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FIRE HOSE SHOULDER SUPPORT ACCESSORY

Abstract

A fire hose shoulder support accessory, also called support accessory, having a forward support and a rear support is presented. The support accessory allows one person to safely handle a fire hose and nozzle under high pressure by having a nozzle holder incorporated in the forward support that is connected to a shoulder stock assembly (i.e., a rear support) using a coupling hub. The rear support has a connector part and a support part with the support part sized and shaped to rest against an individual's shoulder. The connector part may extend from and retract back into the support part adjusting the length of the support accessory. The support accessory may have one or more clamps that hold the fire hose and nozzle in the support accessory.

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Background/Summary

CROSS-REFERENCE TO RELATED APPLICATIONS [0001] This application claims priority to Provisional Application No. 63/555,025 filed Feb. 18, 2024 and Provisional Application No. 63/661,618 filed Jun. 19, 2024, with Provisional Application No. 63/555,025 and Provisional Application No. 63/661,618 incorporated in the current application.

FEDERALLY SPONSORED RESEARCH

[0002] Not applicable.

BACKGROUND OF THE INVENTION

[0003] The technical field of the invention relates to Fire Fighting Equipment, more specifically, Fire Hose Support Accessories. This Invention relates to an apparatus for supporting a fire hose when in operation, and more particularly to a nozzle holder coupled to a shoulder support assembly that makes it more secure and safer to handle for one person while discharging water at high pressure.

BRIEF SUMMARY OF THE INVENTION

[0004] The nozzle end of the fire hose is very difficult and dangerous to handle especially in confined and low visibility conditions, which are often the case when fire fighting in buildings. To handle the hose safely it often requires several persons to support and brace the hose or the fireman in front. This invention, the Fire Hose Shoulder Support Accessory, also referred to as support accessory, allows one person to safely handle the hose and nozzle under high pressure by means of the nozzle holder incorporated in a forward support connected to a shoulder stock assembly (i.e., a rear support) using a coupling hub.

[0005] The novel design takes a shock load of a high-pressure nozzle and transfers it to the person's shoulder so if the person is positioned with feet spaced, preferably at least shoulder width apart, the person can take the load and stay on target without requiring another individual positioned behind them to brace the firefighter's body or handle the hose. This nozzle holder with the shoulder support assembly is anticipated to be constructed of lightweight materials to prevent any additional burden on the firefighter and for easy transporting with the hoses and other nozzles on the fire truck.

[0006] This invention as described is mainly for a pistol grip style nozzle with bail or trigger valve design. But other embodiments without a pistol grip may be accomplished with minor variations of the basic concept. The need for this invention is quite clear as it allows firefighters of different body sizes and physical strength to handle the high-pressure hose safely and more precisely in firefighting situations especially in confined spaces. It can be used in municipal as well as rural fire departments.

[0007] This apparatus is suitable for embodiments for nozzles and

[0008] hoses in sizes from 1"-2.5" with 1.5 and 1.75 inches the most common, though the invention may be modified to accommodate hoses of other diameters if a need arises. The nozzle may be a pistol grip nozzle with bail or trigger valve.

[0009] The forward support may include a nozzle holder with clamps for securing the nozzle, and a coupling hub having a forward receiver or forward sleeve with coupling features to allow for the connection and fixing of a connector part of the rear support securely to the forward support. The forward receiver will have a one end, a forward receiver front end, from which a connector one end extends and is secured to the forward receiver. The coupling features may include one or more keys around a forward receiver other end, forward receiver rear end, of the forward receiver. The keys are sized and shaped to mate with key slots of the rear support aligning the forward support with the rear support. The nozzle holder and the coupling hub of the forward support may be made of a high temperature engineering polymer.

[0010] The rear support part that may be an adjustable shoulder stock featuring a support part (i.e., shoulder stock or referred to a stock) and a connector part (i.e., aluminum stock tube with a machined rail). The support part may have a lever actuator/spring/lug mechanism to lock and unlock the connector part from the support part, allowing the connector part to move in and out of the support part adjusting the length of the support accessory. By providing for multiple length adjustments, the support accessory may accommodate different body sizes.

[0011] Also incorporated into or as a separate component fastened to a rear portion of support part may be a rest for the hose (i.e., a hose support) to keep the hose from falling off the shoulder of the fire fighter. The hose support may also have a clamp to hold the hose in the hose support. The hose support helps the fire fighter focus on the fire in front of them rather than the hose behind them.

[0012] Some embodiments may have a pad on a rear end of the support accessory (i.e., a rear end of the shoulder stock or stock) to cushion any shock load impacting the fire fighter's shoulder. Additionally, the stock may be curved to comfortably fit a user's shoulder.

