

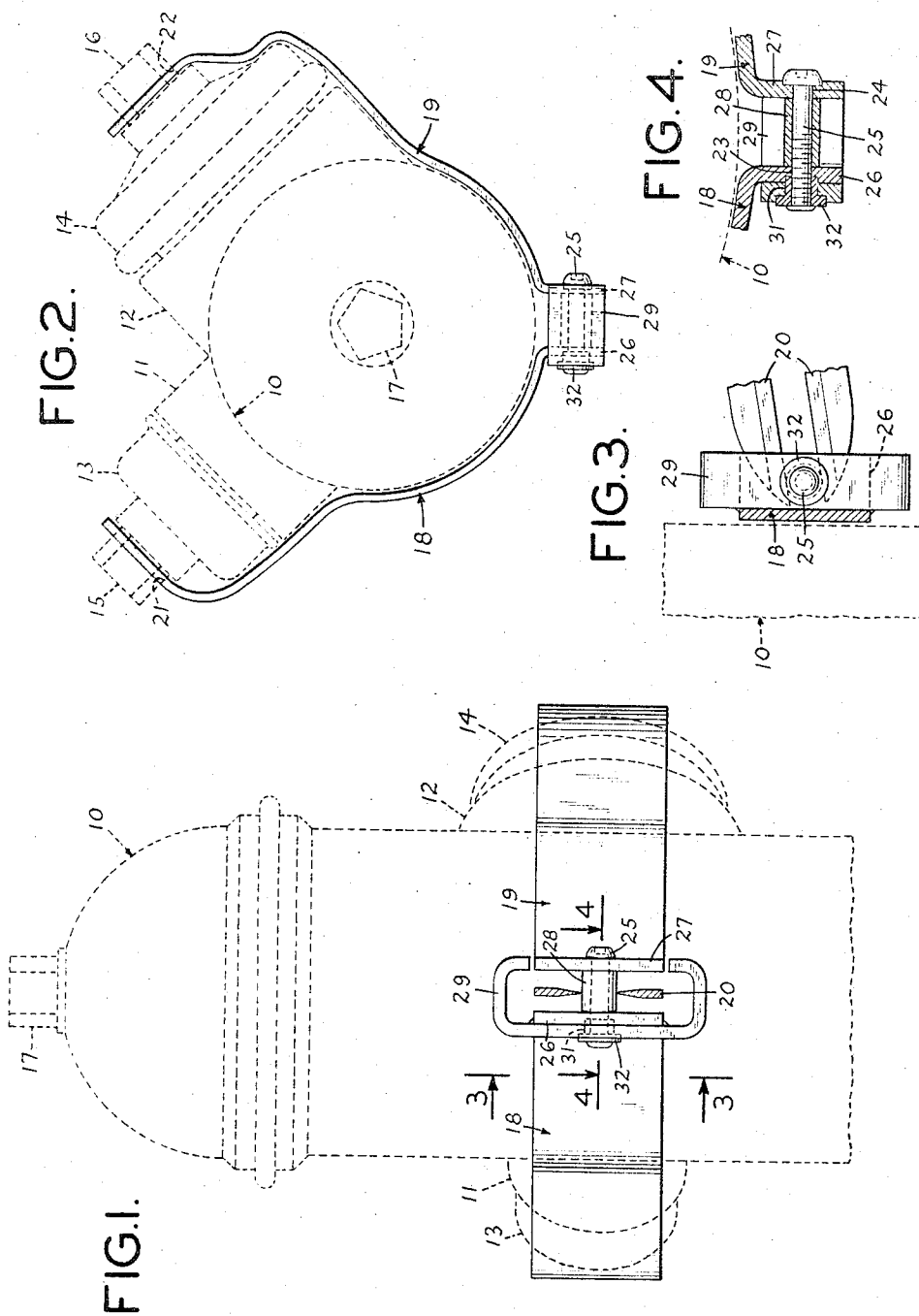
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SECURING DEVICE FOR FIRE HYDRANTS

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SECURING DEVICE FOR FIRE HYDRANTS

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ABSTRACT OF THE DISCLOSURE

A fire hydrant comprising a trunk body, a water inlet source, and a water outlet source in said trunk body including outlet nozzles provided with removable caps rotatably mounted on said outlet nozzles and adapted when in closed position to prevent discharge of water from said outlet nozzles, and means associated with said trunk body and removable outlet caps for preventing rotation of said removable caps when mounted in closed position on said outlet nozzles.

