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VALVE PROTECTOR FOR GAS CONTAINERS

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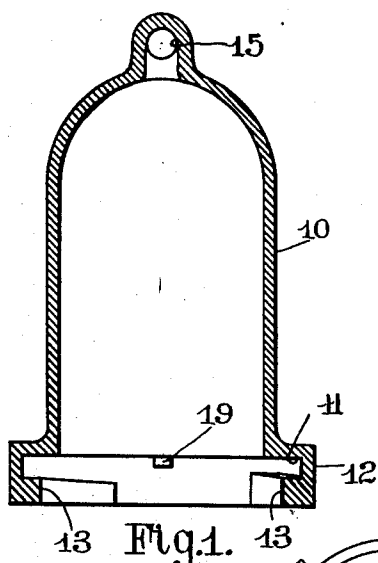


Fig. 1.

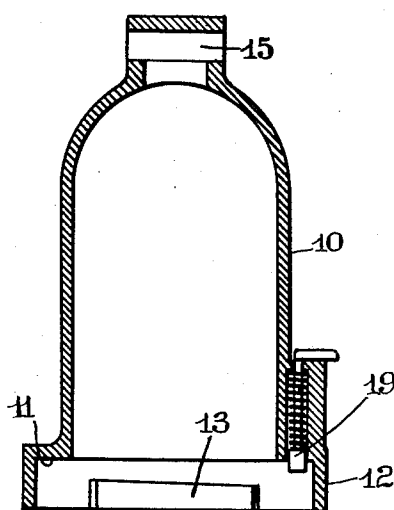


Fig. 2.

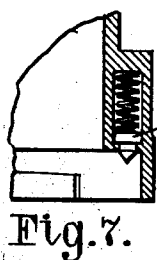


Fig. 7.

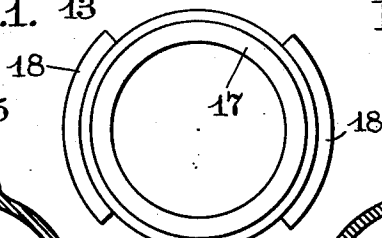


Fig. 5.

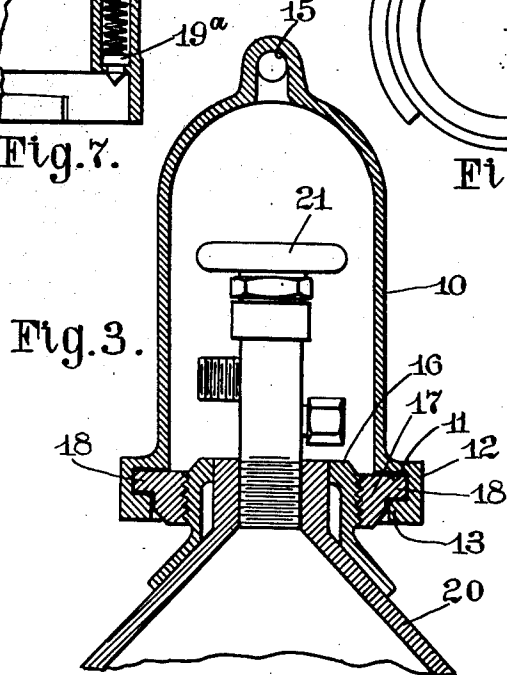


Fig. 3.

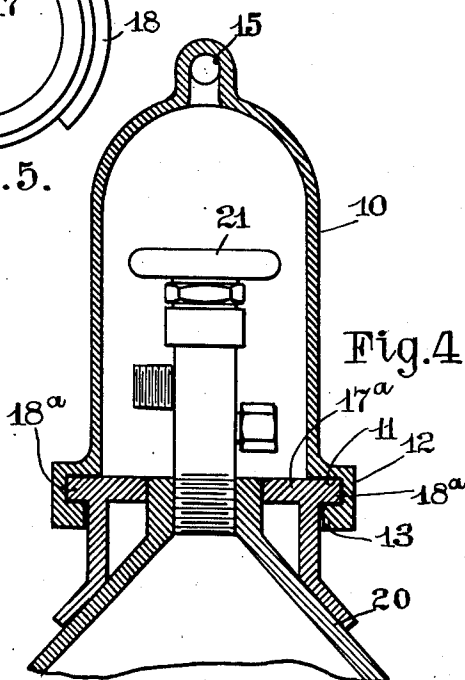


Fig. 4.

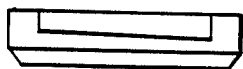


Fig. 6.

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VALVE PROTECTOR FOR GAS CONTAINERS

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6 Claims. (Cl. 220—85)

This invention relates to a cap for protecting the valve of a cylindrical vessel such as commonly used as a container of oxygen, nitrogen and acetylene gases and the like.

Heretofore such caps have been screwed onto and off the containers thereby involving much time and expense. Moreover the screw threads on the container were more or less subject to injury due to careless handling by workmen making it difficult or impracticable to apply the cap.

