April 15, 1941. H. ENSMINGER 2,238,686

FIRE EXTINGUISHER DISCHARGE DEVICE

Filed Nov. 22, 1938 2 Sheets-Sheet 1

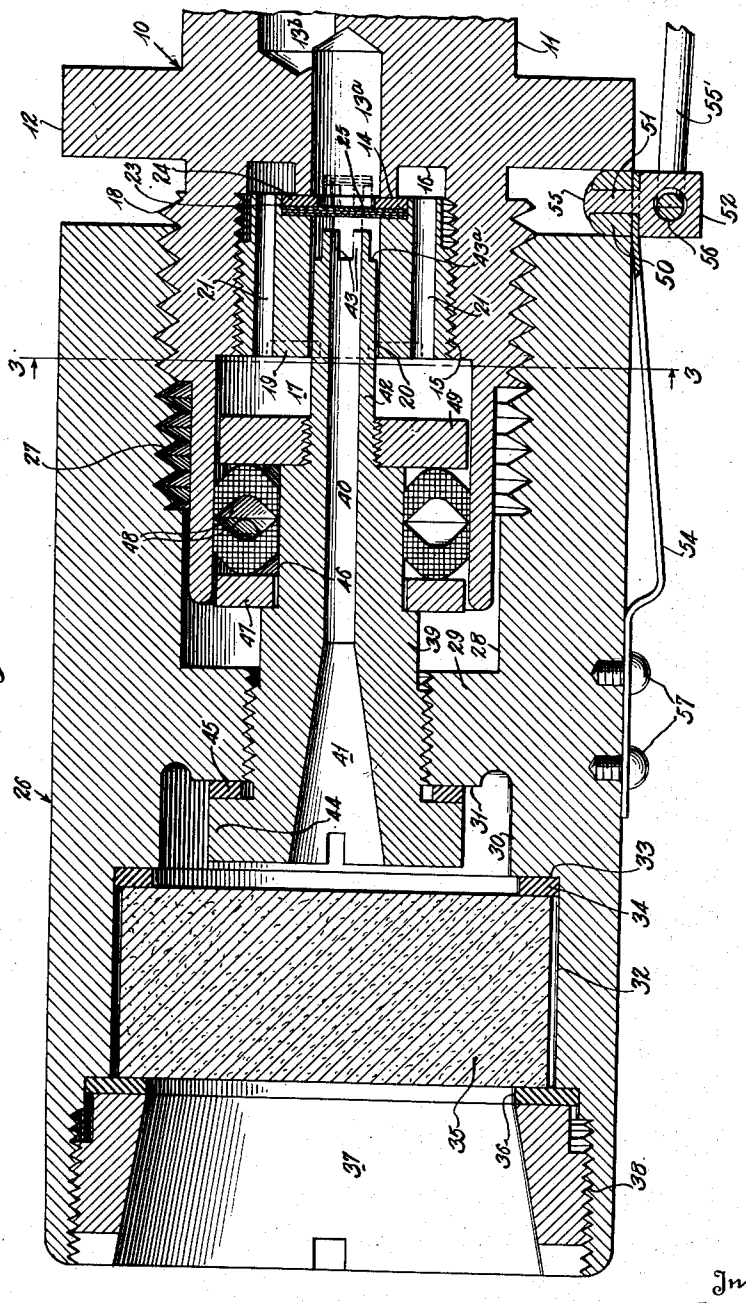

Fig. 1.

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Filed Nov. 22, 1938 2 Sheets-Sheet 2

Fig. 2.

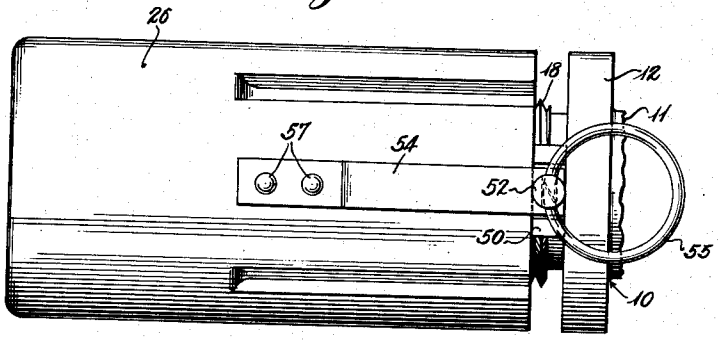


Fig. 3.

