E. E. FERGUSON.

COMBINED FIRE ALARM BOX AND HYDRANT.

APPLICATION FILED NOV. 1, 1916.

1,215,263.

Patented Feb. 6, 1917.

2 SHEETS—SHEET 1.

Fig. 1.

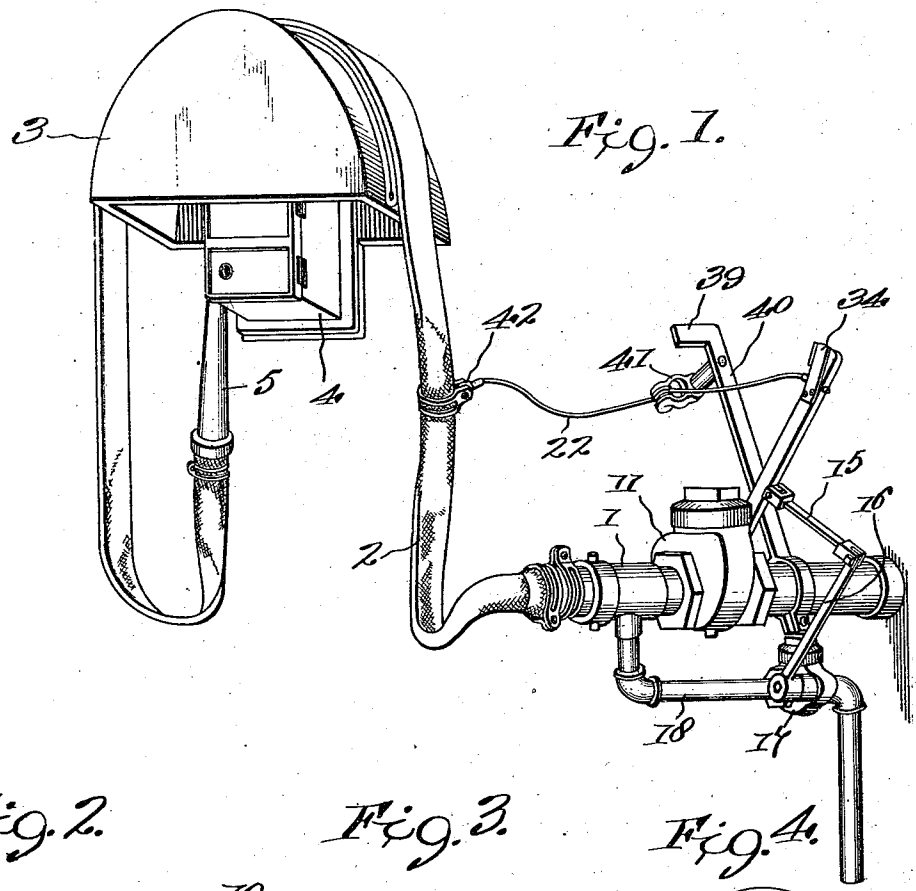


Fig. 2.

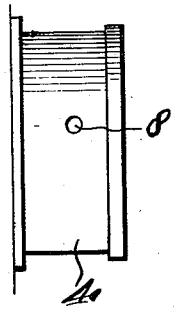


Fig. 3.

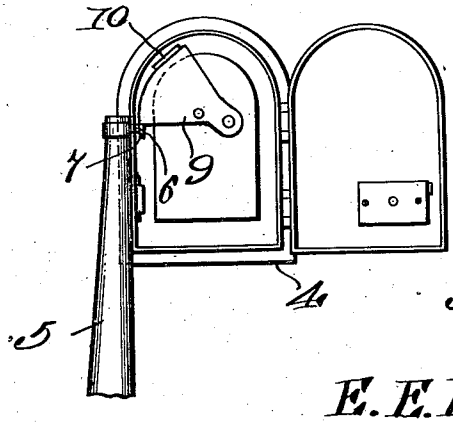
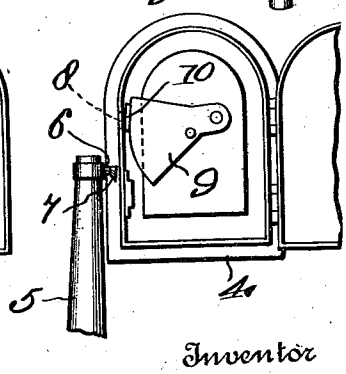


Fig. 4.



