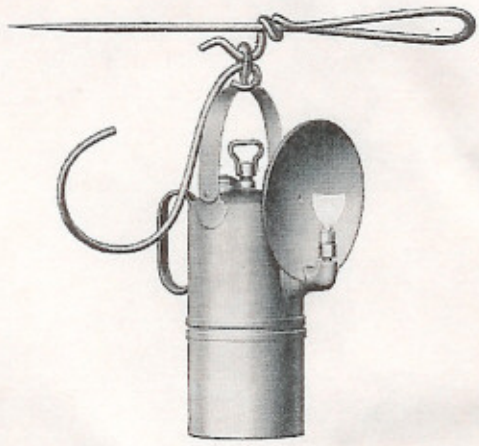
CANDLE-STICK ATTACHMENT



This attachment can be carried attached or detached from the lamp. It is made of ¼-inch wire sharpened and hardened. It is easily and quickly put on or taken off. When in use the lamp can be turned in order to have the light thrown directly on the work.

Attachment Only, List Price Each -	20 cts.
Burners for 210 Lamp, Each -	10 cts.
Reflectors for 210 Lamp, Each -	20 cts.

A LAMP WHICH WORKS WITHOUT WATCHING

THE I. T. P. lamp overcomes everything ever considered a weakness or a fault in carbide mine lamps.

This lamp requires no attention once it's charged and lighted. There is never a need to rake it—there are no wires which must be jiggled—no screws which call for adjusting, nor valves of any kind which require regulating.

You never have to jar or shake it to increase the size of the flame. You simply put in the carbide and water, then light, after that, nothing more until fresh carbide or water is needed.

You Cannot Rake or Regulate This Lamp.

YOU cannot rake nor could you regulate it even though you wanted to. There is nothing to it which can be raked or regulated.

While there is a valve at the top of the lamp, the purpose of this is simply to turn the water on or off—a turn in one direction starts the flow and a turn back shuts it off. The valve has nothing whatever to do with regulating the size of the flame.

Always A Steady Flame.

THE flame will burn as steadily as a jet of city gas and requires no more attention than does the electric bulb used to light your home or office. There is never any flickering or ever a flare, the flame remains the same size until the last atom of carbide is used up.

Agitating or jarring will not affect the size of the flame, even a tumble will not cause sudden increase in pressure and resultant increase in the size of the flame.

The Water is Automatically Regulated —Nothing to Get Out of Order.

THE water regulation is absolutely automatic and as accurate and dependable as the movement of the finest watch, still its mechanism is so simple and free from complicated parts, that there is nothing which can possibly get out of order. There are but two moving parts, and these most strongly made. But one part will ever need cleaning; this is easily taken apart. The cleaning will never take up more than a minute of your time and it is only necessary about once in a month.

20 Per Cent. More Light.

WE claim and can easily prove by demonstration, that this new water-feed will get 20 per cent. more gas from a given quantity of carbide than is possible with any other feed thus far made. By a very simple, yet most effective method, the point of water delivery is changed from the bottom to the top of the slacked mass when all of the gas has been extracted from the bottom; by this means every atom of gas is taken out of the carbide and delivered to the burner for use.

You can easily prove this by simply dropping the slacked carbide from any other lamp into a pail of water and noting the gas bubbles which arise. Apply a match to these and you will find that there is still considerable gas left in the apparently slacked mass, enough to run a lamp for quite a time. Make this same test with the slacked carbide from this lamp and you will find that there is no gas whatever left in the slacked mass.

YOU NEVER HAVE TO RAKE THIS LAMP

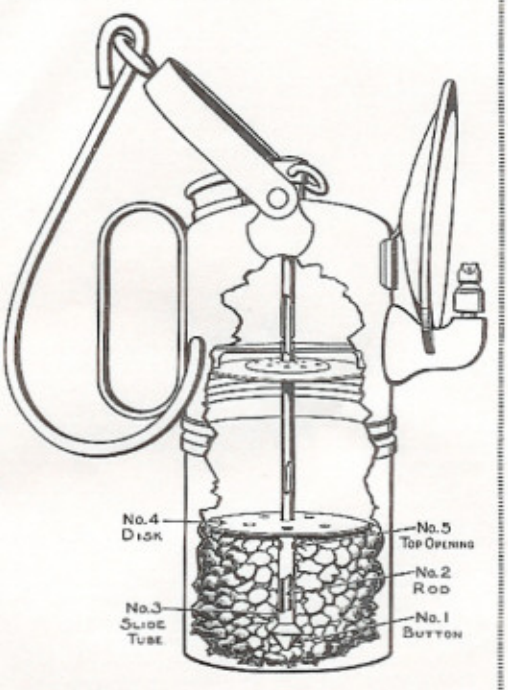
THE carbide in all other lamps must be frequently agitated in order that the slacked carbide be broken away from the bottom of the water-feed, so that the water may more readily reach the unslacked carbide. This is usually done by means of a rod or wire imbedded in the carbide and operated by a lever at the top of the lamp. Moving this lever from side to side or up and down breaks up the caked mass and permits the water to flow.