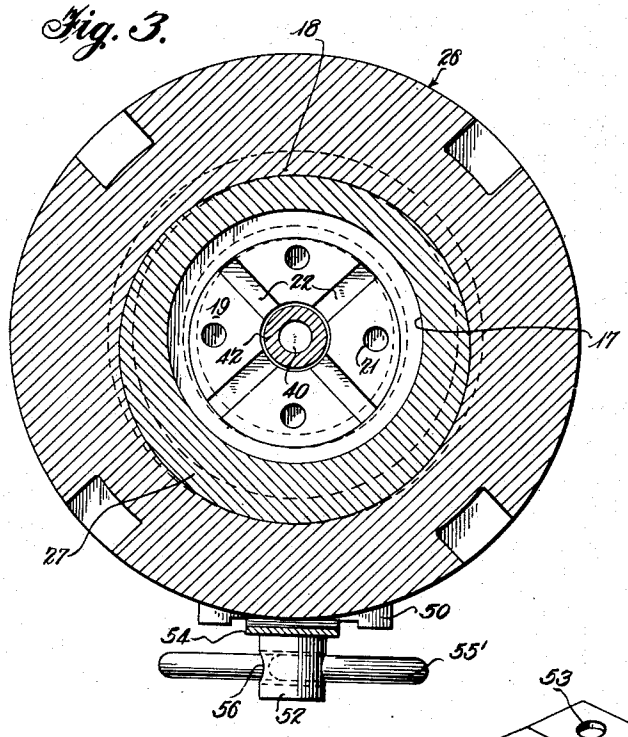


Fig. 4.

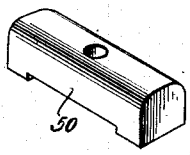


Fig. 5.

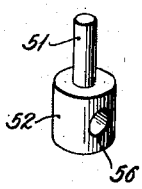
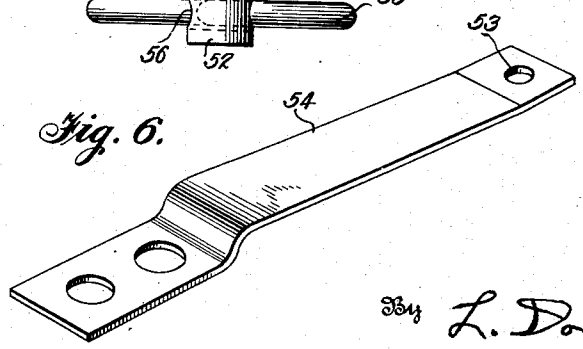


Fig. 6.



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2,238,686

UNITED STATES PATENT OFFICE

2,238,686

FIRE EXTINGUISHER DISCHARGE DEVICE

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Application November 22, 1938, Serial No. 241,867

28 Claims. (Cl. 221—73.5)

This invention relates to new and useful improvements in discharge devices for use on portable fire extinguisher cylinders, or other types of containers.

A primary object of the invention is to provide a discharge device which embodies means for confining a fire extinguishing charge in a suitable container, under high pressure, until such time as the charge is needed for extinguishing a fire when it is released under manual control, or until the pressure of the stored charge, due to an abnormal rise in temperature, exceeds the safety pressure rating of the container when its release is automatically effected.

A further object of the invention is to provide a discharge device of the above mentioned type which may be readily manipulated to accomplish charging of the container on which the device is mounted.

Another important object of the invention is to provide a novel form of cutting mechanism for rupturing a frangible release member at the time of discharge of the fire extinguishing medium and with locking mechanism for preventing accidental or unintentional actuation of said cutting mechanism.

Still another object of the invention is to provide means for effectively preventing leakage of the fire extinguishing medium either during or after manipulation of the aforementioned cutting mechanism.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same—

Figure 1 is a longitudinal sectional view of the fire extinguisher discharge device embodying this invention,

Figure 2 is a side elevational view of the device disclosed in Fig. 1,

Figure 3 is a transverse sectional view taken on line 3—3 of Fig. 1, and

Figures 4 to 6, inclusive, are detail perspective views of several elements of a locking device which prevents unintentional or accidental discharge of the fire extinguishing medium through the device disclosed in Fig. 1.

In the drawings, wherein for the purpose of illustration is shown the preferred embodiment of this invention, and particularly referring to Fig. 1, the reference character 10 designates in its entirety a coupling spud having a shank portion 11, partly broken away, which is employed for connecting this discharge device to the open throat or mouth of a drum or cylinder employed for confining liquid carbon dioxide, or the like, at room temperature. The cylinder or drum is not disclosed as it is of conventional construction. Furthermore, it is to be understood that this discharge device also might be connected to the outer end of a flexible hose, or the like, not shown, extending from a suitable stationary source of supply.

The coupling body has formed thereon a flange 12 which may be engaged by a suitable tool for threading the shank 11 into the portable cylinder or drum, or the like. The coupling spud 10 is formed with a passage which is divided into two sections or portions 13a and 13b. It will be noted that these two sections or portions are laterally offset with respect to each other but are in open communication with each other. This offsetting of the two portions or sections of the passage functions very effectively to dampen recoil at the time of effecting discharge of the fire extinguishing medium.

