Nov. 23, 1926. 1,608,055

R. H. BROWNLEE

SQUIRT GUN

Filed Dec. 22, 1925 2 Sheets-Sheet 1

FIG. 1.

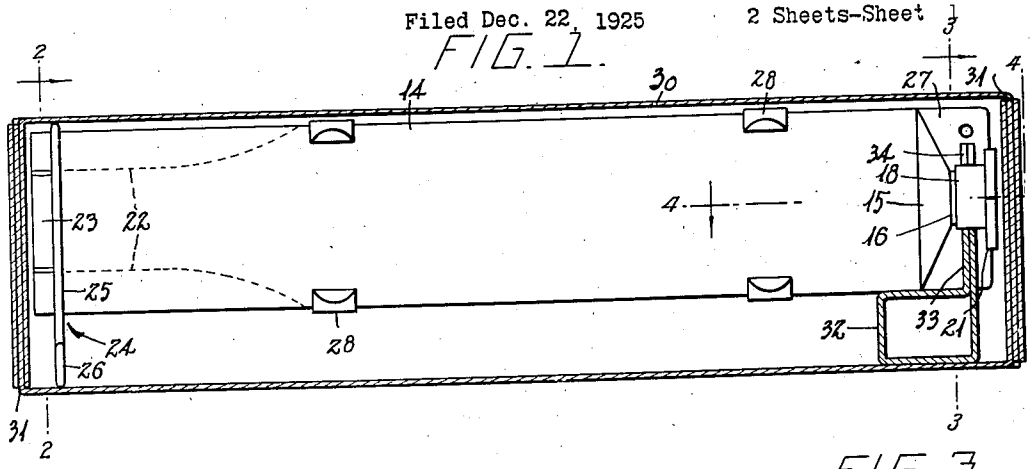


FIG. 2.

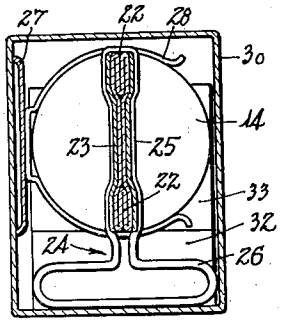


FIG. 4.

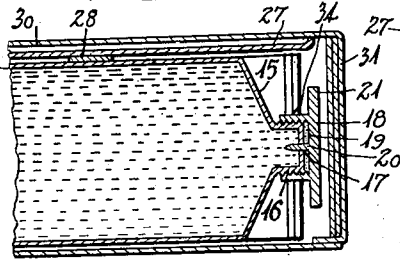


FIG. 3.

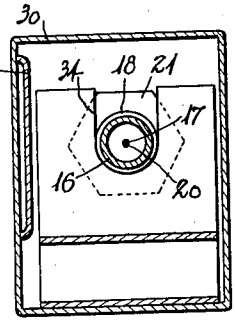
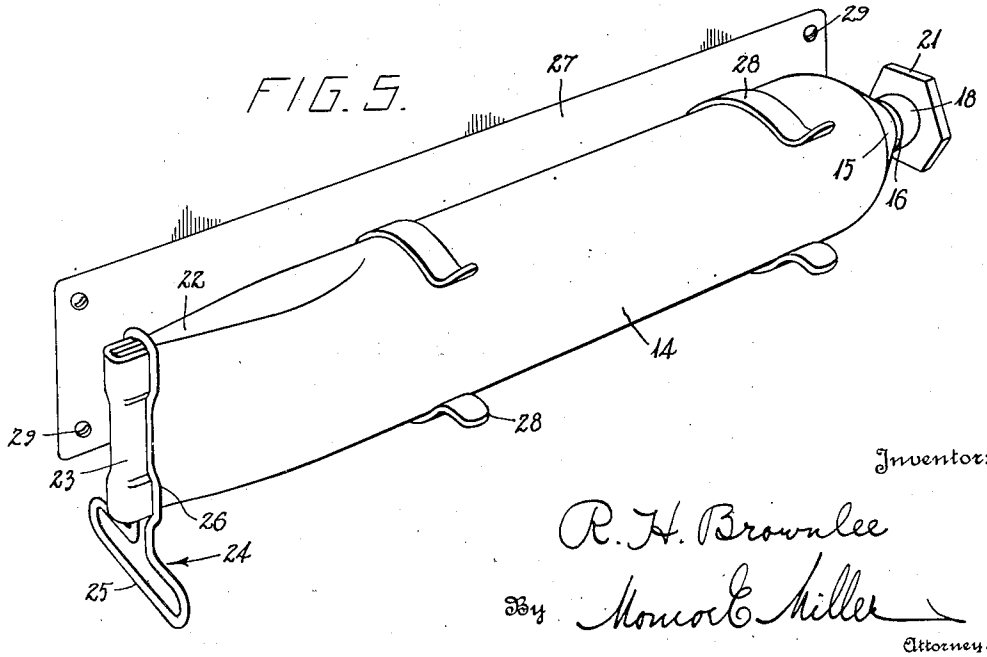


FIG. 5.



