S. L. HARWOOD.

FIRE EXTINGUISHER.

APPLICATION FILED MAY 11, 1912.

1,068,897. Patented July 29, 1913.

Fig. 1.

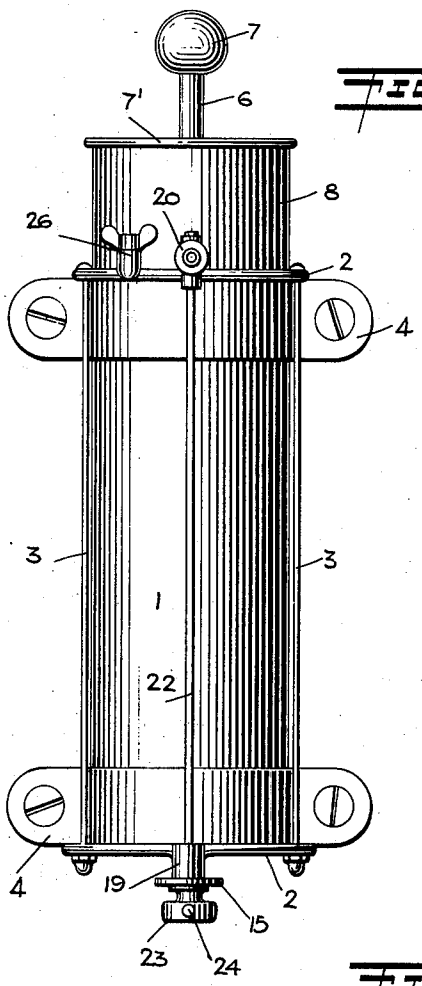


Fig. 2.

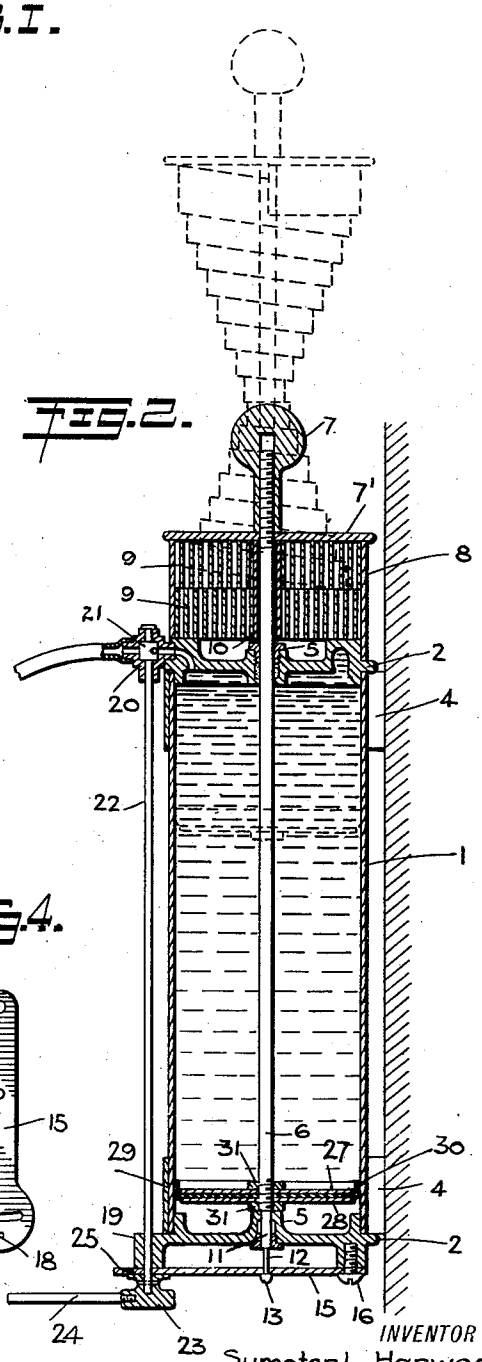


Fig. 4.