Concentrically arranged with respect to the passage section 13a is a raised valve seat 14. Outwardly of the passage section 13a, the coupling spud 10 is formed with a recess 15 which is internally screw threaded and is concentrically arranged with respect to the valve seat 14. Surrounding the raised valve seat 14 is an annular pocket 16 which results from the raised formation of the valve seat. Outwardly of the threaded recess 15, the coupling spud is formed with a smooth surfaced cylinder portion 17 which is concentric with the recess and is of greater diameter. The coupling spud 10 is provided with an external threaded portion 18 which surrounds the portion of the coupling having the recess 15 formed therein. This threaded portion may extend partly onto the portion of the coupling having the cylinder 17 formed therein. The threaded portion 18 is cut to provide a rapid feed thread, the purpose of which will be explained at a later point.

Threaded into the recess 15 is a plug 19 which is provided with a bore 20 and a circular series of passages 21 arranged in parallelism with the bore. This arrangement of passages and bore is clearly illustrated in Fig. 3. This latter figure also discloses crossed slots 22 adapted to be engaged by a suitable tool for threading the plug 19 into and out of the recess 15.

Fig. 1 discloses the plug 19 as having formed in its inner end a socket 23 which receives a

packing gasket 24, of annular formation, and a frangible, laminated valve disc 25. This laminated valve disc, preferably, takes the form of an intermediate disc of metal, or the like, which will withstand a predetermined maximum pressure within the passage 13a—13b, but will blow out or rupture when said maximum pressure is exceeded. Covering opposite faces of this main disc are protecting discs formed of Cellophane, or the like, which will function to prevent corrosion or the like from deteriorating the main disc.

Fig. 1 clearly discloses the annular gasket 24 and the frangible disc unit 25 as being clamped against the raised valve seat 14 by the plug 19. After the release of a charge of fire extinguishing medium, brought about by rupture of the frangible disc valve 25, a new disc and packing gasket 24 may be substituted for the ruptured disc by removing the plug 19 completely from the recess 15 and cylinder 17 of the coupling. To recharge the cylinder or drum to which the coupling 10 is connected, the plug 19 with a new valve disc and washer arranged in the socket 23 is partially threaded outwardly of the recess 15 to space the valve disc 25 and the gasket 24 from the valve seat 14. A suitable charging head, not illustrated, is then connected to the outer end of the coupling 10 for feeding the fire extinguishing medium through the coupling into the confining drum or cylinder. In passing through the plug 19, the extinguishing medium flows through the auxiliary passages 21 and into the annular space 16 which surrounds the valve seat 14. The extinguishing medium flows from the space 16 around the valve seat 14 and into the passage section 13a. The pressure of the extinguishing medium will retain the valve disc 25 and the gasket 24 within the socket 23 of the plug. After a proper charge has been placed in the cylinder or drum, the plug 19 is threaded inwardly of the recess 15, by means of a suitable packed wrench or the like which forms a part of the charging head, and this inward movement of the plug properly positions the gasket 24 and the disc 25 with respect to the valve seat 14 for confining the charge in the cylinder or drum.

The structure to be described hereafter is applied to the coupling 10 after the plug 19, with its valve disc and gasket, has been manipulated to place a charge in the cylinder or drum to which the coupling is connected.

Figs. 1, 2 and 3 disclose a discharge head 26 which is provided at its inner end with an internally threaded bore portion 27. This threaded portion is cut to engage the threads 18 of the coupling 10. Outwardly of the threaded portion 27, the coupling head is provided with a smooth surfaced bore portion 28 which functions to receive the part or portion of the coupling 10 which has the cylinder 17 formed therein. At the outer end of the bore portion 28, the discharge head is provided with a reduced, internally threaded portion or flange 29. Beyond the flange 29, the bore of the discharge head is enlarged to form a chamber 30. Within this chamber, the flange 29 is provided with a raised seat 31. Beyond the chamber 30, the discharge head bore is enlarged at 32 to form a shoulder 33 for receiving a packing gasket 34 and to form a pocket for receiving a rigid, porous disc 35. This disc is of the character disclosed and claimed in the copending application filed in the name of Eric Geertz and bearing Serial No. 208,296, and filed May 16, 1938. This porous disc 35 is held in place by a second packing gasket 36 and an annular clamping ring 37 which is threaded into the internally screw threaded portion 38 of the discharge head.

