

THE SUN-RAY AND ITP CAP LAMPS

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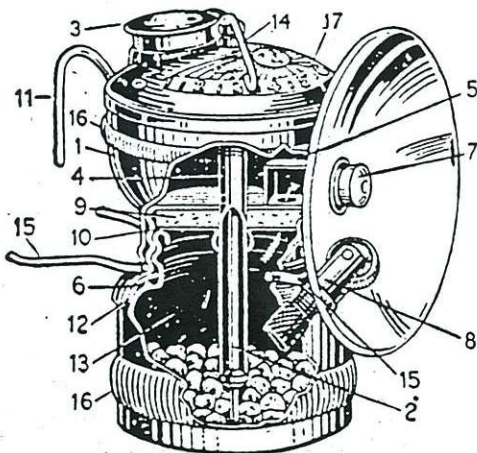
In 1914, Wilbur Cochrane, Francis Coffin and John Brock formed the Dewar Manufacturing Company and began producing the ITP 8-hour hand lamps. Coffin had been associated with the Scranton Acetylene Lamp Company and both Cochrane and Brock were lamp inventors/designers and were associated closely with the John Simmons Company. Around 1918 the Dewar Manufacturing Company began to manufacture the Sun-Ray cap lamp.¹ This, incidently, would have been about the same time that the John Simmons Company had begun the process of shutting down their carbide operations.

It appears that many of the patents granted to John Brock were incorporated into both the Simmons lamps and the Dewar lamps. This would explain why so many features--such as the lamp bases--are almost identical in appearance in the Simmons Pioneer and Sun-Ray and ITP lamps. Other cross-over similarities which indicates a co-operative relationship between the John Simmons Company and the Dewar Manufacturing Company is the reflector illustrated in an early Sun-Ray lamp instruction sheet. The reflector shown on the lamp looks identical to the screw-on reflector common to the Pioneer lamps.

HOW TO USE THE BOTTOM VALVE



CARBIDE LAMP



To Fill the Carbide Container.

Half fill the container No. 13 with Miners Lamp Union Carbide, about 1½ oz. is the proper amount. Never put in more as carbide expands at it slacks, if too much is put in it will pack too hard, cutting off the gas supply and making it difficult to empty the container.

Miners Lamp Union Carbide is made specially for miners' use and gives best service in this lamp.

See that the "Rubber Gasket" No. 12 is in place otherwise gas will escape at the screw threads. If gas escapes, with gasket in place, tighten up on the screw. Keep the screw threads and gasket free from dirt. When emptying the container be careful not to dent the screw threads.

To Fill the Water Tank.

Move the "Valve Handle" No. 14 to the left as far as it will go. Then fill tank No. 1 with water, use care when doing this, for if water drops on the burner it may stop up the small "gas way." Should this happen, either remove the burner and blow out the water or dry out the burner with a lighted match, keep the flame on the burner until the gas lights.

Before Screwing "Container" to "Water Tank."

Open the valve by moving the lever No. 14 several notches to the right, this opens the valve and permits the water to flow. Allow a few drops to enter the container. The gas this will make displaces the air in the container and will relieve the pressure when the "Container" is screwed to the "Tank" preventing blowing at the burner.

Figure 1. Early Sun-Ray lamp instruction sheet.

Figure 2. The Sun-Ray lamp with the radial-ribbed or "sunburst" reflector (3.5 inches tall).

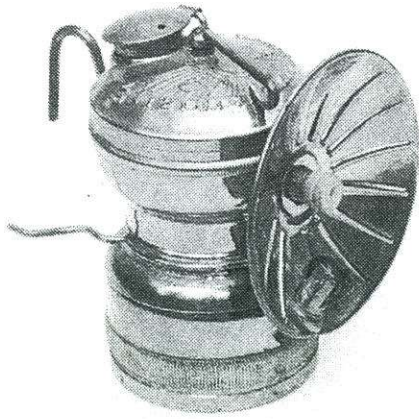


Figure 3. Patent drawing for the Ha-Mer-It cast aluminum reflector.

It is possible--given the close relationship between Cochrane and Brock to the John Simmons Company--that they were able to use many of the dies used to produce the Pioneer lamps to produce the Sun-Ray, and later, ITP cap lamps. This would have been of great value because very little re-tooling would have been necessary, especially in the dies that produced the Simmons intermediate Pioneer lamps, because of the close similarity in appearance (see Issue No. 14, p. 24, Fig. 4).