When the charge is fresh, agitation by the raking wire will usually give the desired results, but after the mass becomes water soaked and caked, the raking only disturbs the slacked carbide immediately about the end of the raking wire, but it does not disturb the mass further removed; then the miner resorts to the only other means available, he shakes the lamp or strikes (bumps) it against something, the carbide is thus violently disturbed and the dust which must arise finds its way to the felt. In addition, there is excess generation of gas, this as well picks up the dust particles carrying them to the filtering felt and burner outlet.

The correct working pressure for a carbide lamp is from 2½ to 3½ inches water column pressure. When the pressure goes below two inches the flame is small and yellow and gives but little light; when it exceeds four inches the gas blows at the burner, there is a loss of illumination, and gas is wasted.

Tests made with a "Bristol Recording Gauge" prove that the pressure of the I. T. P. never exceeds four inches and never goes below two inches. The pressure of other lamps varies between one and sixteen inches.

WHEN the lamp is being charged and the lower part (the carbide container) which is half filled with carbide is screwed to the water tank (the upper part) the tapered button, No. 1, at the lower end of the rod, No. 2, clears a way through the carbide, which allows



the slide tube, No. 3, to follow this button to the bottom of the container.

As soon as the water comes in contact with the carbide, the carbide expands and lifts the unslacked carbide above it. This causes the float or disc, No. 4, to lift gradually drawing upwards the lower end of the tube,

No. 3. The flange at the end of this tube, in rising, breaks away the sludge or slacked carbide which forms around the end of the tube and permits the water to more readily reach the unslacked carbide.

By this means this disc automatically accomplishes the same results as are produced when other lamps are raked or regulated by hand; with this advantage, however, by this method the raking is done at just the right moment and the mass of carbide is never vigorously agitated; as a result, there is never any excess generation and no gas is wasted.

As the end of tube No. 3 is always on a level with the unslacked carbide the point of water delivery is always above the slacked mass, thereby, making it unnecessary for the water to percolate the unslacked mass, as a result, thick pasty sludge is never formed, and for this reason this lamp is more easily cleaned, as the slacked mass is in the form of powder and not a thick pasty mass as with other lamps.

Before all of the carbide is slacked, the disc, No. 4, will have raised to its highest point. The slacked carbide will then choke up the lower end of the tube No. 3. When this occurs the water will rise inside of tube No. 3 and overflow at the openings, No. 5, attacking the unslacked carbide from the top. By this means every atom of gas is taken out of the carbide.

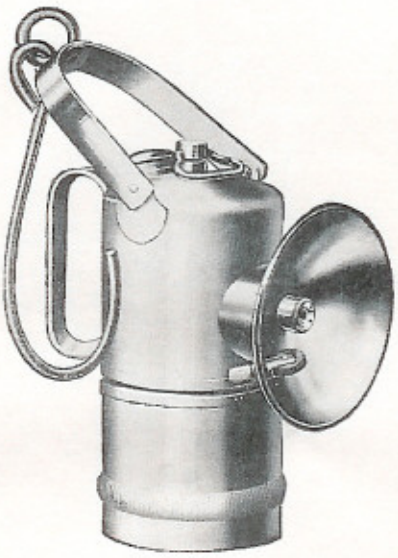
The rod No. 2 may be unscrewed and withdrawn, thus permitting the slide tube, No. 3, to be taken out together with the disc. In this way, these parts may be easily cleaned and replaced.

This feed will deliver the water automatically and regulate the delivery of same, so that a flame of correct size is always maintained and all of this without ever any need of manipulation of any kind.

Severe agitation, even a fall will not affect the uniform operation of this lamp. This is due to the flange at the bottom of the slide tube, No. 3. This flange becomes anchored in the carbide at the bottom and holds disc No. 4 firmly pressed against the top of the carbide.

Lamps Nos. 203, 205 and 210 are made of drawn steel, heavily tinned. They are extra strong and specially strengthened at all points where the greatest strain occurs. The screw threads are almost double the weight of those found in other lamps. The hooks are welded by the oxy-acetylene process, and the bail handles and hooks made of material sufficiently strong to successfully withstand the hardest kind of usage.