To explain the function of the porous disc 35, it will be stated that when liquid carbon dioxide is released from the container, by rupturing the disc 25, the carbon dioxide passes through the pores of the disc 35 and is discharged from the same in the form of a very dense, uniform cloud of low temperature carbon dioxide gas with extremely fine particles of snow mixed therein. The dense but porous disc 35 functions to considerably restrict the flow of carbon dioxide therethrough with the result that the pressure behind the disc is at all times maintained at a relatively high value, such, for example, as 400 to 500 pounds per square inch. This dense porous disc 35 never lets the pressure in back of the same drop to the value at which snow will form in the head inwardly of the disc to clog any of the flow path for the carbon dioxide from the container to the disc. It will be appreciated that snow will form at a pressure of approximately 75 pounds per square inch.

Besides functioning to prevent an undesirable drop in pressure inwardly of the disc 35, this dense porous member also functions to cause the pressure of the discharging carbon dioxide to drop to atmospheric pressure while passing through the disc. The discharge of the very dense cloud of low temperature carbon dioxide gas and fine particles of snow is at a sufficiently low velocity as to avoid entrainment of air in the discharging stream of carbon dioxide gas. The chamber 30 formed in the discharge head 26 functions to supply the liquid carbon dioxide to substantially the entire area of the inner surface of the disc 35 at a uniform pressure.

Threadedly mounted in the flange 29 of the discharge head 26 is a tubular cutter 39. This cutter is provided with a bore portion 40 which is flared or enlarged at its outer end portion 41 for delivering carbon dioxide in liquid form to the inner face of the porous disc 35. The bore portion 40 is surrounded in part by a stem 42 which terminates at its inner end in a circular series of spaced cutting teeth 43. The outer end portion of the tubular cutter 39 is formed into an enlarged head 44 which functions to clamp a gasket 45 against the seat 31 in the chamber 30 of the discharge head 26.

The cutter is provided with a reduced cylindrical portion 46 on which are mounted the metallic ring 47 and the chevron packing rings 48. To retain the rings 47 and 48 in position on the cylindrical portion 46 of the cutter, a follower ring 49 is threaded on the stem portion 42 of the cutter.

With the cylinder or drum, not shown, charged with carbon dioxide which is confined by the valve disc 25, the fire extinguishing medium may be discharged through the discharge head 26 by rotating the head in a direction to cause the threads 18 and 27 to feed the head in an inward direction. This movement of the head causes the teeth 43 of the cutter 39 to sever a disc-like portion from the center of the frangible valve disc 25. By rotating the discharge head 26 approximately one and one-half turns, the cutting teeth 43 will be moved entirely through the valve disc 25 to place a shoulder 43a, which surrounds the teeth 43, in sealing engagement with the outer face of the remaining, ring-like portion of the ruptured disc 25. The severed central portion of the disc will be retained against the

outer ends of the teeth 43 by the pressure of the carbon dioxide fluid within the passage section 13a. The diameter of this passage section is such that the liquid carbon dioxide will flow around the periphery of this severed valve disc portion and will pass between the spaced teeth 43 into the bore 40 of the tubular cutter 39. The spaces between the teeth 43 are supposed to have a total area equal to the cross sectional area of the cutter bore 40. The seating of the shoulder 43a against the outer face of the valve disc will prevent leakage of carbon dioxide around the stem portion 42 of the cutter. Prior to the seating of the shoulder 43a against the outer face of the disc 25, the chevron packing rings 48 will prevent leakage of the carbon dioxide between the cylinder 17 of the coupling 10 and the cylindrical portion 46 of the cutter 39.

To prevent accidental or unintentional rotation of the discharge head 26 in a direction which will cause the cutting teeth 43 to rupture the valve disc 25, an elongated bolt 50, see Figs. 1 and 4, is mounted on the stem 51 of a bolt carrying head 52. This stem 51 also passes through the aperture 53 of the leaf spring 54. Fig. 1 discloses the extremity of the stem 51 as being peened over at 55 to anchor the bolt 50 and the leaf spring 54 to the head 52. A manipulating ring 55 is threaded through a transverse aperture 56 formed in the bolt carrying head 52. Screws, or the like, 57 are employed for securing the spring leaf 54 on the exterior of the discharge head 26. This assembly is clearly illustrated in Figs. 1 and 2.

When it is desired to angularly adjust the discharge head 26 for feeding the cutter 39 inwardly to rupture the valve disc 25, the manipulating ring 55 is employed for moving the bolt 50 out of the space which is normally provided between the flange 12 of the coupling 10 and the inner end face of the discharge head 26. After removal of the bolt 50, the discharge head may be manipulated to bring about rupture of the valve disc.

It is to be understood that the form of this invention herewith shown and described is to be taken as a preferred example of the same and that various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described the invention, I claim:

1. A fire extinguisher discharge device comprising a coupling for connecting the device to a source of supply of an extinguishing medium, a frangible valve for controlling discharge of the extinguishing medium replaceably held in said coupling, a tubular discharge head normally threadedly adjustably mounted on the coupling, and a tubular cutter mounted within the bore of the head out of contact with said valve in the normal position of the head movable with the head to rupture said frangible valve for effecting discharge of the extinguishing medium through the cutter bore and the discharge head, and sealing means operable both with the discharge head in any fixed position relative to the coupling and while the discharge head is being adjusted on the coupling for preventing leakage between the head and coupling.

