Aug. 27, 1957 J. P. FITZGERALD 2,804,029

SAFE PROTECTOR

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Fig. 1

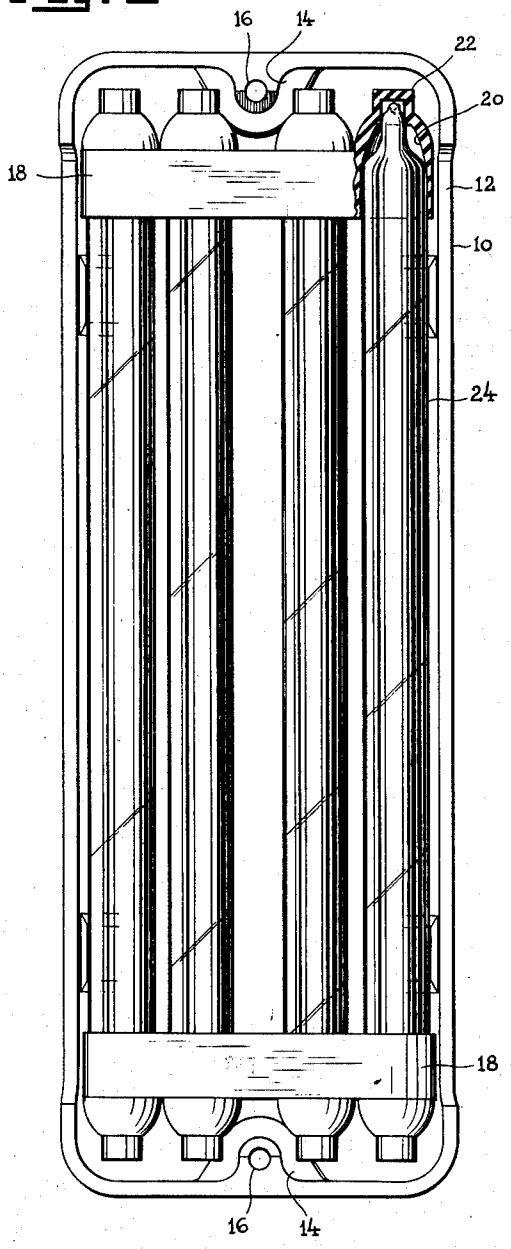
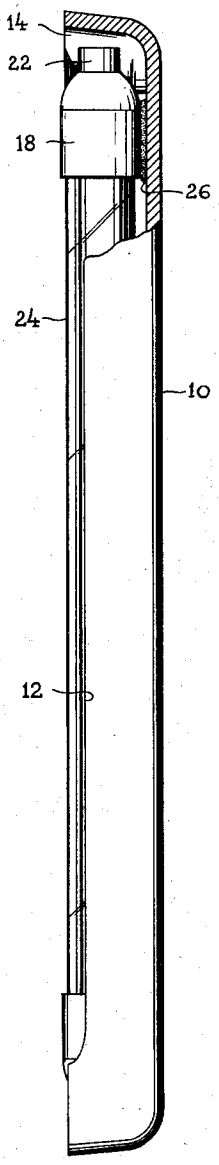


Fig. 2



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Fig. 4

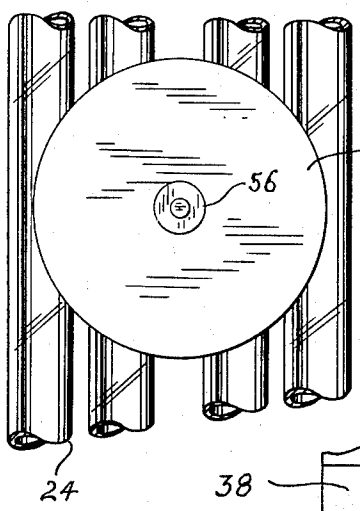


Fig. 3

Fig. 5

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SAFE PROTECTOR

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5 Claims. (Cl. 109—34)

This invention relates to improvements in protectors for safes and the like.

Protectors of this type consist of breakable tubes filled with tear gas which are secured to the inside safe doors over the tumbler core so that, when a safe breaker drives such core inwardly or pulls such core outwardly to open the lock, the tubes will be broken and the tear gas will disperse throughout the safe and the room, when the safe door is opened, thus preventing burglary of the safe's contents.

Because of restrictions in shipping regulations and constricted space in modern safes, especially between inner and outer safe doors, there has arisen a problem of arranging and mounting the glass tubes of tear gas so that they may be conveniently shipped and quickly attached to safe doors. Heretofore, it has been possible to avoid breaking the tear gas tube by carefully withdrawing the tumbler core.

This invention solves such problems and also provides a safe protector of such type which can be inexpensively manufactured by mounting the ends of a plurality of sealed vials of tear gas in resilient mounting pads to form a sub-assembly which can be easily handled. This sub-assembly is mounted in an open face metal base by cementing the pads to the inner surface of its wall or by resiliently fitting stubs on such pads into holes in the end walls of such base. The entire unit is screwed to the back of the safe door and the metal base forms a backing up member against which the vials are broken as above explained.

To prevent removal of the tumbler core without breaking the vials a pair of discs are mounted on opposite sides of the vials and secured by a pin to the curb or tumbler core of the combination. Hence, if the core is pulled out or driven in to free the bolt, the vials will be broken.

In the accompanying drawings:

Fig. 1 is a top plan view of a safe protector embodying the present invention, part being broken away and shown in section for sake of illustration;

Fig. 2 is a view in side elevation of the safe protector viewed in Fig. 1 with part broken away and shown in section for sake of clarity and illustration;

Fig. 3 is a sectional view on a vertical plane normal to the safe door of a modified form of a safe protector embodying the present invention mounted on a safe door and showing in particular the vial breaking discs pinned to the curb or tumbler core;

Fig. 4 is a fragmentary view in side elevation of the vial breaking discs and mounting pin, with base removed; and

Fig. 5 is a fragmentary sectional view showing a modified means of securing the vial pads to the base of the safe protector.