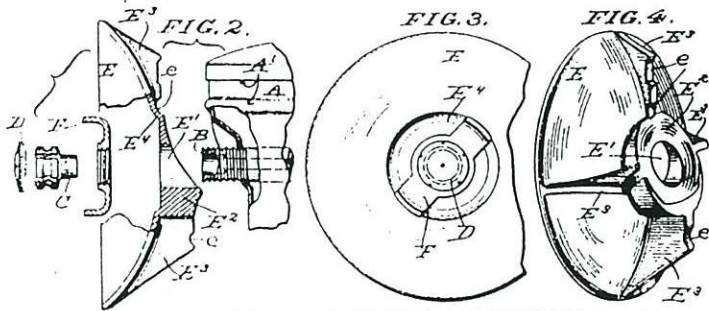
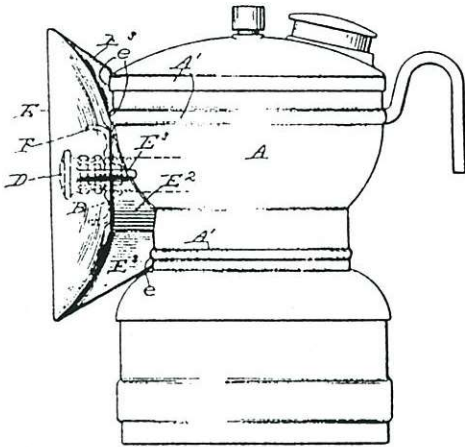
The first style of Sun-Ray cap lamp manufactured was probably that shown in Fig. 1. Later the reflector was re-designed into the more desired screw-on radial-ribbed or "sunburst" style reflector (Figure 2).

March 25, 1924.

1,488,193

W. A. COCHRANE
ACETYLENE LAMP
Filed Oct. 16, 1920

FIG. 1.



INVENTOR.
William A. Cochrane

BY

Regis. Kennedy & Campbell
ATTORNEYS



Figure 4. Late style Sun-Ray lamp with box. The box is white with red lettering.

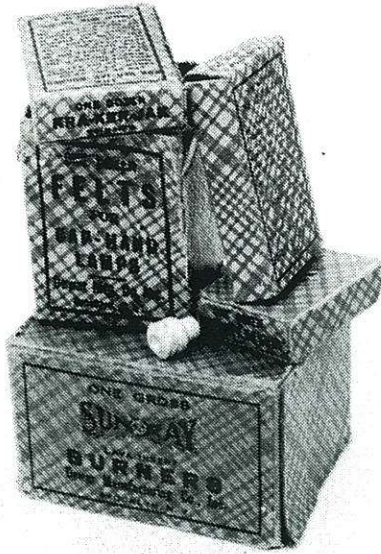


Figure 5. Sun-Ray parts boxes and Kra-Ker-Jak tip.

Figure 6. Ad for the Ha-Mer-It reflector.

No. 12 HA-MER-IT REFLECTOR It Break—Bend or Dent

The HA-MER-IT is well named—you can hammer it—jam it up against the roof or wall—drop it—jump on it and it won't even show a scar.

Use that would crush other reflectors, abuse that would send other reflectors to the "scrap heap" cannot break, bend or even dent the HA-MER-IT.

The HA-MER-IT "stands the gaff". It takes these pile driving bumps a reflector so frequently gets and is none the worse for it. The HA-MER-IT stays right on the job no matter how rough the going.

Cast in one piece of special white alloy. No soldered parts, no plating to wear off. Polishes easily—a rub or two and it's bright as new silver.

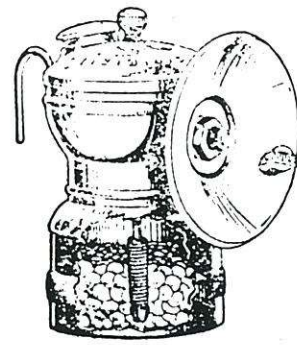
Size, 2 1/4 inches, just large enough to take the roof bumps and save the top of the lamp.

Weight no more than brass—but—stronger than steel. The HA-MER-IT will out wear a dozen lamps.

DEWAR MFG. COMPANY

34 THIRTY-FIFTH ST.

BROOKLYN, N. Y.



The Operation of The



Is As Follows

The container is half filled with carbide; when this is screwed to the water tank, the button at the bottom pushes aside the carbide, allowing the (wire coil) Float Feed to go to the bottom, as illustrated.

When water comes into contact with carbide, the carbide slakes, and forms a sludge or cement; if this is not broken up, it will seal the water outlet, but as carbide slakes, it, at the same time, expands and as it does, it causes the Float Feed to move up gradually, and each time it is lifted, the sludge is cracked or broken up, so that the water can flow and reach the unslaked carbide.

The Float Feed automatically produces the same results as when other lamps are raked or regulated by hand—with this advantage, however—by this unvarying method, the raking is done at just the right moment. It is done more often, but never vigorously. Consequently, there is never any excess agitation, over-generation is impossible and never any waste of gas.

