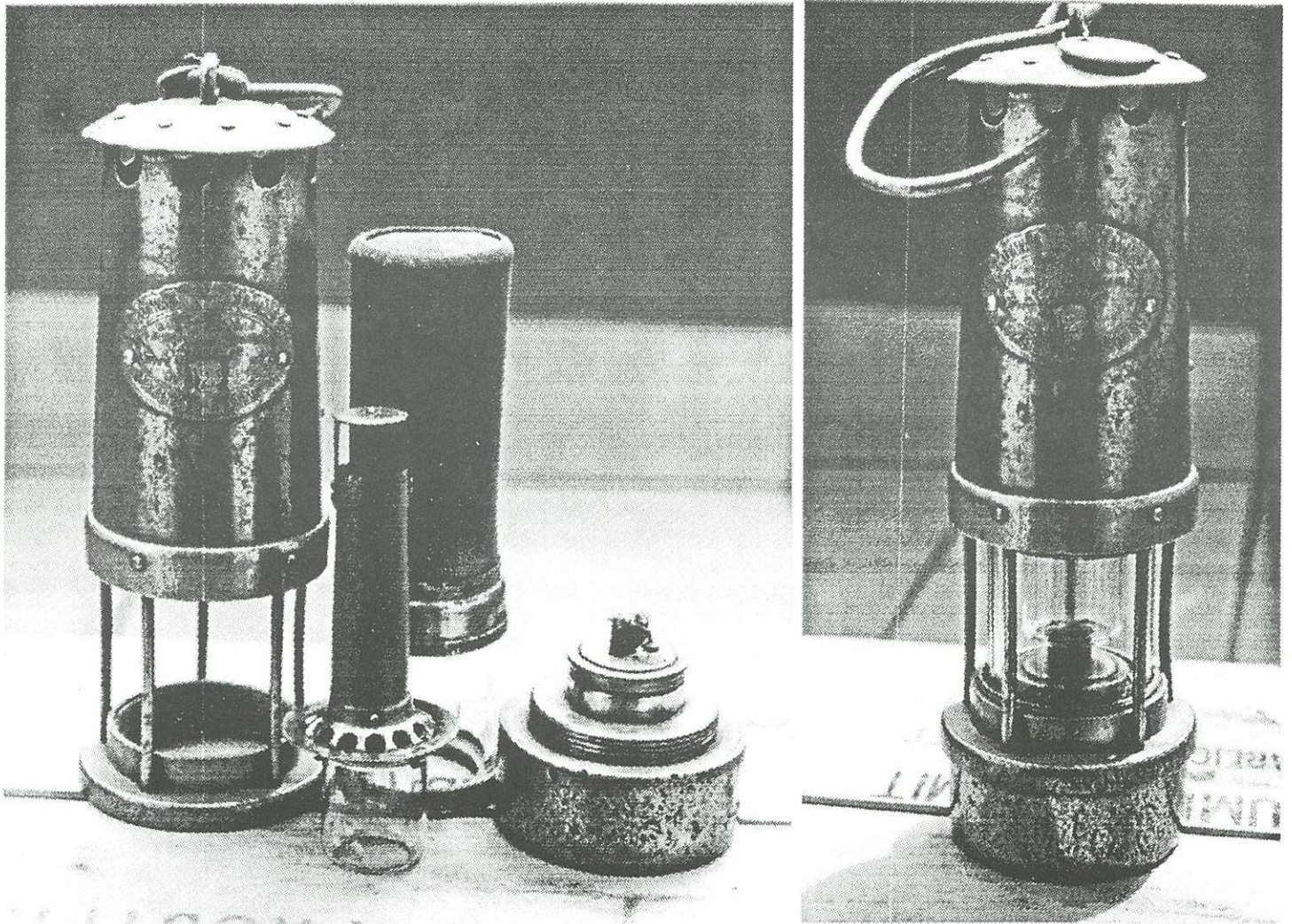


# English Combustion Tube Safety Lamps

by Manfred Stutzer

Safety lamp collectors know what **Davy** and **Clanny** lamps look like. Mueseler and Marsaut are also well known. The **Mueseler** lamp has an additional inside chimney and has no bonnet. In addition we know bonneted safety lamps with inside chimney and without chimney. Safety lamps with a bonnet are known as **Marsaut** lamps. Prize question: Is a safety lamp with an inside chimney and a bonnet a bonneted Mueseler or a Marsaut Lamp with chimney?

Shortly after 1915, lamps with an additional internal small second glass appeared. The glass lay within the outer glass and hung from the bottom of the chimney extending down to enclose the wick. Known as **Combustion Tube Lamps**, they gave a higher candle power compared to normal oil safety lamps.

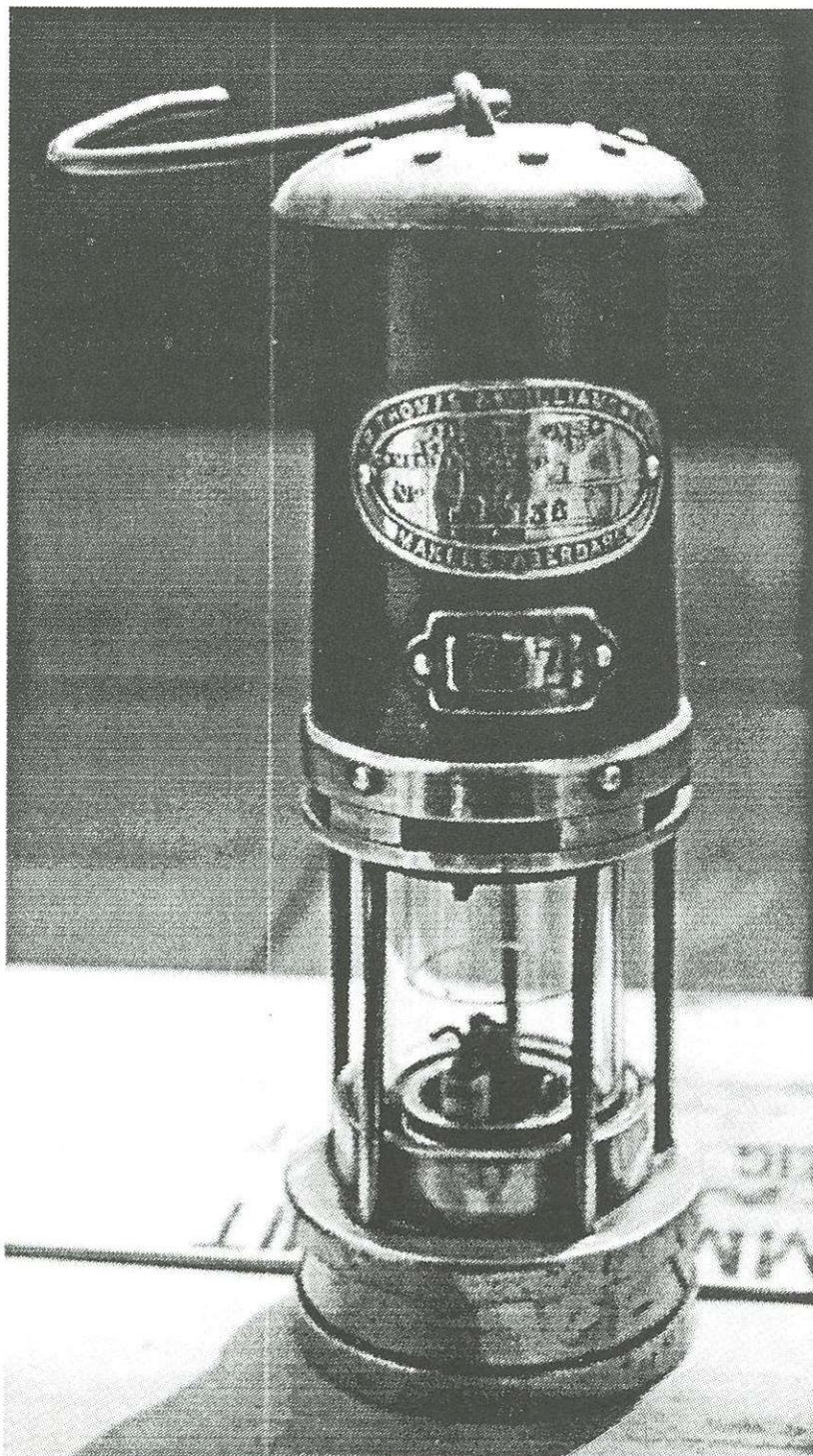


*E. Thomas & Williams Ltd. Makers/Aberdare/Wales. Approved under Lighting Schedule. Cambrian Type No. 4/1936. Note the small inside glass attached to the bottom of the chimney. When assembled, it sits within the outer glass, but surrounds the burning wick.*

Around 1934, the so-called **High Candle Power** flame safety lamps were introduced. HCP-lamps (HCP=High Candle Power) were also combustion tube lamps. What distinguished these from standard combustion tube lamps was their size. HCP-lamps were taller and bigger, and as the name implies, were brighter. The introduction of brighter safety lamps was in direct response to the discovery that dim lighting had negative effects upon health and productivity of the miner.