2. A fire extinguisher discharge device comprising a coupling for connecting the device to a source of supply of an extinguishing medium, said coupling having a bore shaped to form a cylinder portion, a recess and a seat in said recess, a frangible valve for controlling discharge of the extinguishing medium adapted to engage said seat, means in said recess for replaceably holding the valve on said seat, a hollow discharge head normally threadedly adjustably mounted on the coupling, a tubular cutter positioned within the hollow head out of contact with said valve in the normal position of the head and movably extending through said cylinder portion and the valve holding means, said cutter being operable to rupture the frangible valve for effecting discharge of the extinguishing medium through the discharge device when the head is adjusted on the coupling, and sealing means operable both with the discharge head in any fixed position relative to the coupling and while the discharge head is being adjusted on the coupling for preventing leakage between the head and coupling.

3. A fire extinguisher discharge device comprising a coupling for connecting the device to a source of supply of an extinguishing medium, said coupling having a bore shaped to form a smooth surfaced cylinder portion, a recess and a seat in said recess, a frangible valve for controlling discharge of the extinguishing medium adapted to engage said seat, means in said recess for replaceably holding the valve on said seat, a discharge head adjustably connected to the coupling, and a tubular cutter carried by the head and movably extending through said cylinder portion and the valve holding means, and packing means carried by the cutter and movably engaging the surface of the cylinder portion to prevent leakage between the cutter and the cylinder portion.

4. A fire extinguisher discharge device comprising a coupling for connecting the device to a source of supply of an extinguishing medium, a frangible valve for controlling discharge of the extinguishing medium replaceably held in said coupling, a discharge head, having a flow path for the extinguishing medium extending axially therethrough, threadedly adjustably connected to the coupling, a tubular cutter carried by the head to form a part of said flow path and movable therewith to rupture said frangible valve for effecting discharge of the extinguishing medium through the cutter bore and the discharge head, and means for preventing unintentional adjustment of the discharge head in the direction which will cause rupturing of said valve but allowing unobstructed adjustment in the opposite direction.

5. A fire extinguisher discharge device comprising a coupling for connecting the device to a source of supply of an extinguishing medium, said coupling having a bore shaped to form a cylinder portion, a recess and a seat in said recess, a frangible valve for controlling discharge of the extinguishing medium adapted to engage said seat, means in said recess for replaceably holding the valve on said seat, a hollow discharge head threadedly connected to the coupling, a tubular cutter carried by and forming with the head a flow path for the extinguishing medium, said cutter movably extending through said cylinder portion and the valve holding means and being operable to rupture the frangible valve for effecting discharge of the extinguishing medium through the flow path of the cutter bore and the hollow discharge head, and means for preventing unintentional adjustment of the discharge head only in the direction which will cause rupturing of said valve.

6. A fire extinguisher discharge device com-

prising a coupling for connecting the device to a source of supply of an extinguishing medium, said coupling having a bore shaped to form a smooth surfaced cylinder portion, a recess and a seat in said recess, a frangible valve for controlling discharge of the extinguisher medium adapted to engage said seat, means in said recess for replaceably holding the valve on said seat, a discharge head threadedly adjustably connected to the coupling, a tubular cutter carried by the head and movably extending through said cylinder portion and the valve holding means, packing means carried by the cutter and movably engaging the said surface of the cylinder portion to prevent leakage between the cutter and the cylinder portion, and means for preventing unintentional adjustment of the discharge head in the direction which will cause rupturing of said valve.

7. A fire extinguisher discharge device comprising a coupling for connecting the device to a source of supply of an extinguishing medium, a frangible valve for controlling discharge of the extinguishing medium replaceably held in said coupling, a discharge head threadedly adjustably connected to the coupling, and a tubular cutter carried by the head and movable therewith to rupture said frangible valve for effecting discharge of the extinguishing medium through the cutter bore and the discharge head, said cutter including a series of spaced cutting teeth adapted to sever a portion from the remainder of the valve and an annular shoulder adapted to engage the valve to restrict flow of the extinguishing medium through the cutter bore after severance of the valve.

8. A fire extinguisher discharge device comprising a coupling for connecting the device to a source of supply of an extinguishing medium, said coupling having a bore shaped to form a cylinder portion, a recess and a seat in said recess, a frangible valve for controlling discharge of the extinguishing medium adapted to engage said seat, means in said recess for replaceably holding the valve on said seat, a discharge head threadedly adjustably connected to the coupling, and a tubular cutter carried by the head and movably extending through said cylinder portion and the valve holding means, said cutter including a series of spaced cutting teeth adapted to sever a portion from the remainder of the valve for effecting discharge of the extinguishing medium through the cutter bore and the discharge head and an annular shoulder adapted to engage the valve after severance thereof to prevent leakage around the cutter.

