

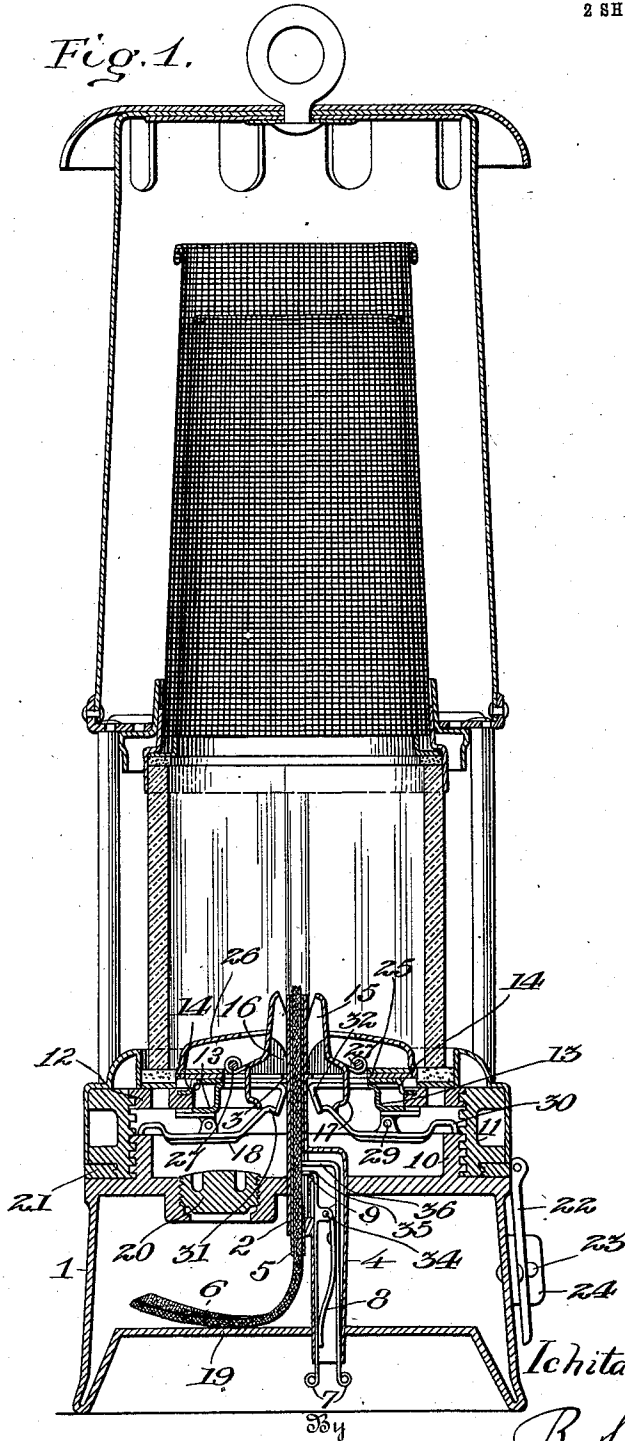
I. KOYANAGI.
 MINER'S SAFETY LAMP.
 APPLICATION FILED MAY 23, 1910.

1,001,052.

Patented Aug. 22, 1911.

2 SHEETS—SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 2.

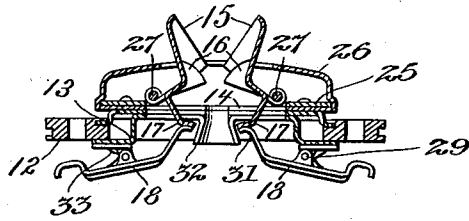


Fig. 3.

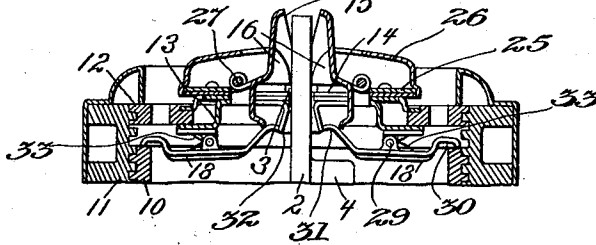


Fig. 4.

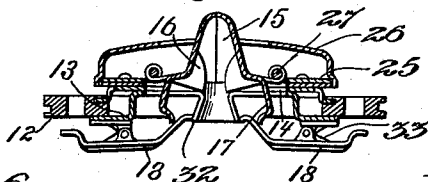


Fig. 6.

