

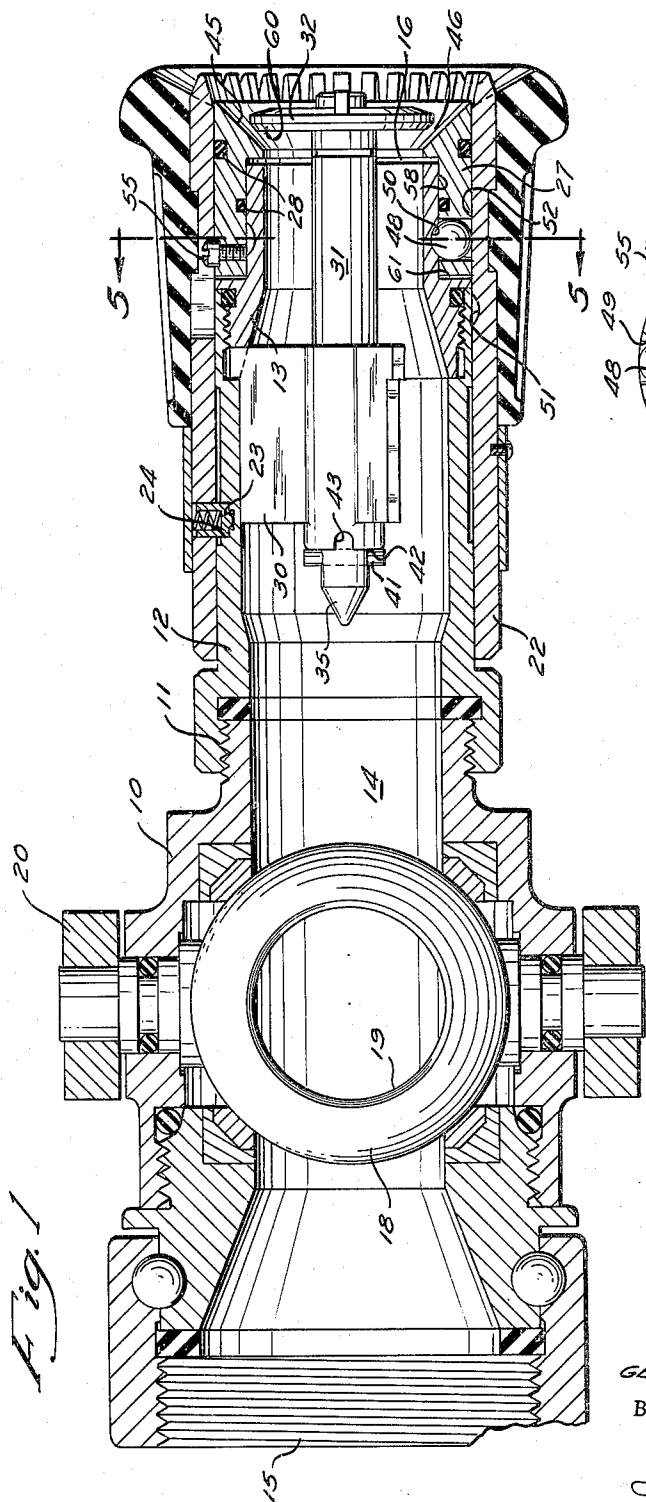
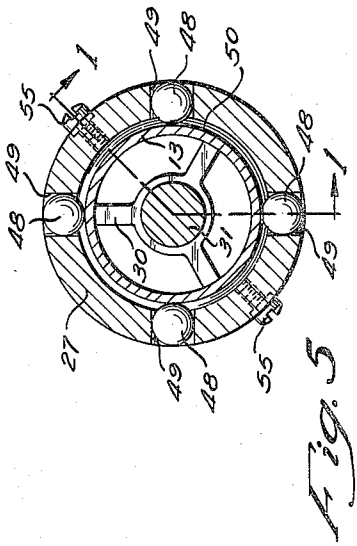
July 4, 1961