In other lamps, the water delivery point is fixed, it is always at the bottom, in the slaked mass, through which all of the water must pass. It is entirely different in this lamp—the water is always delivered above the slaked mass. Thick, pasty sludge is not formed. Instead, the slaked carbide is in loose powdered form, making it easier to clean the *SUN*RAY*. The Float Feed automatically regulates the water supply and rakes the carbide. Unvarying pressure is maintained. The flame produced is of good size and remains constant throughout the charge—as steady as a ray of sunshine.

Severe agitation—even a fall—will not affect the uniform burning of the *SUN*RAY*.

Miners Lamp Union Carbide is made especially for miners' use and gives best service with these lamps.

DEWAR MANUFACTURING CO.

28-34 Thirty-Fifth Street
BROOKLYN, N. Y.

Board of Trade Bldg.
SCRANTON, PA.

357 College Street
TORONTO, ONT.
CANADA

Figure 7. Instruction sheet that came in the box shown in Figure 4.

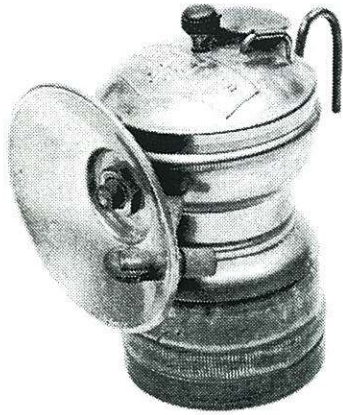


Figure 8. The ITP Float Feed cap lamp.

On October 16, 1920, Cochrane filed for a patent for a cast aluminum reflector (Figure 3) which was called the "HA-MER-IT" in advertisements. This reflector was held onto the lamp by a flat wing-nut (indicated on the patent drawing as "F"). This is the second style of Sun-Ray lamp. On the back of the reflector is cast "PAT. PEND." in raised letters. Both this style and the style with the radial-ribbed reflector were produced with a wire hat brace that went all the way around the lamp.

The last--and latest--style Sun-Ray lamp (Figure 4) has a slightly re-designed reflector that is held on by a hex-nut. On the back of the reflector, in raised letters, is cast:

DEWAR MFG CO. N.Y.
PAT. PEND.

The wire water lever has been replaced with the new "Float Feed" knob, and the wire hat brace has been eliminated--probably to accommodate the Detachable Lamp Clip patented by Brock in 1918 (Figures 9 & 10). The Sun-Ray lamps were supplied with the "Kra-Ker-Jak" burner tip shown in Figure 5.

The "ITP Float Feed" cap lamp shown in Figure 8 was probably the last of the Dewar cap lamps produced. It also has the later style Ha-Mer-It reflector, the knobbed water valve and no hat brace.

There are only four patent dates listed on the bottom of the ITP lamp and the Sun-Ray lamps with the cast aluminum reflectors. Whereas, on the Sun-Ray lamps with the smooth and radial-ribbed or sunburst reflectors, there are five patent dates.

All Sun-Ray and ITP cap lamps are nickel-plated, although there may be a few examples of the Sun-Ray lamp in brass. For some reason these lamps seem to be difficult to obtain in very nice condition. Many have small dings in the sides of the water tank and it seems that the nickel-plating was easily rubbed off, especially on the lamp's base.

J. M. BROCK.
ATTACHING DEVICE FOR MINERS' CAP LAMPS.
APPLICATION FILED JUNE 19, 1918.

1,289,631.

Patented Dec. 31, 1918.