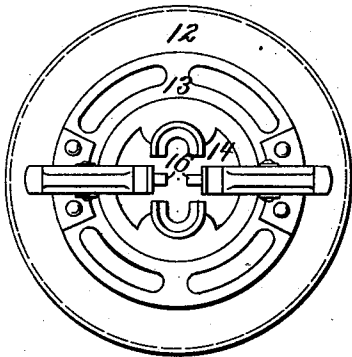
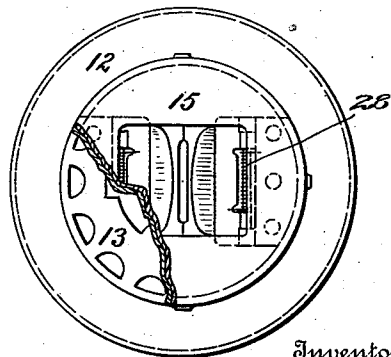


Fig. 5.



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MINER'S SAFETY-LAMP.

1,001,052.

Specification of Letters Patent. Patented Aug. 22, 1911.

Application filed May 23, 1910. Serial No. 563,023.

To all whom it may concern:

Be it known that I, ICHITARO KOYANAGI, machine-maker, a subject of the Emperor of Japan, residing at Nos. 11 and 12 Ichome, Nishicho, Shintokuda, Kyobashiku, city of Tokyo, Empire of Japan, have invented certain Improvements in Miners' Safety-Lamps, of which the following is a specification.

This invention relates to improvements in miners' safety lamps and the nature and object of the invention will be more fully described in connection with the accompanying drawings and will be more particularly pointed out and ascertained in and by the appended claims.

In the drawings: Figure 1, is a vertical sectional view of a miner's lamp showing the application of my invention thereto. Fig. 2, is a sectional view of the burner with parts in an open position. Fig. 3, is a similar view with the parts in a different position. Fig. 4, is a similar view with the parts in a closed position. Fig. 5, is a top plan view with parts broken away. Fig. 6, is a bottom plan view of the burner.

Like characters of reference designate similar parts throughout the different figures of the drawing.

As illustrated, the invention includes a reservoir 1 provided with an inwardly or upwardly recessed bottom portion 19. The top wall of the reservoir 1 is provided with the usual filling plug 20, and also with a connecting ring or flange 10 provided with exterior threads. A casing ring 11 is provided with interior threads for connection with the ring 10. A key ring 21 has threaded connection with the exterior casing ring 11 and is interposed between the same and the upper wall of the reservoir 1.

A locking device is provided for preventing rotation of the key ring 21 so that the latter will serve to prevent accidental loosening or displacement of the ring 11 with respect to the reservoir. As shown a lever 22 is pivotally connected to the ring 21 and is adapted to be sprung between pro-

jection 23 of a U-shaped element 24 anchored to the reservoir 1. It will be readily seen from Fig. 1 that when the lever 22 is in the position shown the ring 21 will be locked against rotation and the parts will be securely anchored together.

A burner disk 12 has threaded connection with the casing ring 11 and may be inserted therein, or turned into locking engagement therewith, from the top of the ring 11.

A burner ring is provided which comprises upper and lower members 14 and 13, respectively, which embrace and are supported by the ring 12. Upon the rings 13 and 14 is disposed a burner base 25 having a hood 26 through which hinged burner members 15 project. The burner members 15 are hingedly mounted on the base 25 at 27 and are provided with springs 28 which normally tend to close the burner members in the position shown in Fig. 4. Burner operating levers 18 are hinged to the part 13 at 29 and have outwardly extending portions 30 adapted for engagement and operation by the ring 10. Stops 32 serve to limit movement of the levers 18 to the positions shown in Figs. 3 and 4. The levers 18 are provided with springs 33 normally tending to move the same into the position shown in Fig. 2. The inner ends of the levers 18, as indicated at 31, are arranged for engagement with the stops 32 and are also arranged for engagement with projection 17 on the burner members 15.

A wick-tube guide 2, projects upwardly from the reservoir 1 between the burner members 15 and is provided with lugs 3 for engagement with projections 16 on the members 15. Slidably mounted within the guide 2 is a wick-tube 5 in which the wick 6 is disposed. The wick-tube 5 is not loosely disposed in the guide 2 but fits the same tightly so that when the parts are assembled no relative displacement of the guide 2 and tube 5 can take place accidentally. The guide 2 is provided with chamber 4 for wick adjusting mechanism and chamber 4 preferably extends downwardly in the reservoir

1 and through the recessed bottom 19 thereof. The guide 2 is provided with an opening 9, adjacent the upper portion of the tube or chamber 4, and the wick-tube 5 is provided with a corresponding opening to afford engagement of the adjusting mechanism with the wick 6, directly.