9. A fire extinguisher discharge device comprising a coupling for connecting the device to a source of supply of an extinguishing medium, said coupling having a bore shaped to form a smooth surfaced cylinder portion, a recess and a seat in said recess, a frangible valve for controlling discharge of the extinguishing medium adapted to engage said seat, means in said recess for replaceably holding the valve on said seat, a discharge head threadedly adjustably connected to the coupling, and a tubular cutter carried by the head and movably extending through said cylinder portion and the valve holding means, said cutter including a series of spaced cutting teeth adapted to sever a portion from the remainder of the valve for effecting discharge of the extinguishing medium through the cutter bore and the discharge head and an annular shoulder adapted to engage the remaining portion of the valve after severance thereof to prevent leakage around the cutter, and packing means carried by the cutter and movably engaging the surface of the cylinder portion to prevent leakage between the cutter and the cylinder portion.

10. A fire extinguisher discharge device comprising a coupling for connecting the device to a source of supply of an extinguishing medium, a frangible valve for controlling discharge of the extinguishing medium replaceably held in said coupling, a hollow discharge head receiving a portion of and normally threadedly adjustably mounted on the coupling, a tubular cutter carried by the head out of contact with the valve in the normal position of the head and movable with the head to rupture said frangible valve for effecting discharge of the extinguishing medium through the cutter bore and the hollow discharge head, said frangible valve being adapted to rupture automatically in response to an excessive rise in pressure within the coupling on the inner side of the valve to discharge the extinguishing medium through the same path as when the valve is ruptured by the cutter, and porous discharge means positioned in the outer end portion of the discharge head.

11. A fire extinguisher discharge device comprising a coupling for connecting the device to a source of supply of an extinguishing medium, said coupling having a bore shaped to form a cylinder portion, a recess and a seat in said recess, a frangible valve for controlling discharge of the extinguishing medium adapted to engage said seat, means in said recess for replaceably holding the valve on said seat, a discharge head threadedly adjustably connected to the coupling, a tubular cutter carried by the head and movably extending through said cylinder portion and the valve holding means, said cutter being so constructed and arranged as to completely sever the center of the frangible valve and displace said central portion inwardly of said valve seat for effecting discharge of the extinguishing medium around the periphery of the said displaced central portion and through the cutter bore and the discharge head, said frangible valve being adapted to rupture automatically in response to an excessive rise in pressure within the coupling on the inner side of the valve, and porous discharge means positioned in the outer end portion of the discharge head.

12. A fire extinguisher discharge device comprising a coupling for connecting the device to a source of supply of an extinguishing medium, said coupling having a bore shaped to form a smooth surfaced cylinder portion, a recess and a seat in said recess, a frangible valve for controlling discharge of the extinguishing medium adapted to engage said seat, means in said recess for replaceably holding the valve on said seat, a discharge head threadedly adjustably connected to the coupling, and a tubular cutter carried by the head and movably extending through said cylinder portion and the valve holding means, packing means carried by the cutter and movably engaging the surface of the cylinder portion to prevent leakage between the cutter and the cylinder portion, said frangible valve being adapted to rupture automatically in response to an excessive rise in pressure within the coupling on the inner side of the valve.

13. In a fire extinguisher, a coupling for connecting a discharge device to a source of supply of a fire extinguishing medium, said coupling comprising an inlet passage formed into two communicating sections of substantially the same

diameter which extend in the same direction but are offset laterally of each other a sufficient amount to dampen recoil, an internally threaded recess outwardly of the outer passage section, an annular raised valve seat formed in the recess concentrically with the outer passage section, and a cylinder portion arranged outwardly of the recess.

14. In a fire extinguisher, a coupling for connecting a discharge device to a source of supply of a fire extinguishing medium, said coupling comprising an inlet passage formed into two communicating sections of substantially the same diameter which extend in the same direction but are offset laterally of each other a sufficient amount to dampen recoil, an internally threaded recess outwardly of the outer passage section, an annular raised valve seat formed in the recess concentrically with the outer passage section, and a cylinder portion arranged outwardly of the recess; a frangible disc valve engageable with said seat, and a plug having a bore threaded into the recess to replaceably hold the disc valve on said seat.