G. G. ALLENBAUGH, JR
NOZZLE

2,991,016

Filed Feb. 4, 1960

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 2

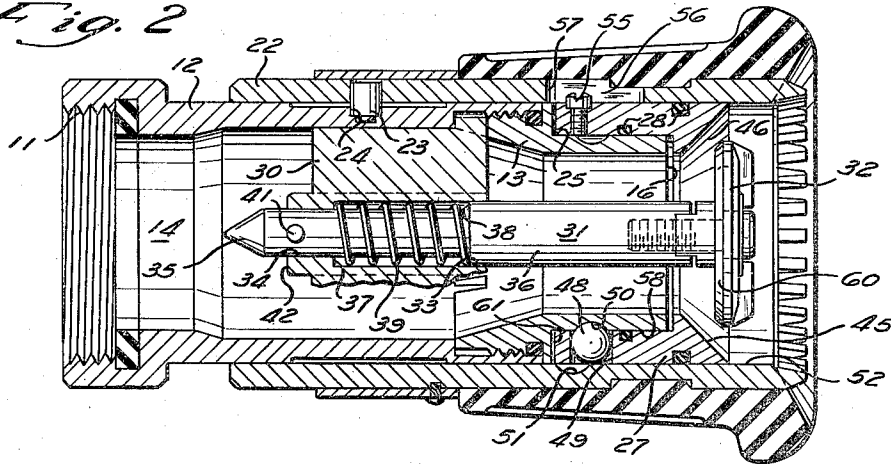
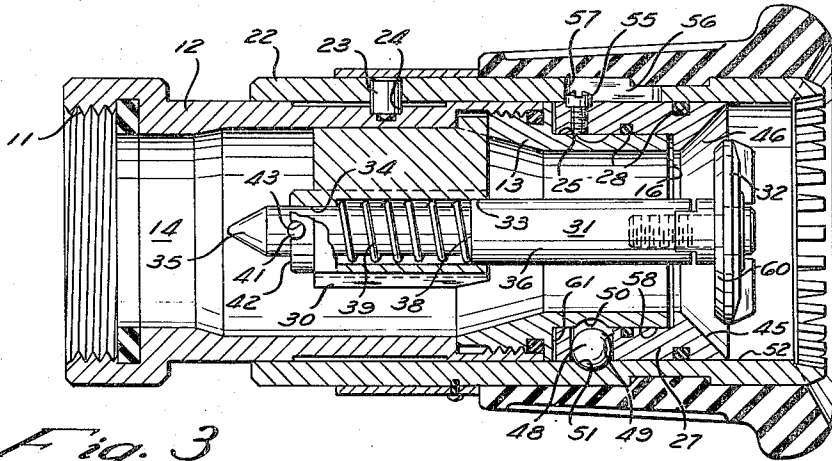


Fig. 3

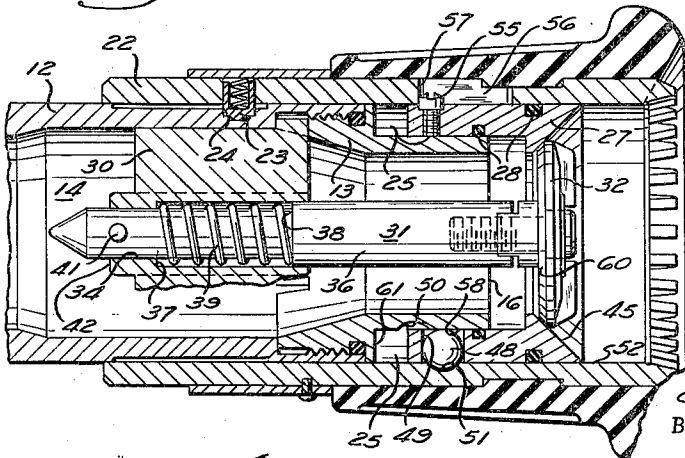


Fig. 4

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This invention pertains to nozzles and more particularly to fire fighting nozzles of the type which are adjustable to selectively provide either a straight stream or a fine dispersion of water, generally termed "fog."

In United States patent application, Serial No. 732,675, filed May 2, 1958, by George G. Allenbaugh, Jr., for a "Nozzle", now United States Patent No. 2,938,673, issued May 31, 1960, there is a teaching of a nozzle which, when in use, is what is known as a constant gallonage nozzle. Even though the contour of an emitted stream is adjustably variable from so-called wide angle fog through a range of adjustments to a straight stream position, the quantity of water passing through a nozzle of the type taught in that patent does not vary. At the same time, the nozzle of that invention is constructed to permit pre-selection of a desired gallonage capacity.

This disclosure is directed to an improvement over that nozzle and this application is a continuation-in-part of that application. The nozzle of this disclosure incorporates all of the features of the referenced nozzle and, in addition, provides features which permit greater flexibility in fire fighting.

