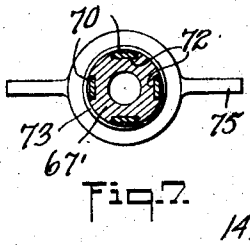


Fig. 7.

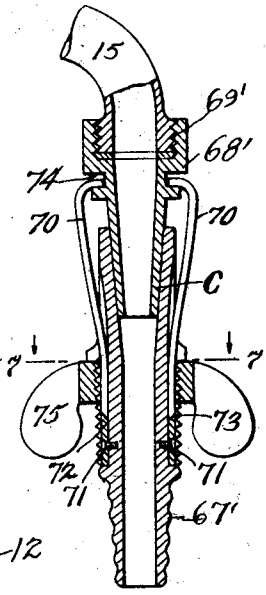


Fig. 6.

Inventor,
George T. Pearsons,
By John O. Seifert
Attorney

Feb. 26, 1929.

1,703,205

G. T. PEARSONS

FIRE FIGHTING DEVICE

Filed Aug. 12, 1922

3 Sheets-Sheet 3

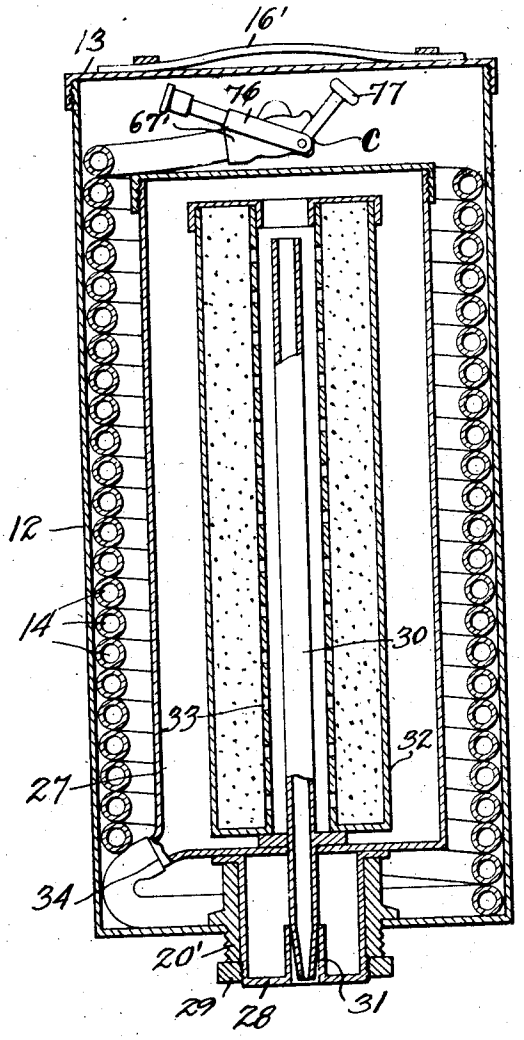


Fig. 8.

Inventor:
George T. Pearsons,
By John O. Seifert
Attorney

Patented Feb. 26, 1929. 1,703,205

UNITED STATES PATENT OFFICE.

GEORGE T. PEARSONS, OF NEW YORK, N. Y.

FIRE-FIGHTING DEVICE.

Application filed August 12, 1922. Serial No. 581,554.

This invention relates to fire fighting devices of the portable type, and it is the primary object of the invention to provide a container for the storage of a hose arranged with a nozzle and with means for quick connection with a source of liquid supply, such as a water faucet and the container having a removable closure at the end to provide a closed receptacle for the hose whereby access may be had to the hose for connection with a source of liquid supply without removing the hose from the container, and the hose arranged in the container whereby it is adapted to be paid out from the container as one end of the hose is withdrawn therefrom, and to so arrange the hose and container that one may have rotative movement relative to the other to prevent kinking of the hose as it is paid out from the container.

Other objects and advantages will hereinafter appear.

