

Dec. 12, 1961

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3,012,733

NOZZLE

Filed May 19, 1960

2 Sheets-Sheet 1

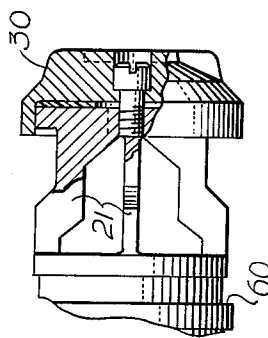
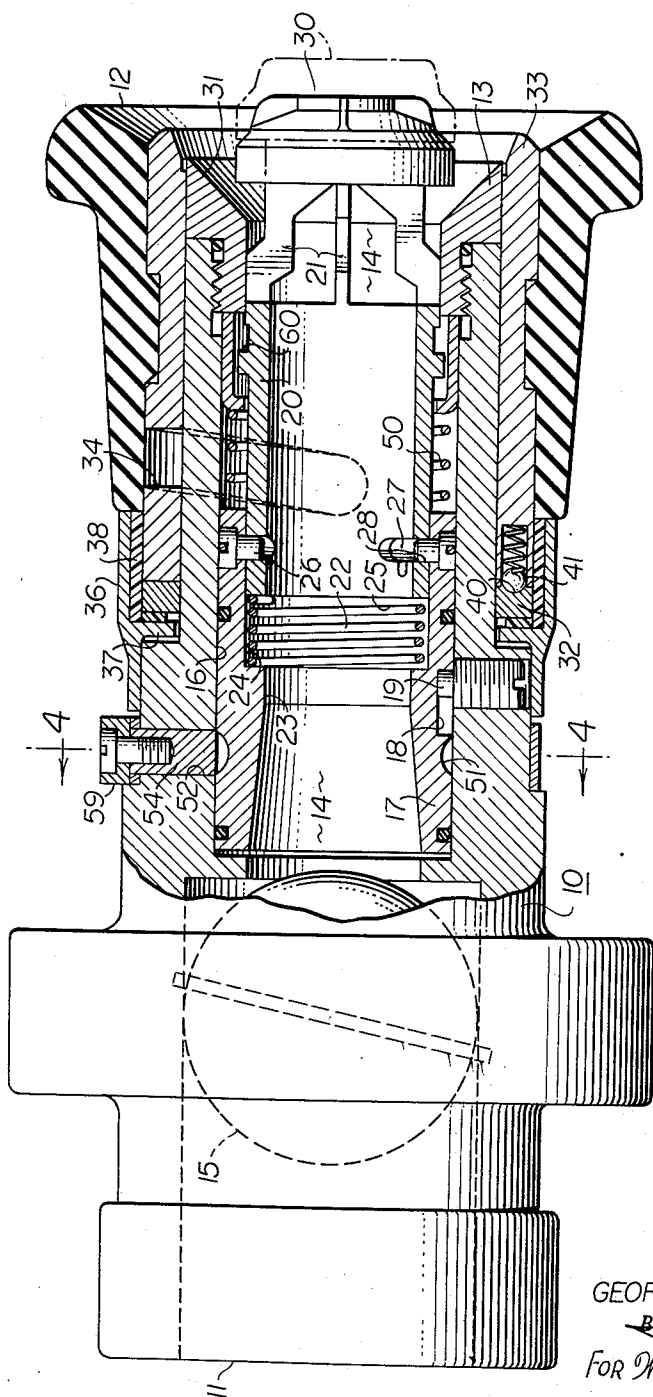