In the nozzle of the referenced patent application, a body which terminates at an outlet end is provided. A ball type shut off valve is carried by the body to selectively permit or prevent the passage of water through a water conducting passage defined by the body. A baffle is positioned in the passage. The baffle projects outwardly past the outlet end of the body. The baffle includes an enlarged head spaced from the outlet end of the body.

A stream contour, controlling sleeve is telescoped over the body in a close, relatively movable but preferably water tight fit. To obtain a stream contour adjustment, a means is interposed between the sleeve and the body to cause relative axial stream adjustment movement of the sleeve and body upon relative rotation of the two. Stops are interposed between the baffle and the body to provide selective, relative axial positioning of the body and the baffle for gallonage selection. A spring urges the baffle against the selected stop.

The usual fire hose which is used to connect a nozzle to a hydrant or other source of water, is a rather inflexible device. Often two men are required to man a nozzle and the hose in fighting a fire. Under some fire fighting conditions, the inflexibility of the usual hose and the necessity of having two men becomes an appreciable handicap. Accordingly, it is very desirable to have the ability to quickly bring a relatively light weight hose and a light weight nozzle into play. With a light nozzle and a light flexible hose, one man can control them with great facility and, therefore, his degree of mobility is materially enhanced. As an example of a condition under which such an ability is desirable, when a substantial portion of a fire has been brought under control but a number of localized fires still exist, it is highly desirable to have a high degree of mobility and an ability to move from one of these localized fires to another. Under such circumstances the fireman will advance into a building or other fire scene and combat these localized conditions.

The present invention provides all of these abilities while maintaining all of the advantages of the nozzle of the above referenced patent. This is accomplished by providing a sectioned body which may be broken into

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two parts. One of the parts includes the ball type shut off valve which is closed before the other part is removed. The baffle and sleeve are connected to the other part of the body. A relatively light, flexible hose can be used to connect the two parts together to provide the fire fighter with a light stream control nozzle connected to a relatively light weight, flexible hose. In addition, a novel and improved shut off mechanism is incorporated in the stream control part of the nozzle so that the man who controls the stream contour can also turn the nozzle off and on.

Accordingly, one of the objects of the present invention is to provide a novel and improved hose nozzle of the adjustable stream type which has a constant gallonage in all adjustment positions when in operation and which incorporates a new and improved shut off mechanism.

Another object of the invention is to provide an adjustable, stream type nozzle which may be utilized to combat fire in the usual way and which also may be utilized to provide a mobile and flexible fire fighting apparatus.

A related object of the invention is to provide a nozzle made in accordance with the foregoing objectives wherein the gallonage passing through the nozzle is constant when the nozzle is in use.

Another and related object of the invention is to provide a novel and improved nozzle made in accordance with the foregoing objectives wherein a selected one of a plurality of constant gallonages may be employed.

With this nozzle, an annular collar is disposed within the sleeve and positioned adjacent to the body outlet. The collar preferably defines the outlet of the passage through the water conducting conduit of the nozzle. When the nozzle is in a stream adjustment range, from wide angle fog to straight stream, the collar is interconnected with the body to prevent relative axial movement of the two. Through this stream adjustment range, the sleeve is axially movable relative to both the body and the collar to provide the desired stream adjustments. When the nozzle is in a shut off range, the collar is interconnected with the sleeve to move axially with it relative to the body. When the sleeve and collar are interconnected, the collar can be advanced through the adjustment range until it abuts the baffle head to provide a fluid shut off.

This selective locking of the collar to the body and to the sleeve, one at a time, is accomplished by moving a plurality of circumferentially spaced balls radially. The balls are carried by the collar and are selectively projectable into a groove in the body or alternately into a groove in the sleeve.

Accordingly, an additional object of the invention is to provide radially movable balls, which are carried by the collar, which balls shift selectively into one at a time engagement with either the sleeve or the body to lock the collar against axial movement relative to the selected one.

A still more specialized object of the invention is to provide an annular groove in the body to receive the ball carried by the collar, thereby permitting relative rotation of the collar and body at all times and in addition to provide a connection to prevent relative rotation between the collar and sleeve, and to cause the collar to advance with the sleeve as the sleeve advances from the adjustment range into the shut off range.