In the drawings accompanying and forming a part of this specification, Figure 1 is a sectional side elevation of a fire fighting device illustrating an embodiment of my invention.

Figure 2 is a cross sectional view taken on the line 2—2 of Figure 1 looking in the direction of the arrow.

Figure 3 is a sectional side elevation of a nozzle utilized in connection with the fire fighting device shown in Figure 1 and valve mechanism for controlling the discharge of fire extinguishing material from the nozzle.

Figure 4 is a cross sectional view of the nozzle shown in Figure 3 taken on the line 2—2 of Figure 1 similar to Figure 2 but showing the valve mechanism in another position.

Figure 5 is a sectional side elevation showing a modified arrangement of my improved fire fighting device.

Figure 6 is a sectional side elevation of a quick connecting and releasable coupling for connecting a hose to a source of liquid supply, such as a water faucet.

Figure 7 is a cross sectional view of the coupling taken on the line 7—7 of Figure 6.

Figure 8 is a sectional side elevation showing a further embodiment of my invention.

Similar characters of reference designate like parts throughout the different views of the drawings.

As is well known one of the most efficient fire annihilators is water but that it is not always readily accessible for distribution at the source of a conflagration. In order to have a water supply readily at hand it is the common practice to have a container or reservoir for water having bicarbonate of soda therein in solution and also containing an acid therein in separated condition from the water and soda solution, which combined with the soda in solution will react and evolve a gas pressure, such as carbonic acid gas which places the water in the reservoir under pressure in the container and forcibly ejects the same therefrom, the device usually being suspended from a bracket. To utilize the device it is removed from its support and manipulated to cause the acid to mix with the soda in solution when the water discharged therefrom is directed to the fire by a hose connected to the outlet of the reservoir. It is a primary object of the present invention to provide a substitute for the above described type of fire extinguisher whereby a fire annihilator, which may consist of water or other liquid, or another fire annihilator may be discharged by or with the water, at the source of the fire.

For this purpose I provide a container 12, preferably of cylindrical form, having a removable closure 13 at the end and a hose 14 to be stored within said container, said hose being arranged with a coupling, shown in a general way at C, for quick connection to a source of liquid supply, such as a water faucet, as shown at 15 (Figure 6), and a nozzle which may be connected directly to the hose, as shown at 16 in Figure 5. The device arranged as above described is a unitary structure, the hose being contained within the container which may be supported upon a shelf or suspended from a bracket engaging a handle 16′. In case of fire, the device is removed from its support and the cover 13 removed when the coupling C is readily accessible for connection to a faucet without first removing the hose from the container and the water may be immediately turned on. The hose is coiled within the container, as shown, whereby as the hose is connected to the faucet and an end of the hose withdrawn the hose will be paid out from the container without kinking and a consequent interruption or obstruction of the flow of the water through the hose.

To further prevent kinking of the hose as it is paid out from the container the hose is arranged in the container whereby the hose and the container may have rotative move-

ment one relative to the other. For this purpose, as shown in the structure of Figure 5, a sleeve 17 is inwardly flanged at one end, as at 17′, to loosely engage at the inner side of an annular flange 18 on the nozzle to prevent the sleeve from slipping off from the nozzle. This sleeve is releasably secured in the container by pins 19 extending laterally therefrom engaging bayonet slots in a collar 20 secured in an opening in the container with the nozzle outlet end engaging an opening, as at 21, in a cap 22 threaded on to the end of the collar 20 extending through the opening in the container, this cap co-operating with a flange 23 on the collar to secure the latter to the container. By this arrangement the container may have rotative movement on the connection of the sleeve 17 with the nozzle, or the hose may be rotated on said connection relative to the container. In the device as shown in Figure 5, as the hose is connected to a source of liquid supply a hand grip 24 is grasped by the user and the container with the hose is removed from the connection of the hose with the source of liquid supply to the place of the fire and simultaneously the hose is paid out from the container, the stream from the hose nozzle being directed through the container. To further prevent kinking of the hose one or more swivel couplings 25 may be distributed through the length of the hose.

