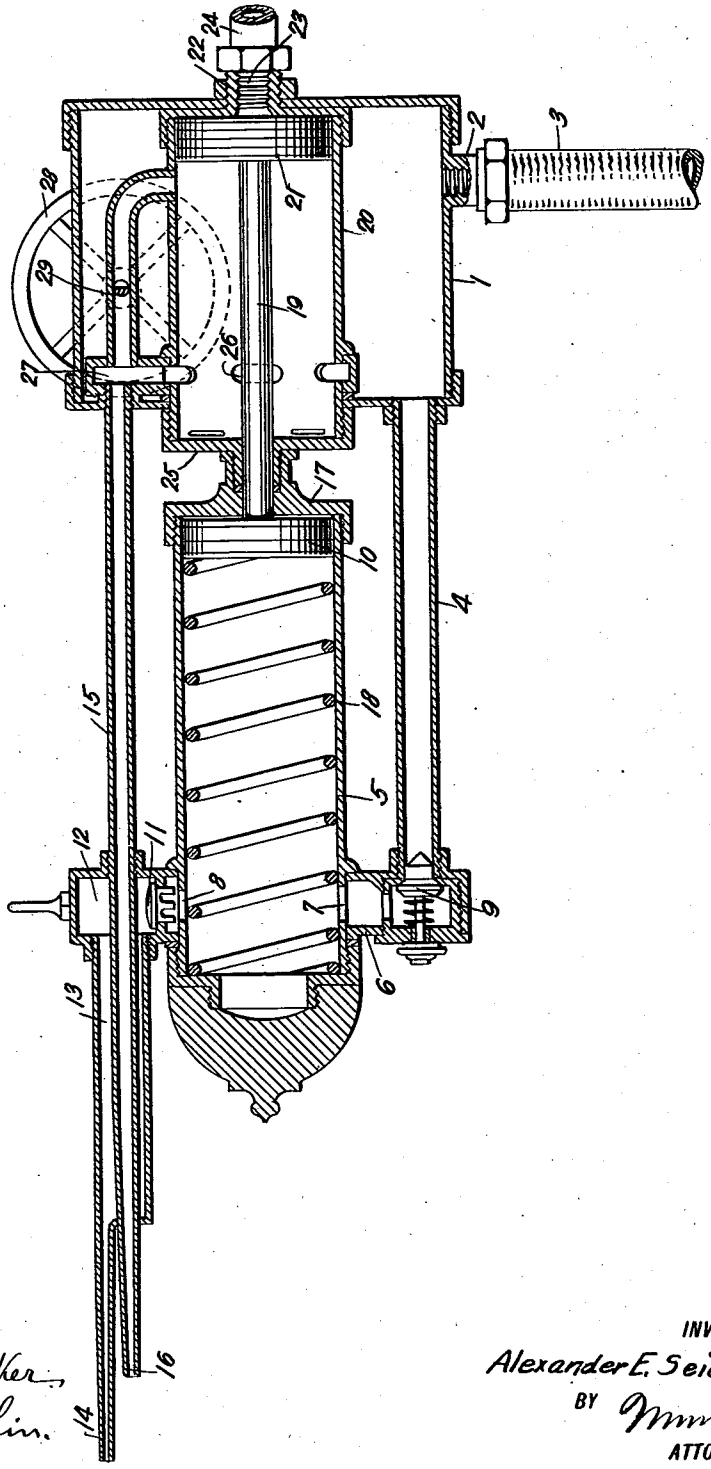
A. E. SEIDLER.

AUTOMATIC FIRE THROWER.

APPLICATION FILED APR. 20, 1918.

1,304,710. Patented May 27, 1919.



WITNESSES

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ALEXANDER E. SEIDLER, OF NEW YORK, N. Y., ASSIGNOR TO FREDERICK C. AUSTIN, OF CHICAGO, ILLINOIS.

AUTOMATIC FIRE-THROWER.

1,304,710. Specification of Letters Patent. Patented May 27, 1919.

Application filed April 20, 1918. Serial No. 229,787.

To all whom it may concern:

Be it known that I, ALEXANDER E. SEIDLER, a citizen of Russia, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Automatic Fire-Thrower, of which the following is a full, clear, and exact description.