FIG. 1

FIG. 7

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2 Sheets-Sheet 2

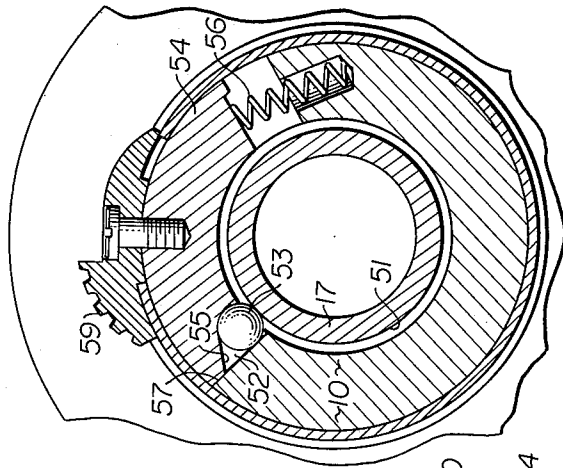


FIG. 4

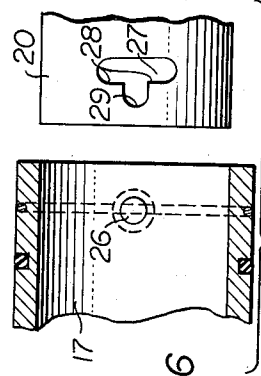


FIG. 6

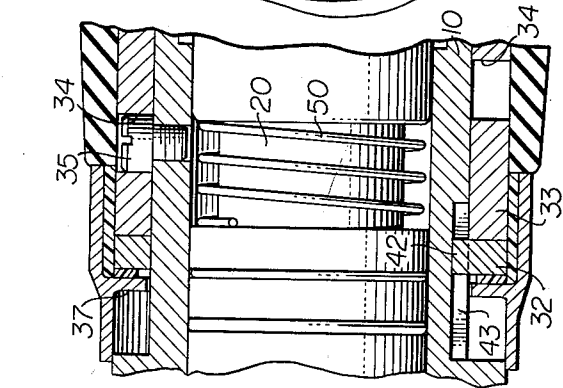


FIG. 3

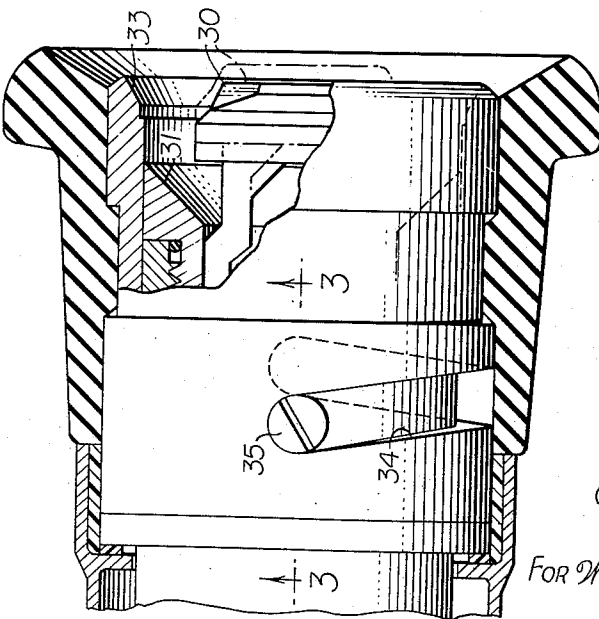


FIG. 2

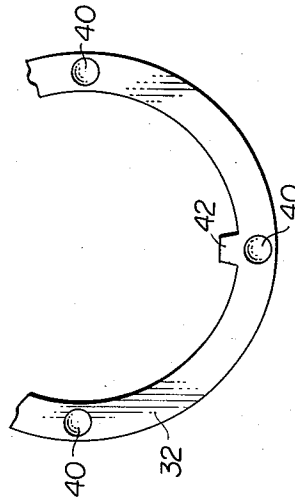


FIG. 5

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3,012,733
NOZZLE

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18 Claims. (Cl. 239-458)

This invention pertains to fire fighting nozzles of the type which may be adjusted to emit fluid in either a straight stream or a fog pattern.

This is a continuation-in-part of United States patent application Serial No. 732,675 filed May 2, 1958, now United States Patent No. 2,938,673, issued May 31, 1960, and entitled "Nozzle." This patent is a teaching of a nozzle which may be adjusted from a wide angle fog position to a straight stream position without having any effect on the volume of water flowing through the nozzle. This is accomplished by providing a baffle head which is spaced a predetermined distance from the outlet end of the nozzle conduit. This space is a constricting orifice which controls the rate of flow through the nozzle and diverts the water into a wide angle fog dispersion. A slidable sleeve or choke is telescoped over the conduit and shiftable longitudinally to a position around the baffle head and the orifice. The choke, when in its most outward position, reconstitutes the flow of water into a straight stream. The choke has a greater water carrying capacity, in all positions, than the orifice when the baffle is positioned such a predetermined distance from the outlet.

In addition, the nozzle of that patent has a baffle head which is selectively shiftable longitudinally relative to the body of the nozzle to one of a plurality of positions of spaced gallonage control relationship with the outlet end of the body or conduit. These selectable positions are obtainable one at a time to obtain a constricting throat of a predetermined and selected size. Thus, the nozzle taught in this reference patent provides selection of the amount of flow of water through the nozzle, or gallonage as it is known in the art. In addition, it provides a nozzle in which the gallonage, though constant when in use, is a preselected one of a plurality of gallonages.

The nozzle of this invention has all of the described features of the referenced patent and additional new and novel features as well.

With prior art nozzles, especially of the type which may be used to emit either a fog or a straight stream, the presence of any dirt or foreign particles in the fire fighting fluid can very materially hamper the efficiency and operation of the nozzle. These particles tend to become lodged in the orifice between the baffle head and the outlet end of the nozzle conduit. They cause both constriction of the rate of flow of water through the nozzle and distortion of the contour of an emitted stream. Further, a particle lodged in the orifice can interfere with the adjustability of most prior nozzles and in addition can, in fact, cause damage to the nozzle.