Inventor:

R. H. Brownlee

By Monroe E. Miller

Attorney.

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R. H. BROWNLEE

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FIG. 6.

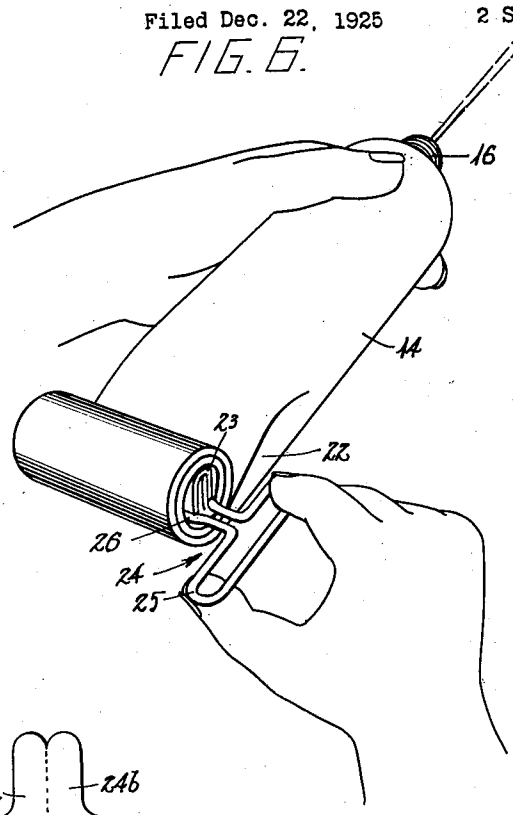


FIG. 8.

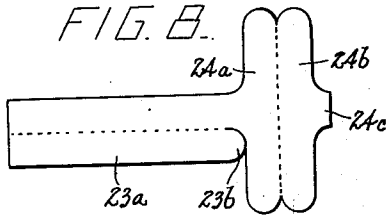


FIG. 9.

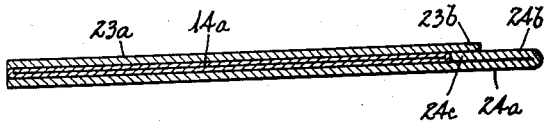
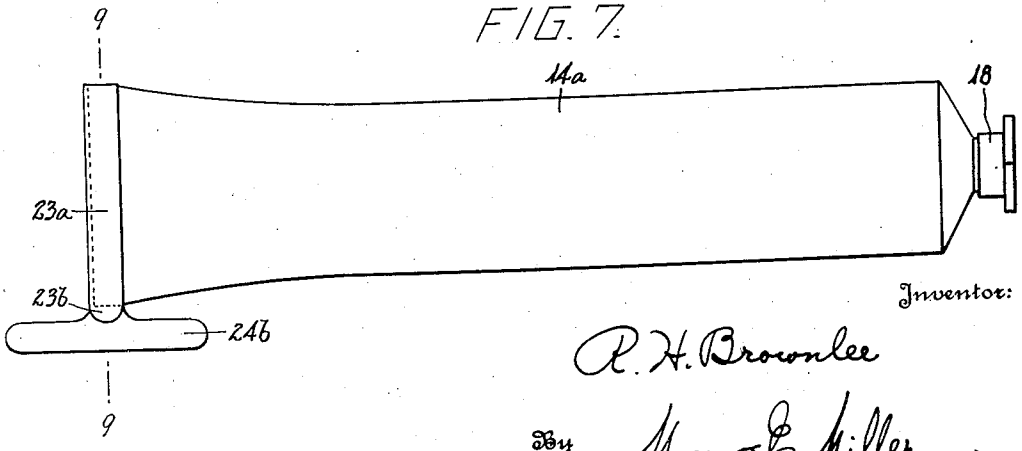


FIG. 7.



Inventor:

R. H. Brownlee

By Monroe E. Miller

Attorney.

Patented Nov. 23, 1926. 1,608,055

UNITED STATES PATENT OFFICE.

ROY H. BROWNLEE, OF PITTSBURGH, PENNSYLVANIA.

SQUIRT GUN.

Application filed December 22, 1925. Serial No. 77,089.

The present invention relates to squirt guns, and aims to provide a novel and improved device of that kind which may be conveniently used for discharging a stream of liquid or semi-liquid fire extinguishing compound to a fire.

It is the primary object of the invention to provide a squirt gun, intended especially for use as a fire extinguisher although useful for other purposes also, which may be economically manufactured and sold, which may be conveniently and efficiently used when called into use such as when a fire occurs or other emergency arises, and which may be thrown away or discarded after use, so as to avoid recharging and trouble incident thereto, such as required by permanent refillable fire extinguishers and similar squirt guns.