“...Lighting has an important effect upon safety, health and productivity and materially influences the attitude of the workmen. Good lighting plays an important part in recruitment and production as it encourages workers to enter the industry and to give of their best whilst employed in it. Bad lighting discourages new entrants slows down the rate of working and results in increased fatigue and accidents. Apart from the adverse effect that inferior lighting has upon morale, it has a direct effect upon health, and medical authorities attribute the cause to the industrial eye disease known a miners’ nystagmus to inadequate lighting.”

Candlepower is the unit employed in the measurement of illuminating power. A certain “candlepower” means that the intensity of light is so many times that of the standard candle. The original standard was a sperm candle one half inch in diameter weighing on-sixth of a pound and burning at the rate of 120 grains (0.017 lb.) per hour. In 1911 a minimum candle power of 0.3 for flame safety lamps was introduced. The first legislation referring to the provision of adequate illumination in mines was introduced in 1913 (General Regulations 1913 No. 748) and the setting of a standard of performance for miner’s lamps had the effect of encouraging the introduction of the miners’ electric lamp and the displacement of the oil lamp. In 1934, Coal Mines Regulation No. 562 substantially increased the low standard of lighting set in 1913. The minimum standard for hand and cap lamps called for 0.8 candle power.



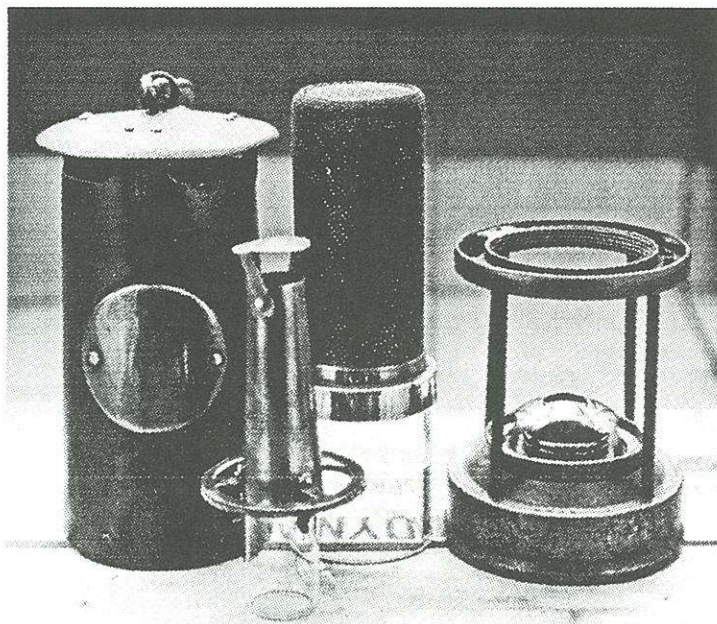
*E. Thomas & Williams Ltd Makers.  
Approved under Schedule "B".  
Cambrian Type No. 1/1953.*

# Protector Lamps

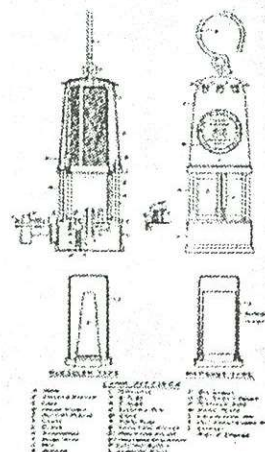
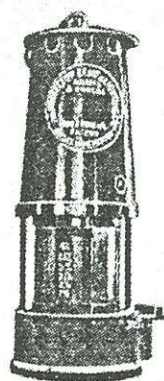


The Protector Lamp and Lighting Co. Ltd. Makers/Eccles/Manchester. On the left is the tall version Type CT 33A, registered patent 789913. On the right is the smaller version, Type CT 33A, approved under Lighting Schedule A33, registered patent 789913.

The advertisement shown right is from 1935.



## PROTECTOR MINERS' SAFETY LAMPS



### The PRESTWICH PATENT "PROTECTOR" LAMP

is the finest gas detector in the world, and the diagrams show reactions of flame to varying percentages of Firedamp.  
(1/2 inch round wick.)

Amount of Firedamp present can be tested accurately to very small percentages.

Other Lamps in the comprehensive  
"PROTECTOR" Range:  
PATENTED "PROTECTOR"  
COMBUSTION TUBE OIL LAMP.  
ALL BRITISH ALKALINE ELECTRIC  
LAMPS.

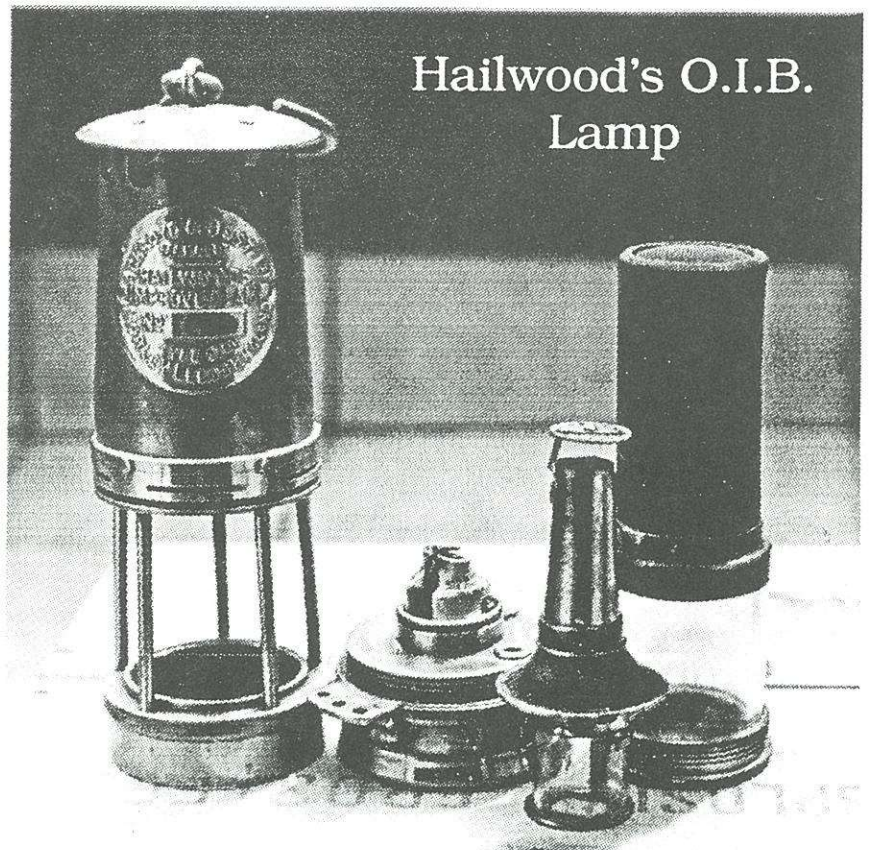
COMPLETE INSTALLATIONS OF ALL THE  
ABOVE ARE SUPPLIED ON SALE OR HIRE.  
EDISON MODEL MINER'S ELECTRIC  
SAFETY CAP LAMP, J MODEL.



"PROTECTOR"  
Combustion Tube Oil  
Lamp, Reg. Design No. 789913.