[0013] A front lock and a rear lock, also referred to as a forward lock and a rear lock, respectively, that may be threaded lock rings, may be used to secure the connector part (e.g., an aluminum tube), of the rear support (i.e., stock assembly) to the forward support. The coupling hub may have a forward receiver with a forward receiver front end and a forward receiver rear end that may be recessed, a front recess and a rear recess, respectively, in the coupling hub. The front recess will ensure the proper surface for the front lock to mate with one end of the connector and the rear recess may allow for one or more keys around the forward receiver rear end. The one or more keys around the rear end of the forward receiver are sized and shaped to mate with key slots of the rear lock, holding the connector, correctly aligned, in the forward receiver. Once the connector is aligned in the forward receiver the front lock may be placed on the connector front end securing the rear support to the forward support. The front and rear locks may be threaded lock rings that may be of a common spanner wrench style or other similar style made of aluminum, high temperature polymer or steel. Typically, there are 1 3/16"-16 Castellated nuts or SAE threaded Castle Nuts that may be used to secure the connector (i.e., that may be an aluminum tube) to the connection hub of the forward support. In some embodiments the rear lock may be a fixed ring on the connector with key slots that match the keys located around the rear end of the forward receiver.

[0014] There may be a series of annular clamps that hold a pistol grip style nozzle in the main housing (i.e., the nozzle holder without the clamps) of the apparatus that allows it to act as one rigid body. The clamps may be of a common over center or toggle latch design or some other appropriate design for an easy to lock/unlock fastener. There may be a fastener first part that may be a stretchable cord with a loop on one end that loops over a fastener second part that extended from the main housing off the nozzle holder. There may be one or more shims that may or may not have a contact channel that allow the shims to cradle raised portions of the nozzle and the firehose. One or more of the shims may be adjustable allowing the adjustable shim to move across the clamp inner surface. One or more of the shims may have contact slots to cradle raised portions of the nozzle and the firehose. The shims may be made of flexible and semi-compressible materials allowing the shim to be shaped to conform to the clamp's inner surface and press against and cradle the nozzle and the firehose. The shims, coupled to one or more of the clamps, allow the support accessory to accommodate hoses and nozzles of varying dimensions.

Description

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0015] The accompanying drawings, which are incorporated in and form part of the specification, illustrate various examples of the present invention and, together with the detailed description, explain the principles of the invention.

[0016] FIG. **1** shows an unassembled view of the invention with a nozzle and fire hose the invention is intended to carry.

[0017] FIG. **2** shows an assembled view of the invention carrying a fire hose mated to a nozzle.

[0018] FIG. **3** shows another assembled view of the invention carrying a fire hose mated to a nozzle.

[0019] FIG. **4** an elevation view of the invention.

[0020] FIG. **5** a rear end elevation view of the invention.

[0021] FIG. **6** shows a frontal view of the invention.

[0022] FIG. **7** shows a sectional view along line **7-7** of FIG. **5**.

[0023] FIG. **8** shows a top view of the invention

[0024] FIG. **9** shows an elevation view of the connector part of the invention.

[0025] FIG. **10** shows a sectional view of the connector part along line **10-10** for FIG. **9**.

[0026] FIG. **11** shows a bottom view of the connector part.

[0027] FIG. **12A** shows a side view of the connector part with a lockring.

[0028] FIG. **12B** shows bottom view of the connector part with the lockring.

[0029] FIG. **13** shows a sectional view along line **13-13** of FIG. **12A**.

[0030] FIG. **14** shows a side view of the invention with an adjustable shim on one clamp and an alternate shim on another clamp.

[0031] FIG. **15** shows a top view of the adjustable shim.

[0032] FIG. **16** shows a sectional view along line **16-16** of FIG. **15**.

[0033] FIG. **17** shows a top view of another shim.

[0034] FIG. **18** shows a sectional view along line **18-18** of FIG. **17**.

[0035] FIG. **19** shows a top view of yet another shim.

[0036] FIG. **20** shows a sectional view along line **19-19** of FIG. **19**.

[0037] FIG. **21** shows a top view of the invention with alternate clamps with straps.

[0038] FIG. **22** shows an elevation view of the forward support with the alternate clamps without straps.

[0039] FIG. **23** shows a sectional view along line **23-23** of FIG. **22**.

[0040] FIG. **23A** shows an exploded view of FIG. **23**.

[0041] FIG. **24** shows a sectional view along line **24-24** of FIG. **22**.