Witnesses

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2 SHEETS—SHEET 2.

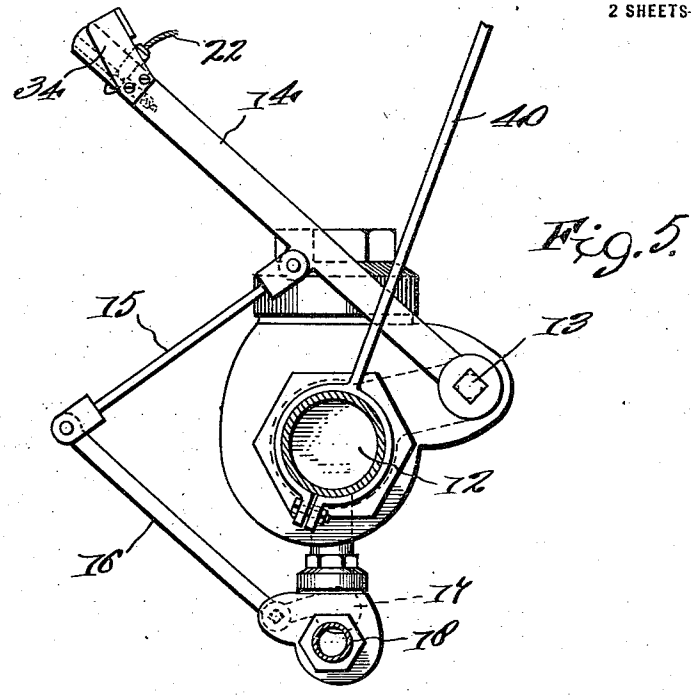


Fig. 5.

Fig. 6.

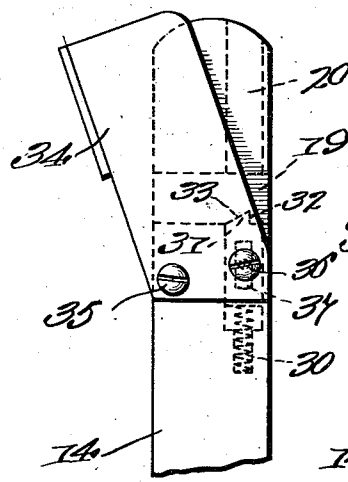


Fig. 7.

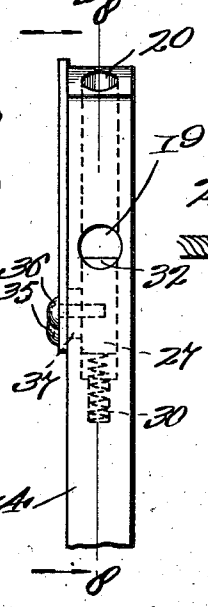
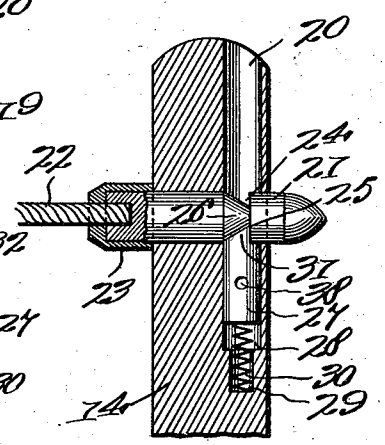


Fig. 8.



Witnesses

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UNITED STATES PATENT OFFICE.

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COMBINED FIRE-ALARM BOX AND HYDRANT.

1,215,263. Specification of Letters Patent. Patented Feb. 6, 1917.

Application filed November 1, 1916. Serial No. 128,922.