# Hailwood-Ackroyd-Best Lamps

## Hailwood's O.I.B. Lamp



Ackroyd & Best Ltd. Makers, Morley, Leeds. Hailwoods Improved Lamp Type O.I.B. Approved under Lighting Schedule "B", complying with "The Safety Lamps Order 1934". It is designed to burn Standard Mineral Colza Oil with a flash point of 250 degrees F and gives a light output of 1.5 to 1.75 candlepower.

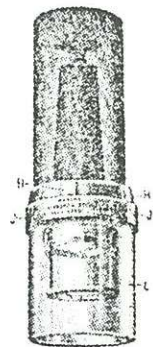
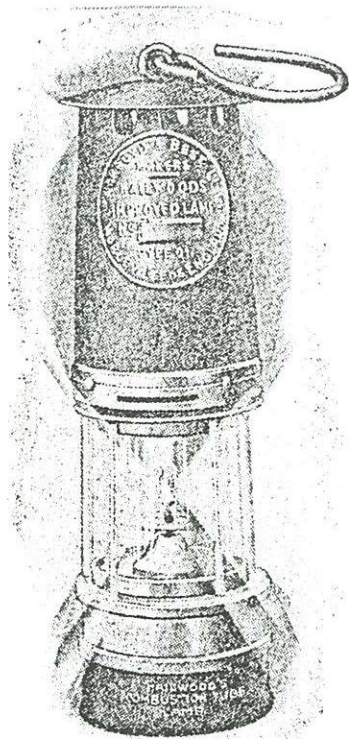


FIG. 56.—View showing Combustion Tube in position in metal frame and glass.

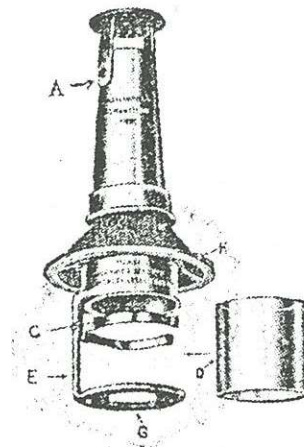


FIG. 57.—HAILWOOD COMBUSTION TUBE LAMP FITTINGS.

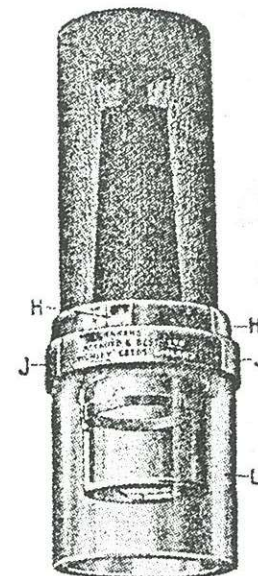


FIG. 58.—HAILWOOD COMBUSTION TUBE AND CHIMNEY IN POSITION.

**HAILWOOD & ACKROYD LTD**  
(FORMERLY ACKROYD & BEST LTD)

Our famous "Schedule B" Lamp



—THE **O.I.B.**  
COMBUSTION TUBE TYPE

—This is a Flame Lamp of robust construction, with a steel bonnet, brass vessel, bush and middlering.

—It is fitted with magnetic lock, pricker wire wick raiser, spring ball oil filling valve, and for electric ignition.

—Surveyors' Lamps are fitted with lead rivet lock

**SPECIAL FEATURES**

- UNRIVALLED FOR GAS TESTING.
- SIMPLE CONSTRUCTION.
- MINIMUM OF PARTS.
- EASE OF MAINTENANCE.
- STABILITY OF FLAME IN WIND.
- LOW HANDLING COSTS.

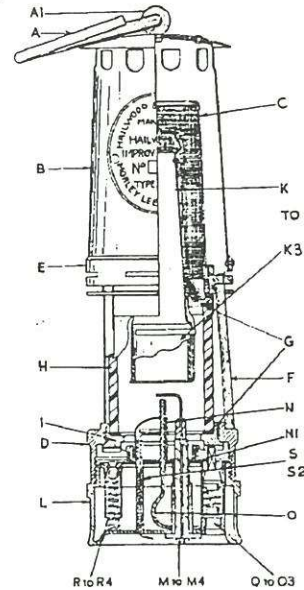
We invite Colliery Managers to send for a trial lamp.

**HAILWOOD & ACKROYD LTD**  
(FORMERLY ACKROYD & BEST LTD)

Sectional Elevation of the  
**O.I.B. Flame Safety Lamp**

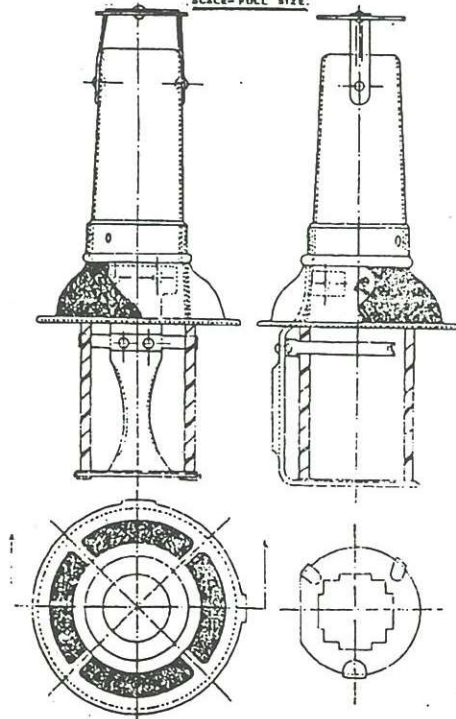
(COMBUSTION TUBE TYPE)

For locating Spare Part details



When ordering spare parts, please give part catalogue number as well as the full name of part. This will avoid delays, and thus expedite delivery.

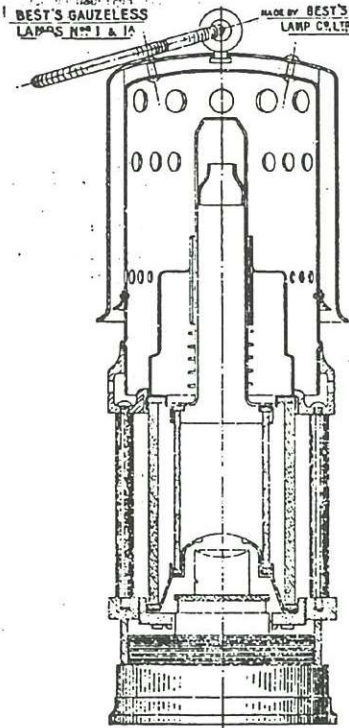
**HAILWOOD COMBUSTION TUBE.**  
MADE BY  
**ACKROYD & BEST LTD MORLEY NEAR LEEDS.**  
SCALE—FULL SIZE.



*Above and left:  
advertisements  
for the Hailwood  
O.I.B. lamp.*

*Right: Advertise-  
ment for Best's  
Gauzeless Lamp  
Co. Ltd, Leeds.*

BEST'S GAUZELESS  
LAMPS Nos 1 & 1A  
MADE BY BEST'S GAUZELESS  
LAMP CO. LTD LEEDS.



# Hailwood A.D.C. No. 3 Lamp

## What are you going to do as regards the New Mining Regulations respect- ing Miners' Safety Lamps?

In making the change you want the best value for your money, don't you? Well before settling anything definite, try out one or two of Hailwood's very latest Oil Flame Safety Lamps, Type A.D.C. No. 3, which has been approved by the Government, and more than meets all their requirements.

Mr. Hailwood has now eliminated all the inconveniences of the A.D.C. Nos. 1 and 2 Lamps, and has actually produced the "Perfect Miners' Safety Lamp."

It gives at least 4 to 5 Candle Power Illumination throughout the whole shift.

The flame does not smoke or creep, and gives a beautiful, agreeable, soft, white light.

The overall height is 10½ inches, the weight 5 lbs.

The lamp is strong and sturdy.

The front half of the burner dome can be lowered for Gas testing.

The lamp draws an air supply about 1 in. from the top of the lamp, and thus enables thin layers of gas to be detected. The lower air inlets are regulated by a simple and large screw-down air regulator.