To mix another fire extinguishing material, such as a chemical, with the fire extinguishing material from the hose a receptacle containing a fire extinguishing material is connected in the line of discharge of the hose, and in the embodiment of this feature of the invention shown in Figure 8 a receptacle 27 is arranged in the container 12 within the coils of the hose 14 stored within the container, the receptacle being rotatably supported in the container to permit of rotative movement of one relative to the other by a tubular trunnion 28 secured to the end of the receptacle rotatably engaging in the container collar 20′ and retained therein by a collar 29 threaded onto the outer end of the trunnion. The discharge from the receptacle is through a tube 30 extending into the receptacle to adjacent the end opposite the end to which the trunnion 20 is secured and projects through the trunnion with the wall at the extremity converging and engaging a tubular portion 21 extending into the trunnion. The fire extinguishing material or chemical is contained in a foraminous carrier which is in the form of an annular receptacle 32 having the inner wall 33 perforated, said carrier being arranged in the receptacle 27 with the outlet tube 30 extending into the carrier. The hose 14 is connected at the end opposite to the coupling C with the receptacle 27, as at 34, at the end opposite to the inlet end of the outlet tube 30. By this arrangement the liquid entering the receptacle through the hose before it is discharged through the outlet tube is caused to mix or take up the fire extinguishing material in the carrier 32. In the use of the device as thus described the closure 13 is removed and the coupling C connected to a source of liquid supply, such as a faucet.

In Figure 1 I have shown an embodiment of my invention particularly adapted for use with a fire extinguishing material such as carbon tetrachloride for extinguishing fires caused by oil or electricity to be discharged from a carrier therefor by the pressure of the liquid discharged through the hose when connected to a source of liquid supply, means being provided to cause the liquid through the hose to discharge said material from its carrier or to discharge the liquid from the source of liquid supply directly from the hose, said means being also adapted to shut off the material in the carrier from the atmosphere and the hose to prevent evaporation of said material or deterioration thereof by exposure to the air. For this purpose a receptacle 35 is arranged in the container similar to the receptacle 27 to permit of the hose being coiled around the same and stored within the container 12. The receptacle 35 is mounted in the container for rotative movement of the receptacle and hose relative to the container by a discharge nozzle 36 secured in the end of the receptacle engaging in the sleeve 20′, said nozzle having a pair of discharge outlet ports 37, 38 (Figure 3) and which nozzle is also in the nature of a valve chamber, the receptacle being retained in position in the container by the end of the sleeve 20′ abutted against the receptacle and a collar 39 threaded to the outer end of the nozzle to abut against the sleeve 20′.

To arrange the nozzle as a valve chamber it is provided with an axial bore 40, preferably tapered as shown, for the reception of valve mechanism in the form of a tapered plug 41. The discharge outlets 37, 38 of the nozzle extend through the nozzle parallel with the axis of the bore 40 and have a laterally extending portion 42, 43 leading from the nozzle bore at diametrically opposite points. To connect the hose with the valve chamber of the nozzle and through said chamber with the nozzle orifice 37, or with the receptacle 35, it is connected to a tube 44 extending through the wall of the receptacle 35 and secured in the nozzle in communication with a port 45 diametrically opposite with the port 46. To control the connection of the hose with a nozzle orifice 37 or the receptacle the valve plug has a port 47 extending diametrically through the plug with which a port 48 communicates extending through the plug at right angles to the port 47. To connect and shut off the receptacle from the noz-

zle orifice 38 the plug has a right angled port 49 opening axially through the inner end of the plug valve and through the lateral wall to be placed in communication with the portion 43 of the nozzle orifice 38.

The respective ports are arranged in the nozzle and in the valve plug so that in one position of said valve the port 47 will be in communication with the portion 42 of the nozzle orifice 37 and the port 48 in communication with the port 45 as shown in Figure 4, thereby connecting the hose with the nozzle orifice 37 to discharge the liquid through the hose from the source of liquid supply directly to the atmosphere to be utilized to extinguish the fire. In this position of the valve the liquid in the receptacle will be shut off from the valve chamber through port 46 and from the nozzle orifice 38 through port 49.