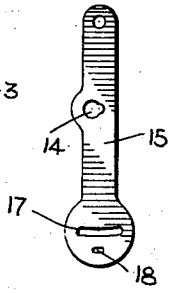
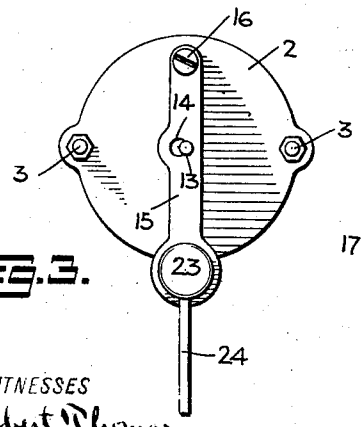


Fig. 3.



WITNESSES

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SUMPTER LEA HARWOOD, OF DUBLIN, GEORGIA, ASSIGNOR OF THREE-EIGHTHS TO JAMES M. FINN, OF DUBLIN, GEORGIA.

FIRE-EXTINGUISHER.

1,068,897. Specification of Letters Patent. Patented July 29, 1913.

Application filed May 11, 1912. Serial No. 696,614.

To all whom it may concern:

Be it known that I, SUMPTER L. HARWOOD, a citizen of the United States, and a resident of Dublin, in the county of Laurens and State of Georgia, have invented a new and Improved Fire-Extinguisher, of which the following is a full, clear, and exact description.

My invention relates to fire extinguishing devices designed especially to be attached to automobiles and other motor vehicles for the purpose of extinguishing fires due to ignition of the contents of the carbureter, or from any other causes; and the primary object thereof is to produce a device of the kind mentioned which can be thrown into operation simply by turning a handle or lever and made to discharge a stream of fire extinguishing fluid upon the flames and smother them.

Reference is to be had to the accompanying drawings forming a part of this specification, in which the same characters of reference indicate the same parts in all the views.

Figure 1 is a side elevation of my improved fire extinguisher; Fig. 2 is a longitudinal sectional view of the same; Fig. 3 is a bottom plan thereof; and Fig. 4 is a view of a detail of my invention.

Referring particularly to the drawings, I employ the numeral 1 to designate the body or casing of my improved fire extinguisher, this body being preferably cylindrical in shape, having its ends closed by the heads 2. These heads 2 are joined by tie rods 3, which hold them firmly in place, making a closed structure. This casing is secured to the dashboard or to some other part of the automobile by means of clamps 4, which are passed around the same adjacent the ends thereof, as shown in the drawings.

In the heads 2 of the casing 1 are formed stuffing boxes 5, through which pass the ends of a rod 6, on which is mounted inside the casing a piston. This piston rod projects from both ends of the casing and has one end, shown as the upper end on the drawings, threaded, and on this threaded end is secured a knob 7. Between the knob 7 and the adjacent head 2 of the extinguisher is a tubular section 8, in which are a pair of volute springs 9. These springs are secured at their inner ends to a sleeve 10, surrounding the rod 6 in the tubular section 8, and their bases rest one against the head 2 and the other against a disk 7′ which closes the outer end of the section 8, this disk being also mounted on the rod 6 by screw-threading, and normally abutting against the end of the knob 7. If preferred, the knob and the disk may be made in one piece. The function of the springs 9 is to force the disk 7′ and the rod 6 outward to operate the piston on the rod 6, the section 8 remaining stationary, being secured to the head 2 upon which it fits; and discharge the fire extinguishing fluid from the casing when occasion arises to use the same. The opposite end of the rod 6, where it passes through the stuffing box 5, is reduced, as shown at 11, and the portion which projects from this end is still further reduced, as shown at 12, and terminates in a head or button 13. This head or button 13 forms a shoulder and passes through an aperture 14 having a suitable notch formed in its edge in a pivoted bar 15, which is secured by means of a screw 16 to the adjacent head 2. The opposite end of this bar is provided with a transverse slot 17, curved concentric with the pin 16, and is likewise provided with an opening 18 between the slot and the adjacent end of this bar.

