F. BENEDETTI & A. STELLA.

MINER'S SAFETY LAMP TESTER.

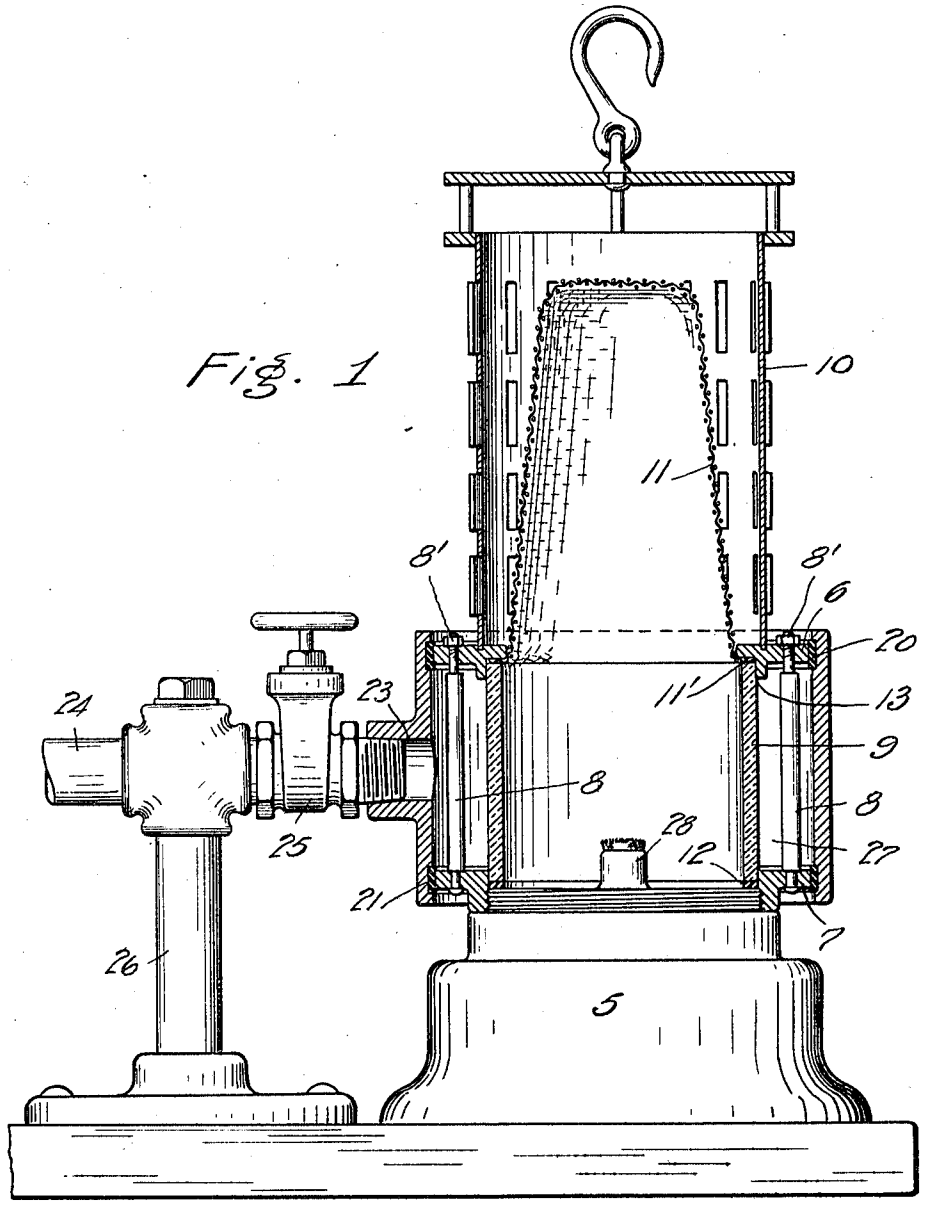
APPLICATION FILED APR. 1, 1911.

1,004,348.

Patented Sept. 26, 1911.

2 SHEETS—SHEET 1.

Fig. 1



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2 SHEETS—SHEET 2.