To all whom it may concern:

Be it known that I, EDWARD E. FERGUSON, a citizen of the United States, residing at Portsmouth, in the county of Norfolk and State of Virginia, have invented certain new and useful Improvements in Combined Fire-Alarm Boxes and Hydrants; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to improvements in fire alarm and water distribution systems, and consists more particularly in an improved combined fire alarm box and hydrant.

It is a primary object of the present invention to provide a hose mounted in connection with a fire alarm box in such manner that when the nozzle of the hose is removed an alarm will be turned in, and when the hose is removed from a support, provided near the alarm box to receive the same, the water supply will be turned on, so that a single person, detecting a fire may have the convenient means at hand of automatically turning in the alarm and in the same operation turning on the water supply.

The improved apparatus is especially designed to be installed in hotels, theaters, factories, etc., and is to be placed within convenient reach to be readily grasped and brought into action in case of fire.

In the accompanying drawings forming a part of this application, and in which similar reference symbols indicate corresponding parts in the several views:

Figure 1 is a perspective view of an apparatus constructed in accordance with the present invention.

Fig. 2 is a side elevational view of the alarm box.

Fig. 3 is a front elevation of the alarm box with the door open, and showing the alarm setting lever in the potential position before the alarm has been turned in.

Fig. 4 is a similar view of the alarm box, illustrating the alarm lever as having been released.

Fig. 5 is an enlarged cross sectional view through the service-pipe and drain.

Fig. 6 is an enlarged fragmentary view of the upper end of the service valve lever.

Fig. 7 is a similar view at right angles to Fig. 6; and

Fig. 8 is a sectional view taken on the line 8—8 in Fig. 7.

Referring more particularly to the drawings, 1 designates a service-pipe connected to a water main in the usual manner. A hose 2 is held by a suitable union to the service-pipe 1 and is folded and placed upon a support 3 above, or near a fire alarm box 4. The hose nozzle is indicated at 5.

On the nozzle 5 is a projection 6 having an inclined lower edge 7, for the purpose of entering an opening 8 in one side wall of the alarm box 4. As clearly seen from Fig. 3, when the projection 6 is placed within the opening 8 the nozzle 5 is supported thereby and is prevented from accidentally jarring therefrom by the inclined lower edge 7. The alarm setting lever 9 within the box 4, is adapted to engage the projection 6, which lies in the path thereof, and holds said lever 9 suspended in the potential position in readiness to drop by gravity or spring when the nozzle 5 and projection 6 are removed, and act in a well known manner to turn in the general alarm.

Fig. 4 shows the fallen position of the alarm setting lever 9 after the nozzle 5 and projection 6 have been removed; and when in such fallen position the lever 9 carries a block 10 down therewith to close the opening 8 and prevent the reëntering of the projection 6 before the lever 9 has been returned to the upper potential position shown in Fig. 3. By this means the nozzle is prevented from being replaced on the alarm box, when the same would not, if subsequently removed, turn in the alarm. The alarm box 4 therefore furnishes a suitable support from which the nozzle 5 may be suspended, and from which it may not be stolen without sending in an alarm.

In the service pipe 1 is included a valve casing 11 having a gate or other valve 12 therein. The valve 12 is hung on a suitable shaft 13 projecting from the casing 11, and connected to be oscillated by a lever 14. A link 15 connects the lever 14 with a second lever 16 in operative relation to a valve 17 in a drain pipe 18, which is connected to the outer end of the service-pipe 1, as shown in Fig. 1, and permits any water in the hose 2 to flow down therethrough when said hose is placed on the elevated support 3.

From an inspection of Fig. 5, it will be clear that the connections are such that when one of the valves is open the other is closed,

as, for instance, the service valve 12 is shown in this figure to be closed, shutting off the water supply, while the drain valve 17 is open, permitting the water from the hose 2 to be discharged therefrom. It is evident that the valves may be of other construction than here shown.