The safe protector shown in Figs. 1 and 2 of the drawings has a shallow pan-like metal base **10**, the top of which is open. The side walls are slightly recessed, as indicated at **12**, so that, when the base is placed against a flat surface such as the inner wall of the door of the

safe, there will be opening for the escape of tear gas. At each end of the base, there are pads **14** having openings **16** therethrough. These openings accommodate screws or the like for fastening the protector to the safe door. The base **10** may be cast or stamped from sheet metal. In the present exemplification the base is an aluminum casting.

The sub-assembly which is placed in the base consists of a pair of moulded rubber mountings **18** and a plurality of glass tubes **24**. The mountings **18** have formed therein recesses **20** for receiving and gripping the ends of the tubes **24**. In order to conserve rubber, the mounting may be formed with a main body having projections **22** in which is part of the recesses **20**. In this embodiment there are four such recesses. The four glass tubes **24** are hermetically sealed and contain tear gas. Each tube has its ends inserted in the recesses **20** of each mounting **18**. The diameter of the recesses **20** is such as to frictionally engage the end of the glass tubes **24** and this makes a solid sub-assembly which may be easily stored and handled during other steps of assembly. In order to secure the sub-assembly to the inside of the base **10**, there is applied a layer of liquid solder to sides of the mountings **18** and the sub-assembly is then pressed into engagement with the base **10** while the liquid solder **26** sets.

Considerable manufacturing time is saved by using the rubber mountings and securing them to the metal base plate by the use of liquid solder. The former use of rubber tape bands on the tubes, over which are placed metal holding bands which are screwed to the metal base, have been eliminated by this protector. Instead of storing and handling each tube separately, they may now be handled as a single unit of two, four or more tubes depending upon the size of the protector. The rubber mountings **18** protect the tubes **24** during such handling and assembly. In addition to this, the rubber mountings **18** project slightly beyond the outer edge of the base **10** so that they act as resilient protectors for the tubes during shipment and during installation.

In the modification shown in Figs. 3 to 5, inclusive, the base **28** has holes **30** into which the projections **22** on the mounting **18** are pressed to hold the solid sub-assembly in the case. The base **28** also a centrally located hole **32** which accommodates the disc operating pin and nut. In other respects the base **28** is the same as base **10** heretofore described.

This modification includes mechanism for breaking the vials **24** no matter whether the tumbler core is pushed in or withdrawn. To illustrate this embodiment the safe protector is shown secured by screws **34** to the inside of a safe door **36** which includes a combination **38** operated by a dial **40** and a tumbler curb **42**. All such parts are shown diagrammatically and the curb **42** is deemed to be connected to the tumbler core of the combination so that movement of one causes movement of the other. Before securing the safe protector to the safe door the inner wall is drilled to provide a hole **44** for the pin and the curb **42** is drilled and tapped as indicated at **46** to receive the threaded end of a disc operating pin **48**. The pin **48** has an outer end of reduced diameter which forms a shoulder **50** at the inner end of the hole **44**. The pin **48** is then threaded into fixed place on the curb **42** with its outer reduced and threaded end projecting from the inside of the safe door. A first disc **52** is then placed over the reduced end of the pin so that it will be engaged by the shoulder **50** if the pin **48** is driven inwardly and forced against the vials **24**. The safe protector with a second disc **54** placed between the vials **24** and the side wall of the base **28** is then placed against the door **36** so that the pin **48** projects between the vials, through the disc **54** and into the hole **32**. A nut is then threaded on the pin **48** so that if the tumbler core is withdrawn, the pin **48** will

cause the disc **54** to smash the vials **24** against the wall of the safe. While not necessary, it is desirable to insert a compression spring **58** on the pin **48** between the discs **52** and **54** to prevent rattling of such discs in normal opening and closing of the safe.

I claim:

1. In a safe protector having an open face metal base adapted to be fastened to the inside of a safe door having a tumbler in line with which said base is fastened, a sub-assembly comprising a pair of moulded rubber mounts each having a plurality of tube end receiving openings and a plurality of hermetically sealed tubes containing tear gas having their ends frictionally fitted in said openings to form such sub-assembly, said sub-assembly being secured to the inside of said base by liquid solder adhering to said rubber mounts and said metal base.

2. In a safe protector, a metal base having end walls with spaced holes, a sub-assembly comprising rubber mounts each having a plurality of tube end receiving openings, said mounts each having projections thereon, and a plurality of breakable tubes each having their ends fitted in said openings and carried by said mounts, said projections being seated in said holes to secure said sub-assembly in said base.

3. A safe protector for a safe having a door with a tumbler curb, comprising a breakable vial containing tear gas, means for mounting said vial on the inside of said door over said tumbler curb, a member connected to said tumbler curb for movement therewith, said member projecting from the inside of said door beyond said vial, and pieces extending from said member on opposite sides of said vial and adapted to break said vial upon movement of said member inwardly or outwardly of said door.

4. In a safe protector for a safe having a door with a tumbler curb, said protector including a breakable vial containing tear gas, mounted on the inside of said door over said tumbler curb, a breaker device comprising a rod threadedly connected to said tumbler curb, said rod having a reduced end projecting beyond the inside of said door and beyond said vial and forming a shoulder at its inner end, a disc on said reduced end abutting said shoulder and positioned between said door and said vial, a second disc on said reduced end overlying the side of said vial opposite said first disc, and means for holding said second disc on said rod.

5. A safe protector as claimed in claim 4 in which there is a compression spring between said discs to prevent rattling.

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