DETAILED DESCRIPTION OF THE INVENTION

[0042] Referring to FIGS. **1**, **2** and **3**, the invention is a fire hose shoulder support accessory, hereafter referred to as a support accessory **10**, having a forward support **12** and a rear support **13**. The forward support **12** may have a forward support axis **12a**, a forward support one end **12b** that is also called a support accessory front end, and a forward support other end **12c**, also called a support accessory rear end. The rear support **13** may have a rear support axis **13a**, a rear support one end **13b**, and a rear support other end **13c** that may also be referred to as a support accessory rear end. Referring to FIG. **2**, the forward support **12** may have a nozzle holder **11a** and a coupling hub **11b** having a coupling hub wall **11w**, the coupling hub **11b** used to join the rear support **13** to the forward support **12**.

[0043] Referring to FIGS. **4**, the forward support axis **12a** and the rear support axis **13a** may be in parallel with the forward support axis **12a** in a reference horizontal plane **12u** as shown in FIGS. **5** and **6**, a rear and a front view, respectively, of the support accessory **10**. Referring again to FIGS. **5** and **6**, the forward support axis **12a** and the rear support axis **13a** may be in a vertical reference plane **12v** that is perpendicular to reference horizontal plane **12u**. Thus, when the accessory device is employed aimed with the forward support axis **12a** and the rear support axis **13a** horizontal, the forward support axis **12a** would be above the rear support axis **13a**. The rear support **13** may further have a support part **14** and a connector part **15** with the connector part **15** having a connector **15a** and a rail **15b**. There may be front lock **15c** and a rear lock **15d** on the connector **15a**.

[0044] Referring again to FIGS. 1-4, the forward support **12** may be connected to the rear support **13** along the rear support axis **13a** using the connector **15a** and secured using the front lock **15c** and the rear lock **15d**. The support part **14** may be an adjustable stock from a rifle, such as an AR-15 rifle adjustable stock, available in the marketplace. The support part **14** may be sized and shaped to rest against an individual's shoulder. Although not shown, the support accessory **10** may be a single unit with the forward support **12** permanently attached to the rear support **13**.

[0045] Continuing to refer to FIGS. 1 and 2, the support accessory **10** is sized and shaped to receive a nozzle **16** and a fire hose **17**. The nozzle **16** may comprise: a trigger handle portion **16a** located between a forward nozzle portion **16b** and a rear nozzle portion **16c**. The nozzle **16** may further comprise a nozzle hose connector portion **16d** connected to the rear nozzle portion **16c** using a transition portion **16e**. The trigger handle portion **16a** may have a handle **16h** and a trigger **16t**, although some nozzles may have a handle **16h** without a trigger **16t**. The fire hose **17** may have a hose portion **17a** and a coupling portion **17b**, with the coupling portion **17b** sized and shaped to connect to the nozzle hose connector portion **16d** of the nozzle **16**. The coupling portion **17b** may be a camlock coupling or a treaded coupling.

[0046] Referring to FIGS. 1-4, the nozzle holder **11a** of the forward support **12** may have an aperture **20** and an abutment **22**. Referring to FIG. 1 and FIG. 8, a top view of the support accessory **10**, the aperture **20** may be located in an aperture portion **21** having an aperture wall **21w** with and, referring to FIG. 7, aperture front edge **21b**, an aperture rear edge **21c**, an aperture lower edge **21d**, and referring to FIG. 8, an aperture upper one side edge **21e** and an aperture upper opposite side edge **21f**. Referring to FIGS. 7 and 8, the abutment **22** may extend down from an aperture rear end **20c**. The aperture **20** is sized and shaped accept at least the handle **16h** of the nozzle **16** shown in FIG. 1. Referring again to FIGS. 7 and 8, the abutment **22** may extend down from the aperture lower edge **21d** at the aperture rear edge **21c** and may be sized and shaped to prevent the handle **16h** moving toward the coupling hub **11b**. The aperture lower edge **21d** runs around the aperture wall **21w** and may be parallel to the aperture upper one side edge **21e** and the aperture upper opposite side edge **21f**. In embodiments of the invention with a trigger **16t**, the aperture **20** may be sized and shaped to accept both the handle **16h** and the trigger **16t**. Referring to FIG. 2, the nozzle holder **11a** may further comprise: a forward nozzle support portion **26** having a forward nozzle support wall **26w**, the forward nozzle support portion **26** sized and shaped to accept and cradle the forward nozzle portion **16b**; a rear nozzle support portion **27** having a rear nozzle support extension wall **27u** and a rear nozzle support wall **27w**, the rear nozzle support portion **27** sized and shaped to accept and cradle the rear nozzle portion **16c** and the trigger handle portion **16a**; a transition support portion **25** having a transition support wall **25w**, the transition support portion **25** sized and shaped to accept and cradle the transition portion **16e**; a nozzle hose support portion **29** having a nozzle hose support wall **29w**, the nozzle hose support portion **29** sized and shaped to accept and cradle the nozzle hose connector portion **16d** coupled to the coupling portion **17b** of the fire hose **17**; an abutment portion **23** providing lateral support for the abutment **22** also shown in FIGS. 3 and 4, the abutment portion **23** may be located below the rear nozzle support wall **27w** and the transition support wall **25w** with the abutment **22** on one end of the abutment portion **23** and the coupling hub **11b** located on an other end; and the nozzle holder further having one or more clamps **28** sized and shaped to hold the nozzle **16** in the nozzle holder **11a**. The aperture portion **21** may extend from the forward nozzle support wall **26w** and the rear nozzle support wall **27w** with the transition support portion **25** positioned between the rear nozzle support portion **27** and the nozzle hose support portion **29**.