Referring more particularly to Figs. 6 to 8, inclusive, the upper end of the lever 14 is formed with a transverse opening 19 intersected by a longitudinal opening 20, which is advantageously disposed to one side of the longitudinal axis of said lever. The opening 19 is for the purpose of receiving a tip 21 on a flexible connection 22, such as a cord, rope, or the like, there being a cap 23 forming a shoulder for engaging the wall of the lever 14 adjacent the opening 19, and preventing the tip 21 from passing therethrough. In this tip 21 is an annular groove 24 having an abrupt or perpendicular wall 25 and an inclined or conical wall 26. A pawl 27 is fitted to slide at the base of the longitudinal passage 20 and is limited in its downward movement by a shoulder 28 formed between said passage 20 and a socket 29 in which is placed a coil spring 30 for yieldingly urging the pawl 27 upwardly. The pawl 27 has, at its upper end, a tooth 31 shaped with an abrupt edge 32 and an inclined edge 33 formed complementary to the groove 24 in the tip 21, and fitting the same snugly, as clearly illustrated in Fig. 8. In this position the tip 21 is locked in place by the pawl 27, and can be withdrawn from the opening 19 only when said pawl is retracted in opposition to the spring 30.

The withdrawal of the pawl 27 from engagement with the tip 21 is automatically accomplished by means of a finger 34 pivoted at 35 on the lever 14 and carrying a screw, pin, or other device 36, which engages through a vertically elongated slot 37 in the lever 14, and is connected in any suitable manner through the opening 38 in said pawl 27. This trip finger 34, as disclosed to advantage in Fig. 1, lies in the path of a lug 39 on the upper end of a stationary arm 40. This arm 40 is connected, in any suitable manner, to the service-pipe 1, or other fixed support; the lug 39 thereon forming a stop for the lever 14 and acting, when struck by the finger 34, to swing the latter about its pivotal connection 35, thereby moving the connecting pawl 27 downwardly in the passage 20 in a manner to release the tooth 31 thereon from engagement with the annular groove 24 in the tip 21. In such position the tip may be withdrawn from the slot 19, thus releasing the connection 22.

As shown in Fig. 1, on the arm 40 is a pulley block 41 through which engages the flexible connection 22. The opposite end of the flexible connection 22 is coupled to the hose 2 as by the means shown at 42 in Fig. 1; although other means may be employed without departing from the present invention.

The operation of the invention is carried on substantially as follows:

The several parts are normally in the position shown in Fig. 1, where the nozzle 5 is suspended from the alarm box 4 and the hose rests on the support 3, with the service valve 12 closed, as indicated in Fig. 5, and the drain valve 17 open, allowing any water in the hose to be discharged through the drain 18.

In case of fire the nozzle 5 is grasped and lifted so that the notch or inclined lower edge 7 of the projection 6 may be withdrawn through the opening 8 in the alarm box 4. When the projection 6 is so withdrawn, the lever 9 will drop from the position shown in Fig. 3 to that shown in Fig. 4, and will actuate any suitable mechanism for turning in the general alarm.

When the nozzle 5 has been thus released from the alarm box 4, the hose 2 will be drawn down from the support 3, and when fully removed therefrom will drop by gravity to the ground, thereby pulling upon the flexible connection 22 which will swing the lever 14 over, opening the service valve 12 and, through the link 15 and lever 16, simultaneously closing the drain valve 17, so as not to permit the escape of the water flowing through the service-pipe 1 to the hose 2.

When the lever 14 is thus swung over, the finger 34 will strike the lug 39 on the arm 40 and will move said finger about the pivot 35, thus operating, as above described, to trip the reciprocating pawl 27 and permit the escape from the opening 19 of the tip 21 on the flexible connection 22. The flexible connection 22, together with the tip 21, may thereby be drawn through the pulley block 41 and fall down with the hose 2; while the weight of the valve-operated parts will maintain the same in actuated position with the service-pipe 1 open and the drain 18 closed. Water will thus be supplied to the hose 2 until the valve mechanism is returned by hand to a position closing the service-pipe and opening the drain. This manual return of the valves to their normal positions is accomplished after the fire has been extinguished, and subsequently the hose is replaced on the support 3 which is elevated above the service-pipe 1, and from which any water that may remain therein will be discharged through the drain 18. After the hose has been replaced on the support 3, the flexible connection 22 is again inserted through the pulley block 41, and the tip 21 reëngaged with the pawl 27 in the opening 19.