The numeral 19 represents a boss or bearing formed on the edge of the head 2 adjacent the bar 15, and at the opposite end of the casing is a perforated nipple 20, the bore of which communicates with a duct leading through the adjacent head 2 to the interior of the casing 1. To one end of this nipple is secured a section of hose or other tubing through which the fire extinguishing fluid can be discharged to any point; and the passage through the nipple is controlled by means of a rotary valve 21. This valve is operated by a stem 22 which passes along the casing 1 through the bearing 19 and the slot 17 in the bar 15, and terminates in a head 23. This head 23 has a handle 24, and it also is formed with a projection 25 which passes into the opening 18, as shown in Fig. 2.

The numeral 26 represents an opening through which the casing 1 can be filled, this opening being closed by a screw-threaded plug in the shape of a wing nut, as shown in Fig. 1.

In operation, the bar 15 will be in such position that the reduced end 12 of the rod

6 will lie in the notch of the recess 14, and the button 13 will engage the lower surface of this rod and hold the rod 6 in such position that the piston thereon will be adjacent the stuffing box 5 at the end opposite the springs 9, as shown in Fig. 2. The projection 25 from the head 23 fitting into the opening 18, and this head 23 being fast to the valve stem 22, the valve 21 thereon must occupy a certain position with respect to the bar 15 and the rod 6 at this time, and this position is the closed position of the valve, to prevent any of the fluid in the casing 1 from passing out through the hose attached to the nipple 20. In the event of fire, the operator lays hold of the handle 24 and turns it, rotating the stem 22 and the valve thereon until the valve comes into open position. The direction of rotation will be clockwise, referring to the position of the parts in Fig. 2, and the moment the head 23 is turned with the stem 22 as an axis, the projection 25 swings the bar 15 to the left also, moving the notch 14 away from the section 12 of the rod 6, and bringing the button into registry with the opening 14, which is of greater size than the button. The force of the springs 9 is now effective against the inside of the disk 7′, and causes the rod 6 to draw the piston thereon toward the end 2, to which is secured the nipple containing the valve 21. This position of the parts is illustrated by the broken lines in Fig. 2, which show how the springs force the disk 7′ upward, owing to the fact that the disk 7′ abuts against the end of the knob 7 which is fixed on the outer end of the rod 6. This forces the fluid out through the bore of the nipple 20 and the hose attached thereto, and puts the fire out immediately. The valve 21 need only be turned through a small angle in order to carry the bore of the same out of alinement with the passage which leads to the discharge pipe. Should it not be necessary to use the entire contents of the casing 1, the movement of the piston can be checked by turning the lever 24 to close the valve. The body of fluid between the piston and the head 2 through which the rod passes will then prevent the piston from moving further.

From an inspection of Fig. 2 it will be seen that the diameter of the button 13 is about the same as the diameter of the section 11 passing through the stuffing box 5. The section 11 and the button 13 can be withdrawn through the bore of the stuffing box 5 entirely, and as the piston rod is held in alinement with the bore of the stuffing box the button 13 and sections 11 and 12 will pass back through the stuffing box when the piston rod is moved to force the piston away from the discharge end of the casing to allow the same to be refilled for further use.

Leakage is prevented through the bore of the stuffing box 5 in the head 2 adjacent the bar 15 by constructing the piston to consist of a pair of plates 27 and 28, between which is clamped a disk of rubber or leather, the ends of which are turned toward the discharge end of the casing to form a flange 30. Ordinary nuts 31 may be used to clamp the disks 27 and 28 together to hold the disk 29 firmly between them. When the piston moves toward the discharge end of the casing the action of the fluid will tend to spread the flange 30 and force the same into tight contact with the inner surface of the casing 1, and all leakage will be thus obviated.