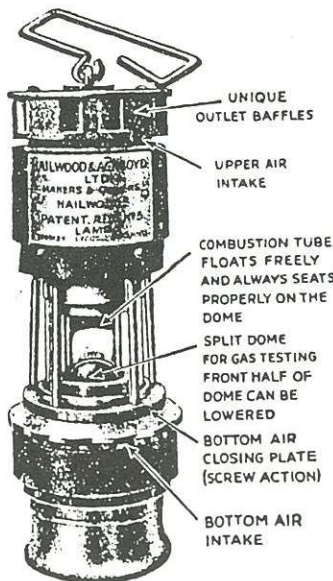
The lamp withstands the fiercest air-currents, in any pit, either horizontal, or "up" or "down." For Nystagmus cases the illumination is most agreeable and will no doubt eliminate or reduce this costly and painful disease.

It is cheaper than an Electric Lamp.

If you don't test out this lamp you will have cause for the greatest regret and chagrin.

**We are not bluffing!** Your tests would certainly confirm every statement we make, which are based on the conclusions arrived at by Mr. Hailwood after more than 10 years of the most concentrated, exhaustive, and costly experiments ever made in regard to Miners' Safety Lamps, during which time lamps of every conceivable size and shape have been constructed and tested.

It's a wonderful lamp! There is no Flame or Electric Lamp in existence to beat it.



SOLE MAKERS:

**HAILWOOD & ACKROYD, Ltd.,  
MORLEY, near Leeds.**

Telephone: Morley 86.

Telegrams: HAILWARE, MORLEY.

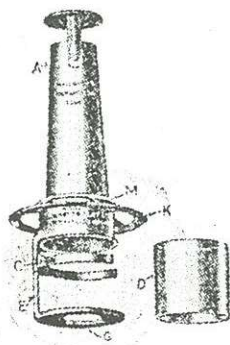
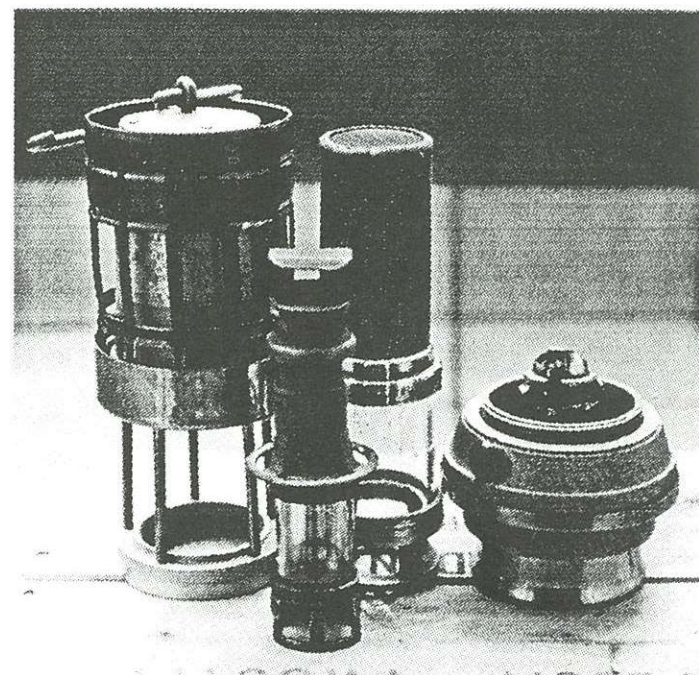
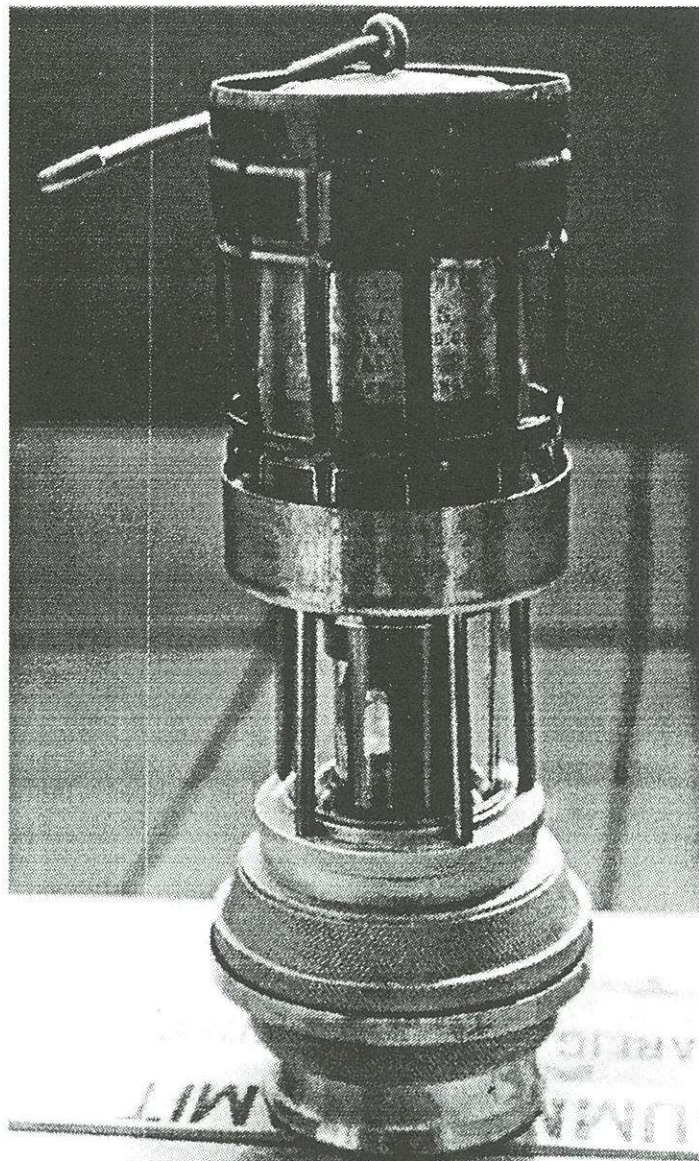


Fig. 10.—Hailwood Combustion Tube showing small glass D ready to be passed into and supported by spring arms C.

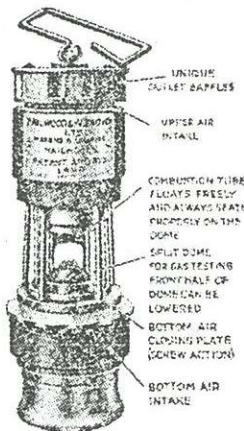
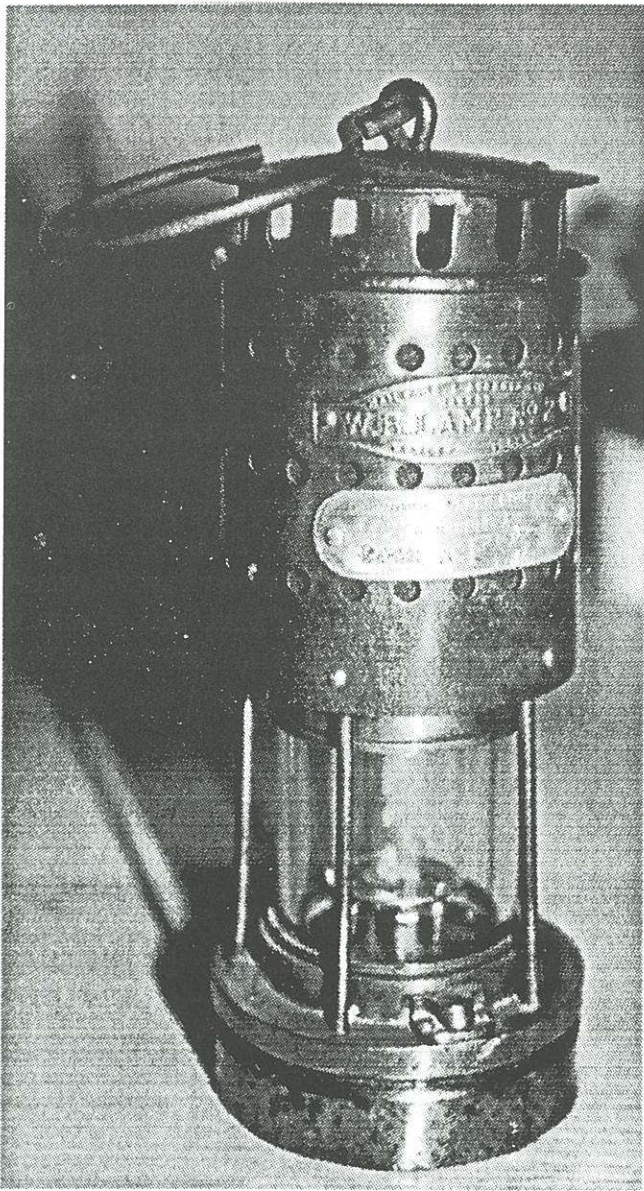


Fig. 11.