Other objects and a fuller understanding of the invention may be had by referring to the following description and claims, taken in conjunction with the accompanying drawings, in which:

FIGURE 1 is a sectional view of the nozzle in the wide angle fog adjustment position; as seen from the planes indicated by line 1-1 of FIGURE 5;

FIGURE 2 is a sectional view in the planes of FIGURE 1 of the stream adjustment section of the nozzle in the straight stream position;

FIGURE 3 is a foreshortened sectional view in the planes of FIGURE 1 of the device of FIGURE 2 as it shifts from the stream adjustment range to the shut off range;

FIGURE 4 is a sectional view in the planes of FIGURE 1 of the device of FIGURE 2 in the shut off position; and,

FIGURE 5 is a sectional view of the body, and the spider in the plane indicated by the line 5—5 of FIGURE 1.

Referring to the drawings, a first body section is shown generally at 10. The first section 10 is threadedly connected at 11 to a second body section 12, FIGURE 1. To provide ease of construction and assembly, another body section 13 is fixed to and forms a part of the second body section 12. The body sections 10, 12, 13 together define a body having a through fluid passage 14 extending from an inlet 15 to an outlet end at 16.

A ball type shut off valve is provided. This valve includes a ball 18 which is pivotally connected to the first body section 10. The ball 18 has a through fluid passage 19. A handle 20 is connected to the ball 18 to selectively pivot it through a 90° range. When the ball is at one end of the range, it is an opened position with the passage 19 aligned with and forming a part of the body passage 14. In its second position, as shown in FIGURE 1, the ball is rotated 90° to shift the passage 19 to a position at right angles with the body passage 14 and to close the body passage.

A stream adjustment sleeve 22 is telescoped over the second body section 12 and the other body section 13. The sleeve 22 includes an inwardly extending projection 23 which engages a cam groove 24 formed in the periphery of the second body section 12. Coaction of the projection 23 and the cam groove 24 causes relatively axial movement upon relative rotation of the body and the sleeve.

The second body section 12 and the sleeve 22 are in closely fit but slidable relationship. Adjacent the outlet end 16, the sleeve and body together define an annular chamber 25 which is best seen in FIGURE 4. The annular chamber 25 is open at the body second end 16. The chamber 25 extends rearwardly from the opening at 16 toward the inlet 15. An annular collar 27 extends into and substantially fills the chamber 25. Suitable gaskets 28 are provided to maintain fluid tight integrity around the collar 27.

A spider 30 is positioned in the passage. The spider 30 may be connected to and from a part of the body 12. A baffle member, which includes a stem 31 and a head 32, is supported by the spider 30. The baffle stem 31 is disposed along the axis of the passage 14. The baffle 31 projects through an axially disposed bore in the spider 30. The bore comprises a large diameter portion 33 and a reduced diameter portion 34 which is in axial alignment with the portion 33.

The baffle stem 31 includes a reduced diameter part 35 which is in close sliding relationship with the reduced diameter portion 34. The stem 31 also includes an enlarged part 36 which is in close sliding relationship with the larger spider bore portion 33. A radially disposed shoulder 37 is formed between the spider bore portions 33, 34. A second radially disposed shoulder 38 is formed between the baffle stem parts 35, 36. A spring 39 is interposed between the shoulders 37, 38. The spring is disposed around the stem reduced part 35 and within the larger spider bore portion 33. The spring urges the baffle head 32 away from the collar 27.

A pin 41 projects through the baffle stem 31 at the end opposite the head 32. The pin 41 is abutable against end 42 of the spider, FIGURES 2 and 4. Alternately, the pin 41 may be disposed in notches 43 formed in the end 42, FIGURE 3.

The collar 27 is selectively movable axially relative to the body and the baffle. In FIGURES 1 and 2 the collar is at its innermost position, substantially filling the chamber 25. This innermost position is a stream adjustment position. The selective axial movement of the body 27 from the stream adjustment position to a shut off position will subsequently be described in more detail.

The collar 27 includes, at its outlet end, a frusto-conical shaped, outwardly flaring flow control surface 45. The surface 45 and the head 32 of the baffle coact to define a flow control constricting throat 46 therebetween. The throat 46 is of a predetermined size that is selected before the nozzle is turned on.