This invention relates to fire hydrants and more particularly to a device to be applied to fire hydrants for preventing the unauthorized discharge of water therefrom.

Conventional fire hydrants generally comprise a trunk body, a water inlet through which water from a water main is conducted and a water outlet source which generally comprises two discharge outlets in the form of nozzles having removable caps disposed thereon. The water from the water main is prevented from passing through the water inlet by means of a valve disposed in the trunk body which valve is controlled by an operating nut extending from the head portion of the trunk body. Thus, if it is desired to discharge water from a fire hydrant, all that is required is that the operator unscrew the caps on the discharge outlets and thereafter turn the operating nut extending from the head portion of the trunk body. Unfortunately, these operations can be easily performed with conventional tools and equipment such as conventional wrenches and the like, thereby affording an opportunity for unauthorized individuals to cause water to be discharged from the fire hydrant. The unauthorized opening of fire hydrants presents a serious problem to municipalities particularly where there already exists a water shortage. This problem becomes particularly serious in hot weather when fire hydrants are used by unauthorized individuals to cool themselves by the normally cool water which discharges from the fire hydrants. During this time, water sheds and reservoirs are receiving the lowest input of water during the year and this drain on the reservoirs is, therefore, undesirable. In addition, to water loss per se, the secondary effect of flows from hydrants is a reduction of pressure in the mains and in the surrounding hydrants. Since hydrants are primarily for use in fire fighting, this reduction of pressure can have disastrous results during the demand for fire fighting water. Other side effects include physical harm which may be inflicted upon passing pedestrians and motorists as a result of an unauthorized opened fire hydrant.

Attempts have been made to deter unauthorized individuals from opening fire hydrants. In one such attempt, the operating nut of the fire hydrant was recessed in the head portion so that it was difficult to open the hydrant with the common tools in the possession of individuals. Unfortunately, the recesses so provided were filled by vandals with debris, cement, and other materials so that access to the recessed nut was difficult. In addition, snow and ice accumulated in the recesses making access to the nut time consuming. Other attempts employed complicated devices for opening the fire hydrants. However, it should be remembered that if the device is made com-

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plicated for unauthorized individuals, it also becomes complicated for the authorized individual and slows the opening of a hydrant in an emergency.

It is an object of this invention to provide an apparatus for preventing unauthorized water discharge from a fire hydrant which is relatively simple; non-costly of itself; easily and rapidly opened with a tool generally not available to unauthorized individuals; and which does not require elaborate installation time. Another object of the invention is to have the major portions of the apparatus re-useable after an emergency or authorized removal from a hydrant.

These and other objects will be apparent to those skilled in the art.

My invention consists in the construction, arrangement, and combination of the various parts of the device, whereby the objects contemplated are attained as hereinafter more fully set forth, specifically pointed out in my claims, and illustrated in the accompanying drawings in which:

FIGURE 1 is a front elevation of the invention as assembled on a fire hydrant.

FIGURE 2 is a top plan view showing the invention as assembled on a fire hydrant.

FIGURE 3 is a fragmentary sectional view taken on the line 3-3 of FIGURE 1 looking in the direction of the arrows and illustrating the application of the jaws of a bolt-cutter.

FIGURE 4 is a section taken on the line 4-4 of FIGURE 1 illustrating the closure means of the invention.