With prior nozzles the presence of dirt particles such as pebbles lodged between the baffle head and the outlet end of the conduit has been a difficult problem to correct. Considerable manipulation and adjustment of the nozzle was usually resorted to in an attempt to free the particle from the nozzle. This seldom proved to be a satisfactory solution, and often particles could not be freed from the orifice until the line had been shut down and the nozzle disconnected from the line. With the nozzle disconnected, the operator could free the particle and cause it to reverse direction and come out the inlet end of the conduit.

With this invention a new and novel arrangement is provided in which the baffle head has a flush-out position. The simple press of a button while the nozzle is in opera-

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tion releases an interlock and allows the flowing water to urge the baffle outwardly against the action of a spring to a flush-out position. When the operator is satisfied that the foreign particles have been purged, he simply closes his shut-off valve to stop the flow of water and allow the spring to return the baffle to its operative position. Thereafter, he reopens the shut-off valve. With this simple operation all foreign particles are purged, and the nozzle is immediately back in fire fighting operation with absolutely no effect on either the stream contour adjustment or the preselected gallonage adjustment.

Accordingly, one of the principal objects of the present invention is to provide a novel and improved fire fighting nozzle in which a baffle head may be shifted from a stream control position to a flush-out position to allow foreign particles to be purged from the nozzle.

In addition to the novel and simplified flush-out arrangement, the present nozzle provides a greatly increased efficiency. The nozzle has a through open substantially unobstructed passage. The spider, in its more or less conventional form, is substantially eliminated. In lieu of the usual spider, which forms a rather massive obstruction to the flow of water through the nozzle passage, a series of longitudinally extending spider arms which have portions which are at least substantially outside of the contour generated by the nozzle passage are provided. With the provision of these new and novel spider arms the capacity of a nozzle of any given diameter is materially enhanced, and the loss of pressure head of water flowing through the nozzle is materially reduced.

Accordingly, another principal object of the invention is to provide a novel and improved nozzle construction in which an open unobstructed path of fluid flow throughout the nozzle body is provided, to provide a greatly improved efficiency over prior known nozzles.

Another object of the invention is to provide a nozzle made in accordance with the foregoing objectives, which is also a constant gallonage nozzle when in operation.

A related object of the invention is to provide a nozzle made in accordance with all of the foregoing objectives in which the constant gallonage is one of a plurality of preselected gallonages.

Still another object of the invention is to provide a nozzle in which a baffle is shifted longitudinally and rotatively to move it selectively, one at a time, into engagement with one of a plurality of longitudinal stops while still obtaining a nozzle with an unobstructed fluid passage throughout and the described quick-release flush-out mechanism.

Still another object of the invention is to provide a nozzle which has a longitudinally shiftable stream choke selectively positionable around the baffle head in which a novel and improved detent selectively indexes the choke into one of a plurality of pattern adjustment positions one at a time.

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 partially sectioned side elevational view of the nozzle;

FIGURE 2 is a partially sectional view of the outlet end of the nozzle in another adjustment position;

FIGURE 3 is a sectional view of a portion of the nozzle showing the stream contour, cam and groove;

FIGURE 4 is a sectional view of the device as seen from the plane indicated by the line 4-4 of FIGURE 1;

FIGURE 5 is a fragmentary plan view of the detent ring;

FIGURE 6 is a fragmentary partially sectioned and exploded view showing the stream selection mechanism; and,

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FIGURE 7 is a fragmentary sectional view showing the details of the baffle head.

Referring to the drawings, a nozzle body is shown generally at 10. The body 10 is a conduit which has a through water passage 14 extending from an inlet end at 11 to an outlet end at 12. The outlet end at 12 is defined by a throat collar 13 which is secured to and forms a part of the body 10. A ball-type shut-off valve 15 is provided near the inlet end 11.

The body 10 has an internal bore 16 which is of substantially uniform cross-section and which extends from the throat collar 13 to a terminus near the ball-type valve 15. A tubular holding sleeve 17 is positioned in the bore 16 at its inlet end. The holding sleeve 17 is normally held in fixed relationship with the body 10 so that it functions, when the nozzle is in operation, as a part of the body or conduit member 10.

The holding sleeve 17 includes a longitudinally extending positioning groove 18. A positioning pin 19 is carried by the body 10 and projects into the groove 18. The pin 19 coacts with the ends of the groove 18 to limit relative longitudinal travel of the holding sleeve 17 relative to the body 10.

A spider member composed of a tubular sleeve portion 20 and a plurality of spider arms 21 is provided. The spider sleeve portion 20 is disposed within the bore 16 and positioned essentially between the holding sleeve 17 and the collar 13. The sleeve portion 20 is a support portion for the arms 21. The spider member is interconnected with the holding sleeve 17 and selectively relatively movable, in a fashion that will be described below, to obtain a preselected gallonage.