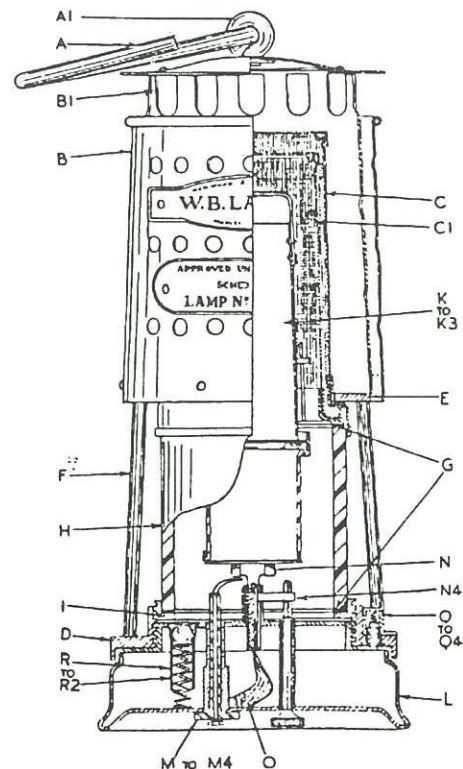
# Hailwood's W.B. No. 2 Lamp



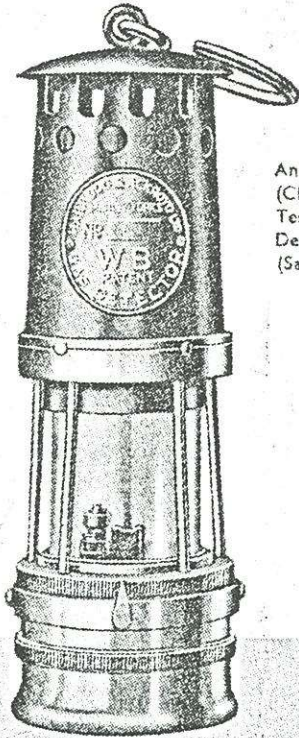
Hailwood & Ackroyd Ltd., Morley, Yorkshire. W.B. Lamp No. 2. Approved under Lighting Schedule "A", complying with the requirements of Section 5 of the Coalmines General Regulations (Lighting) 1946. Designed to burn Standard Mineral Colza Oil with a flash point of 250 degrees F. It gives the following readings after a full 9 hours burning: Maximum horizontal candlepower: 3.0, Mean spherical candlepower: 1.45.



## Sectional Elevation of the W.B.2 Flame Safety Lamps for locating Spare Part details



## W.B. GAS DETECTOR LAMP with internal igniter

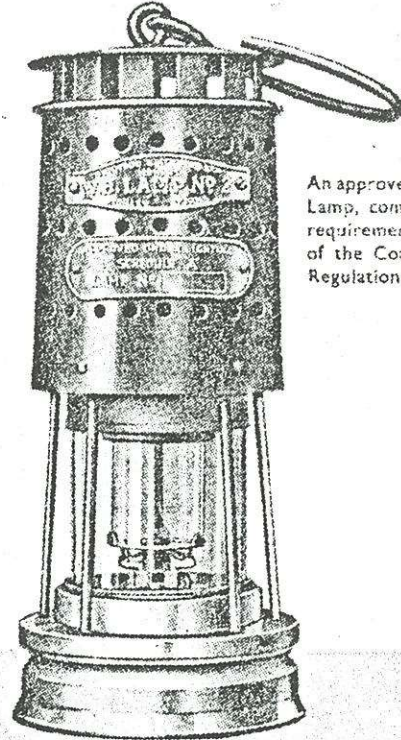


An approved Schedule "B" (Class 3) Lamp for Gas Testing purposes under the Deputies and Shotfirs (Safety Lamps) Order 1938.

**T**HE W.B. Gas Detector Lamp is fitted with an improved internal igniter that really does give "first time" lighting. It is designed to burn Petroleum Spirit, and has a bottom air inlet of adequate proportions which in turn is fitted with a cut-off ring of original design. It will be noticed that a flat wick is fitted for accurate gas readings.

Full details and prices will be sent on request.

## W.B. HIGH CANDLE POWER LAMP No.2

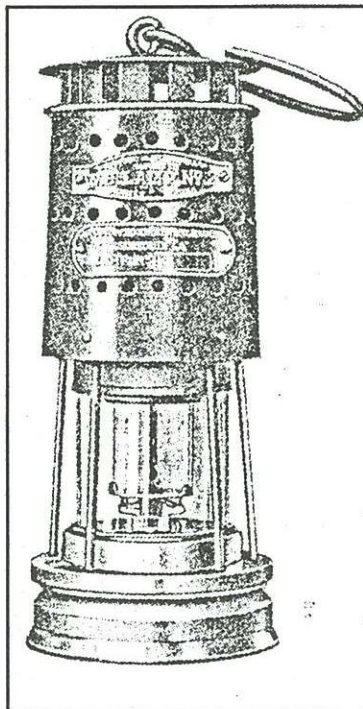


An approved Schedule "A" Lamp, complying with the requirements of Section 5 of the Coalmines General Regulations (Lighting) 1946.

**T**HE W.B. High Candle Power Lamp is designed to burn Standard Mineral Colza Oil with a flash point of 250°F. It gives the following readings after a full 9 hours burning:—

Maximum horizontal candle power . . . . .	3.0
Mean spherical candlepower . . . . .	1.45

The lamp is well ventilated and the increase in temperature of the bonnet does not exceed 56°F. during a 9 hour shift. Full details and prices will be sent on request.



## —THE W.B.2.

—This is the simplest and coolest "Schedule A" Lamp produced and is even cooler to handle than many "Schedule B" Lamps.

—Gives higher candle power and longer burning capacity than any other lamp and is designed to burn satisfactorily with present day available oils.