To discharge the material from the receptacle through the nozzle orifice 38 by the liquid passing through the hose from the source of supply the valve plug is adjusted so that the valve port 47 is in register with the ports 45, 46 thereby connecting the hose with the chamber, as shown in Figures 1 and 2. In this position of the valve plug the port 49 will be in register with the portion 43 of the nozzle orifice 38 and the nozzle orifice 37 will be shut off from the valve chamber. The valve plug is also adjustable to place the ports 47, 49 out of register with the port 46 and the nozzle orifices 37, 38 thereby shutting off both the hose and the receptacle from the nozzle orifices.

The plug 41 is rotatably mounted in the valve chamber of the nozzle by a screw 50 passing through an opening 51 in the nozzle between the nozzle orifices and threaded into the end of the plug with a washer 52 interposed between the screw head and the nozzle.

To manipulate the valve a tubular member 53 is secured axially in the valve plug in communication with the port 49 and has a lateral port 54 to connect the tube and port 49 with the receptacle 35, the outer end of the tube 53 being closed and extending through a stuffing box 55 with an operating handle 56 connected thereto at the exterior of the receptacle. The end of the receptacle has a removable closure 57 with a filler opening having a closure 58.

To connect the nozzle orifice 38 with the material in that portion of the receptacle 35 which is lowermost, the specific gravity of the material therein, carbon tetrachloride, being greater than that of the expelling material, water, entering therein through the hose, inlet means is connected to the tubular member 53 in communication with the port 49 to position an inlet thereto by gravity in the lowermost portion of the receptacle 35 in all positions thereof. This inlet means comprises a tube 59 extending longitudinally of the receptacle with its opposite ends open to the receptacle, said tube being mounted for rotative movement about the axis of the receptacle and in communication with the tubular member 53, by a sleeve 60 to which the tube 59 is connected by a tube 61 and to position the tube 59 at the side of the receptacle. The sleeve may be directly mounted upon the tubular member 53 in communication therewith, but as shown it is mounted upon a tube 62 secured at one end in the valve plug concentric with the tubular member 53 and in spaced relation thereto, the opposite end of the tube 62 being rotatably mounted in the stuffing box 55. This tube 62 has a port 63 to connect the sleeve and thereby the inlet means to the tubular member 53. The sleeve 60 has a portion between the ends thereof in spaced relation to the tube 62 whereby the inlet means is at all times in communication with the tube port 63, and the sleeve is supported on the tube 62 for rotative movement between the stuffing box 55 and a collar 64 fixed to the tube with suitable washers 65, 66 interposed between the same and the ends of the sleeve.

To shut off the end of the inlet tube 59 which is uppermost from the receptacle and open the inlet end which is lowermost thereto, gravity valve mechanism is provided, shown as comprising a pair of balls 67, 68 to cooperate with valve seats arranged at opposite ends of the tube and connected by a rod 69 of such length so that when one valve is seated the other is unseated and whereby the valves are operable in unison.

In the use of the device last described the closure 13 is removed and the hose coupling C connected to a source of liquid supply, such as a water faucet, and the valve 41 adjusted by the handle 56 to discharge the liquid from the source of supply direct upon a fire, or to cause said liquid to enter the receptacle 35 to discharge the material therefrom, and by removing the container 12 from the hose connection with the liquid supply to the place of the fire the hose will be paid out from the container, and this may be during the discharge of the liquid from the nozzle due to the arrangement of the storing of the hose within the container.

While I have described and illustrated the receptacle 35 and hose as being of a unitary structure with the container 12 in which the hose is to be stored and thereby providing a compact arrangement of fire fighting device, it will be obvious that the receptacle 35 may be connected in the line of discharge of the hose and utilized independent of the container and come within the scope of my invention.