The holding sleeve 17 has a bore 23, which is of a diameter substantially equal to the inside diameter of the spider sleeve portion 20. The bore 23 and the spider sleeve portion 20 define a uniform diameter portion of the passage 14, which provides advantages which will be discussed below.

The holding sleeve 17 is counterbored at 24 adjacent its outlet end. Inlet end 25 of the spider sleeve portion 20 is telescoped into the counterbore 24. A gallonage control positioning spring 22 is interposed between the base of the counterbore 24 and the end 25 of the sleeve portion 20 to urge the sleeves away from one another. The holding sleeve 17 includes a pair of radially extending indexing projections 26. The indexing projections 26 extend into locating slots 27 formed in the spider sleeve portion 20. Each of the locating slots 27 includes low gallonage stop walls 28 and spaced high gallonage stop wall 29. The indexing projections 26 are selectively abutable one at a time against the spaced stop walls 28, 29 to provide a predetermined spaced relationship of the spider member and the holding sleeve 17. The low gallonage position is shown in solid lines in FIGURE 1 while the high gallonage position is shown in FIGURE 2.

An enlarged baffle head 30 is secured to the spider arms 21 of the spider member such that the head, the spider member, and the holding sleeve 17 all coact together as one unitary element which may be referred to as a spider and baffle means. The baffle head 30 is disposed across the outlet end of the conduit. The baffle head 30 is of a diameter greater than the diameter of the through water conduction passage 14 adjacent its outlet.

The baffle head 30 is spaced, when in a gallonage control position, from a truncated flow control surface 31 on the throat collar 13. The baffle head 30 and the truncated surface 31 coact to define a flow control constricting orifice or throat when the baffle head is in one of the preselected gallonage control positions. The baffle head and the surface 31 also coact to impart the maximum fog characteristic to a flow of water through the nozzle.

A tubular stream choke sleeve 33 is telescoped over the body 10 near the outlet end 12. The stream choke 33 is selectively positionable in the position shown in FIGURE 2 to reconstitute the flow of water into a straight stream.

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The stream choke 33 may be shifted longitudinally from the maximum fog position of FIGURE 1 to the straight stream position of FIGURE 2, and if desired, positioned at a location intermediate these two positions to provide an intermediate fog dispersion.

To impart a longitudinal relative shifting of the stream choke 33 relative to the body 10 upon relative rotation of the two, a cam groove 34 is provided in the stream choke 33. A cam follower member 35 is connected to the body 10. The cam follower member 35 extends into the groove 34 to coact with the walls of the groove. This coaction causes relative longitudinal shifting of the choke and body 33, 10 when there is relative rotation of the choke and body.

The choke is indexed into one of a plurality of stream contour control positions one at a time by a new and novel arrangement. This new and novel arrangement includes an annular detent ring 32 which is positioned, in the disclosed embodiment, in a recess in the stream choke. The recess is actually obtained by providing a ring 36 which has an inwardly directed flange 37 overlying the detent ring 32. The ring also serves as a stream adjustment indicia ring. The ring has a plurality of adjustment position indicating apertures (not shown) formed through it. A colored plastic 38 is interposed between the ring 36 and a portion of the choke 33 making the positioning apertures readily and permanently visually discernable.

The detent ring 32 has a plurality of spaced indexing recesses 40. A spring-urged detent ball 41 is carried by the stream choke 33 for selective engagement with the detent recesses 40 one at a time.

The detent ring 32 has an inwardly extending projection 42 which is disposed in and coacts with the walls of the longitudinally extending guide groove 43, FIGURE 3. The guide groove 43 is formed in the peripheral surface of the body 10.

Upon relative rotation of the choke 33 relative to the body 10, the projection 42 will prevent rotation of the detent ring 32 relative to the body 10. The overlying flange 37 and the remainder of the stream choke 33 will cause the ring and the projection 42 to reciprocate with the choke to the groove 43. At the same time, since the choke 33 will rotate relative to the detent ring 32, the detent ball 41 will rotate with the choke and be caused to shift from one of the detent recesses 40 to a contiguous recess.

The features which permit the baffle 30 to be substantially instantaneously shifted from either the low gallonage control position shown in solid lines in FIGURE 1, or the high gallonage control position of FIGURE 2 to the flush-out position shown in phantom in both figures, provides one of the outstanding advantages of the invention.

A flush-out control spring 50 circumscribes the sleeve portion 20 of the spider member and is interposed between the collar 13 and the holding sleeve 17. The flush-out control spring 50 urges the sleeve 17 rearwardly until the end of the locating slot 18 nearest the outlet end 12 is in abutting contact with the pin 19. When this contact is obtained, a recess 51 formed in the peripheral surface of the holding sleeve 17 is in alignment with a portion of a slot 52 which extends through the wall of the body 10.