The body of the casing 1 between the heads 2 is preferably made of glass, and the section beyond the head 2 in which the outlet is formed is made of brass, and the end thereof is closed by the lid or disk 7′, which fits tightly upon the same. This brass section forms a housing for the springs, which may be filled with oil, and the disk 7′ may be provided with a packing to have an air-tight fit with the end of the bushing.

As stated above, the knob 7 and the disk 7′ may be made separate or integral. When the extinguisher piston is to be reset the rod 6 is forced down against the springs 9 until the button 13 again passes through the aperture 14 in the bar 15. In doing this the knob 7, and disk 7′ as well, may be unscrewed to some extent so that it will not be necessary before locking the projection 13 to compress the springs 9 to the full extent; and after the projection 13 is engaged with the bar 15, the disk 7′ and knob 7 can be screwed home to close the upper open end of the section 8. While the knob 7 and disk 7′ may be made separate or integral, the former construction is preferred, and it is to be understood that it is not at all necessary that the disk or cover 7′ should be threaded on the outer end of the rod 6, but may be loosely mounted thereon instead.

I wish to have it understood that the above description taken in connection with the accompanying drawings is illustrative only, and that it illustrates only a preferred embodiment of my invention, and that I do not care to be limited to the specific details thereof, but wish to reserve to myself the right to make whatever changes in the shape, size and arrangement of the parts which fairly fall within the scope of the appended claims.

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

1. In a fire extinguisher, the combination of a casing having an outlet, a valve for controlling said outlet, means inside said casing for delivering the contents thereof through said outlet, means projecting outside of said casing and connected to said means inside the casing for moving said means inside the

casing, a locking device for the means projecting outside the casing, means for operating the valve, and a connection between the valve-operating means and the locking device to release the means for delivering the contents of the casing when the valve is opened.

2. In a fire extinguisher, the combination of a casing having an outlet, a piston in said casing, a rod for said piston passing through the wall of the casing, a knob on the outer end of said rod, a compression spring between the said knob and the said casing, and a movable disk mounted on said rod to engage the casing and cover the spring when the extinguisher is not in use.

3. In a fire extinguisher, the combination of a casing having a valve controlled outlet, a bar pivoted to the casing, said bar having an opening therethrough, a rod carrying a piston mounted in said casing, one end of said rod passing out of said casing and having a shoulder thereon which passes through the opening in the bar and engages the edge of the same to hold the bar against movement, means for moving said rod to cause the piston to discharge the contents thereof when the bar is moved into position to allow the shoulder on the rod to move through the aperture therein, and means for operating the valve of the outlet from said bar.

4. In a fire extinguisher, the combination of a casing, a rod therein having a piston thereon, a bar pivoted to said casing and having an aperture therethrough, one end of said rod having a projection thereon which is adapted to pass through the aperture in the bar and engage the edge thereof to prevent movement of the rod, an outlet from the casing, a valve for the outlet, said valve having a stem passing through a slot in the outer end of said bar, and a handle connected to the stem, said handle having a projection which engages an opening adjacent the slot, whereby when the handle is turned the valve is opened and the bar moved to release the rod, to allow the piston to discharge the contents of the casing.

5. In a fire extinguisher, the combination of a casing having an outlet at one end and a piston therein, a rod for operating the piston passing through the wall of the casing, compression springs engaging the end of the casing having the outlet, to move the piston to discharge the contents of the casing, housing means for said springs surrounding said rod, said housing means serving to contain a lubricant for said springs and to protect the same, and means for locking the springs compressed and releasing the same.

6. The combination of a casing, automatic means for expelling the contents thereof, means for engaging and locking said automatic means against action, a valve for controlling the discharge of said contents, and a connection between said valve and said locking means, whereby when the valve is opened the actuating means will be released.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SUMPTER LEA HARWOOD.

Witnesses:
G. L. DIXON,
M. A. ROGERS.