As stated the hose is arranged with a coupling for quick connection to a source of liquid supply. As shown in Figures 5, 6 and 7, this coupling comprises a pair of members 67′, 68′ having a slip joint connection, the one

member 68′ being arranged at the outer end for connection to a faucet, and is preferably permanently connected thereto as by internal screw threads for connection to a threaded faucet in common use as shown at 69′. The member 67′ is arranged for connection to a hose and has spring fingers 70 mounted at one end as at 71 in slots 72 of a threaded portion 73 with the free ends bent inwardly and tensioned to normally spring laterally, said bent ends being adapted to engage an annular recess 74 in the coupling member 68′ and locked therein by a thumb nut 75 mounted on a threaded portion of the coupling member 67′.

In the coupling shown in Figures 1 and 8 the coupling member 67′ has pivotally mounted thereon a yoke shaped lever 76 and has pivotally connected thereto a yoke shaped member 77 to be brought into and out of operative relation with the annular recess 74 of the member 68′ by movement of the lever 76 to lock the coupling members together.

Having thus described my invention, I claim:

1. In a fire fighting device, the combination of a container having an outlet, a hose having a coupling at one end and a nozzle at the other end to be stored in said container connected to the outlet for rotative movement of the container and hose one relative to the other, said hose being arranged within the container whereby the end with the coupling is accessible without removal of the hose from the container for connection to a source of liquid supply, and the hose is adapted to be paid out from the container as the latter with the contained hose is removed from said connection.

2. In a fire fighting device, the combination of a container having an outlet, a hose to be stored in said container, a nozzle at one end of said hose, mounted in the container in communication with the exterior thereof and for rotative movement of the nozzle and container one relative to the other, and a coupling at the opposite end of the hose to connect the hose to a source of water supply.

3. In a fire fighting device, the combination of a container having an open end and an outlet, a removable closure for the open end of the container, a hose to be stored within said container arranged with means at one end for connection to a source of liquid supply, a nozzle connected to the opposite end, and a flanged sleeve loose on the nozzle, said sleeve and the container being constructed and arranged to releasably connect the sleeve to the container with the nozzle in communication with the container outlet and permit of rotative movement of the container and hose one relative to the other.

4. In a fire fighting device, the combination of a container having an open end and a perforation in the opposite end, a removable closure for the open end of the container, a sleeve mounted in the container perforation, said sleeve being arranged with bayonet slots within the container, a cap mounted on said sleeve exterior of the container having a perforation to constitute an outlet for the container, a hose having a nozzle at one end and a coupling at the opposite end stored within the container, a sleeve having an inwardly extending flange whereby it is rotatably mounted on the nozzle with the flange engaging at the inner side of an annular flange on the nozzle, said sleeve having pins to co-operate with the bayonet slots in the sleeve fixed in the container perforation to releasably connect the nozzle with the outlet of the container and have rotative movement of the container and hose one relative to the other.

5. In a fire fighting device, the combination of a container open at one end and having a perforation in the opposite end, a removable closure for the open end of the container, a hose to be stored within the container having a coupling and a nozzle at opposite ends, said hose being adapted to be paid out from the container when the coupling is connected to a source of water supply and the container removed therefrom, and means to couple the nozzle to the container in communication with the perforation therein for rotative movement of the hose and container one relative to the other.

6. In a fire fighting device, the combination of a container having a removable closure and an outlet, a hose to be coiled and stored within the container arranged with means for connection to a source of liquid supply and having a swivel connection with the container outlet for rotative movement of the hose and container one relative to the other to prevent kinking of the hose as it is withdrawn from the container.

7. In a portable fire fighting device, a container having a closure at one end with an opening and open at the opposite end, a closure for the open end, a hose stored in said container having a coupling at one end thereof accessible through the open end of the container for connection to a source of liquid supply, a nozzle at the other end of the hose, means to maintain said nozzle in the container with its orifice in communication with the exterior of the container through the opening therein, said hose being arranged to be paid out from said container when the coupling is connected to the source of liquid supply and the container is removed therefrom.