[0047] Referring to FIGS. 1, 4-6, the coupling hub wall **11w** extends from the nozzle hose support wall **29w** around a forward receiver **30** and then connects again with the nozzle hose support wall **29w**. Continuing to refer to FIGS. 4, 5, and 6, the rear nozzle support extension wall **27u** extends above the forward support axis **12a** from the rear nozzle support wall **27w**. The forward nozzle support wall **26w**, the rear nozzle support wall **27w**, and the nozzle hose support wall **29w** and the

transition support wall **25w** may extend from the reference horizontal plane **12u** on one side of the support accessory **10** in a semicircular manner to the reference horizontal plane **12u** on an opposite side of the support accessory **10**.

[0048] Referring to FIG. **1**, there may be a clamp **28** that is sized and shaped to mate with the forward nozzle support portion **26** to hold the forward nozzle portion **16b** of the nozzle **16** in the forward nozzle support portion **26**. There may be another clamp **28** sized and shaped to mate with the nozzle hose support portion **29** sized and shaped to hold the nozzle hose connector portion **16d** of the nozzle connected to the coupling portion **17b** of the fire hose **17** in the nozzle hose support portion **29** of the forward support **12**. Referring to FIGS. **1-2**, the rear support **13** may have a hose support **42**, sized and shaped to cradle the hose portion **17a** of the fire hose **17**. The clamps **28** may be semi cylindrical. Referring to FIGS. **1-4**, one or more of the clamps **28** may have a hinged connection **28c** similar to a house door hinge, allowing the clamps **28** to be placed over the nozzle **16** and the coupling portion **17b** of fire hose **17** securing them in the forward support **12** using a fastener first part **28d** attached to each of the clamps **28**, and a fastener second part **28e** that may extend outward from each of the forward nozzle support wall **26w** and the nozzle hose support wall **29w**.

[0049] Referring to FIGS. **1** and **4**, the forward receiver **30** is sized and shaped to receive the connector **15a** of the rear support **13**. The coupling hub **11b** may have the forward receiver **30** that may have a forward receiver inner wall **32** that may be cylindrical, and there may be at a forward receiver one end, also called a forward receiver front end **30a**, a forward recess **34** in the coupling hub **11b** sized and shaped and sized for a front lock **15c**, and at a forward receiver opposite end, also called a forward receiver rear end **30b**, there may be a rear recess **36** sized and shaped and sized for a rear lock **15d**. The front lock **15c** and the rear lock **15d** will be sized and shaped to hold the connector **15a** of the rear support **13** in the forward receiver **30**. The forward recess **34** and the rear recess **36** may be $\frac{1}{4}$ inch greater than the diameter of the front lock **15c** and the rear lock **15d**, respectively. The forward sleeve or forward receiver **30** may have a diameter that is at least $\frac{1}{16}$ inch greater than a connector radius as measured perpendicular to the rear support axis **13a**. The front lock **15c** and the rear lock **15d** may be threaded nuts and may have key slots **37k**. Referring to FIG. **1**, the forward receiver **30**, also called the forward sleeve may have one or more keys **30k** on the opposite end of the forward receiver, the forward receiver rear end **30b**, that are sized and shaped to fit the key slots **37k** of the rear lock **15d**. The rear lock **15d** may be two lock nuts, one against the other, with at least one positioned with the key slots **37k** to mate with the keys **30k** of the forward receiver **30**. With the front lock **15c** removed from the connector **15a**, the connector **15a** may be inserted through the forward receiver **30** and the front lock **15c** used to hold the connector **15a** in the coupling hub **11b**. The forward nut **37a** of the rear lock **15d**, shown in FIG. **1**, is then moved toward the forward receiver **30** and rotated to align and place the key slots **37k** on the keys **30k** of the forward receiver **30**. The rear nut **37b**, shown in FIG. **1**, of the rear lock **15d** is then rotated forward and tightened against the forward nut **37a** establishing the alignment of the forward support **12** and the rear support **13**. The front lock **15c** is then placed on the connector **15a** and tightened securing the connector **15a** in the forward receiver **30**. Referring to FIGS. **12A**, **12B**, and **13**, in embodiments of the invention having a lock ring **137** on the connector **15a**, the connector **15a** is rotated to align and place the key slots **37k** on the keys **30k** of the forward receiver **30** and then the front lock **15c** is placed on the connector **15a** and tightened. The connector part **15** may be made with aluminum, steel, polymer, titanium, or other suitable material. The connector **15a** may be a stock tube with the rail **15b** that may be machined.