The selection of the size of the throat 46 is obtained by positioning the pin 41 against either the surface 42 or the base of the notches 43. If the pin is in the notches, the operator simply presses in on the baffle head and rotates it to bring the pin out of alignment with the notches. When he releases the baffle, the pin will abut the surface 42 and stay in that position, FIGURE 2. To bring the pin back into the notches, one simply rotates the baffle until the pin drops into the notches under the urging of the spring, FIGURE 3.

As will be apparent, the throat 46 has a smaller cross sectional area when the pins are against the surface than when the pins are in the notches. The size of the constricting throat, of course, controls the amount of water flowing through it, and, therefore, the gallonage of the nozzle.

One of the outstanding advantages of the invention resides in the mechanism which permits the collar to be selectively locked against axial movement relative to either the body or the sleeve.

A ball 48 is carried in a slot 49 formed in the collar 27. A plurality of balls may be provided at circumferentially spaced locations. For simplicity of illustration only one ball 48 will be described, it being understood that additional slots 49 carrying additional balls 48 may be provided, FIGURE 5.

When the nozzle is in the stream adjustment range with the collar in a stream adjustment position, the ball 48 is registered in an annular groove 50. The groove 50 is formed in the periphery of the other body section 13. Thus, the groove 50 defines a portion of the inner radial extremity of the chamber 25.

When the nozzle is in the shut off range, the ball 48 is registered in an annular groove 51 formed in the inner surface of the sleeve 22. It will be seen that the groove 51 defines a portion of the outer radial extremity of the chamber 25. For simplicity of manufacture, the sleeve groove 51 is preferably annular. As will be more apparent from the subsequent description, the groove 51 could be a dish shaped portion registerable to receive the ball when the nozzle is in the shut off range. One such dish shaped portion is needed for each ball 48.

Referring now to FIGURES 1 and 2, two extremes of the stream adjustment range are shown. In FIGURE 1 the sleeve is fully retracted axially relative to the body in a wide angle fog position. Rotation of the sleeve 22 relative to the body will, due to the coaction of the projection 23 in the groove 24, cause the sleeve to shift axially outwardly relative to the body. This adjustment will continue through one or more intermediate fog adjustment positions to the straight stream adjustment position of FIGURE 2. This is the other extreme of the stream adjustment range. Thus, this sleeve 22 serves as a stream choke sleeve to confine the flow of fluid to a straight stream when the sleeve is in the position of FIGURE 2.

Throughout this stream adjustment range, a cylindrically contoured, smooth portion of inner surface 52 of the sleeve 22 is registered with the ball 48 to maintain the ball in a radially inwardly disposed position. Thus, throughout the stream adjustment range the ball 48 is maintained in registry with the body groove 50 by the

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surface 52. Since the groove 50 is annular, the collar is free to rotate relative to the body.

A pin 55 is carried by the collar. The pin 55 projects into a longitudinally extending slot 56 formed in the sleeve. In the preferred and disclosed arrangement, the pin registers with the side walls of the slot 56 to prevent relative rotation between the collar 27 and the sleeve 22. Throughout the stream adjustment range the pin shifts back and forth relative to the slot as the sleeve shifts axially relative to the collar. Since there is no relative rotation between the collar and sleeve, it will be seen that, as mentioned above, it is not necessary for the groove 51 to be annular.

When the sleeve 22 reaches the straight stream position of FIGURE 2, a rear wall 57 of the slot 56 comes into abutment with the pin 55. At the time when the surface 57 registers against the pin 55, the groove 51 is in radial alignment with the groove 50 and the ball 48, FIGURE 3. As the sleeve continues to advance outwardly relative to the body, the coaction of the end surface 57 and the pin 55 pulls the collar axially with the sleeve and relative to the body. When the sleeve 27 commences to move axially relative to the body, the ball 48 is moved with the collar. Action of outer cylindrical portion of outer surface 58 of the other body section 13 causes the ball 48 to shift radially outwardly into registry with the groove 51. The collar will continue to move with the sleeve through a shut off range until the outwardly tapered surface 45 abuts a chamfered shut off surface 60 on the baffle head 32, FIGURE 4. The pressing of the collar surface 45 against the baffle head 60 produces a shut off which closes the outlet of the nozzle.

The registry of the ball 48 in the sleeve groove 51 locks the collar and sleeve together against relative axial movement. Thus, on return rotation of the sleeve, the coaction of the ball in the groove 51 will cause the collar to retract axially with the sleeve relative to the body until the ball is again registered with the groove 50. At this point, the collar abuts inner end 61 of the chamber 25 preventing further inward axial movement of the collar relative to the body. As the sleeve continues to retract, now through the stream adjustment range, the ball will be urged radially inwardly into the groove 50 by the action of the surface 52.