Fig. 3

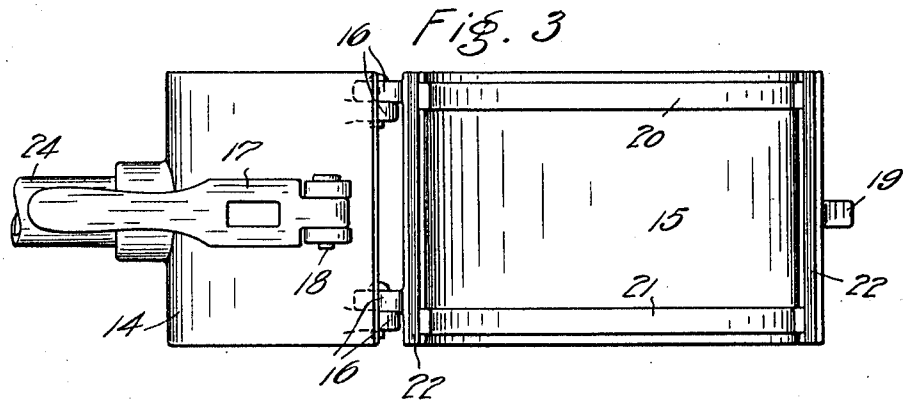
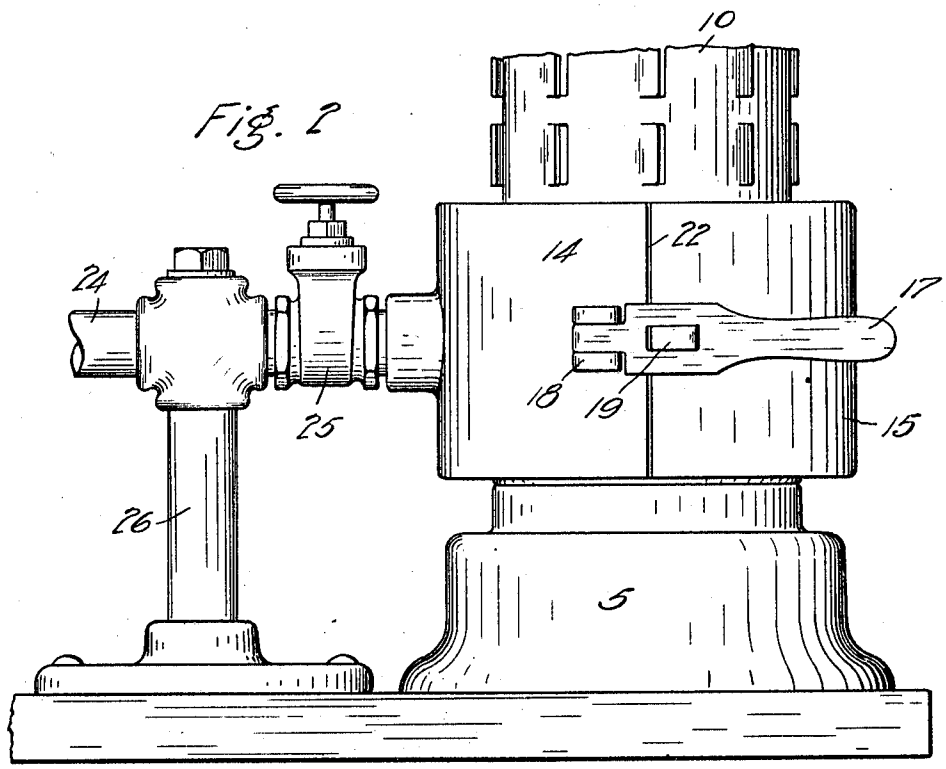


Fig. 2



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MINER'S SAFETY-LAMP TESTER.

1,004,348. Specification of Letters Patent. Patented Sept. 26, 1911.

Application filed April 1, 1911. Serial No. 618,424.

To all whom it may concern:

Be it known that we, FRED BENEDETTI and ANDREW STELLA, citizens of the United States, residing at Black Diamond, in the county of King and State of Washington, have invented certain new and useful Improvements in Miners' Safety-Lamp Testers, of which the following is a specification.

This invention relates to miners' lamps and its object is to furnish means whereby the lamps may be conveniently tested to discover if there is any openings for the admission of external air or gas into the combustion chamber of the lamp, except through the appropriate gauze protected openings.