FLOAT FEED



No. 150

Lava Burner—Rigid Removable Reflector.
Weight, 12 oz. Height to top of bail, 7 in.

Burns six hours on one charge.

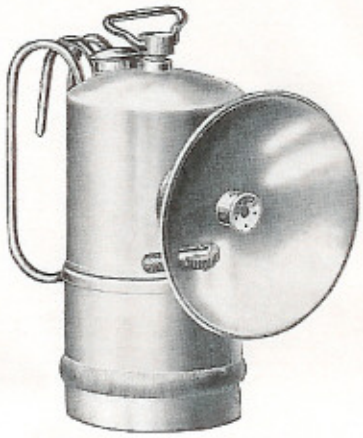
Made of spun brass, heavily nickel plated.

No lamp equals this for steady, even burning—requires no attention—it never has to be raked or regulated.

Equipped with wind shield and one extra container.

Price Complete $2.50

FLOAT ITP FEED



No. 160

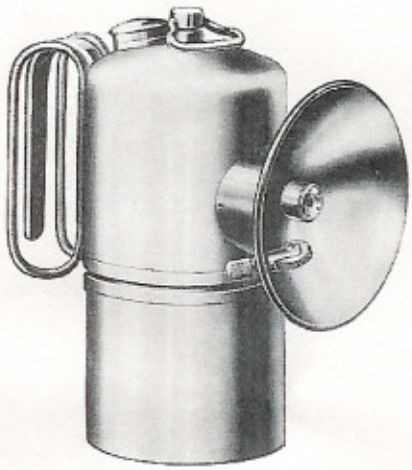
Lava Burner—Rigid Removable Reflector.
Weight, 11 ounces Height, 5¼ inches

Burns six hours on one charge.

Made of spun brass, heavily nickel plated.
No lamp equals this for steady, even burning—requires no attention—it never has to be raked or regulated.
Equipped with wind shield and one extra container.

Price Complete $2.50

FLOAT ITP FEED



No. 203

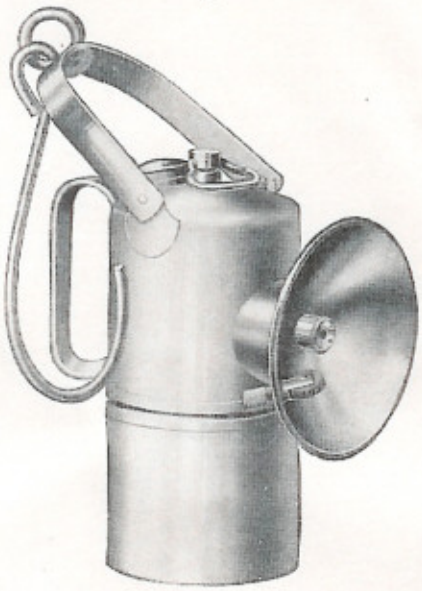
Lava Burner—Rigid Removable Reflector.
Height, 6½ inches Weight, 19 ounces
Burns 10 hours on one charge.

Requires no attention while burning—never has to be raked or regulated.

Equipped with hinged handles, sparker lighter, wind shield, and one container. A substantial Inspector's lamp.

Price Each $2.90
Extra Containers, each ..... .35

FLOAT TP FEED



No. 205

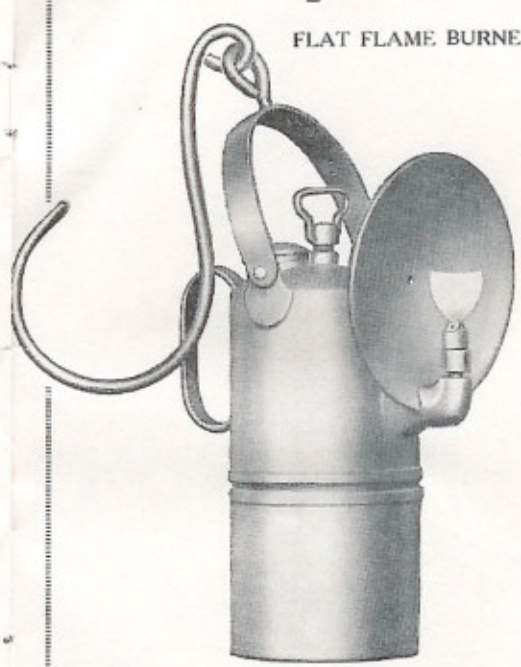
Lava Burner—Rigid Removable Reflector.
Height of Lamp, 6½ in. Weight, 19 oz.
Height to top of bail, 8½ inches
Burns 10 hours on one charge.