The principal object of the invention is to provide a simplified and exceedingly cheap construction whereby the protecting cap may be quickly connected with or detached from the container. Another object is to provide simplified means whereby the cap may be operated to connect it with or remove it from the container. A further object is to provide means whereby the cap is latched when turned to closed position. Other objects will appear from the disclosure herein.

The invention is embodied in the examples herein shown and described, the features of novelty being finally claimed.

In the accompanying drawing—

Figure 1 is a vertical section of the protecting cap according to my invention.

Fig. 2 is a similar section taken at right angles to the section of Fig. 1, such section including details of one form of latch for the cap.

Fig. 3 is a section showing the cap applied to a container having a standard screw threaded cap ring flange and a cap ring threaded thereon.

Fig. 4 is a similar view of a modification showing a cap ring without the usual cap ring flange.

Fig. 5 is a plan view looking at the lower side of the cap ring as shown in Fig. 3.

Fig. 6 is an edge view of the cap ring.

Fig. 7 is a detail illustrating another form of latch for the cap.

In the views the container is shown at 20 and the valve thereof to be protected at 21.

The character 10 designates the valve protecting cap it being of mainly cylindrical form and provided at its lower end with an enlarged projecting portion forming an annular horizontal shoulder 11, and a downwardly projecting flange 12. At diametrically opposite sides the inner side of said flange are two inwardly projecting lugs 13, 13, having their upper edges upwardly inclined as shown in Fig. 2.

The upper end of the cap is provided with a projection having an opening to the atmosphere and a hole 15 into which the end of a bar wrench can be placed and pressure applied thereto for

turning the cap on or off the container. The form of the projection at the top prevents rain from entering the cap.

Referring to Fig. 3 the character 16 designates the usual threaded cap ring flange, it being permanently secured to the neck of the container by indenting it and the container at the joint at the top. On the threaded portion of the cap ring flange is screwed the cap ring 17, said ring having diametrically outwardly projecting lugs 18, 18, like the lugs 13, 13, except that the lower edges thereof are inclined so that a projecting wedge member is formed to cooperate with the lugs 13, 13, of the cap. Said lugs 18 and 18, are of such dimensions that they can squeeze into the spaces between the lugs 13, 13, and the shoulder 11 when the cap is placed down on the ring and given a turn by the bar before referred to in "clockwise" direction to cause the lugs to interlock. Conversely when the cap is to be turned off the container the cap is given a small turn anti-clockwise.

In the modification Fig. 4 the construction and operation are the same except that the usual cap ring flange is omitted and the cap ring 17^a with the lugs 18^a and 18^a made of sufficient thickness in its bar horizontally to fit upon the neck of the container and receive the same protecting cap. The cap ring 17^a can be secured to the neck of the container by indentation in the same manner as described with reference to securing the cap ring flange to the neck of the container.

In Fig. 2 is illustrated one form of latch for latching the cap when it is turned to closed position, said latch including a spring-actuated pin 19 located in an offset housing of the cap, said pin is normally projected at its lower end so that it stands opposite the end of a lug 18 of the ring and prevents the cap from being turned and removed until the pin is lifted out of the way. Said pin is provided with a finger piece at the top to permit the lifting of the latching pin.

Fig. 7 illustrates a modification of the latching pin in which the lower projecting end of the pin 19^a is beveled so as to require extra pressure to turn the cap into and out of closed position.

The forms of the parts can be changed without departing from the gist of the invention as claimed.

What we claim is:

1. A valve protector for a gas container having a neck provided with a ring, said ring having circumferential transversely separated exter-

nal wedging elements, said protector having circumferential transversely separated internal wedging elements to engage said external wedging elements of the ring to removably secure the protector to said container, said protector having a wrench receiving element at its top to facilitate the turning of the protector.

2. A valve protector for a gas container having a neck provided with a ring, said ring having circumferential transversely separated external wedging elements, said protector having circumferential transversely separated internal wedging elements to engage said external wedging elements of the ring to removably secure the protector to said container, said protector having an opening and a wrench receiving element at its top to facilitate the turning of the protector.

3. A valve protector for a gas container having a neck provided with a ring, said ring having circumferential transversely separated external wedging elements, said protector having circumferential transversely separated internal wedging elements to engage said external wedging elements to removably secure the protector to said container and means for latching said protector actuated by operation of the protector for releasing the latch.

4. A valve protector for a gas container having a neck provided with a ring, said ring having

circumferential transversely separated wedging elements and said protector having circumferential transversely separated wedging elements to engage the wedging elements of the ring to removably secure the protector to said container, and means for latching said protector actuatable by the operation of the protector for releasing the latter.

5. A valve protector for a gas container having a neck provided with a ring, said ring having circumferential transversely separated wedging elements, said protector having circumferential transversely separated wedging elements to engage said wedging elements of the ring to removably secure the protector to said container, said protector having a wrench receiving element at its top to facilitate the turning of the protector.

6. A valve protector for a gas container having a neck provided with a ring, said ring having circumferential transversely separated wedging elements, said protector having circumferential transversely separated wedging elements to engage said wedging elements of the ring to removably secure the protector to said container, said protector having an opening and a wrench receiving element at its top to facilitate the turning of the protector.

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