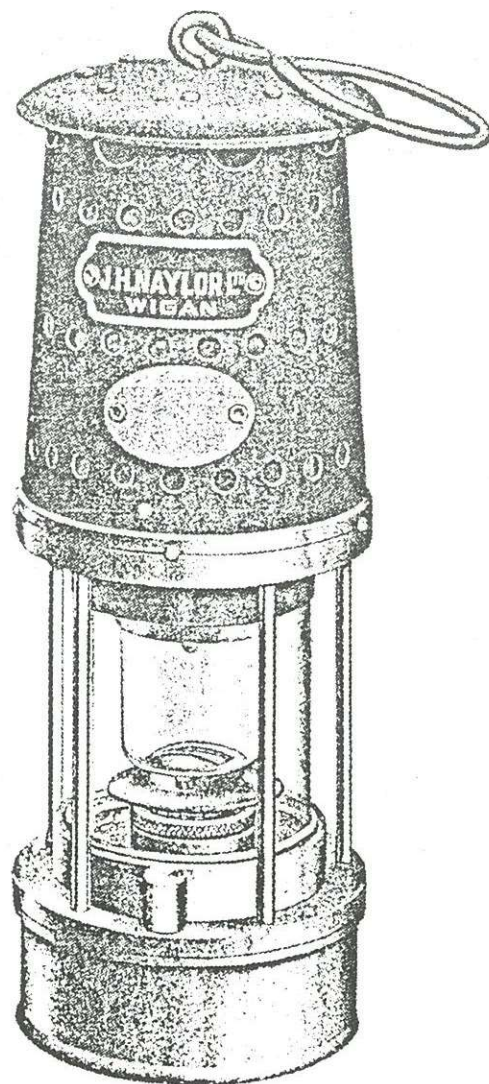
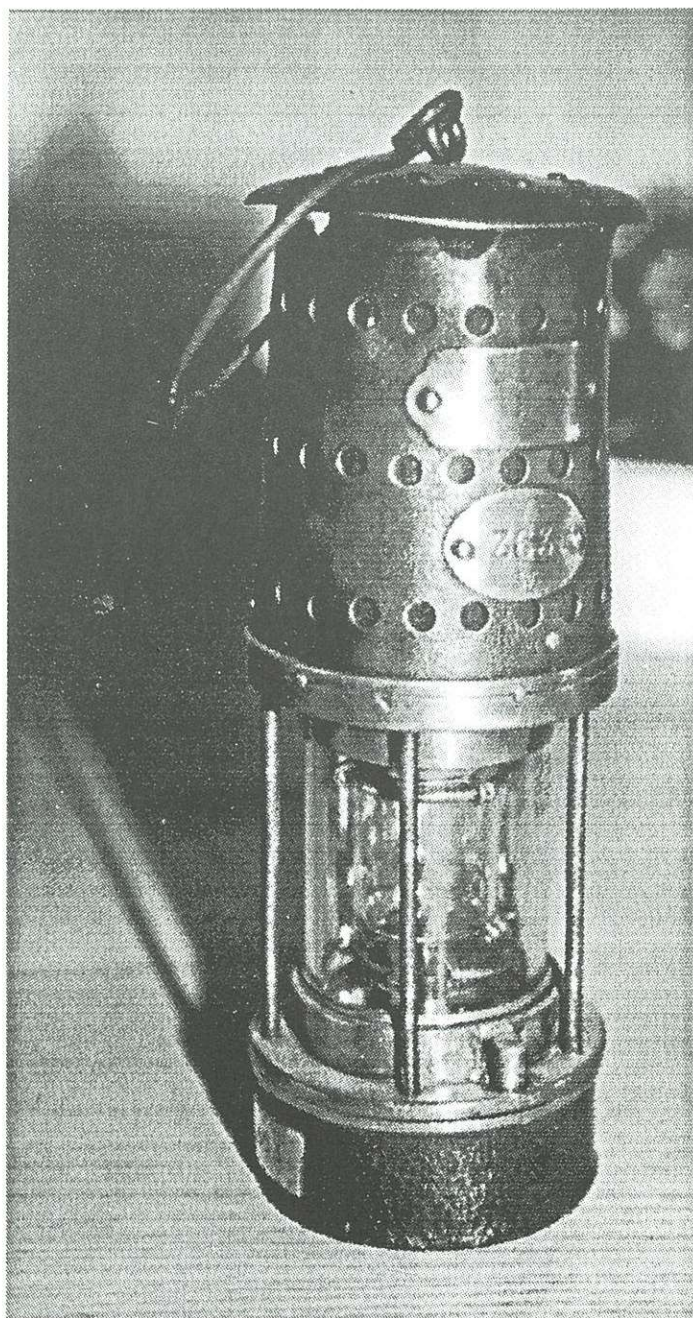
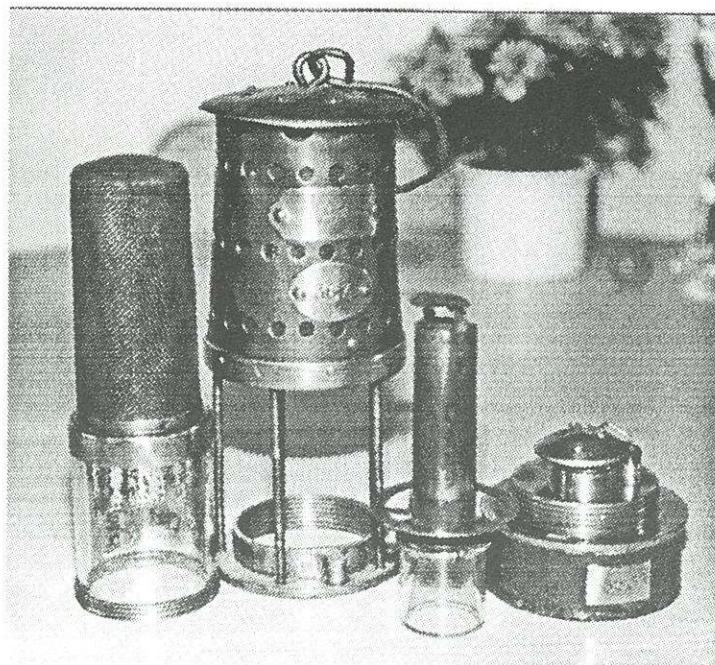
—It is built for low seams, has few parts and is easy to clean.

—Fitted with patented burner of special design giving clear easy reading of gas caps.



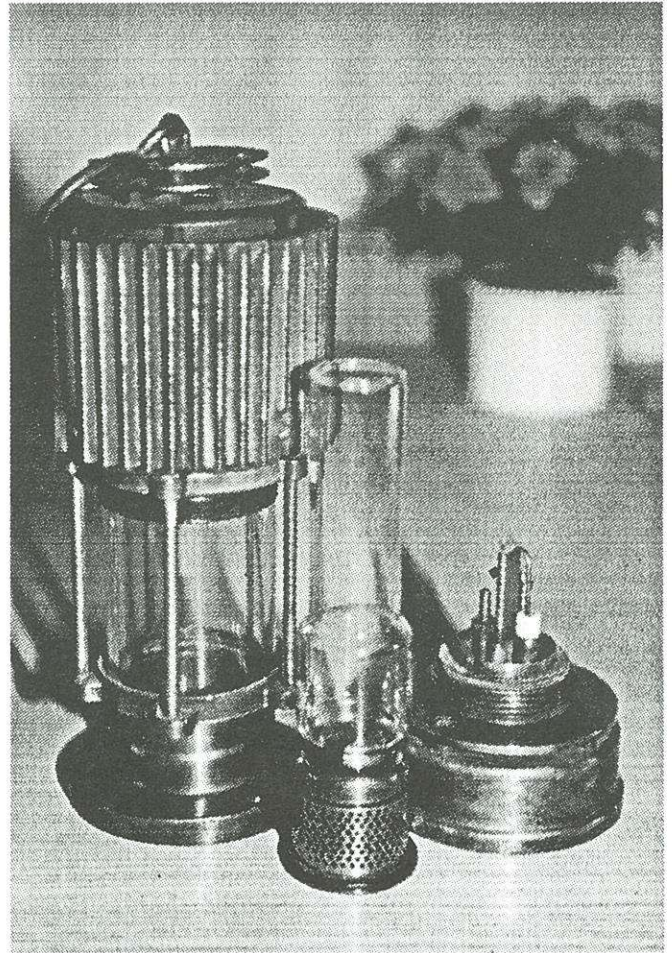
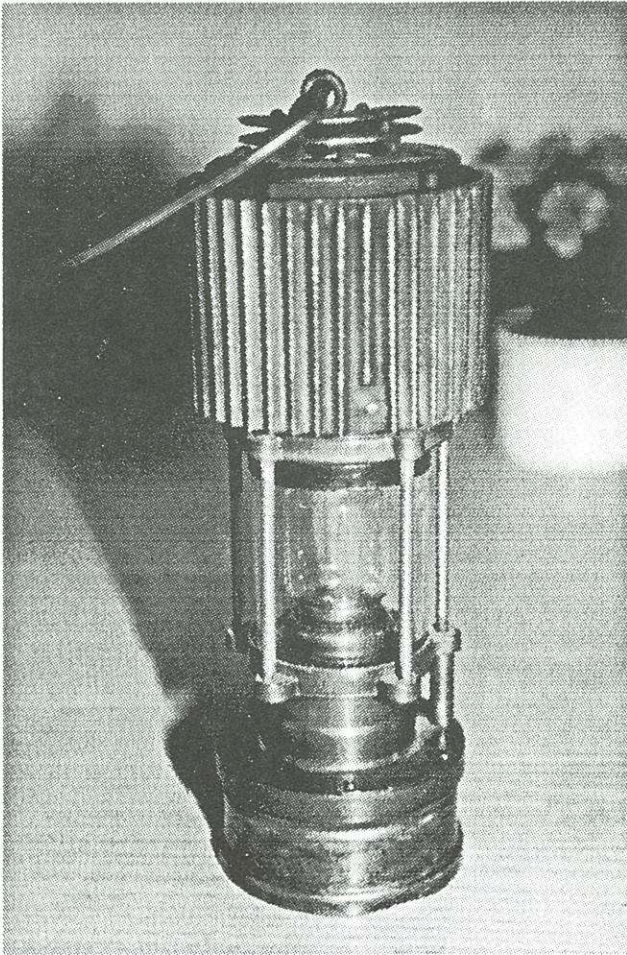
# J.H. Naylor Lamp