With the described nozzle a light weight, flexible hose may be interposed between the body sections 10, 12. The section 12 with the various connected stream adjustment parts may then be used as a portable nozzle readily handled by a single operator. This portable nozzle retains all of the advantages of the nozzle of the referenced patent including selection of one of a plurality of constant gallonages. At the same time the operator has the ability to shut off the small nozzle at will. Further, the nozzle sections may be coupled together as shown in FIGURE 1 and operated in the same manner as the referenced nozzle.

While the invention has been described with a great deal of detail, it is believed that the invention essentially comprises a nozzle defining a through water conducting conduit terminating at an outlet end, a collar defining a part of the conduit and positioned adjacent to the outlet end, and means to selectively shift the collar relative to the baffle head from a stream adjustment position to a shut off position.

Although the invention has been described in its preferred form with a certain degree of particularity, it is understood that the present disclosure of the preferred form has been made only by way of example, and that numerous changes in the details of construction and the combination and arrangement of parts may be resorted to without departing from the spirit and the scope of the invention as hereinafter claimed.

What is claimed is:

1. A fire fighting nozzle comprising first and second tubular members telescoped together to define a conduit

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having a through water conducting passage extending from an inlet end to an outlet end, a baffle carried in the passage and having stem means and an enlarged head at one end of the stem means, means disposed between said inlet end and the head and securing the baffle to the conduit, the members being relatively shiftable longitudinally, means carried by the first member and coacting with the second member to shift the members selectively relatively longitudinally, said members being relatively shiftable from a wide angle fog position through a stream adjustment range to a straight stream position and from the straight stream position through a shut off range to a shut off position, an annular collar carried by the conduit and movable through a shut off range into abutment with the baffle head to form a shut off when the members are in the shut off position, said collar and baffle being spaced when the members are in the stream adjustment range, and means coactable between the collar and the members to prevent relative axial movement between the collar and one of the members and permit relative axial movement between the collar and the other of the members when the device is in the shut off range and to prevent relative axial movement between the collar and said other of the members and the baffle and permit relative movement between the collar and said one member when the device is in the stream adjustment range.

2. A nozzle for use with a fire hose, said nozzle having a through water conduit, said nozzle having an outlet at one end, baffle means having a head and a support portion in said conduit, said baffle means head being spaced from said outlet end and being of a diameter greater than that of said conduit adjacent said outlet end, resilient means interconnecting said conduit and said baffle means and urging the latter away from said conduit outlet, said nozzle having longitudinally spaced stop means between said conduit and said baffle means, said stop means being selectively engagable to determine the opening between said baffle and the outlet of said conduit, said nozzle including an annular collar defining a portion of said conduit and interposed between the baffle head and the interconnection of the baffle and the conduit, said nozzle including a stream adjustment member shiftable longitudinally through a stream contour adjustment range, means connecting the collar to the remainder of the conduit to retain the collar and the baffle in fixed relative axial position when the nozzle is in said adjustment range, and the nozzle including other means releasing said connection means to permit the collar to be moved axially relative to the remainder of the conduit and said baffle head through a shut off adjustment range to a shut off position to bring the collar into abutment with the baffle head and thereby close said outlet.

3. A fire fighting nozzle comprising, a body defining a through water conducting passage extending from an inlet to an outlet end, said passage including means at said inlet end for connecting the nozzle to a hose or the like, a sleeve telescoped over the body in a close sliding fit and projecting past the outlet end of the body, means interposed between the body and the sleeve to cause relative longitudinal movement of the two on relative rotation thereof, an annular collar disposed within the sleeve and adjacent said body at the outlet end of the body passage, a baffle having an elongated stem and an enlarged head, the stem being disposed in part in the body passage and secured to the body, the stem extending from the body passage through the collar, lock means carried by the collar and coactable with the body and sleeve to selectively lock the collar against longitudinal movement relative to the body and to the sleeve one at a time, said sleeve and collar being in a shut off adjustment range when locked against relative longitudinal movement, and said collar being in tight fluid shut off abutment with said head at one end of said range.

4. The device of claim 3 wherein the means coactable

with the body and the sleeve is a radially shiftable mechanical member.

