April 10, 1951 A. RUTLEDGE 2,548,621

PENETRATING FIRE EXTINGUISHING NOZZLE

Filed March 1, 1948

FIG. 1.

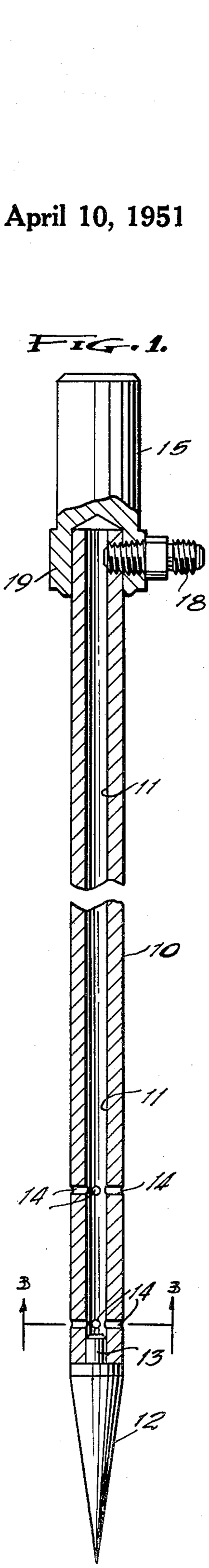


FIG. 2.

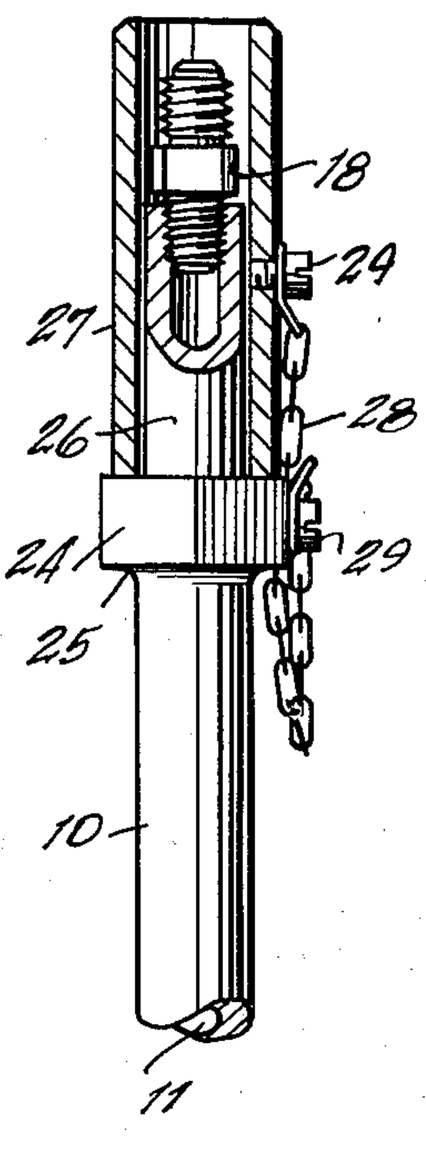


FIG. 3.