[0050] The support part **14** may be similar to an AR-15 adjustable stock and may be made of wood, aluminum, steel, polymer, titanium, plastic, other suitable material or a combination thereof.

Referring to FIG. **1**, the support part **14** may have a stock top surface **41** with a hose support **42** mounted to the stock top surface **41** using one or more legs **43**. There may be three of the legs **43** and each leg **43** may be a rectanguloid. The hose support **42** will be sized and sized and shaped to

hold the fire hose **17**. The hose support **42** may be semicylindrical and may be a half of an open cylinder with a support radius that may be 0.125-0.500 inches, preferably 0.5 inches greater than the radius of the fire hose **17**. The hose support **42** may have a hose support surface **42s** and a hose support one end **42a** and a hose support other end **42b**. Referring to FIG. **14**, there may be yet another clamp **28** sized and shaped to mate with the hose support **42** of the rear support **13** to hold the hose portion **17a** of the fire hose **17** in FIG. **1** in the hose support **42**.

[0051] Referring to FIG. **8**, the hose support surface **42s** may further have one or more ribs **42r** running from the hose support one end **42a** to a hose support other end **42b**, the ribs **42r** may have a semicircular cross section with a radius of 0.125 to 0.25 inches as measured in planes perpendicular to the hose support surface **42s**.

[0052] Referring to FIG. **4**, the support part **14** of the rear support **13** may further have a lever **44** that moves a locking pin **45** on a spring **46** allowing the locking pin **45** to lock and unlock the connector part **15** in a support part **14**. Referring to FIG. **7**, the support part **14** may have the stock connector sleeve **48** and a rail channel **49** sized and shaped to receive the connector **15a** and the rail **15b**, respectively. The support part **14** part may have a shoulder end **47**, allowing the support part **14** to be placed against an individual's shoulder. Referring to FIG. **5**, there may be a pad **47p** attached to the shoulder end **47** to cushion the rearward force due to water exiting the nozzle **16** shown in FIGS. **1-3**.

[0053] Continuing to refer to FIGS. **7**, and **9-13** the connector **15a** may have a connector one end **52** with threads **53**, and a connector other end **54**. The connector one end **52** is sized and shaped to be inserted in the coupling hub **11b** and the threads **53** mated with the front lock **15c** allowing the connector **15a** to be held in the coupling hub **11b**. The connector other end **54** is sized and shaped to move back-and-forth in the stock connector sleeve **48** allowing the length of the support accessory **10** to be variable and adjusted using the lever **44** to remove and reinsert the locking pin **45** in the rail **15b**. Referring to FIGS. **7**, and **11** and **12B**, the locking pin **45** of FIG. **7** is sized and shaped to be inserted in connector pockets **58** of the rail **15b**. Referring to FIGS. **12A**, **12B**, and **13**, in another embodiment the rear lock, the lock ring **137** is attached to the connector **15a** with the lock ring **137** having one or more of the key slots **37k** sized and shaped to fit the keys **30k** at the forward receiver rear end **30b** of FIG. **1**.

[0054] Referring to FIGS. **1** and **14**, there may be an adjustable shim **28s** may be provided so that the support accessory **10** may accept fire hoses **17** of FIG. **1** with hose portions **17a** and coupling portions **17b** of varying sizes. The adjustable shim **28s** may be applied to the clamp inner surface **28a** of the clamps **28** and held in place with one or more shim fasteners **28z**. The adjustable shim **28s** may be made of flexible material or a semi-compressible and flexible material that allows the adjustable shim **28s** to conform to shape of the clamps **28**. The adjustable shim **28s** may move in shim slots **28t** that allow the adjustable shim **28s** to move parallel to the forward support axis **12a** shown in FIG. **1** adjusting the adjustable shim **28s** to the location of the coupling portion **17b**. The adjustable shim **28s** may have a contact channel sized for the coupling portion **17b** of the fire hose **17** shown in FIG. **1**, allowing the shim **28s** to accept and cradle the coupling portion **17b**. Referring to FIGS. **15**, an exploded view of the adjustable shim **28s** is shown with a sectional view along line **16-16** is shown in FIG. **16**. The adjustable shim **28s** may have shim thickness **28m** from 0.125-0.250 inch preferably 0.190 inches. Referring again to FIG. **14**, an alternate shim **128s** may be applied to the clamp **28** at the forward support one end **12b**. Looking to FIG. **17** an enlarged view of the alternate shim **128s**, the alternate shim **128s** may have an alternate shim width **128g** between 1-3 inches, preferably 1.5 inches, and referring to FIG. **18**, a sectional view of the alternate shim **128s** along line **18-18a**, the alternate shim may have an alternate shim height **128h** between 1-4 inches, preferably 2 inches with aa alternate shim thickness **128m** from 0.125-0.250 inch preferably 0.190 inches. The alternate shim **128s** may be attached to the clamp **28** to using an adhesive **128p**. Referring to FIG. **19**, yet another shim **228s** is shown having the contact or coupling channel **28r**. Referring to FIG. **20**, the yet another shim **228s** may be fastened to the clamp inner surface **28a** using