A locking ball 53 is provided which normally extends into the recess 51 to rigidly interconnect the body 10 and the holding sleeve 17 and prevent relative longitudinal movement of the two against the action of the flush-out spring 50. Thus, the ball 53 normally locks the body and holding sleeve together rendering the spring 50 ineffectual. A saddle 54 including a ball camming surface 55 is positioned in the slot 52. A lock control spring 56 is interposed between the saddle 54 and the body 10. The lock control spring 56 urges the saddle 54 circumferentially against stop wall 57 of the slot 52.

A saddle control knob 59 is secured to the saddle 54. Pressing of the saddle control knob 59 to shift the saddle

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and compress the spring 56 will shift the camming surface 55 out of engagement with the locking ball 53 and permit the locking ball 53 to shift laterally out of the groove 51. This lateral shifting of the locking ball 53 out of the groove 51 will occur when the nozzle is turned on.

When the saddle 54 is shifted circumferentially with the nozzle turned on, the flow of water pressure acting against the baffle head 30 will cause an axial shifting of the baffle head 30, to the right as seen in the drawings. This axial shifting of the baffle 30 will, of course, cause the spider member and the holding sleeve 17 to shift with it. This shifting of the holding sleeve 17 will urge the locking ball 53 laterally outwardly. The amount of axial shifting to the right is limited by the coaction of a stop shoulder 60 on the spider sleeve portion 20 and the collar 13. While the pin 19 will normally not contact the end of the slot 18 nearest the inlet 11, the pin 19 may come in contact with the end of this slot 18 if inertia of the sleeve 17 tends to cause it to travel somewhat more than the spider member against the action of the gallone control spring 22.

So long as the water pressure is maintained, the nozzle will remain in the flush-out position shown in phantom in FIGURES 1 and 2 of the drawings. When the baffle is at this outer or extended flush-out position, it is widely spaced from the collar 31 a distance greater than either of the gallone control positions of the solid lines of FIGURES 1 and 2. Upon closing of the valve 15 to stop the flow of the water, the flush-out control spring 50 will urge the holding sleeve 17 and the connected spider member and the baffle head 30 axially to the left until the positioning pin 19 strikes the outlet end of the groove 18. At this time the recess 51 will be again in alignment with the groove 52. If the control button 59 has been released, the action of the locking control spring 56 urging the saddle circumferentially will cause the camming surface 55 to cam the lock ball 53 back into the recess 51. As soon as the shut-off valve is closed, the nozzle automatically and substantially instantaneously returns to the operating condition which existed prior to the flush-out operation. The adjustment of the stream choke 33 or the baffle 30, which was made before the flush-out operation, is completely unaffected by the flush-out.

Thus, instantaneous simple flush-out is obtained which can be performed simply and accurately by an operator. All an operator needs to do is press the button 59 to cause the nozzle to flush. When he is satisfied that the foreign matter is purged, he simply closes and immediately reopens the shut-off valve 15.

The described nozzle will be seen to have a number of advantages. Among these is the fact that all adjustments are obtained by an operator with one hand. By this is meant that he always has one hand free to firmly grip the nozzle while making any adjustment operation.

If an operator wishes to adjust gallone, he first shuts off the nozzle and then presses in on the baffle 30 against the action of the gallone control spring 22. He then rotates the baffle 30 while the spring 22 is so depressed to bring the indexing member 26 into engagement with the appropriate stop 28 or 29. The principles of this selection and the reason for its obtainment only when the water is shut off are explained in greater detail in the referenced patent.

The stream choke is simply and expeditiously adjusted with one hand, while the nozzle is gripped firmly with the other. Likewise, the ball-type shut-off valve is simply and expeditiously actuated by one hand while the flush-out mechanism may be operated by one finger.

Clearly all of these adjustments require only one hand for the adjustment while the other is gripping the nozzle. Thus, this nozzle, unlike many of the prior art nozzles, can be simply operated by a single fireman with a minimum of training.

While the invention has been described in a great deal of detail, it is believed that it essentially comprises a fire

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fighting nozzle in the form of a conduit member having a through fluid passage, a spider and baffle means in the passage with a baffle head across the outlet and releasable lock means interposed between the baffle head and the conduit to permit the baffle head to be selectively shifted from the gallone control position to another position a further distance from the conduit. The invention also includes a novel and improved arrangement where a substantially obstruction-free flow control passage is provided.