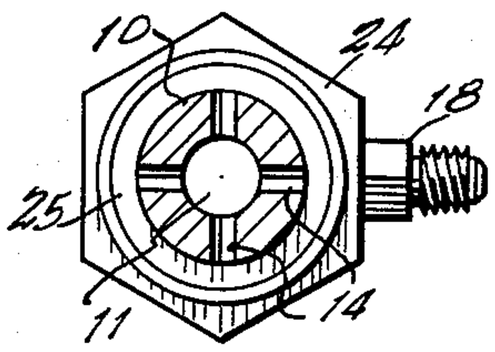
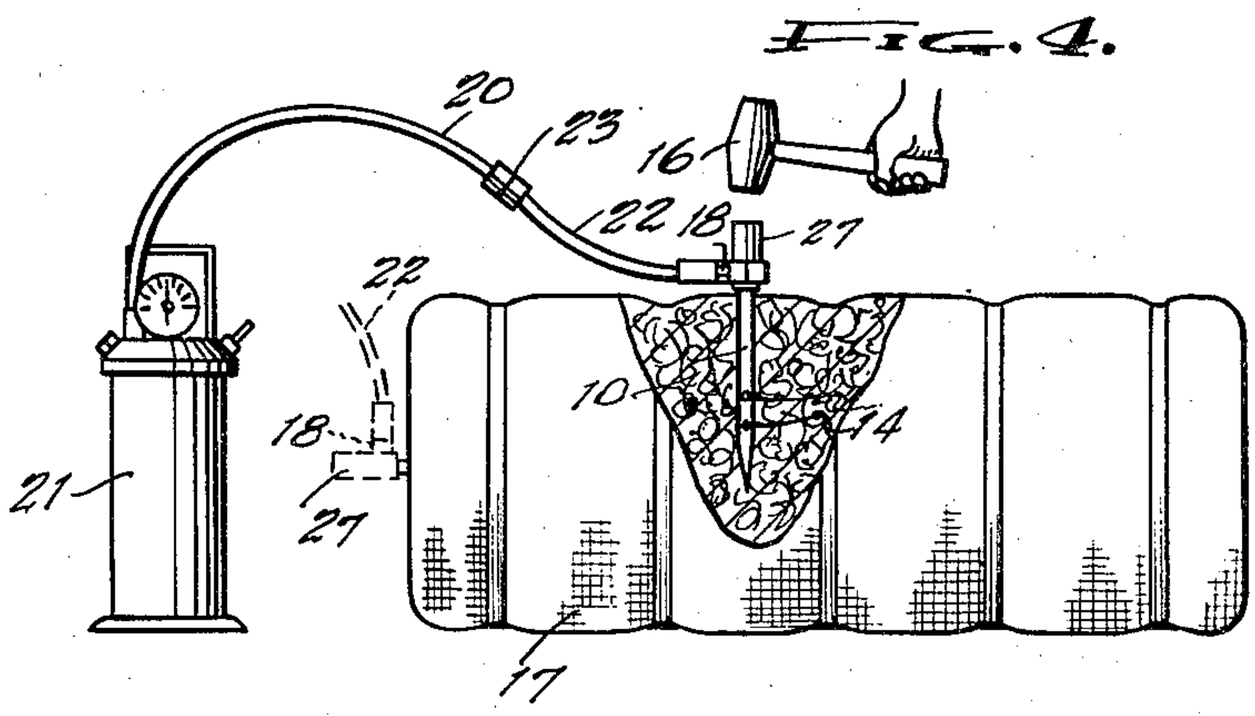


FIG. 4.



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PENETRATING FIRE EXTINGUISHING NOZZLE

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1 Claim. (Cl. 299—110)

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This invention relates to fire extinguishing apparatus adapted for use in combination with conventional devices designed for administering extinguishing fluids, such as carbon-tetrachloride, and the like, and it has particular reference to a spear type of injector capable of being pressed or driven into a bale of cotton, storage bins, and the like, containing bulk cotton, grain, and similar commodities, in which fires have been discovered, and its principal object resides in the provision of a device through which a fire extinguishing fluid can be conducted directly into the heart of a comparatively compact body of inflammable material, such as cotton, cotton seed, and various types of grain, and the like.

An object of the invention resides in the provision of a light, simple and inexpensive structure which can be arranged for ready accessibility when needed, and capable of quick attachment to standard types of fire extinguishers, preferably of the pressure type, from which an extinguishing fluid can be injected into the burning area with a minimum of effort and delay and by which great damage and loss may be prevented.

Broadly, the invention contemplates the provision of an injector type of extinguishing device which is capable of being driven deep into the affected area and thus insure immediate and thorough control of fires which are not readily discernible under ordinary circumstances and consequently are not easily extinguished by the use of conventional equipment.

While the foregoing objects are paramount, other and lesser objects will become manifest as the description proceeds, taken in connection with the appended drawings, wherein:

Figure 1 is a longitudinal cross-sectional illustration of the invention, in its preferred form, showing the tubular body and the spear-like point, and illustrating the striking head on its opposite end and the fluid fitting.

Figure 2 fragmentarily illustrates the invention in elevation, showing a modified form of the striking head which encloses the fluid fitting when the device is not in use.

Figure 3 is a lateral cross-sectional view, taken on lines 3—3 of Figure 1, showing the hexagonal flange and the fluid fitting connected therein, and

Figure 4 illustrates the invention being driven into a bale of cotton and coupled to a conventional fire extinguisher, and illustrating, in dotted lines, the manner in which the invention can be driven into the end of the bale.