This invention relates to fire throwing devices and has for an object the provision of an improved apparatus which will utilize the power created by the explosion of a shell of a rifle or the explosion of a shell of a rapid fire gun for projecting the burning fluid.

Another object in view is to provide a simple, comparatively light structure which may be connected to a rapid fire gun or any similar gun so as to receive power therefrom.

A further object of the invention is the provision of means for utilizing power from a rapid fire gun or other gun and causing the combustible gases from the gun to not only project the fluid, but provide a flame for igniting the same.

In the accompanying drawing:

The figure is a longitudinal vertical section through a fire thrower disclosing an embodiment of the invention.

Referring to the accompanying drawing by numerals, 1 indicates a casing which is provided with an extension 2 designed to have a pipe or tube 3 connected therewith, said pipe or tube being connected with a tank or other suitable source of supply under any desired pressure, said tank supplying the fluid to be projected to the casing 1 and from said casing through pipe 4 to the projecting cylinder 5. Cylinder 5 extends through a hollow ring 6, which ring is in communication with the cylinder through the ports 7 and 8. A check valve 9 is interposed between pipe 4 and ring 6, so that the fluid may freely enter the cylinder 5 until the piston 10 begins to move, as hereinafter fully described, for ejecting the fluid from the projecting cylinder. A check valve 11 is arranged adjacent the outlet 8 and moves in a direction away from said outlet whereby when the fluid from the cylinder 5 is flowing outwardly from the cylinder into the ring 6 it will raise the valve 11 and enter into the compartment 12 and from thence into the projecting barrel 13 and finally out the nozzle 14 under a comparatively high pressure.

A flame pipe 15 extends through the chamber 12 and the barrel 13 so that the nozzle 16 will be preferably near the nozzle 14, but spaced a sufficient distance therefrom to ignite the fluid emerging from nozzle 14 at some appreciable distance from said nozzle.

Referring again to piston 10 it will be seen that the same is normally against the head 17 of the cylinder 5, but when pressure is brought to bear thereon it will compress the spring 18 and force the oil from the cylinder as above described. When the power exerted on piston 10 has been removed the spring 18 will move the piston back to its former position as shown in the drawing. In order that power may be provided for piston 10 the piston is connected with a piston rod 19 which extends into what may be termed a firing cylinder 20 where it is connected to a driving piston 21. Casing 1 is provided with a threaded boss or extension 22 designed to receive the threaded end 23 of a gun 24, said gun being an ordinary rifle used by an infantryman, or a rapid fire gun, or other suitable gun. The gun 24 must use only a blank cartridge as the power from the powder is what is desired to act as an expanding gas in back of the piston 21 for forcing the same to the end 25 of cylinder 20, and at the same time move piston 10 against the action of spring 18. Ordinarily several charges may be discharged from gun 24 before piston 21 has finished its stroke, but as soon as it has finished its stroke and is nearest to the end 25 the burning gases will pass out through the various discharge ports into the chamber 27 and from thence into the flame pipe 15 and eventually out of the nozzle 16 so as to ignite the fluid passing through nozzle 14. In this way there will be provided a separate discharge flame for each impulse of fluid. However, usually the device is operated so rapidly as to provide what would be a substantially continuous discharge of flame and a substantially continuous discharge of fluid, said fluid, however, being discharged in separate impulses.

If it should be found that the pressure is too high in the cylinder 20 against piston 21 some of this pressure may be relieved by turning the wheel 28 and thereby open to a certain extent the valve 29. This may also be done in case the flame from port 26 is not sufficient to properly ignite the fluid. In addition, after the device has been in use for sometime valve 29 may be slightly opened

or even completely opened to act as an exhaust, though ordinarily this is not necessary as the exhaust will pass back into the gun 24. This is not objectionable to gun 24 because the gun is only acting as a power member and not as a projectile projecting device. In using the device it is, of course, understood that any kind of fluid may be used which is supplied to the pipe 3 from any suitable source and that any form of gun 24 may be used which may be properly connected to casing 1. It will be noted that the cylinder 20 will become heated and the oil entering through pipe 3 will act as a cooling medium to the cylinder while in turn the cylinder will heat the oil to a certain extent and make the same flow more easily through pipe 4 into the cylinder 5 and from thence out through nozzle 14.