*High Candle Power Lamp Type No. S.H., Patent No. 466551. Approved under lighting Schedule Mines Department Certificate No. A 53.*



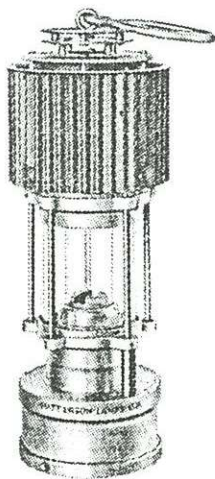
# Patterson Lamps

*Felling-on Tyne, No. H.C.P., approved under Lighting Schedule , Patent No. 25399.*



## THE PATTERSON TYPE H.C.P. FLAME LAMP

THE OUTSTANDING PRODUCTION IN SCHEDULE A LAMPS



A PERFECT LIGHT

THE COOLEST AND SAFEST LAMP MADE

PATTERSON LAMPS Ltd  
SUNDERLAND ROAD WORKS  
FELLING-ON-TYNE

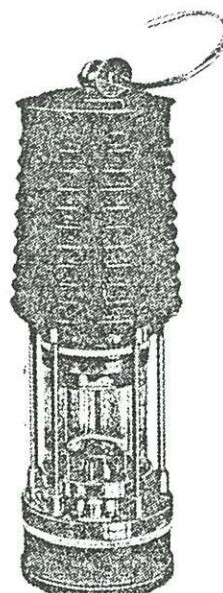
MANUFACTURERS OF MINERS' LAMPS AND APPARATUS FOR 25 YEARS

*Advertisement for Felling-on-Tyne model. 1935.*

## PATTERSON'S LATEST FLAME LAMP.

TYPE H.C.P. 9.

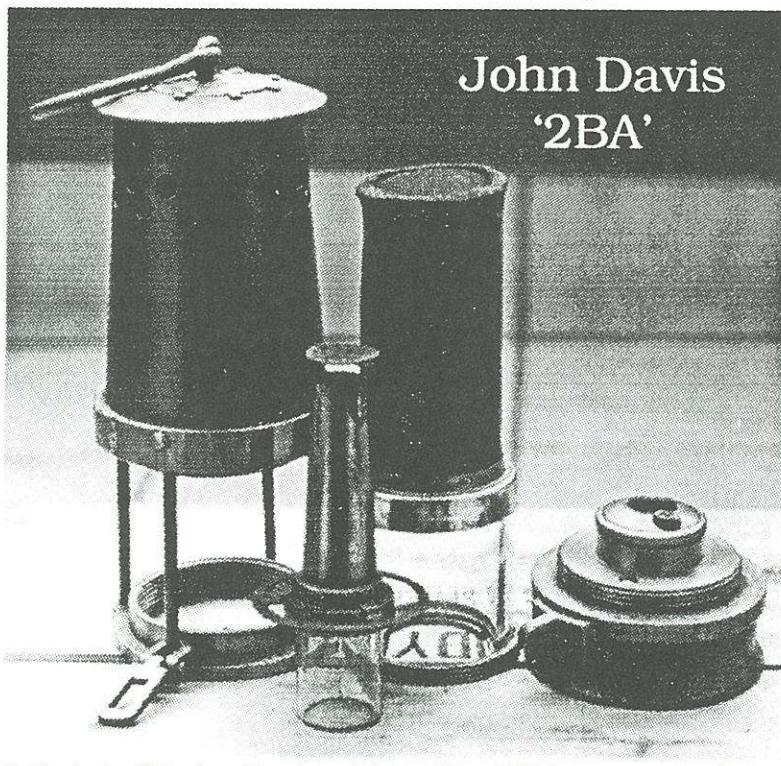
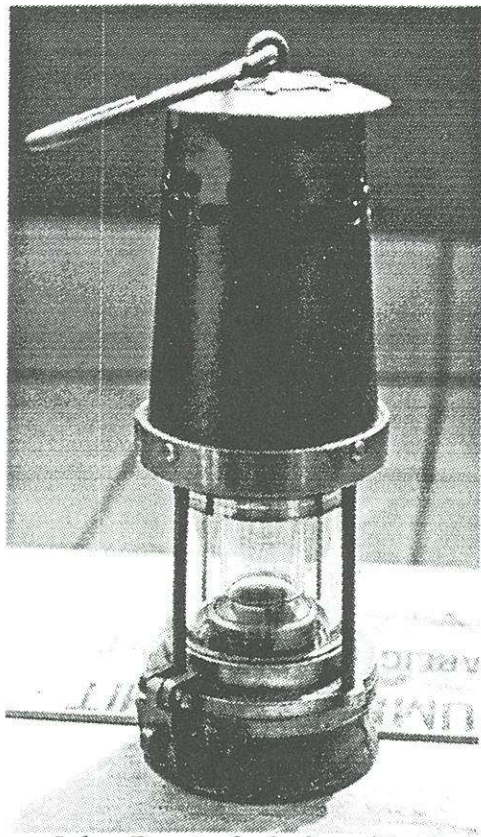
MAXIMUM LIGHT.  
MINIMUM HEAT.  
ECONOMICAL SERVICE.



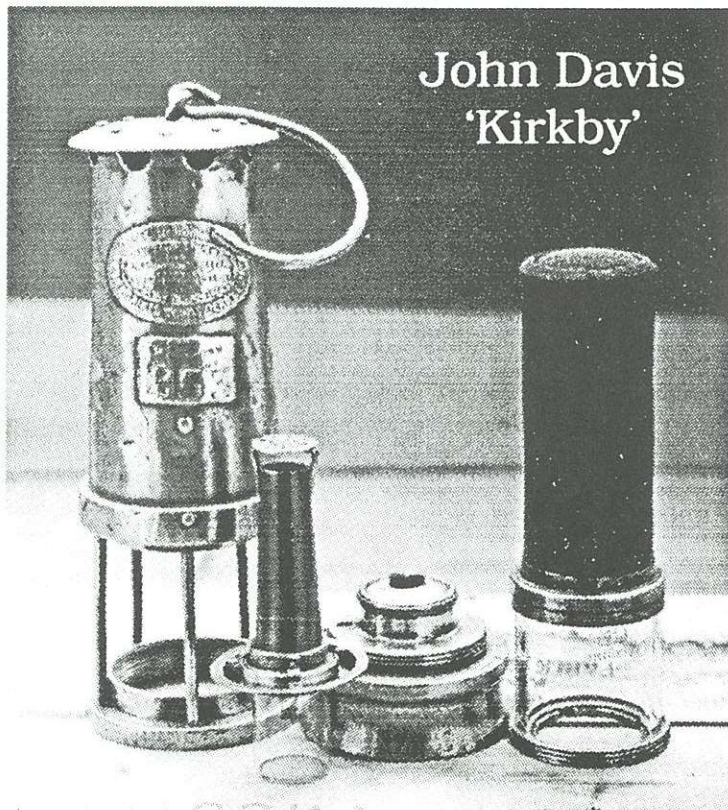
APPROVED BY THE BRITISH MINES DEPARTMENT UNDER SCHEDULE "A" OF THE LIGHTING REGULATIONS.