Referring more particularly to FIGURES 1 and 2 of the drawing, numeral 10 designates a conventional fire hydrant which has the usual discharge nozzles or outlets 11 and 12. These outlets normally are closed by closure caps 13 and 14 respectively, which are threaded on the nozzles and which are removable by a wrench or other suitable operating tool applied to cap nuts 15 and 16. Nuts 15 and 16 are integral with the caps 13 and 14 and are provided for enabling the caps to be screwed and unscrewed relative to the nozzles 11 and 12. Extending from the head portion of the fire hydrant is an operating nut 17 which, when rotated, permits water to enter the hydrant through a standpipe. If it is desired to discharge water from the hydrant, all that is required is that the operator unscrew nozzles 11 and 12 and thereafter turn the operating nut 17 extending from the head portion of the hydrant. Normally, however, with the apparatus of the invention, the nozzles are fixed in closed position so that only an individual with a special bolt cutter tool, which is part of most fire fighters equipment, can release the apparatus and thus, the nozzles for rotation. As will be seen from FIGURE 2, configuratively enveloping the trunk body of the hydrant are a pair of bands 18 and 19 having holes or recesses 21 and 22. These holes or recesses are designed to receive nuts 15 and 16 respectively and when the bands are in position on the hydrant, the nuts are prevented from turning because the recesses generally conform to the outer periphery of the nuts.

Referring to FIGURES 2 and 4, it will be seen that the end of each of the bands 18 and 19 furthest away from the recesses 21 and 22 are out-turned away from the hydrant 10 and lie in parallel relation when the bands are locked on the hydrant. Situated in approximately the center of the outwardly extending portions or out-turned ends of each band are two holes 23 and 24 in juxtaposition to each other through which a securing member such as a bolt 25 passes. Intermediate the out-turned ends 26 and 27 is a collar spacer 28 encircling the bolt 25 and being loosely fitted thereon which serves a dual purpose that is, to maintain out-turned ends 26 and 27 at a specific distance from each other and also to add extra thickness to the portion of the bolt 25 intermediate the out-turned

ends 26 and 27. In addition, the collar which is loosely fitted on the bolt prevents tampering with the shank of the bolt by unauthorized individuals in possession of conventional wrenches such as a pipe wrench. Although a collar is preferred for added security, it is to be understood that the device is operable without said collar spacer.

As can be seen best from FIGURE 1, one of the out-turned ends of the band has affixed thereto a C-shaped guard 29 which of course may be also an annular-shaped guard which is fabricated from metal or other suitable rigid material and which is adapted to form a housing for the bolt 25. The guard 29 further prevents access to the bolt 25 by a hacksaw or similar operating tool. Although the guard 29 is shown as being affixed to one of the ends of the out-turned bands, it is apparent that portions of the guard may be integral with each band such that when the bands are in position on the hydrant, the guard forms an annular housing for the securing member.

The guard is also provided with a hole 31 which is aligned with the holes 23 and 24 in the bands 18 and 19. When in position, the bolt 25 passes through the holes 23 and 24 and a nut 32 is threaded on the bolt 25. When assembled, the outer end of the bolt is "peened-over" so that the nut is secured on the bolt 25.

Assembly of the apparatus on a hydrant comprises fitting the recesses 21 and 22 to the cap nuts 15 and 16 respectively, and thereafter drawing the bands 18 and 19 toward each other, thus causing the shaped bands to embrace a portion of the trunk body of the hydrant. The bolt 25 is then passed through hole 24 in band 19 and spacer-collar 28 is then placed over the shank of the bolt 25. The bolt insertion is then continued through holes 23 and 31 of band 18 and guard 29 and engages nut 32. The bolt and nut are then tightened to bring bands 18 and 19 tight to the ends of spacer-collar 28. After the correct positioning is effected, the end of the bolt 25 is peened or hammered.

Disassembly of the apparatus, when the hydrant is required to be opened, consists of cutting through the spacer-collar 28 and bolt shank by means of a bolt cutter 20, as shown in FIGURE 3, whereupon the two bands 18 and 19 fall away from each other, and are easily removed from the hydrant cap nuts 15 and 16. The loose bands can be used to advantage while still on nuts 15 and 16, to unscrew the nozzle caps.