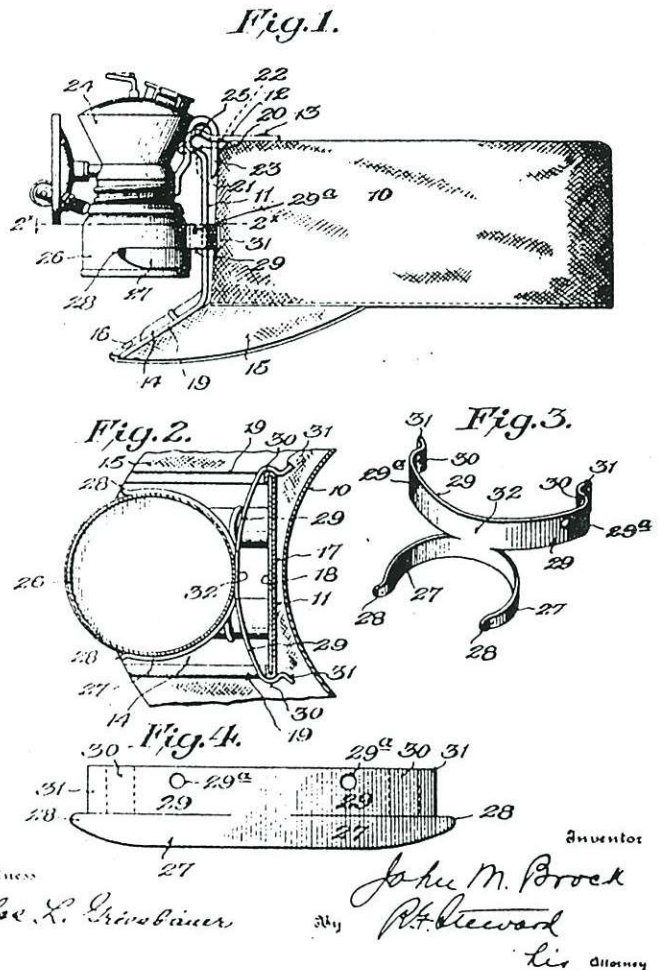
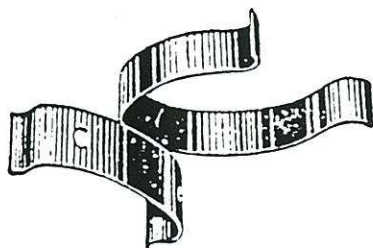


Figure 9. Patent drawing for the Detachable Lamp Clip.

Detachable Lamp Clip



Patented

Takes the place of the spreader wires on the lamp. When used on the regulation miners cap the clip snaps onto to the tin shield of cap. If used on a hat the snaps can be cut off and clip fastened to hat by rivets or staples, and in this same manner the clip can be fastened to the lapel of a coat. The clip holds lamp securely and lamp can be snapped into place or removed with greatest ease.

List Price, Each 10c.

Figure 10. Advertisement for the Detachable Lamp Clip shown on the back of a lamp instruction sheet.

1. Gregg S. Clemmer, *American Miners' Carbide Lamps*, (Tucson, Arizona: Westernlore Press, 1987), p. 69.
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UNDERGROUND SURVEYING: A CANDLE TRIPOD LAMP

by **Tony Moon**
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Sandy, Utah 84093

A previous MAC article (Issue No. 12, Summer 1991) described two types of tripod lamps which used small oil lamps as the light source. These lamps were used as target lamps and the surveying technique used was briefly described in that article.

A candle version of a tripod lamp was also manufactured and is illustrated in Figure 1. This surely must be one of the most elaborate precision candle holders ever manufactured! A candle is held in a long tube with two bubble levels mounted on the tube with the tube itself mounted on a ball and socket arrangement with levelling screws. The whole device was mounted on a tripod and was interchangeable with a transit. An example of an underground surveying kit consisting of a candle holder, two tripods, and a Lean's dial type transit was recently available on the market. The kit was made by E. T. Newton & Son of Camborne, Cornwall (England). The candle holder in Figure 1 is attributed to the same manufacturer.

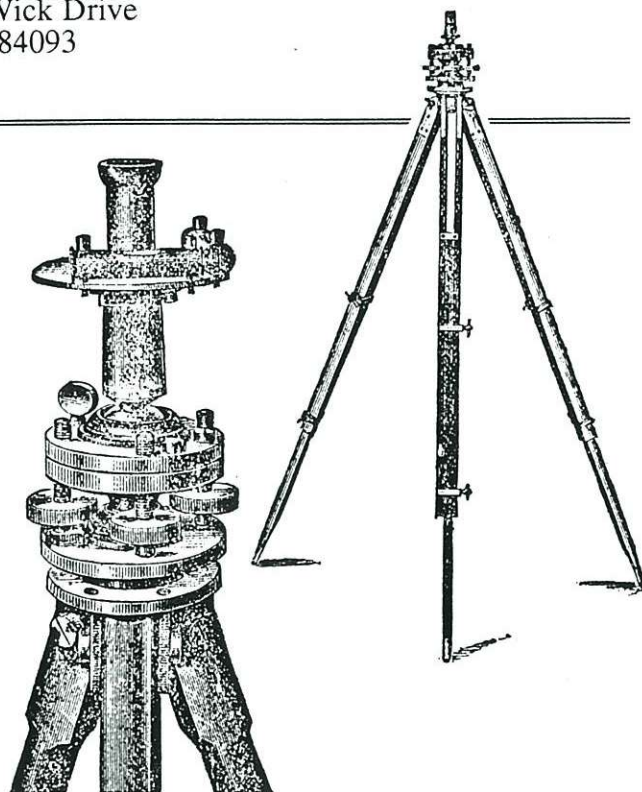


Figure 1. Candle holder and tripod (From B. H. Brough's *A Treatise on Mine Surveying*, London, 1896)