8. In a portable fire fighting device, a container having an outlet and open at one end with a closure for the open end, a hose in said container arranged with means for connection with a liquid supply, nozzle means maintained in said container in communication with the hose and with the container out-

let, said hose being arranged to be withdrawn from the container while connected to a liquid supply and discharging liquid from the nozzle orifice.

9. In a portable fire fighting device, a tank having an outlet and an opening with a removable closure therefor, a nozzle in said tank with its orifice end removably maintained in said outlet, a hose in said tank spirally coiled about the inside thereof with one end attached to the nozzle and communicating with the exterior of the tank through the nozzle orifice, the other end of said hose being arranged to be easily accessible from the opening in said tank and having means to attach the hose to a source of liquid supply, and the hose adapted to be paid out from the tank when the end is withdrawn therefrom.

10. In a portable fire fighting device, a tank having an outlet and an opening therein with a removable closure therefor, a hose having an attachment at one end contained within the said tank, a nozzle attached to the other end of said hose and maintained in said tank outlet, and means to permit rotative movement between different portions of the hose, said hose being arranged in said tank to be paid out therefrom when one end is withdrawn therefrom.

11. In a portable fire fighting device, a tank having an outlet and an opening with a removable closure therefor, a hose having an attachment means at one end contained in said tank, a nozzle removably supported within said tank in communication with the exterior thereof through the outlet therein attached to the opposite end of said hose, and means adapted to hold the nozzle and release it from the tank, as and for the purpose specified.

12. In a portable fire fighting device, a tank having an outlet and an opening with a removable closure therefor, means to support a nozzle movably maintained within the tank relative to said outlet with one end in communication with the exterior of the tank, the other end arranged through flexible means contained in the tank to be placed in communication with a source of liquid supply as and for the purpose specified.

13. In a portable fire fighting device, a tank having an outlet and an opening with a removable closure therefor, a hose having a coupling at one end and a nozzle at the other end stored within said tank, said nozzle being in communication with the exterior of the tank through the outlet thereof and means to lock the nozzle in the tank, said nozzle being operable to eject liquid therefrom to the exterior of the tank when the coupling end of the hose is attached to a source of liquid supply.

14. In a portable fire fighting device the combination of a container having an opening at one end and a closure therefor, a perforation adjacent the opposite end, and a hose having a nozzle at one end and a coupling at the other end stored in said container with the coupling located adjacent the closure end of the container and the nozzle maintained in a locked position inside the container adjacent the opposite end with its orifice in communication with the exterior of the container through the perforation in the container, said hose being so arranged as to be withdrawn from the container when the hose is connected to a source of liquid supply and the container removed therefrom.

15. In a portable fire fighting device, a tank having an outlet and an opening therein and a removable closure for said opening, a hose having attachment means at one end and a nozzle at the other end contained within said tank, said attachment being adjacent the closure end of the tank and the end of said nozzle being supported inside the tank and in communication with the exterior of said tank through the outlet thereof and means in the tank adapted to lock and release the nozzle from the tank as and for the purpose specified.

16. In a portable fire fighting device, a tank having an outlet in one end and an opening in the other end with a removable closure for said opening, a hose stored in said tank, said hose having a coupling at one end located adjacent the closure end of the tank, means in said tank including a nozzle to attach the other end of the hose to the tank with the hose in communication with the exterior of the tank through the nozzle orifice maintained in the outlet of said tank as and for the purpose specified.

17. In a portable fire fighting device, a tank having an outlet and an opening therein and a removable closure for said opening, a hose having attachment means at one end contained in said tank, a nozzle removably supported within said tank in communication with the exterior thereof through the outlet therein attached to the opposite end of said hose and means adapted to hold the nozzle and release it from the tank through the closure opening as and for the purpose specified.

Signed at the city of New York, in the county of New York and State of New York, this 11th day of August, 1922.

GEO. T. PEARSONS.