The invention consists in the novel construction and combination of devices, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a view partly in side elevation and partly in section, of a lamp tester embodying our invention and shown applied to a miner's lamp. Fig. 2 is a view in side elevation of parts shown in Fig. 1. Fig. 3 is a side elevation of the tester shown detached and in open condition.

The lamp illustrated in the drawings is of the ordinary type of miners' "safety" lamps. It is provided with an oil vessel 5 which is connected to and supports a frame comprised of upper and lower annular members 6 and 7, or "flanges" as they are conventionally called, which are connected by upright posts 8 and inclose the lamp glass 9. Secured to the flange 6 and above the glass is a shield 10 for an interiorly positioned bonnet or a gauze screen 11.

The lower end of the glass 9 is seated upon a ring or gasket 12 while the upper end is socketed in a recess 13 provided in the flange 6 and seating against the rim 11′ of the gauze screen. The flange 6 is detachably connected to the posts 8 by providing screw threads upon the latter to engage nuts 8′ which are screwed against the flange.

In order to clean and fill a lamp the flange 6 and the superposed parts which are connected therewith are removed. Upon the completion of such operation and before the parts are re-assembled, it is essential to safety that there should be no leak holes about the glass ends or at the connection between the gauze screen and the flange 6.

In carrying out our invention, we provide a casing comprised of two semi-circular members 14 and 15 which are connected by hinge elements 16 at one side and at the diametrically opposite side is separably connected by a latch lever 17 hinged at 18 to the member 14 and engageable over a catch 19 provided on the other member. This casing is somewhat longer than the distance between the flanges 6 and 7 and of an internal diameter greater than the outer diameter of such flanges.

Peripheral grooves are provided in the casing to accommodate yieldable packing strips 20 and 21, such as of rubber, which are respectively disposed to embrace the circumferential surfaces of the flanges 6 and 7 when the casing is closed thereabout, as shown in Fig. 1 and affording a non-leakable joint. By the provision of elastic strip 22, Fig. 3, along the meeting edges of the casing members the joints thereat are also rendered tight. The casing member 14 is provided with a screw threaded opening 23 for coupling the same with a line of pipes 24 which is connected with a source or reservoir of compressed air at a pressure exceeding that of the atmosphere. Included in this pipe connection is a controlling valve 25. A standard 26 may advantageously be used to support the air supply pipe and may be constructed of pipe and pipe fittings.

In operating this invention, a lighted lantern is placed within the casing and the latter clamped thereabout, through the agency of the latch lever 17 and the catch 19, so that the gaskets, or strips 20, 21, will embrace the lamp flanges 6 and 7. The valve 25 is then opened to admit the compressed air into the annular cavity 27 obtaining about the glass 9 and between the flanges 6 and 7. If there is any leakage from this cavity into the interior of the lamp it will result in the extinguishing of the flame from the burner 28 and thereby prove that the parts of the lamp were improperly fitted and that the lamp would be risky to carry into mines where inflammable gas was or might be present. If there is no leakage then the flame would be undisturbed and the lamp may be considered safe.

The invention is of extremely simple construction and is adapted to be conveniently utilized and furnishes dependable means for safeguarding the lives of people working in coal mines from explosions where the same are caused through leaky lamps.

What we claim, is—

1. In a tester for miners' safety lamps, a

casing comprised of hinged members arranged to form air tight connections between themselves and the frame of a lamp, and means to apply an external air pressure within said casing and external to said lamp.

2. The combination with a miner's safety-lamp having a frame comprising two flanges and a glass secured between said flanges, of a leakage tester consisting of a casing formed of hingedly connected semi-circular members, gaskets adjacent to the edges of said members, latch devices for clamping said members together and causing the gaskets to be juxtaposed with the respective flanges, and means to supply compressed air into the space inclosed by the casing and intermediate said flanges.

3. In a tester for miners' safety lamps, a casing comprised of two members arranged to be fitted together and about the frame of a miner's lamp to form a non-leakable joint therebetween, and providing a space between said lamp and the frame, and means to supply compressed air into the space intermediate the casing and the lamp.

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Witnesses:
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