From the above, it will be apparent that I have provided a device for preventing the unauthorized rotation of outlet nozzles on a fire hydrant, which device is simple to install and easy to operate by authorized individuals in possession of a special type bolt cutter not readily available to the general public. Although the device is shown in connection with a fire hydrant having a trunk body, and an approximately dome shape covered housing and outlet nozzles communicating with a water supply line with closure caps for the nozzles mounted thereon normally closing said nozzles, it is to be understood that the device is not limited to the protection of such specialized type of hydrant. It will be apparent that the device can be employed in any type of fire hydrant having outlet sources or discharge nozzles. In such case, minor modifications and structural details may be necessary to adapt the construction to such varying conditions and uses as defined by the appended claims.

Although certain preferred embodiments of the invention have been disclosed for purpose of illustration, it will be evident that various changes and modifications may be made therein without departing from the scope and spirit of the invention.

I claim:

1. A fire hydrant comprising a trunk body, a water inlet source, and a water outlet source in said trunk body including outlet nozzles provided with removable caps having cap nuts integral therewith, said caps being rotatably mounted on said outlet nozzles and adapted when in closed position to prevent discharge of water from said outlet nozzles, and means associated with said trunk body

and removable outlet caps for preventing rotation of said removable caps when mounted on said outlet nozzles said means including a pair of bands configuratively enveloping a portion of said trunk body, each of said bands having a recess near an outer end adapted to receive said cap nuts in non-rotating relation therebetween, the other ends of said bands having an outwardly extending portion in juxtaposition to each other when mounted on said hydrant, and means associated with said outwardly extending portions for maintaining said outward portions in fixed, parallel relation to each other.

2. A fire hydrant comprising a trunk body, a water inlet source, and a water outlet source in said trunk body including outlet nozzles provided with removable caps having cap nuts integral therewith said caps being rotatably mounted on said outlet nozzles and adapted when in closed position to prevent discharge of water from said outlet nozzles, and means associated with said trunk body and removable outlet caps for preventing rotation of said removable caps when mounted on said outlet nozzles, said means including a pair of bands configuratively enveloping a portion of said trunk body, each of said bands having a recess near an outer end adapted to receive said cap nuts in non-rotating relation therebetween, the outer ends of said bands having an outwardly extending portion having holes therein in juxtaposition to each other when mounted on said hydrant, an annular shaped guard providing a housing for said outwardly extending portions having a hole therein in alignment with the holes in said outwardly extending portions of said bands and means associated with said outwardly extending portions for maintaining said outward portions in fixed, parallel relation to each other.

3. A fire hydrant comprising a trunk body, a water inlet source, and a water outlet source in said trunk body including outlet nozzles provided with removable caps having cap nuts integral therewith said caps being rotatably mounted on said outlet nozzles and adapted when in closed position to prevent discharge of water from said outlet nozzles, and means associated with said trunk body and removable outlet caps for preventing rotation of said removable caps when mounted on said outlet nozzles, said means including a pair of bands configuratively enveloping a portion of said trunk body, each of said bands having a recess near an outer end adapted to receive said cap nuts in non-rotating relation therebetween, the other ends of said bands having an outwardly extending portion having holes therein in juxtaposition to each other when mounted on said hydrant, a C-shaped guard mounted on one of said outwardly extending portions and providing a housing for said outwardly extending portions, said guard having a hole therein in alignment with the holes in said outwardly extending portion of said bands and means associated with said outwardly extending portion for maintaining said outward portion parallel and in fixed relation to each other, said means including a securing member passing through each of said holes in said outwardly extending portion of said bands and C-shaped guard and a collar spacer disposed intermediate said outwardly extending portions and encircling said securing member.

4. A fire hydrant comprising a trunk body, a water inlet source, and a water outlet source in said trunk body including outlet nozzles provided with removable caps having cap nuts integral therewith said caps being rotatably mounted on said outlet nozzles and adapted when in closed position to prevent discharge of water from said outlet nozzles, and means associated with said trunk body and removable outlet caps for preventing rotation of said removable caps when mounted on said outlet nozzles, said means including a pair of bands configuratively enveloping a portion of said trunk body, each of said bands having a recess near an outer end adapted to receive said cap nuts in non-rotating relation therebetween, the other ends of said bands having an outward-

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ly extending portion having holes therein in juxtaposition to each other when mounted on said hydrant, a C-shaped guard mounted on one of said outwardly extending portions and providing a housing for said outwardly extending portions, said guard having a hole therein in alignment with the holes in said outwardly extending portions of said bands and means associated with said outwardly extending portion for maintaining said outward portions parallel and in fixed relation to each other, said means including a bolt passing through each of said holes in said outwardly extending portion of said bands and C-shaped guard, and a collar spacer disposed intermediate said outwardly extending portions and encircling said bolt.