Another object of the invention is the provision of such a device comprising a flexible tube for holding the liquid and having a discharge orifice at one end with a quickly removable closure for said orifice, and having a key at its other end for conveniently rolling or winding up the tube so as to collapse same and force the liquid through the orifice under comparatively high pressure.

A further object is the provision of a squirt gun of the kind indicated assembled with a holder to support the device from a wall, dash of an automobile or other vehicle, or other suitable support, in order that the device is quickly and conveniently accessible when called into use.

A still further object is to provide a novel and improved package containing the device whereby the device may be conveniently stored or transported with the parts thereof assembled, so that no assembling is necessary by the purchaser or user, and the device may be left in the package until the necessity arises for its use, or may be removed so as to be ready for use instantly.

The invention also includes novel features of construction and assembly to enhance the utility and efficiency of the device.

With the foregoing and other objects in view, which will be apparaent as the description proceeds, the invention resides in the construction and arrangement of parts, as hereinafter described and claimed, it being understood that changes can be made within the scope of what is claimed, without departing from the spirit of the invention.

The invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a side elevation of the device in its box or container, constituting the package, said box and other portions being shown in section.

Figs. 2 and 3 are cross-sections on the respective lines 2—2 and 3—3 of Fig. 1.

Fig. 4 is a longitudinal section on the line 4—4 of Fig. 1.

Fig. 5 is a perspective view of the squirt gun and its holder removed from the box or container.

Fig. 6 is a perspective view of the squirt gun in use.

Fig. 7 is an elevation of a modified form of squirt gun.

Fig. 8 is a plan view of the blank from which the tube sealing clip and operating key shown in Fig. 7 is formed.

Fig. 9 is an enlarged section on the line 9—9 of Fig. 7.

In carrying out the invention, there is employed a tube 14 of convenient length and diameter, and which may be of any suitable size, for example, to hold a pint or quart of liquid, and such tube constitutes the casing or container for the liquid. The tube 14 is composed of lead or other suitable pliant metal, alloy or other material, in order that it may be compressed, and wound or rolled up for discharging the contents.

The tube 14 has a conical shoulder 15 at one end from which the neck 16 extends that has a small orifice or aperture 17 through which the liquid is discharged in a small stream, and said orifice may be of any suitable size. The orifice is normally closed by a screw cap 18 threaded on the neck 16 and having a gasket or packing disk 19 therein to prevent leakage. The cap 18 has a needle 20 therein projecting through the orifice 17 in order to prevent said orifice from being clogged up, and when the cap is unscrewed the needle 20 being withdrawn from the orifice 17 will leave said orifice open in order to avoid any possibility of said orifice being plugged up when the device is used. The cap 18 has an outstanding flange 21 for conveniently unscrewing the cap, to facilitate the operation when the device should be used quickly.

The opposite end portion of the tube 14 is tapered down into a flattened end, and the metal or material of the tube is provided

with reentrant folds 22 at the opposite edges of the tapered portion, in order that the width of the tapered end portion will be substantially the diameter of the tube, as seen in Fig. 1. This facilitates packaging the device, as well as being convenient in use. The rear end of the tube (that end which has the orifice 17 being the forward end) is sealed in any suitable manner, such as by lead burning, brazing, soldering, or the like. It is also possible to coat the inner surfaces with shellac or other adhesive material before the rear end of the tube is compressed, so as to securely seal the tube. The end of the tube may also be compressed in any suitable manner to make the seal thoroughly effective. It is preferable to clamp a doubled sheet metal clip 23 over the flattened end of the tube in order to complete the seal and resist the breaking of the seal even though the tube 14 is subjected to unusual strain or pressure, such as the accidental stepping of a person on the tube when on the floor, it being desirable that the tube 14 be capable of withstanding comparatively high pressures without bursting.

A key is permanently assembled with the rear terminal of the tube so as to be ready for use instantly, without requiring the assembly of the key with the tube, such as might be confusing, when the device is brought into use. As shown, the key 24 is composed of wire and has the T-head or handle 25 and a loop 26 at right angles to the head. The loop 26 embraces the flattened terminal of the tube, and is either slipped on the tube before the clip 23 is applied, or is compressed after movement over the clip, so that the clip retains the key on the tube. The loop 26 may also be compressed on the tube so as to assist in sealing the tube.