an adhesive **128p**.

[0055] Referring to FIG. 1, the fastener first part **28d** may be stretchable with a loop sized and shaped to fit over the fastener second part **28e**.

[0056] Referring to FIGS. 1, 4 and FIG. 8 the nozzle hose support portion **29** may have nozzle hose support wall **29w** the is generally semi-cylindrical with a forward support one side edge **12e** that is opposite a forward support other side edge **12f**. One of the clamps **28** may be attached to the forward support one side edge **12e** and connected to the fastener second part **28e** at the forward support other side edge **12f** of the nozzle hose support portion **29**. The forward nozzle support portion **26** may have a forward nozzle support wall **26w** that is substantially semi cylindrical and disposed to cradle the forward nozzle portion **16b**. Another of the clamps **28** may be attached to the forward support one side edge **12e** of the forward nozzle support portion **26** and the other clamp **28** fastened to the fastener second part **28e** at the forward support other side edge **12f** of the forward nozzle support portion **26**. The nozzle holder **11a** may extend from a forward support one end **12b** along a forward support one side edge **12e** and a forward support one side edge **12e** to a forward support other end **12c**. The coupling hub **11b** may have a coupling hub wall **11w** that extends from a hub one end **11c** to a hub other end **11d**. Referring to FIG. 6, the coupling hub wall **11w** that may extend from the nozzle hose support wall **29w** on one side of the support accessory **10** and continue around the forward receiver **30** and connect back to the nozzle hose support wall **29w** on the other side of the support accessory **10**. Referring to FIGS. 1, 2, and 6, the rear nozzle support wall **27w** may be semi-circular extending from a reference horizontal plane **12u** and a rear nozzle support extension wall **27u** on one side of the support accessory **10** to another rear nozzle support extension wall **27u** on the other side of the support accessory **10**.

[0057] Referring to FIG. 4, the support accessory **10** may have a stock height **47d** of 7.48 inches. Referring to FIG. 8, the support accessory **10** may have: a support accessory length **70** that is variable ranging from 22 to 27.750 inches; a forward support length **72** of 12.625 inches; a forward nozzle support width **74** of 2.450 inches; a nozzle hose support width **76** of 0.1 to 0.25 inches greater than the coupler diameter **17h**; a support part width **78** of 0.1-0.25 inches, preferably 0.20 inches; a nozzle holder wall thickness' as measured from the nozzle hose support inner wall surface **94** to the nozzle hose support outer wall surface **95** of 0.125 inches; an aperture length **91** of 4.00 inches and an aperture width **93** of 2.000 inches; an abutment length equal to the aperture width **93** of 2.000 inches; an abutment base **22g** of 0.750 inches, and referring to FIG. 5, an abutment height **22h** of 1-1.5 inches; referring again to FIG. 8, a forward nozzle support length **26h** of 2.6875 inches, a rear nozzle support width that may be equal to the forward nozzle support width **74** of 2.45 inches and a rear nozzle support length **27h** of 3.875 inches; a transition support portion width **25g** of 1-2 inches and a transition support portion length **25h** of 1.375 inches, a nozzle hose support width **76** of 3.34 inches, referring to FIG. 14, a coupling hub upper length **11u** equal to the nozzle hose support length **29h** and a coupling hub top width **11g** of 1-3 inches, a coupling hub lower length **11h** of 1-2 inches and a coupling hub top width **11j** of 1.625 inches, a clamp width **28g** of 1-2 inches and a clamp length **28h** of half the circumference of that portion of the nozzle holder **11a** covered by the clamp **28**. Referring to FIG. 10, the connector part **15** may have a connector outer diameter **81** of 1.150 inches, a connector wall thickness **82** of 0.060 inches, and a rail height **83** of 0.357 inches and a rail width **84** of 0.500 inches. Referring to FIG. 11, the connector may have a connector length **75** of 12.1 inches, a rail length **86** of 7.650 inches, a rail recess length **87** of 4.250 inches, a rail recess rear position **89** of 0.209 inches, with the connector pocket separation distance **88** of 0.675 inches, and a rail recess rear distance **90** that may be 2.580 inches from the connector other end **54**. Referring to FIG. 12A, the connector **15a** may have a connector diameter **15f** of 1.150 inches, a connector length **75** of 12.100 inches, a lockring forward distance **77** of 8.939 inches, a lockring thickness **73** of 0.130 inches, rail upper slant distance **79** of 7.000 inches, and a rail lower slant distance **80** of 6.740 inches. Referring to FIG. 13, the lock ring **137** may have a lockring diameter **98** of 1.407 inches, and one or more key slots **37k** that may have a key width **99**