Equipped with sparker lighter and wind shield.

Price, each $2.90
Extra Containers, each ..... .35

FLOAT TP FEED

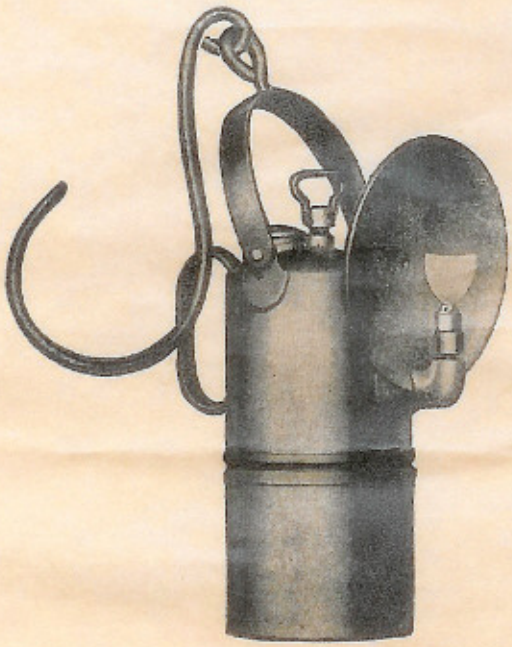
FLAT FLAME BURNER



No. 210

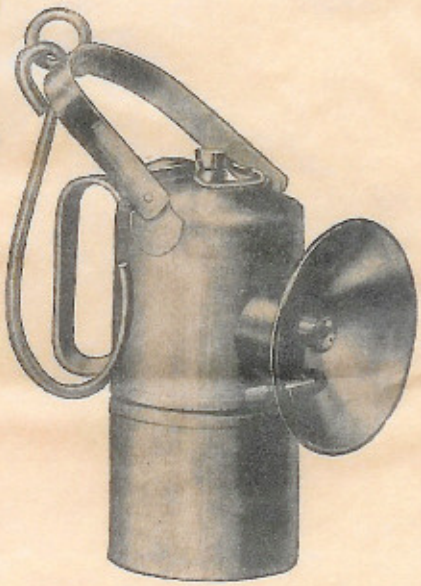
Height of Lamp, 6½ in. Weight, 20½ oz.
Height to top of bail, 8½ inches
Burns 6½ hours on one charge.

Price, each $3.10
Extra Containers, each ..... .35



NO. 210

ITP
IT'S TROUBLE-PROOF



NO. 205

These lamps have the NEW FEED which uses up every bit of Carbide—no waste—will save you 20 per cent over any other lamp. No regulation of any kind needed, as the flame burns without fluctuation. Made of heavy drawn steel and will stand the hardest kind of knocks.

Flat open Flame.
Weight, 20 ounces. Height, 6½ inches.
Half Shift Capacity, 25 candlepower.
Full Shift Capacity, 12½ candlepower.
PRICE ..... Each, $3.00

Round flame and Wind-Shield Cap.
Will stand the hardest gale.
Weight, 20 ounces. Height, 6½ inches.
Full Shift Capacity, 20 candlepower.
Equipped with Sparker Lighter.
PRICE ..... Each, $3.00

Best Quality Miner's Cap with Lamp Attachment	Doz.	$2.00
Cap Clips to hold lamp firmly on any cap or hat	Doz.	1.20
Heavy Candlestick Attachment	Doz.	2.00
Full Shift Curved Pocket Carbide Container	Doz.	.75
Rubber Gasket for Cap Lamp	Doz.	.20
Rubber Gasket for large "ITP" Lamp	Doz.	.75
Felt for Cap Lamp	Doz.	.15
Felt for large "ITP" Lamp	Doz.	.20

Best Lava Burners	Doz.	$ .20
Metal Lava Insert Burners, complete	Doz.	1.80
Lava Inserts	Doz.	.10
No. 22 Burner Cleaners, 65 steel wires	Doz.	.40
Burner Cleaners, Disc type	Doz.	.25
Reamers for enlarging Lava Burner holes	Doz.	.30
Sparkers, complete	Doz.	1.80
Sparking Metals	6 for	1.00

SPECIAL MINE LAMP CARBIDE, per steel drum of 100 Lbs. $4.75

E. D. BULLARD

268 Market Street - San Francisco

John Simmon

Oxweld Acet
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