15. In a fire extinguisher, a coupling for connecting a discharge device to a source of supply of a fire extinguishing medium, said coupling comprising an inlet passage formed into two communicating sections of substantially the same diameter which extend in the same direction but are offset laterally of each other a sufficient amount to dampen recoil, an internally threaded recess outwardly of the outer passage section, an annular raised valve seat formed in the recess concentrically with the outer passage section, and a cylinder portion arranged outwardly of the recess; a frangible disc valve engageable with said seat, and a plug threaded into the recess to replaceably hold the disc valve on said seat, said plug having a main bore coaxial with the outer passage section of the coupling, and a socket to receive the valve disc at the inner end of the bore.

16. In a portable fire extinguisher, a coupling connected to the fire extinguisher body, said coupling comprising an inlet passage, an internally threaded recess outwardly of said passage, an annular raised seat formed in the recess concentrically with said passage, and a smooth surfaced cylinder portion outwardly of the recess, a frangible disc valve engageable with said seat, a plug threaded into said recess, said plug having a bore enlarged at one end to form a socket to receive the disc valve and being operable to move the said valve into and out of register with the valve seat when the plug is adjusted axially of said recess, a tubular cutter extending through said cylinder portion and the plug bore, packing means between the cutter and the surface of the cylinder portion to prevent leakage around the cutter, and means adjustably connected to the coupling for actuating the cutter to rupture the disc valve.

17. A fire extinguisher discharge device comprising a coupling for connecting the device to a source of supply of a liquid extinguishing medium, means for replaceably mounting a frangible disc valve in the bore of said coupling, a hollow discharge head adjustably coonnected to said coupling, a tubular cutter housed within the hollow discharge head and movable therewith to rupture said frangible valve disc for effecting discharge of the extinguishing medium through the cutter bore and into the portion of the discharge head located outwardly of the cutter, and porous means mounted in said last mentioned portion of the discharge head through which the extinguishing medium is discharged to the atmosphere.

18. A fire extinguisher discharge device comprising a coupling for connecting the device to a source of supply of a liquid extinguishing medium, means for replaceably mounting a frangible disc valve in the bore of said coupling, a hollow discharge head adjustably connected to said coupling, a tubular cutter housed within the hollow discharge head and movable therewith to rupture said frangible valve for effecting discharge of the extinguishing medium through the cutter bore and into the portion of the discharge head located outwardly of the cutter, packing means associated with the cutter and the coupling for preventing leakage around the cutter in all positions of the latter, and porous means mounted in the said last mentioned portion of the discharge head through which the extinguishing medium is discharged to the atmosphere.

19. A fire extinguisher discharge device comprising a coupling for connecting the device to a source of supply of a liquid extinguishing medium, means for replaceably mounting a frangible disc valve in the bore of said coupling, a hollow discharge head adjustably connected to said coupling, a mounting flange located in the intermediate portion of the bore of the discharge head, a tubular cutter head housed within the hollow discharge head and attached to the mounting flange for movement therewith to rupture said frangible valve for effecting discharge of the extinguishing medium through the cutter bore and into the portion of the discharge head located outwardly of the cutter, and porous means mounted in said last mentioned portion of the discharge head through which the extinguishing medium is discharged to the atmosphere.

20. A fire extinguisher discharge device comprising a coupling for connecting the device to a source of supply of a liquid extinguishing medium, means for replaceably mounting a frangible disc valve in the bore of said coupling, a hollow discharge head adjustably connected to said coupling, a tubular cutter housed within the hollow discharge head and movable therewith to rupture said frangible valve for effecting discharge of the extinguishing medium through the cutter bore and the discharge head, and packing means carried by the cutter and engageable with the coupling to prevent leakage around the cutter.

21. A fire extinguisher discharge device comprising a coupling having a hollowed out end portion and an inlet passage leading thereto, a hollow discharge head having its bore divided intermediate its ends by an internal mounting flange, the hollowed out end portion of the coupling being telescopically arranged within the bore of the discharge head on one side of said dividing flange, a rapid feed thread connection between the telescopically arranged portions of the coupling and the discharge head, a frangible disc valve replaceably mounted in the hollowed out end portion of the coupling, and a tubular cutter attached to the mounting flange of the discharge head, said cutter extending into the hollowed out portion of the coupling so as to rupture the disc valve when the discharge head is threadedly adjusted relative to the coupling and also extending through the mounting flange of the discharge head so as to establish a direct connection between the inlet passage of the coupling and the bore portion of the discharge head out-

wardly of said mounting flange when the disc valve is ruptured.