of 0.0200 inches. Referring to FIGS. **14 16**, the adjustable shim **28s** may have a shim-width **28i** of at least 0.250 inches greater than the coupling portion width **17g** and less than the clamp width **28g**, a shim length of **28j** that may be less than half the circumference of the coupling portion **17b** calculated using the coupling diameter **17d** but at least the coupling diameter **17d**, a shim thickness **28m** of at least 0.125 inches and a shim slot-thickness **28o** of at least 0.0625 inches, a contact channel-length **28x** of at least 1.0 inch, a contact channel-width **28y** of at least the 0.0325 inches, a shim traverse-slot-length **28v** of 0.0125 less the shim-width **28i**, a shim traverse slot width **28u** of 0.0325 greater than a diameter the shim fastener **28z**. The shim fastener **28z** being a bolt between 0.125 and 0.250 inches in diameter, preferably 0.1875 in diameter. The head of the shim fastener **28z** may be recessed in the adjustable shim **28s** no greater than one tenth of the shim thickness **28m**. The shim traverse slot **28t** shall be at least 0.125 inches from the contact channel **28r**.

Referring again to FIG. **14**, the coupling hub **11b** may a coupling hub upper length **11u** equal to the nozzle hose support length **29h**, and a coupling hub lower length **11h** that may be one half to two thirds of the coupling hub upper length **11u**, or referring to FIG. **12A**, FIG. **12B**, and FIG. **13**, for a connector with a lock ring **137** and a threaded the connector one end **52**, the distance from the connector one end **52** to the lock ring **137** minus $\frac{1}{2}$ inch allowing for threads for the front lock **15c** to be placed on the connector one end **52**. The coupling hub one end **11c** may be 45 degrees measured clockwise with another horizontal plane parallel that is parallel to the reference horizontal plane **12u**. The abutment **22** may have an abutment base **22g** that is 0.7-2.0 inches, one example may be 0.75 inches, and referring to FIG. **6**, an abutment height **22h** of 1-1.5 inches.

[0058] Referring to FIG. **21**, shown is a top view of the support accessory with 5 alternate clamps **428**, with 3 of the alternate clamps **428** on the forward support **12**, and a rear support **13** with 2 hose supports **42**, each with the alternate clamps **428**. Referring to FIG. **22**, show is an elevation view of the forward support **12** with the 3 alternate clamps **428**. FIG. **23** is a rear end view of the forward support **12.8** and FIG. **23A** is an exploded view of the forward support other end **12c**. Referring again to FIG. **22** and FIG. **24**, a sectional view along line **24-24** of FIG. **22**, each of the alternate clamps **428** may have two track walls **428w** that are substantially parallel to each other with a track **430** there between. The track walls **428w** are may be 0.125 inches in wide and 0.125 to 0.250 high. Referring again to FIG. **21**, a strap **429** may be may disposed between the track walls **428w** and the strap **429** secured to the alternate clamp **428** using a top plate **434** and one or more strap fasteners **431**. The strap fastener **431** may be treaded bolts 0.125 to 0.375 inches in diameter. The strap **429** may have a strap width **429g** of 0.9375 inches and a strap length at least three quarters a circumference of the alternate clamp **428** that is substantially semicircular. The strap **429** may have a strap slot **429i** surrounded by a strap side wall **433**. Each of the straps **429** may have a strap slot width of 0.4375 inches as measured across the strap slot **429i** perpendicular to the track walls **428w**. The straps **429** may be stretchable and have a strap business end **429b** that may be “T” shaped, allowing the user to pull the strap business end **429b** until the strap slot **429i** is over the fastener second part **28e**. Referring to FIG. **23**, the fastener second part **28e** may be substantially “L” shaped, and referring again to FIG. **21**, the strap business end **429b** may to looped over the fastener second part **28e** as shown for the alternate clamps **428** of the forward support **12**. The adjustable shim **28s**, the alternate shim **128s**, and the yet another shim **228s** shown in FIG. **14** may be used on each of the alternate clamps **428** of FIG. **21**.