When the squirt gun, as above described, is called into use, it is only necessary to unscrew the cap 18, and the forward portion of the tube is held in one hand while the other hand is used for turning the key 24, as seen in Fig. 6. This will wind or roll up the tube around the loop 26 of the key, so as to collapse the tube, and the liquid therein is forced through the aperture 17 at a comparatively high pressure. The stream discharging through the orifice 17 may be directed for a considerable distance, so that the liquid may be directed to flames without having to approach too closely to the fire. The folds 22 will travel forwardly along the tube as the tube is wound up, as seen in Fig. 6, thereby facilitating the discharge of the liquid, although, in some cases, when the pressure of the liquid is high, the folds 22 only travel forwardly a short distance of the tube before the pressure forces the folds outwardly in advance of the wound or rolled portion of the tube. This, however, does not interfere with the operation. If for any reason, should the device fail to work, or should the user become confused the tube 14 may be torn or cut open quickly to pour the liquid directly on the flames. After once being used the device may be thrown away or discarded, inasmuch as it may be supplied at substantially the cost of recharging an ordinary refillable fire extinguisher. This has the advantage of the user being able to purchase an entirely new filled squirt gun or fire extinguisher at substantially the same cost as required for refilling or recharging an ordinary squirt gun or fire extinguisher. This, even at slightly greater cost, eliminates the trouble of purchasing a new charge and refilling or recharging, inasmuch as the present device may be sold comparatively cheap and ready for use.

As shown in Figs. 1-5 a holder is assembled with the device to support the device for convenient access. The holder comprises a board or plate 27 of sheet metal, wood, or other suitable material, having spring clasps 28 secured thereto to embrace the tube 14, thereby holding said tube assembled with the plate 27. The plate 27 may be of about the same length and width as the tube, and may be secured to a wall, dash of an automobile or other vehicle, or other suitable support, by means of screws 29 or other securing elements. The device is thus supported for convenient access and quick removal from the clasps 28, with the key 24 accessible for instant use.

Figs. 1-4 illustrate the device as it is stored or shipped in a convenient package. Thus, a box or container 30 of cardboard or other suitable material is provided, which, as shown, has the ordinary end closure flaps 31. The box is of a size as to conveniently receive the tube 14, and the box is wider in one lateral dimension than in the other, as seen in Figs. 2 and 3, so as to accommodate the key 24. The key 24 is arranged with its head 25 disposed transversely so as to bear against the corresponding wall of the box, as seen in Figs. 1 and 2, thereby spacing the tube from said wall, and preventing the tube from moving about loosely in the box. The forward end portion of the tube is also spaced from the same wall by means of a spacer 32 of cardboard or other suitable material, which is disposed between the tube 14 and the wall of the box against which the head 25 of the key bears. This provides a convenient package for storing or shipping the device, with the device completely assembled, and the holder may also be assembled with the tube 14 while in the package, although the same package may be used without the holder. The spacer 32 has the portions 33, which may be the terminal portions of the strip from which the spacer 32 is formed, projecting across the shoulder 15

and having a notch 34 receiving the neck 16 and cap 18. This assists in holding the parts assembled, and when the tube 14 is removed from the box, the spacer 32 will drop from the tube. Thus, the device may be left in the package until used, or may be removed to be supported by the holder, or the device when removed may be laid on a shelf or elsewhere.

Figs. 7 and 9 illustrate the rear end of the tube 14^a flattened without the reentrant folds as shown in Figs. 1, 2 and 5. A modified form of key is also shown which combines the key and sealing clip, same being composed of a single blank of sheet metal as seen in Fig. 8. Thus, the clip 23^a is doubled so as to engage over the flattened end of the tube. One side of the clip 23^a has a T-head at one end comprising the portions 24^a and 24^b doubled together, and the portion 24^b which is bent back has a lug or lip 24^c projecting therefrom and overlapped by an extension 23^b on the corresponding end of the other side portion of the clip 23^a. This provides a strong construction of the clip and key in one piece, for purposes of economy and convenience.

Having thus described the invention, what is claimed as new is:—

1. A squirt gun for a fire extinguishing or other liquid comprising a tube of flexible material having a flattened end portion and a discharge orifice at its opposite end, a sealing clip on said flattened end portion, and a winding key embracing and compressed on said end portion and retained thereon by said clip.

2. A squirt gun for a fire extinguishing or other liquid comprising a tube or flexible material having a flattened end portion and a discharge orifice at its opposite end, a winding key having a loop surrounding and compressed on said end portion, and a sealing clip on said end portion holding said loop thereon.

3. A squirt gun for a fire extinguishing or other liquid comprising a tube of flexible material having a tapered end portion with reentrant folds at the opposite edges of said portion, so that said portion is of a width substantially the same as the diameter of the tube.

4. A squirt gun for a fire extinguishing or other liquid comprising a tube of flexible material having a flattened end portion with reentrant folds at the opposite edges of said portion, so that said portion is of a width substantially the same as the diameter of the tube, and having a discharge orifice at its opposite end, and a key embracing said end portion and folds thereof for winding the tube thereon.

In testimony whereof I hereunto affix my signature.

ROY H. BROWNLEE.