5. A device for preventing the unauthorized rotation of outlet nozzles on a fire hydrant, the fire hydrant including a trunk body, a water outlet source in said trunk body including outlet nozzles provided with removable caps having cap nuts integral therewith, said caps being rotatably mounted on said outlet nozzles and adapted when in closed position to prevent discharge of water from said outlet nozzles said device comprising a pair of bands configuratively enveloping a portion of said trunk body, each of said bands having a recess near an outer end adapted to receive said cap nuts in non-rotating relation therebetween, the other ends of said bands having outwardly extending portions in juxtaposition to each other when mounted on said hydrant, and means associated with said outwardly extending portions for maintaining said outward portions in fixed parallel relation to each other.

6. A device for preventing the unauthorized rotation of outlet nozzles on a fire hydrant, the fire hydrant including a trunk body, a water outlet source in said trunk body including outlet nozzles provided with removable caps having cap nuts integral therewith, said caps being rotatably mounted on said outlet nozzles and adapted when in closed position to prevent discharge of water from said outlet nozzles, said device comprising a pair of bands configuratively enveloping a portion of said trunk body, each of said bands having a recess near an outer end adapted to receive said cap nuts in non-rotating relation therebetween, the other ends of said bands having outwardly extending portions in juxtaposition to each other when mounted on said hydrant, each of said outwardly extending portions having a hole therein, an annular-shaped guard providing a housing for said outwardly extending portions said guard having a hole therein in alignment with the holes in said outwardly extending portions of said bands and means associated with said outwardly extending portions for maintaining said outward portions in fixed parallel relation to each other.

7. A device for preventing the unauthorized rotation of outlet nozzles on a fire hydrant, the fire hydrant including a trunk body, a water outlet source in said trunk body including outlet nozzles provided with removable caps having cap nuts integral therewith, said caps being rotatably mounted on said outlet nozzles and adapted

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when in closed position to prevent discharge of water from said outlet nozzles, said device comprising a pair of bands configuratively enveloping a portion of said trunk body, each of said bands having a recess near an outer end adapted to receive said cap nuts in non-rotating relation therebetween, the other ends of said bands having outwardly extending portions in juxtaposition to each other when mounted on said hydrant, each of said outwardly extending portions having a hole therein, an annular-shaped guard mounted on one of said outwardly extending portions providing a housing for said outwardly extending portions, said guard having a hole therein in alignment with the holes in said outwardly extending portions of said bands and means associated with said outwardly extending portions for maintaining said outward portions in fixed parallel relation to each other.

8. A device for preventing the unauthorized rotation of outlet nozzles on a fire hydrant, the fire hydrant including a trunk body, a water outlet source in said trunk body including outlet nozzles provided with removable caps having cap nuts integral therewith, said caps being rotatably mounted on said outlet nozzles and adapted when in closed position to prevent discharge of water from said outlet nozzles, said device comprising a pair of bands configuratively enveloping a portion of said trunk body, each of said bands having a recess near an outer end adapted to receive said cap nuts in non-rotating relation therebetween, the other ends of said bands having outwardly extending portions in juxtaposition to each other when mounted on said hydrant, each of said outwardly extending portions having a hole therein, a C-shaped guard mounted on one of said outwardly extending portions providing a housing for said outwardly extending portions, said guard having a hole therein in alignment with the holes in said outwardly extending portions of said bands and means associated with said outwardly extending portions for maintaining said outward portions in fixed parallel relation to each other, said means including a bolt passing through each of said holes in said outwardly extending portions of said bands and C-shaped guard, and a collar spacer disposed intermediate said outwardly extending portions and encircling said bolt.

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