

S. S. MANN & C. B. MANN.

Devices for Illustrating Lamp Explosions.

No. 152,855.

Patented July 7, 1874.

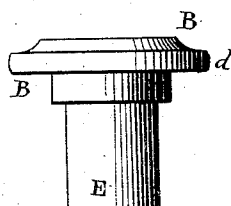


Fig. 3.

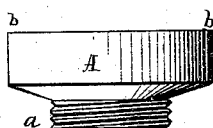


Fig. 2.

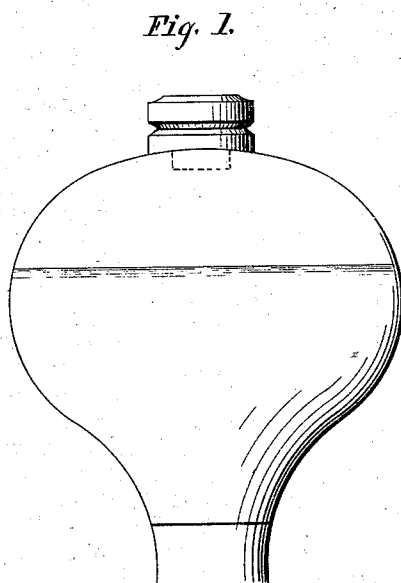


Fig. 1.

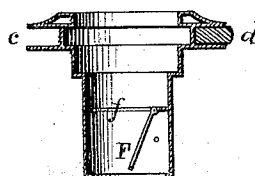


Fig. 4.



Fig. 5.

Witnesses:

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UNITED STATES PATENT OFFICE.

STEPHEN S. MANN AND CHARLES B. MANN, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN DEVICES FOR ILLUSTRATING LAMP EXPLOSIONS.

Specification forming part of Letters Patent No. **152,855**, dated July 7, 1874; application filed May 11, 1874.

To all whom it may concern:

Be it known that we, STEPHEN S. MANN and CHAS. B. MANN, of Baltimore, Baltimore county, Maryland, have invented a Device for Illustrating Lamp Explosions, of which the following is a specification:

Our invention relates to a device for illustrating lamp explosions, to be used by the manufacturers of safety-lamps, or their agents who engage in the sale thereof, to demonstrate the importance of something to prevent explosions.

For a number of years there has been a great want felt by those selling safety-lamps for a device by which the liability to explosion, and consequent danger in using the common kerosene-lamp, could be easily and practically demonstrated. Persons who have never had or witnessed an explosion of a lamp cannot be made to realize their danger, and consequently they always prefer to pay a lower price for a common lamp and risk the danger than a greater price for one that is safe in every respect.

Our device is intended to supply this want, and to be the means of educating the people up to that point where they will demand not only safety-lamps, but a safer quality of oil than is now generally used for illuminating purposes.

Our invention consists of a recessed cup or holder, which is to be screwed to the lamp-bowl, and into which is forced a valved tube having around its circumference a ring or band of rubber, or other compressible or elastic material, the tube portion being retained in position in the cup by the frictional contact of the elastic material against the sides of the cup until blown out by the explosion, as will be more fully explained hereafter.

Figure 1 is a side elevation of a lamp-bowl to which our invention is connected. Fig. 2 is a side elevation of the cup or holder by itself. Fig. 3 is a similar view of the detachable part ready to be inserted into the cup. Figs. 4 and 5 are sections of the valved tube or detachable part, taken at right angles to each other.

A represents a cup or holder of any suitable shape, size, or construction, which has a male screw, *a*, formed upon its lower part, for

attachment to the lamp-bowl, and a suitable recess, *b*, formed in its upper part for receiving the valved tube or detachable part. The detachable part B consists of the circular head or top, having a groove, *C*, formed around its edge, and the tubular neck *E*, which projects down, through the cup *A*, into the top of the bowl, as shown in Fig. 1. Into the groove *C* is inserted a ring or band of rubber, or other suitable elastic material, which projects out slightly beyond the edge of the head or top, so as to be somewhat larger than the recess *b* of the cup, into which the head *B* is forced. As the head is forced downward into the cup the elastic material is compressed, and, by its frictional contact with the sides of the recess, it holds the detachable part securely in position. In the tubular neck *E* is fitted a valve, *F*, which inclines open, leaving a passage, *f*, through the tube, into the lamp-bowl, for the ready admission of flame to the gas.

The operation of our device is as follows: After the lamp has been burning a while, the bowl becomes warm, and the oil generates gas. In order to show the explosive condition of the common lamp, and to convince of the necessity for a safety-lamp that will prevent accidents of this kind, the detachable part B *E* is inserted in the cup or holder *A*, as above described. The burner is removed from the lamp-bowl, and the cup *A* screwed on its place. A strip of paper, saturated with oil so as to make it burn more readily, is lighted, and inserted, through the opening *f*, into the bowl, the upper end being left above the top an inch or two. As soon as the flame passes the open valve, it at once ignites the explosive gas, and the expansion thus created instantly causes the valve *F* to close. The gas then, having no other means of escape, blows the detachable part B *E* out of position, the frictional contact of the elastic material *d* against the sides of the cup being weaker than the cohesion of the particles that form the lamp-bowl.

By means of this simple device, a practical demonstration can be quickly and easily given of the liability of common lamps to explode, and persons can be made to realize the danger of using poor burning-fluids as they can in no other way; and thus, through the instrumentality of this device, the use and sale

of safe lamps and oils will be rapidly promoted, and consequently accidents, now frequent from such causes, will be greatly lessened.

Having thus described our invention, we claim—

1. A device for illustrating lamp explosions, consisting of a cup or holder for attachment to the lamp-bowl, and a detachable part that is held in the cup by means of frictional contact, substantially as set forth.

2. The cup or holder A, formed to receive and hold the detachable part designed for attachment to the lamp.

3. The detachable part B E and a band of rubber or other compressible or elastic material, for the purpose specified.

4. In a device for illustrating lamp explosions, a band or packing of compressible or elastic material, for holding, by frictional contact, a detachable part that is to be blown out

by the explosion of the gas, substantially as specified.

5. In a device for illustrating lamp explosions, an upwardly-closing valve, arranged, when open, to permit the passage of flame to the interior of the lamp, and to close when the explosion takes place, to confine the pressure temporarily within the lamp, for the purpose described.

6. The detachable part B E, having a valve fitted therein which inclines open, for the purpose described.

7. The combination of the cup A *a b*, tube B E, packing *d*, and valve F, arranged for operation substantially as set forth.

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Witnesses:

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