The wick adjusting mechanism comprises a pair of levers 7 loosely mounted in the chamber 4 and hinged to each other at 34. A suitable spring 8 retains the levers in spaced relation as shown in Fig. 1. The upper ends 35 and 36 of the levers 7 engage the wick 6 and are shown bent at right angles to the body portion of the levers 7.

When it is desired to adjust the wick 6 the lower ends of the levers 7 are brought together and this action displaces or separates the upper ends and forces one of the upper ends into engagement with the wick 6. By moving the levers 7 slightly longitudinally in the chamber 4 adjustment of the wick 6 can be obtained. The wick 6 fits tightly in the tube 5 so that ordinary movement of the levers 7 in the position shown in Fig. 1 would not alter the position of the wick 6. It will thus be seen that the levers 7 can be adjusted longitudinally and then compressed to subsequently adjust the wick 6.

It will be noticed from Fig. 1 that the burner members 15 are held in an open position by the lugs 3 when the parts are in the position shown in said figure. When it is desired to detach the reservoir 1 the lever 22 is raised and the locking ring 21 turned to release the rings 11 and 10 so that the reservoir 1 can be turned out of engagement with the casing ring 11. In withdrawing the reservoir 1 the lugs 3 will release the projection 16 and the members 15 will close automatically thereby automatically extinguishing the flame. In addition to the spring 28 the spring 33 will also act to assist in closing the burner members 15 as shown in Fig. 4. When the reservoir is again attached to the ring 11 the operator first opens the members 15 to the position shown in Fig. 2. This brings the projection 17 to a position to engage the end 31 so as to hold the burner members 15 open and prevent extinguishing the lighted wick when the same is inserted into the position shown in Fig. 1. When the reservoir 1 is turned on the thread of ring 10 into the position shown in Fig. 1, the ring will engage the ends 30 of the levers 18 and return them to the position shown in Fig. 3 thereby releasing the members 15. The projection 16 will, however, be engaged by the lugs 3 and will be prevented from completely closing.

As the chimney and upper portions of the lamp do not form features of my invention detailed description of the same is omitted.

I claim:

1. In a safety lamp, the combination with an oil receptacle having a wick containing element in connection therewith, of a detachable hood supporting member, for said receptacle, having an aperture for reception of said wick containing element, a snuffer carried by said supporting member and adapted to close over said aperture, means normally actuating said snuffer to a closed position, means carried by said receptacle to resist such movement, and catch mechanism carried by said supporting member to hold the snuffer from the aperture therein, until the snuffer is controlled by said resisting means.
2. In a safety lamp, the combination with an oil receptacle having a wick containing element in connection therewith, of means for adjusting said wick, a detachable hood supporting member, for said receptacle, having an aperture for reception of said wick containing element, a snuffer carried by said supporting member and adapted to close over said aperture, means normally actuating said snuffer to a closed position, means carried by said receptacle to resist such movement, and catch mechanism carried by said supporting member to hold the snuffer therein, until the snuffer is controlled by said resisting means.
3. In a safety lamp, the combination with an oil receptacle having an externally threaded upstanding flange, of a wick containing element in communication with said receptacle and having a laterally extending flange, means for adjusting said wick, an internally threaded annular support adapted to be screwed to said receptacle, an intermediate locking means adapted to be screwed to said annular support and held in locking engagement with said receptacle, a burner base, carrying a hood, adapted to encircle said wick containing element and carried by said support, two hemi-domical shaped members pivoted to said burner base and adapted to close forming a snuffer for said wick, means normally closing said members, lugs carried by said members adapted to engage the flange of said wick containing element to hold such snuffer members open, and means carried by said burner base to hold the snuffer members open until controlled by the flange of said wick containing element.
4. In a safety lamp, the combination with an oil receptacle provided with a burner, of means for extinguishing the flame of said burner, said extinguishing means including a support capable of attachment to said oil receptacle, a snuffing structure carried by said support and adapted to normally close over the flame issuing portion of said burner, catch mechanism carried by said

support to retain said snuffing structure
away from the flame issuing portion of the
burner, means carried by said oil receptacle
to disengage said catch mechanism upon at-
5 tachment thereto of said support, and re-
taining means carried by said oil receptacle
to hold said snuffing structure away from
the flame issuing portion of the burner but
allowing movement of the said snuffing

structure to a normal position when the said 10
oil receptacle and support are detached.

In testimony whereof I affix my signature
in presence of two witnesses.

ICHITARO KOYANAGI.

Witnesses:

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HARUTADA YASUMARO.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