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, a conduit member having a through fluid passage extending from an inlet to an outlet, a spider and baffle means connected to the conduit member, the spider and baffle means including a baffle head of a diameter greater than the passage outlet positioned across the outlet when the nozzle is in use, a stream contour control sleeve member telescoped over said conduit member adjacent the outlet end, the members including coacting means to cause relative longitudinal movement upon relative rotation thereof, an annular detent ring rotatably carried by one of the members, the other of the members having a longitudinal groove therein, said ring including an extension portion disposed in said groove to cause said ring to rotate with said other member relative to said one member, said one member and said ring being coacting elements, one of the elements having a plurality of spaced stream locating recesses formed therein and the other having a spring loaded detent selectively engageable with said recesses one at a time.

2. The device of claim 1 wherein said coacting means comprises a cam groove formed in the sleeve member and a cam follower secured to the conduit member and projecting into the groove.

3. A nozzle comprising, an elongated tubular body member having a through passage extending from an inlet end to an outlet end, a holding member carried by the body member intermediate the ends, the members being selectively movable longitudinally, one of the members including a groove having longitudinally spaced inlet and outlet ends, the other member having a pin projecting into the groove and coactable with the ends of the groove one at a time to limit relative longitudinal movement of the members, a flush-out biasing means interposed between the members and urging the holding member toward the inlet to urge said pin against said groove inlet end, said holding member including a recess in the peripheral surface thereof, lock means carried by the body in alignment with said recess when said pin and groove inlet end are in abutment, lock biasing means urging the lock means into engagement with the recess when the locking means and recess are in alignment, said lock biasing means being compressible to permit the lock means to shift out of engagement with the recess, a spider means including a support portion disposed in said passage, said spider means including a plurality of arms extending longitudinally from the support portion past the outlet end of the body, a baffle head secured to the spider arms and having a plurality of selectable flow control positions spaced from the end of the body to define a flow control orifice of selectable size therebetween, said holding member and said support portion being coacting elements, one of the elements having at least one group of at least two longitudinally spaced locating stops, the other of the elements having one indexing surface for each such group, each such indexing surface being selectively abutable against

the locating stops of one group one at a time, said elements being relatively rotatable and relatively movable longitudinally to permit each such indexing surface to selectively abut the locating stops of one group one at a time and thereby shift the head into a selected one of said gallonage control positions, element biasing means interposed between the holding elements and urging the elements away from one another and each indexing surface against the selected stop, a stream control sleeve telescoped over said body adjacent the outlet end and including means coactable with the body to cause relative axial rotation thereof, said sleeve being positionable around said orifice and said baffle head and having a greater water carrying capacity than said orifice at all times when the baffle is in one of said flow control positions, and said baffle having a flush-out position; said baffle, said holding member, and said spider means being shiftable together from the selected one of said flow control positions under the urging of water pressure and against the action of said flush-out biasing means upon compressing the lock biasing means to permit lock means to shift out of engagement with the recess.

4. A nozzle comprising, an elongated tubular body having a through passage extending from an inlet end to an outlet end, a tubular holding sleeve disposed within the body passage intermediate the ends and selectively movable longitudinally relative to the body, the body and the holding sleeve including first coactable abutment surfaces limiting relative longitudinal movement in one direction and second coactable abutment surfaces limiting relative longitudinal movement in the other direction, a flush-out spring interposed between the holding sleeve and the body and urging the holding sleeve toward the inlet to urge said first coactable surfaces into abutment, said holding sleeve including a recess in the peripheral surface thereof, the body including a transversely disposed slot in alignment with said recess when said first coactable surfaces are in abutment, a ball in said slot and projectable into said recess when said first surfaces are in abutment, a movable saddle in said slot and having a ball camming surface, a locking spring interposed between the saddle and the body and urging said camming surface against said ball and locking the ball in engagement with said recess when the slot and recess are in alignment, a spider member including a tubular sleeve portion disposed in said passage and telescoped in part within said holding sleeve, said spider member including a plurality of arms extending longitudinally from the sleeve portion past the outlet end of the body, a baffle head secured to the spider arms and having a plurality of spaced and selectable flow control positions spaced from the outlet end of the body to define a flow control orifice of selectable size therebetween, one of the sleeves having at least one group of at least two longitudinally spaced locating stops, the other of the sleeves having one indexing surface for each such group, each such indexing surface being selectively abutable against the locating stops of one group one at a time, said sleeves being relatively rotatable and relatively movable longitudinally to permit each such indexing surface to selectively abut the locating stops of one group one at a time and thereby shift the head into a selected one of said gallonage control positions, a gallonage spring interposed between the holding sleeves and urging the sleeves away from one another and each indexing surface against the selected stop, said baffle having a flush-out position; said baffle, said holding sleeve, and said spider member being shiftable together from the selected one of said flow control positions under the urging of water pressure and against the action of said flush-out spring upon shifting of said saddle against the locking spring to permit the ball to shift laterally outwardly from the recess, a stream control sleeve telescoped over said body adjacent the outlet end and including means coactable with the body to cause relative axial rotation thereof, said sleeve being positionable around said orifice and said

baffle head and having a greater water carrying capacity than said orifice at all times when the baffle is in one of said flow control positions.