5. The device of claim 4 wherein the mechanical member is a ball which projects alternately into a groove formed in the sleeve and a groove formed in the body.

6. A fire fighting nozzle comprising, a body defining a through water conducting passage extending from an inlet to an outlet end, said passage including means at said inlet end for connecting the nozzle to a hose or the like, a sleeve telescoped over the body in a close sliding fit and projecting past the outlet end of the body, means interposed between the body and the sleeve to cause relative longitudinal movement of the two on relative rotation thereof, an annular collar disposed within the sleeve and adjacent said body at the outlet end of the body passage, a baffle having an elongated stem and an enlarged head, the stem being disposed in part in the body passage and secured to the body, the stem extending from the body passage through the collar, means carried by the collar and coactable with the body and sleeve to selectively lock the collar against longitudinal movement relative to the body and the baffle at one time and against longitudinal movement relative to the sleeve at another time, said sleeve and collar being in a shut off range when locked against relative longitudinal movement at said other time, said collar being in tight fluid shut off abutment with said head at one end of said shut-off range, the nozzle being in a stream adjustment range when the collar is locked against longitudinal movement relative to said baffle and said body at said one time, said baffle and head being spaced to define a constricting throat when the nozzle is in the stream adjustment range, and said sleeve having a greater water carrying capacity at all times than said throat when the nozzle is in said stream adjustment range.

7. A fire fighting nozzle comprising a tubular body defining a through fluid passage extending from an inlet to an outlet end, an annular sleeve member telescoped over the body in snug relatively movable relationship and projecting past the outlet end of the body, means interposed between the body and the sleeve member and coactable therewith to cause relative axial movement of the sleeve member and body upon relative rotation thereof, said sleeve member and body together defining an annular chamber extending from the outlet end of the body rearwardly toward the inlet end, the sleeve member and body each having an annular groove defining a part of one peripheral extremity of the chamber, an annular collar member disposed within the sleeve member and partially within said chamber, the collar member projecting from the chamber outwardly past said body outlet end and terminating at an outlet water control surface, a baffle having a stem and an enlarged water diverting head, the stem being disposed within said passage and secured to the body between the inlet and outlet ends, said collar member having a stream adjustment position and a shut off position, the collar outlet surface being spaced from said head to define a water conducting throat when the collar member is in the stream adjustment position, said collar outlet surface being in abutment when the collar member is in the fluid shut off position, a radially movable ball carried by the collar member and disposed in part within the body groove when the collar member is in the stream adjustment position to prevent relative axial movement of the collar member and body, the ball being disposed in part in the sleeve member groove when the collar member is in the shut off position to prevent relative axial movement of the members, a pin secured to one of the members, the other of the members having an elongated slot therein having a pin abutment end, said pin projecting into said slot to prevent relative rotation of said members and abutable with said abutment end to cause the collar to shift axially with the sleeve from the adjustment position to the shut off position, and gasket means coactable with at least one

of the members to prevent the flow of fluid between the members.

8. The device of claim 7 wherein the body comprises two sections connectable together to define a fluid tight connection between the inlet end and the baffle and wherein a shut off valve is carried by one of the sections between the inlet end and the connection.

9. The device of claim 7 wherein a resilient means is interposed between the baffle and the body to urge the baffle away from the outlet and the nozzle includes longitudinally spaced stop means between the body and the baffle which may be selectively engaged to determine the spacing between the baffle head and the collar when the collar is in the stream adjustment position.

10. The device of claim 7 wherein the sleeve has a greater water carrying capacity than the water conducting throat at all times.

11. A fire fighting nozzle comprising, first and second tubular conduit sections including means to selectively and repeatedly secure the two together to define a through passage extending from an inlet in the first section to an outlet in the second section, a shut-off valve carried by the first section for selectively opening and closing the passage, a baffle carried by the second section and including a head disposed across said outlet and of a diameter greater than the diameter of the passage adjacent the outlet, stream choke means carried by the second section adjacent the outlet and movable axially relative to the second section from a fully retracted wide angle fog position through a stream adjustment range to an extended straight stream position, said choke means when in the extended position being disposed around and spaced from the head, said choke means also being movable axially relative to the second section through a shut-off range to a further extended shut-off position, a collar positioned at the outlet and spaced from the baffle head to define a water conducting annular orifice when said choke means is in said stream adjustment range, connection means locking the collar and the second conduit section against relative axial movement when the choke means is in the adjustment range while permitting relative axial movement between the collar and the choke means, said connection means locking the collar and choke means against relative axial movement and permitting relative axial movement between the collar and the second conduit when the stream choke means is in shut-off range and means between the choke means and the collar to cause said connection means to lock the two together and permit axial movement of the collar with the stream choke means relative to the second section through the shut-off range until the collar abuts the baffle head to close said orifice and shut off said passage.