Operations about cotton gins and compresses are frequently hazarded by latent fires which

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may be ignited by the infiltration of rocks, nails, and other metal objects, passing through the machinery to set off sparks and ignite the cotton lint which, in its smoldering form, is impacted within bales in the presses and tied out, and frequently these latent fires will continue to burn until the bale is consumed. Obviously, the adjacent property is endangered and, unless such fires are extinguished at an early stage, great damage may result. The character of a compressed bale of cotton prevents immediate discovery of such fires and such bales have been known to burn for several hours, or even days, before discovery. The latent conflagration, or "hot spot," can be located and extinguished, however, by injecting a small amount of vaporizing liquid, such as carbon tetrachloride, or chemically treated "wet water," into the bale itself and it is the purpose of the invention to provide a means whereby such extinguisher fluid can be injected into the heart of the bale and diffused into the burning area.

The invention, therefore, comprises a tubular member 10 having a passage 11 therethrough and has a pointed tip 12 fixed to its operative end, in the manner illustrated in Figure 1. The tip 12 is preferably conical in form and reasonably sharp and can be attached to the body 10 in any suitable manner such as by providing an integral pin 13 at the base of the tip 12 which may be pressed into the end of the passage 11 and the parts sweated or welded together to provide an integral combination. Toward the operative end of the body 10 are a plurality of spaced arrangements of lateral ports 14 which extend through the walls of the body 10 from the passage 11, as illustrated in Figure 1, so that the extinguisher fluid forced through the passage 11 can be disseminated through the ports 14 and caused to impregnate the fibers of the cotton well within the bale, as illustrated in Figure 4.

At the opposite end of the body 10 is attached a striking head member 15 adapted to be struck by a hammer 16 to drive the spear-like body 10 into the bale 17 and into the burning area. A suitable fitting 18 is threadedly connected to the flange 19 of the head 15 and communicates with the passage 11 of the body 10, as in Figure 1, and providing means for attaching a flexible hose or coupling 20 of a conventional fire extinguisher 21 thereto to conduct extinguishing fluid therefrom into the bale 17. A suitable flexible coupling 22 may be attached to the fitting 18, if desired, which in turn can be coupled by a suitable connection 23 to the flexible hose 20 of the extinguisher 21, in the manner shown in Figure

4. It is contemplated that any of the conventional types of pressure-operated fire extinguishers may be employed, but it is preferable to use the type of extinguisher which operates under pressure or by a hand pump, the latter not being shown in the drawings.

A modified form of the invention is illustrated in Figure 2 in which a flange **24** is integral with the body **10** and provides a shoulder **25** which serves as a stop so that the body **10** may be driven entirely into the bale **17**, similarly to the structure shown in Figure 1 and operatively illustrated in Figure 4, while yet permitting the extended portion **26** opposite the body **10** to project sufficiently to attach the coupling **20** of the fire extinguisher **21** to the fitting **18** in the upper end of the member **26**. To drive the body **10** into the bale **17** a suitable sleeve **27** is provided which embraces the member **26** and the fitting **18** to afford a driving head, such as the member **15** shown in Figure 1, which may be struck by the hammer **16** in the manner shown in Figure 4. The sleeve **27** may be secured to the flange **24** by a chain **28**, or other suitable device, secured at each end by screws **29**, in the manner shown in Figure 2.

It is contemplated that the invention may be driven into the bale **17** either from one of its broader sides or from one end, as illustrated in Figure 4, which shows a bale of cotton positioned on one of its broader sides and the invention driven in from the opposite side. In dotted lines is shown the manner in which the invention may be driven in from one end of the bale. Obviously, the body **10** may be of any desired length but it is considered practicable to afford a length adapted to extend substantially half way through the bale at its lesser dimension.

Obviously, the invention may be made in lengths up to several feet and capable of being inserted into storage bins, and the like, where

lint cotton, cotton seed, grains, and other commodities, are stored and which may develop latent fires deep within the bulk not readily accessible by ordinary apparatus. The ports **14** arranged in the tubular body **10** may be arranged in any manner best suited to the purpose for which the invention is to be employed. It is, therefore, intended that the invention be not limited to the structure herein shown and described and that certain changes and modifications may be resorted to from time to time without departing from the spirit and intent of the invention or the scope of the appended claim.

What is claimed is:

In a fiire extinguishing device, in combination, a tubular body having a longitudinal passage therethrough, a pointed head of hardened material secured to one end of said body and adapted to penetrate through dense, fibrous bodies, a plurality of lateral ports in said body communicating with said tubular passage therein, a flange formed on said body spaced from its end opposite said pointed head, a fitting arranged in the upper end of said body and communicating with the said passage therethrough providing means for connecting a fire extinguisher to said body, and a driving sleeve embracing said upper end of said body and said fitting whereby to provide a driving head for said assembly.

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