5. The device of claim 4 wherein a shut-off valve carried by the body is interposed between the inlet and the holding sleeve.

6. A fire fighting nozzle comprising, a conduit member having a through fluid passage extending from an inlet to an outlet, a spider and baffle means carried by the conduit member, the spider and baffle means including a baffle member of a diameter greater than the passage outlet, said spider and baffle means being positioned to maintain the baffle across the outlet when the nozzle is in use, releasable lock means interposed between the members to selectively interconnect the members to maintain the baffle member across and spaced from the passage outlet in a stream contour forming position, biasing means interposed between the baffle and the conduit and urging the baffle towards the conduit, said lock means interconnection being releasable to permit the baffle member to shift away from the outlet to a flush-out position against the action of the biasing means and under the urging of the pressure of water conducted by the conduit, and said conduit including means coactable with the baffle when the baffle is in said stream forming position to adjustably control the contour of an emitted stream.

7. A fluid nozzle for fire fighting comprising, a conduit element having a fluid passage extending from an inlet to an outlet, a baffle assembly carried by the conduit element and positioned at least in part within the passage, said assembly including a baffle head of a greater diameter than the outlet and positioned adjacent the outlet, a stream choke carried by the conduit element and selectively positionable around said baffle head, said choke when around said head defining an extension of said passage, said assembly including an element, one of the elements including at least one recess, a recess engaging member carried by the other element and selectively movable into and out of engagement with one such recess, said elements being locked against relative axial movement when the member is engaged with such one recess, a spring interposed between the member and said other element and biasing the member toward such one recess, said baffle head having at least one gallonage control position in predetermined spaced relationship with said outlet to define a constricting throat when the member is engaged with such one recess, said baffle head and conduit being relatively shiftable axially to a flush position with the space between the head and outlet having a greater water carrying capacity when the member is disengaged from one such recess, and said choke when positioned around the baffle head having a greater water carrying capacity than the throat when the baffle head is in one such gallonage control position and the space between the baffle head and the outlet when the head is in the flush position having a greater water carrying capacity than the cross sectional area of said passage in at least one plane of cross section such that the amount of water flowing through the nozzle when in the flush position is controlled by the passage area in such plane of cross section.

8. The device of claim 7 wherein the baffle head has a plurality of gallonage control positions and wherein baffle assembly includes means to index the head into the gallonage control positions one at a time.

9. The device of claim 7 wherein the baffle assembly element is said other element and is an annulus circumscribing said fluid passage.

10. A fire fighting nozzle comprising, a conduit member having a through fluid passage extending from an inlet to an outlet, a spider and baffle means carried by the conduit member, the spider and baffle means including a baffle member of a diameter greater than the passage outlet, said baffle member having at least one gallonage control position in predetermined spaced relation-

ship with said outlet to define a constricting throat therebetween, a choke carried by the conduit and positionable around the baffle member, said choke when positioned around the baffle forming an extension of said passage and having a greater water carrying capacity than said constricting throat, releasable lock means interposed between the members to selectively and rigidly interconnect the members to maintain the baffle member in each such predetermined gallonage control position, a spring interposed between the lock means and one of the members and biasing said lock means into said interconnection, said lock means being movable against the action of the spring to release such interconnection, said baffle member having a flush position widely spaced from said outlet, the space between the baffle member and the outlet when the baffle member is in the flush position having a greater water carrying capacity than the cross-sectional area of said passage in at least one plane of cross section such that the amount of water flowing through the nozzle when in the flush position is controlled by the passage area in such plane of cross section, and the baffle member being shiftable away from the outlet from said gallonage control position to said flush position when said lock means is moved against the action of the spring to release the interconnection.

11. A fire fighting nozzle comprising, a conduit member having a through fluid passage extending from an inlet to an outlet, a spider and baffle means carried by the conduit member, the spider and baffle means including a baffle member of a diameter greater than the passage outlet, said spider and baffle means being positioned to maintain the baffle member across the outlet when the nozzle is in use, a choke carried by the conduit and positionable around the baffle, said spider and said baffle means including a recess, a laterally shiftable ball selectively engageable with said recess, a spring urged saddle carried by the conduit urging the ball inwardly into the recess when the members are selectively interconnected and selectively shiftable against the spring away from the ball to permit the ball to shift laterally out of said recess and thereby release said interconnection, said baffle member being across and spaced from the passage outlet in a predetermined gallonage position when the members are interconnected by the ball to define a constricting throat of a constant value of less water carrying capacity than said choke, and said baffle member being shiftable away from the outlet to another position of a predetermined capacity greater than said choke.