12. A fire fighting nozzle comprising, a collar and a body telescoped together to define a conduit having a through passage extending from an inlet in the body to an outlet in the collar, a baffle carried by the conduit and including a head disposed across said outlet and of a diameter greater than the diameter of the passage adjacent the outlet, a stream choke sleeve telescoped over the conduit adjacent the outlet and movable axially relative to the conduit from a fully retracted wide angle fog position through a stream adjustment range to an extended straight stream position, said choke sleeve when in the extended position being disposed around and spaced from the head, said choke sleeve also being movable axially relative to the body through a shut-off range to a further extended shut-off position, the collar being spaced from the baffle head to define a water conducting annular orifice when said choke sleeve is in said stream adjustment range, connection means carried by the collar and locking the collar and the body against relative axial movement when the choke sleeve is in the adjustment range while permitting relative axial movement between the collar and the choke sleeve, said connection means locking the collar and choke sleeve against relative axial movement and permitting relative axial movement

between the collar and the body when the choke sleeve is in the shut-off range, and pin and groove means between the choke sleeve and the collar to prevent relative rotation and permit relative axial movement when the choke sleeve is in the adjustment, said pin and groove means causing said connection means to lock the sleeve and collar together and permit axial movement of the collar with the choke sleeve relative to the second section through the shut-off range until the collar abuts the baffle head to close said orifice and shut off said passage.

13. A nozzle comprising a body having a through fluid passage extending from an inlet to an outlet, a sleeve telescoped over the body and shiftable axially from a retracted wide angle choke position to an extended straight stream position and to a further extended shut-off position, said body and sleeve defining an annular recess open at the end nearest the outlet and including a stop wall, an annular collar disposed at least in part within said recess and abutable against the stop wall to limit inward axial movement relative to the body, said body and sleeve together forming a first member and said collar being a second member, one of said members including a radially spaced pair of grooves communicating with the annular recess, the other of the members including radially movable balls, each engageable with at least one of the grooves, means between the collar and the sleeve to prevent relative rotation and to permit relative axial movement between the wide angle choke and straight stream positions, said means between the collar and the sleeve coacting with the collar to shift it axially when the sleeve is shifted from straight stream position toward the shut-off position and thereby cause each ball registered with one of the grooves and locking the collar and body against axial movement to shift out of said one groove and at least one of the balls to register with the other of the grooves to lock the collar and sleeve against relative axial movement.

14. A fire fighting nozzle comprising, a collar and a body telescoped together to define a conduit having a through passage extending from an inlet in the body to an outlet in the collar, a baffle carried by the conduit and including a head disposed across said outlet and of a diameter greater than the diameter of the passage adjacent the outlet, a stream choke sleeve telescoped over

the conduit, adjacent the outlet and movable axially relative to the conduit from a fully retracted wide angle fog position through a stream adjustment range to an extended straight stream position, said choke sleeve when in the extended position being disposed around and spaced from the head, said choke sleeve also being movable axially relative to the body through a shut-off range to a further extended shut-off position, the collar being spaced from the baffle head to define a water conducting annular orifice when said choke sleeve is in said stream adjustment range, a radially movable ball carried by the collar, said body and sleeve each having an annular groove adjacent the collar, said body and sleeve each having a cylindrical surface adjacent the respective annular grooves, said ball being disposed in part within said body groove and retained therein by said sleeve cylindrical surface when said sleeve is in said adjustment range, said ball being disposed in part within said sleeve groove and retained therein by said body cylindrical surface when said sleeve and collar are in the shut-off range, and means between the sleeve and the collar to cause said ball to shift, radially lock the two together and permit axial movement of the collar with the sleeve relative to the body through the shut off range until the collar abuts the baffle head to close said orifice and shut off said passage.

15. The device of claim 13 wherein the ball has a diameter greater than the radial thickness of the collar.

16. The device of claim 14 where there are a plurality of balls carried by the collar and selectively engageable with the grooves, one groove at a time.

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