What I claim is.

1. A flame throwing device comprising a casing, means on the casing for connecting the same with a gun, power means operated under pressure by a discharge of gas from said gun, means for directing a liquid to a point in front of said power means, a discharge barrel for said liquid for directing the liquid from said power means to a discharge point, and means for supplying a flame to said liquid after it has been discharged.

2. A flame throwing device comprising a casing, a projecting cylinder in communication with said casing, means for supplying oil to said casing and from thence into the projecting cylinder, a discharge barrel connected with said projecting cylinder, a flame supplying member, and means operated by the discharge of a gun for forcing the liquid from said projecting cylinder and substantially at the same time supplying a flame to said flame supplying member.

3. A flame throwing device comprising a casing, means for directing a fluid into said casing, a projecting cylinder, a pipe extending from the casing to the projecting cylinder, a check valve in said pipe to allow fluid to pass through said pipe into the projecting cylinder and prevent the return of any of the fluid, a discharge barrel connected with said projecting cylinder, a piston arranged in said projecting cylinder, a piston rod extending from said piston, a pressure chamber, a piston connected with said piston rod arranged in said pressure chamber, means for directing gases under pressure into said pressure chamber, moving both of said pistons and thereby causing the liquid in said projecting cylinder to be ejected through said discharge barrel, and means for directing part of the gases from said pressure chamber to a point adjacent the discharge end of said barrel.

4. A flame throwing device of the character described comprising a casing, means for directing oil into the casing, a projecting cylinder, a pipe connecting the casing with the projecting cylinder, a check valve for preventing a back flow of oil through said pipe, a discharge barrel connected with said projecting cylinder, means including a piston for quickly ejecting fluid from said cylinder, and means for directing a flame to a point adjacent the discharge end of said barrel.

5. A device of the character described comprising a casing, a projecting barrel, a discharge cylinder, means for connecting said cylinder with said barrel, means for connecting said cylinder with said casing, an independent check valve arranged in each of said means to prevent back flow, a piston arranged in said cylinder, a rod connected to said piston, an intermittently operated second piston connected with said rod for intermittently forcing said first mentioned piston in one direction for causing the cylinder to be emptied into said discharge barrel, and means for returning the piston to its former position.

6. A flame throwing device comprising a casing, a discharge barrel, a cylinder, means for connecting the cylinder and the discharge barrel so that liquid from the cylinder will pass into the discharge barrel, means connecting the casing with the cylinder whereby fluid can flow from the casing into the cylinder, an independent check valve in each of said means for preventing back flow of liquid into the cylinder and into the casing respectively, a piston arranged in said cylinder, means acting on said piston for moving the same to eject the liquid from said cylinder, a spring for returning said piston, and means for providing a flame adjacent the discharge end of said discharge barrel upon each movement of said piston in one direction.

7. A flame projecting device comprising a discharge barrel, a casing for supplying oil to said barrel, means for causing oil in the casing to be forced through said discharge barrel, said means including a pair of pistons and a rod connecting the pistons, means for directing burning gases against one of said pistons for actuating both pistons, and means for directing part of said burning gases to a point adjacent the nozzle of said discharge barrel.

8. A flame projector comprising a projecting barrel, a pair of alined cylinders, a piston in each of said cylinders, a piston rod connecting said pistons, means for directing gases under pressure into one of said cylinders for moving the piston therein whereby the other piston will be also moved, means for directing oil into the cylinder of said last mentioned piston, means for directing oil from said last mentioned cylinder to said projecting barrel, and means for directing a

part of said gases to a point adjacent the outer end of the said barrel for igniting the oil passing therethrough.

9. A flame projecting device comprising a discharge barrel, a cylinder, means for connecting said cylinder with said barrel, a casing connected with the cylinder for supplying oil thereto, a piston arranged in said cylinder, a second cylinder, a piston positioned in said second cylinder, a piston rod connecting said pistons, means for directing burning gases into one of said cylinders back of the piston therein for moving the same and the other piston for forcing liquid into said barrel, a flame tube extending to a point near the end of said barrel, means for directing some of said burning gases into said tube, said means having communicating passageways opening at different points into said second cylinder, and a manually operated valve for controlling one of said passageways.

ALEXANDER E. SEIDLER.