[0059] Referring to FIG. **23** and FIG. **23A**, there are 4 keys **30k** around the coupling receiver rear end **30b** of the forward receiver **30**. The forward receiver **30** have a forward receiver outer wall **31** and the forward receiver inner wall **32** with the forward receiver **30** disposed between a “U” shaped coupling hub wall **11w** that extends from the nozzle hose support wall **29w**.

[0060] Although the invention has been described with reference to one or more embodiments, this description is not meant to be construed in a limiting sense. Various modifications of the disclosed embodiments as well as alternative embodiments of the invention will become apparent to persons

skilled in the art. It is therefore contemplated that the appended claims will cover any such modification or embodiments that fall within the scope of the invention.

Claims

- 1:** A support accessory comprising: a forward support, and a rear support; the rear support comprising, a connector part, and a support part; the connector part connecting the forward support to the rear support; the forward support comprising a nozzle holder; and the nozzle holder to receive and hold a nozzle connected to a fire hose.
- 2:** The support accessory of claim 1 wherein the nozzle holder further comprises an aperture portion, the aperture portion sized and structured to receive at least a handle of the nozzle.
- 3:** The support accessory of claim 2 wherein the nozzle holder further comprises an abutment, the abutment disposed to rest against the handle of the nozzle.
- 4:** The support accessory of claim 1 wherein the nozzle holder further comprises one or more clamps, disposed to hold the nozzle connected to the fire hose in the nozzle holder.
- 5:** The support accessory of claim 4 wherein the forward support further comprises a coupling hub, the coupling hub disposed to receive the connector part of the rear support.
- 6:** The support accessory of claim 5 wherein the connector part further comprises a front lock and a rear lock, the front lock and the rear lock disposed to hold the connector part in the coupling hub.
- 7:** The support accessory of claim 6 wherein at least one of the one or more clamps further comprise one or more shims placed on a clamp inner surface.
- 8:** The support accessory of claim 7 wherein at least one of the one or more shims has shim slots.
- 9:** The support accessory of claim 7 wherein at least one of the one or more shims has a coupling channel.
- 10:** The support accessory of claim 7 wherein at least one of the one or more shims has a coupling channel and two shim slots.
- 11:** The support accessory of claim 10 wherein the rear support further comprising a hose support, the hose support disposed to cradle a hose portion of the fire hose.
- 12:** The support accessory of claim 11 wherein a support accessory length is variable.
- 13:** A support accessory comprising: a forward support, and a rear support; the rear support comprising, a connector part and a support part; the support part sized and shaped to rest against an individual's shoulder; the connector part connecting the forward support to the rear support; the forward support comprising a nozzle holder; the nozzle holder sized and disposed to receive and hold a nozzle connected to a fire hose; and the support accessory having a support accessory length that is variable.
- 14:** The support accessory of claim 13 wherein the nozzle holder further comprises an aperture portion, the aperture portion disposed to receive at least a trigger and a handle of the nozzle; and an aperture in an aperture portion of the nozzle holder.
- 15:** The support accessory of claim 14 wherein the nozzle holder further comprises an abutment, the abutment disposed to rest against the handle of the nozzle when the handle disposed through the aperture.
- 16:** The support accessory of claim 15 wherein the nozzle holder further comprises one or more clamps, the clamps disposed to hold the nozzle in the nozzle holder.
- 17:** The support accessory of claim 16 wherein the forward support further comprises a coupling hub, the coupling hub sized and disposed to receive the connector part of the rear support.
- 18:** The support accessory of claim 17 wherein the connector part further comprises a forward lock and a rear lock, the forward lock and the rear lock disposed to hold the connector part to the coupling hub.
- 19:** The support accessory of claim 18 wherein at least one of the one or more clamps further comprise a shim, the shim disposed on a clamp inner surface.

20: The support accessory of claim 19 wherein the shim has a coupling channel, the coupling channel disposed to cradle a coupling portion of the fire hose.

21: A support accessory comprising: a forward support and a rear support; the forward support comprising a nozzle holder; and the nozzle holder disposed to receive a nozzle connected to a fire hose.

22: The support accessory of claim 21 further comprising one or more clamps disposed to hold the nozzle connected to the fire hose in the support accessory.

23: The support accessory of claim 22 wherein at least one of the one or more clamps further comprises one or more shims.

24: The support accessory of claim 23 wherein at least one of the one or more shims has one or more shim slots.

25: The support accessory of claim 23 wherein at least one of the one or more shims has a coupling channel.

26: The support accessory of claim 23 wherein at least one of the one or more shims has two shim slots and a coupling channel.