12. A fire fighting nozzle comprising, a conduit member having a through fluid passage extending from an inlet to an outlet, a spider and baffle means carried by the conduit member, the spider and baffle means including a baffle member of a diameter greater than the passage outlet, said spider and baffle means being positioned to maintain the baffle member across the outlet when the nozzle is in use, a choke carried by the conduit and positionable around the baffle, said spider and baffle means including first and second relatively movable sleeves, and a spring interposed therebetween, one of said sleeves including a plurality of spaced stops and the other including at least one indexing portion, each such indexing portion being selectively engageable with the stops one at a time to locate the baffle member in one of a plurality of spaced gallonage control positions, releasable lock means interposed between said conduit member and said first sleeve to selectively, rigidly, interconnect said conduit member and said first sleeve to maintain the baffle member across and spaced from the passage outlet in the selected one of said plurality of predetermined gallonage control positions, thereby defining a constricting throat of constant value of less water carrying capacity than said choke, and said lock means interconnection being releasable to permit the baffle member to shift away from the outlet to another position of predetermined capacity greater than said choke.

13. In a nozzle the combination of, a conduit extending from an inlet to an outlet, a spider means connected to said conduit, a baffle head connected to the spider means and positioned across the outlet, resilient means interposed between the head and the conduit and urging the head toward the conduit, a saddle carried by the conduit, a spring between the saddle and the conduit biasing the saddle into an interconnecting position, said spider means having a recess therein, a ball urged into the recess by the saddle when the saddle is in the interconnecting position, said head and conduit being maintained in a predetermined spaced relationship when the ball is urged into the recess by the saddle, and said saddle being movable against the action of the spring to release the ball and permit the baffle to be shifted outwardly by water pressure against the action of the resilient means.

14. The device of claim 10 wherein said baffle member has a plurality of gallonage control positions and is positionable selectively one at a time in such gallonage control positions.

15. The device of claim 10 wherein said baffle member is a circular head and wherein the spider and baffle means includes an annular portion spaced rearwardly of the conduit outlet and at least one longitudinally extending member connecting the head to the annular member.

16. In a nozzle the combination of, a conduit extending from an inlet to an outlet, a spider means connected to said conduit, a baffle head connected to the spider means and positioned across the outlet, resilient means interposed between the head and the conduit and urging the head toward the conduit, releasable lock means interposed between the head and the conduit and normally rigidly and positively interconnecting the head and conduit in an operative position to maintain predetermined spaced relationship therebetween and render the resilient means ineffectual, and said lock means being releasable to render the releasable means effectual to permit the baffle to be shifted outwardly by water pressure against the action of the resilient means, and biasing means urging the lock means into such normal interconnection of the head and conduit.

17. A fluid nozzle for fire fighting comprising, a conduit element having a fluid passage extending from an inlet to an outlet, a baffle assembly carried by the conduit element and positioned at least in part within the passage, said assembly including a baffle head of a greater diameter than the outlet and positioned adjacent the outlet, a stream choke carried by the conduit element and selectively positionable around said baffle head, said assembly including an element, one of the elements including at least one recess, a recess engaging member carried by the other element and selectively movable into and out of engagement with one such recess, said elements being locked against relative axial movement when the member is engaged with such one recess, a spring interposed between the member and said other element and biasing the member toward such one recess, said baffle head having at least one gallonage control position in predetermined spaced relationship with said outlet to define a constricting throat when the member is engaged with such one recess, said baffle head and conduit being relatively shiftable axially to a flush position with the space between the head and outlet having a greater water carrying capacity when the member is disengaged from one such recess, and said choke when positioned around the baffle head having a greater water carrying capacity than the throat when the baffle head is in one such gallonage control position and a lesser water carrying capacity than the space between the baffle head and the outlet when the head is in the flush position.

18. A fire fighting nozzle comprising, a conduit member having a through fluid passage extending from an inlet to an outlet, a spider and baffle means carried by the conduit member, the spider and baffle means including a baffle member of a diameter greater than the passage out-

let, said baffle member having at least one gallonage control position in predetermined spaced relationship with said outlet to define a constricting throat therebetween, a choke carried by the conduit and positionable around the baffle member, said choke when positioned around the baffle having a greater water carrying capacity than said constricting throat, releasable lock means interposed between the members to selectively and rigidly interconnect the members to maintain the baffle member in each such predetermined gallonage control position, a spring interposed between the lock means and one of the members and biasing said lock means into said interconnection, said lock means being movable against the action of the spring to release such interconnection, said baffle member having a flush position widely spaced from said outlet, the space between the baffle member and the outlet when the baffle member is in the flush position having a greater water carrying capacity than said choke when positioned around the baffle member, and the baffle member being shiftable away from the outlet from said gallonage control position to said flush position when said lock means is

moved against the action of the spring to release the interconnection.

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