After the nozzle 5 is suspended from the alarm box by lifting the lever 9 from the position shown in Fig. 4 to the raised po-

tential position shown in Fig. 3, the apparatus is again in the initial position in readiness for subsequent operation.

It is obvious that those skilled in the art may vary the details of construction and arrangements of parts without departing from the spirit of my invention, and therefore I do not wish to be limited to such features except as may be required by the claims.

I claim—

1. The combination of a service-pipe, a valve therein, a hose coupled to said service-pipe, a lever connected to actuate said valve, an arm adjacent said lever, a connection between said hose and lever, a releasable device on said lever for yieldingly holding said connection including a pivoted part adapted to strike said arm and actuate said releasable device when the lever is swung, substantially as described.

2. The combination of a service-pipe, a valve therein, a hose coupled to said pipe, a lever in operative relation to said valve, a connection between said hose and lever, an arm extending in the path of said lever, and a releasable device on said lever for yieldingly holding said connection including a tooth, and a pivoted finger adapted to be struck by said arm and shift the tooth out of engagement with said connection, substantially as described.

3. In a device of the character described, the combination of a water supply pipe, a hose connected to said pipe, a valve in said pipe, a lever connected to actuate said valve, a connection between said lever and hose, and a releasable device on said lever for yieldingly holding said connection, said releasable device including a tooth, spring means for yieldingly forcing said tooth into engagement with said connection, and a pivoted finger on said lever in connection to actuate said tooth, said finger adapted to strike against a fixed part when the lever is swung over to open said valve, substantially as described.

4. In a device of the character described, the combination of a water supply pipe, a hose coupled to said pipe, a support for the hose, a valve in said pipe, a lever for actuating said valve having an opening and an intersecting socket therein, a connection between said lever and hose, a tip on said connection adapted to be received in the opening in said lever and having a notch therein, a tooth movable in said socket and adapted to engage the notch in said tip, spring means for yieldingly urging said tooth into said notch, and means for releasing said tooth from engagement with said notch when the lever is swung over to open the valve, substantially as described.

5. In a device of the character described, the combination with an alarm box, of a support placed near thereto, a water supply pipe, a hose coupled to said pipe and adapted to be held on said support, a valve in said pipe, a device for actuating said valve, means between said device and hose for operating the former when the hose is removed from said support and drops by gravity, a nozzle on said hose, and complementary parts between said nozzle and fire alarm box for providing a support for the nozzle and for holding the alarm mechanism inoperative while the nozzle is in place thereon but in readiness to be placed in operation when the nozzle is removed, substantially as described.

6. The combination of an alarm box having an alarm setting lever therein and an opening adjacent said lever, a hose, a nozzle on said hose, and a projection on said nozzle for entering the opening in said alarm box to form a support for the nozzle and adapted to engage and hold the alarm setting lever in a potential position in readiness to turn in the alarm when the projection is removed, substantially as described.

7. In a device of the character described, the combination of an alarm box, a support, a hose carried on said support, a water supply pipe coupled to said hose, a valve in said water supply pipe, a lever for actuating said valve, a connection between said lever and hose, means for releasing said connection when the valve is open including a pivoted finger on said lever for striking against a fixed part, and a nozzle on said hose adapted to be supported from the alarm box and hold the alarm mechanism therein in a potential position in readiness to turn in an alarm when removed, substantially as described.

8. In a device of the character described, the combination of an alarm box having an opening therein, a nozzle, a projection on said nozzle for supporting the same on said alarm box and fitting through the opening therein in the path of the alarm mechanism whereby to prevent operation of the same until the nozzle is removed, a support near said fire alarm box, a hose coupled to said nozzle and carried on said support, a service pipe coupled to said hose, a valve in said pipe, a lever for actuating said valve, a flexible connection between said lever and hose, and means for releasing said flexible connection when the valve is opened including a movable tooth and a pivoted finger in connection with said tooth and adapted to strike a fixed part when the lever is swung over, substantially as described.

In testimony whereof, I affix my signature.

EDWARD E. FERGUSON.