22. A fire extinguisher discharge device comprising a coupling having a hollowed out end portion and an inlet passage leading thereto, a hollow discharge head having its bore divided intermediate its ends by an internal mounting flange, the hollowed out end portion of the coupling being telescopically arranged within the bore of the discharge head on one side of said dividing flange, a rapid feed thread connection between the telescopically arranged portions of the coupling and the discharge head, a frangible disc valve replaceably mounted in the hollowed out end portion of the coupling, a tubular cutter attached to the mounting flange of the discharge head, said cutter extending into the hollowed out portion of the coupling so as to rupture the disc valve when the discharge head is threadedly adjusted relative to the coupling and also extending through the mounting flange of the discharge head so as to establish a direct connection between the inlet passage of the coupling and the bore portion of the discharge head outwardly of said mounting flange when the disc valve is ruptured, and packing means between the exterior of the cutter and the interior of the hollowed out end portion of the coupling for preventing leakage outwardly of the cutter.

23. A fire extinguisher discharge device comprising a coupling having a hollowed out end portion and an inlet passage leading thereto, a hollow discharge head having its bore divided intermediate its ends by an internal mounting flange, the hollowed out end portion of the coupling being telescopically arranged within the bore of the discharge head on one side of said dividing flange, a rapid feed thread connection between the telescopically arranged portions of the coupling and the discharge head, a frangible disc valve replaceably mounted in the hollowed out end portion of the coupling, a tubular cutter attached to the mounting flange of the discharge head, said cutter extending into the hollowed out portion of the coupling so as to rupture the disc valve when the discharge head is threadedly adjusted relative to the coupling and also extending through the mounting flange of the discharge head so as to establish a direct connection between the inlet passage of the coupling and the bore portion of the discharge head outwardly of said mounting flange when the disc valve is ruptured, said cutter including a series of spaced cutting teeth adapted to sever a portion from the remainder of the valve, and an annular shoulder adapted to engage the valve to restrict flow of the extinguishing medium to the cutter bore after severance of the valve.

24. A fire extinguisher discharge device comprising a coupling having a hollowed out end portion and an inlet passage leading thereto, a hollow discharge head having its bore divided intermediate its ends by an internal mounting flange, the hollowed out end portion of the coupling being telescopically arranged within the bore of the discharge head on one side of said dividing flange, a rapid feed thread connection between the telescopically arranged portions of the coupling and the discharge head, a frangible disc valve replaceably mounted in the hollowed out end portion of the coupling, a tubular cutter attached to the mounting flange of the discharge head, said cutter extending into the hollowed out portion of the coupling so as to rupture the disc valve when the discharge head is threadedly adjusted relative to the coupling and also extending through the mounting flange of the discharge head so as to establish a direct connection between the inlet passage of the coupling and the bore portion of the discharge head outwardly of said mounting flange when the disc valve is ruptured, said cutter including a series of spaced cutting teeth adapted to sever a portion from the remainder of the valve, an annular shoulder adapted to engage the valve to restrict flow of the extinguishing medium to the cutter bore after severance of the valve, and packing means between the exterior of the cutter and the interior of the hollowed out end portion of the coupling for preventing leakage outwardly of the cutter.

25. A fire extinguisher discharge device comprising a coupling for connecting the device to a source of supply of a liquid extinguishing medium, means for replaceably mounting a frangible disc valve in the bore of said coupling, a discharge head connected to said coupling and having a passage for the discharge of the extinguishing medium therethrough, porous means mounted in the discharge passage of said head through which the extinguishing medium is discharged to the atmosphere, and a cutter carried by the discharge head and movable relative to the frangible valve disc for rupturing the same to effect discharge of the extinguishing medium through the discharge head and its porous means.

26. A fire extinguisher discharge device comprising a coupling for connecting the device to a source of supply of an extinguishing medium, a frangible valve in the coupling for controlling discharge of the extinguishing medium, a discharge head adjustably mounted on the coupling, frangible valve cutting means fixed with respect to the head so as to effect rupturing of the valve when the head is adjusted with respect to the coupling, and sealing means operable both while the discharge head is in any fixed position relative to the coupling and while the head is being adjusted on the coupling for preventing leakage between the head and coupling.

27. A fire extinguisher discharge device comprising a coupling for connecting the device to a source of supply of an extinguishing medium, a frangible valve in the coupling for controlling discharge of the extinguishing medium, a discharge head adjustably mounted on the coupling, frangible valve cutting means fixed with respect to the head so as to effect rupturing of the valve when the head is adjusted with respect to the coupling, and means for preventing unintentional adjustment of the discharge head in the direction which will cause rupturing of said valve but allowing unobstructed adjustment in the opposite direction.

28. A fire extinguisher discharge device comprising a coupling, a frangible valve for controlling discharge of the extinguishing medium through said coupling, and a tubular cutter movable relative to the coupling to rupture said frangible valve for effecting discharge of the extinguishing medium through the cutter bore after it has passed through the coupling, said cutter including a series of spaced cutting teeth adapted to sever a portion from the remainder of the valve and an annular shoulder adapted to engage the said remainder of the valve to restrict flow of the extinguishing medium to the cutter bore after severance of the valve.

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