*Advertisement for Gateshed-on-Tyne model. type No. H.D.P. 9, approved by British Mines Department under Schedule "A: of the Lighting Regulations.*

## John Davis Lamps

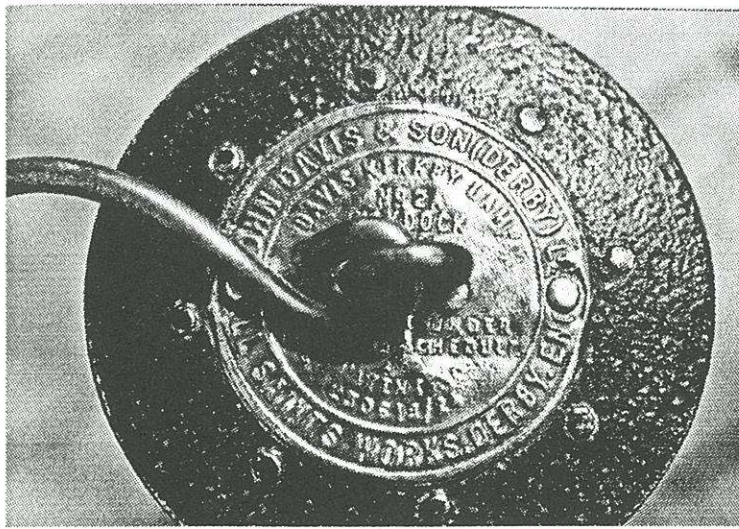


*John Davis & Son (Derby) Ltd., All Saints Works Derby. Type No. 2BA, approved under Lighting Schedule.*

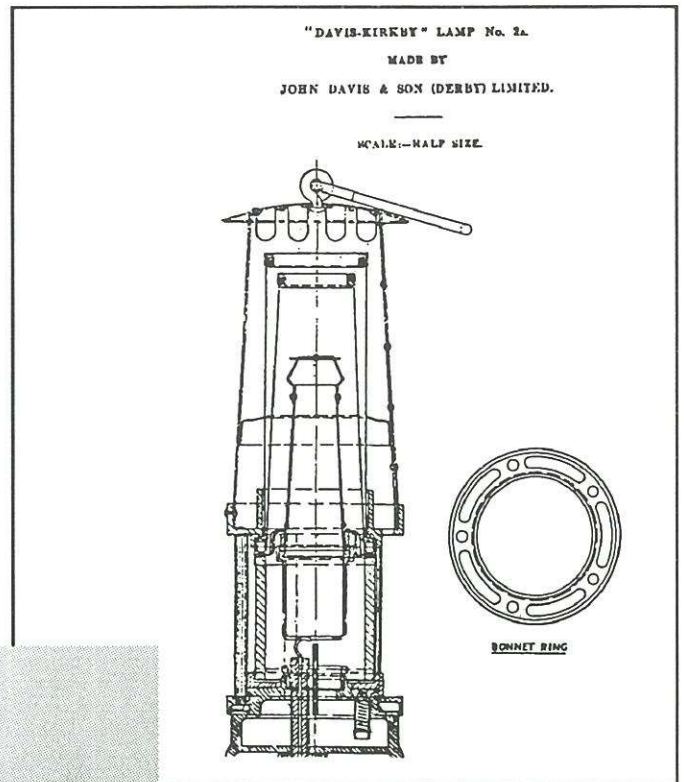


*John Davis & Son (Derby) Ltd., All Saints Works Derby. Davis Kirkby Lamp, Type No. 2A/1935 Haydock Pattern, approved under Lighting Schedule, Patent No. 230618/24.*





Davis Kirkby Lamp 2A (previous page) showing top stamping and patent drawing (right).



John Davis  
'Dalight'



John Davis & Son (Derby) Ltd., All Saints Works Derby. Type: Davis Dalight, approved under Schedule, "A", 1947. Top of Dalight shown left.

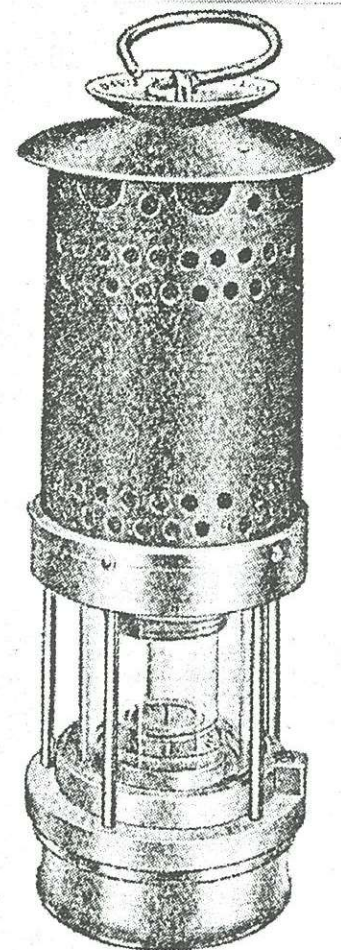
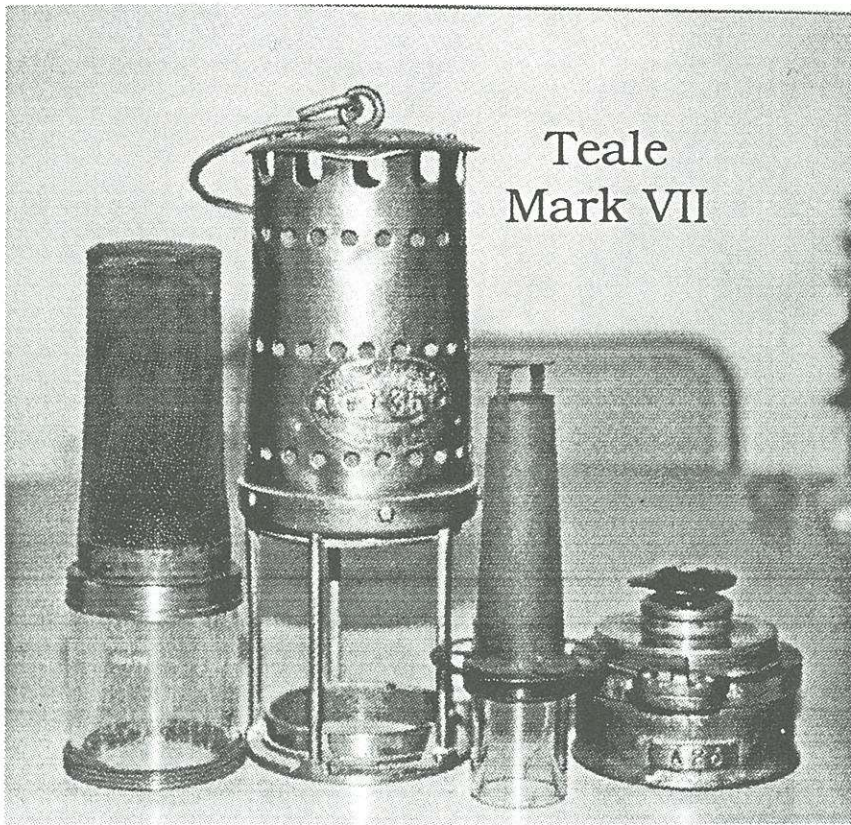


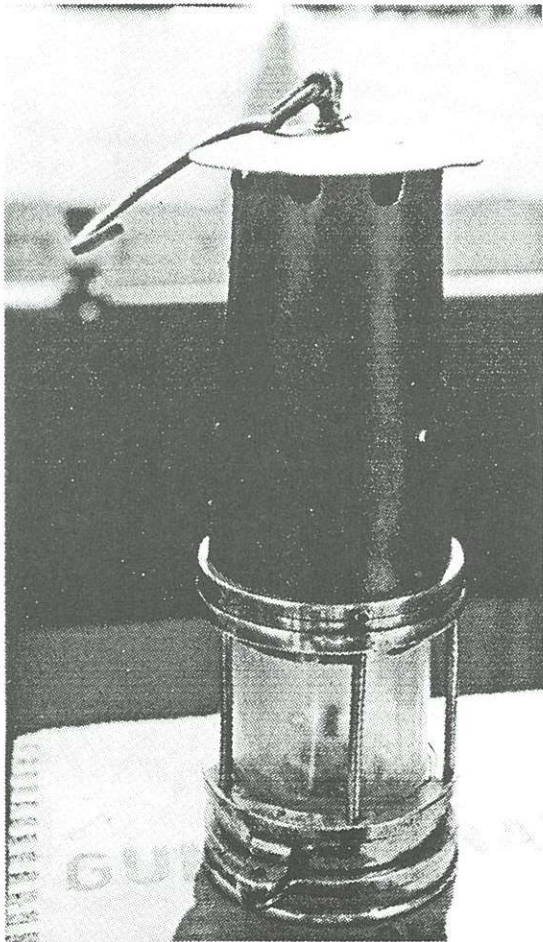
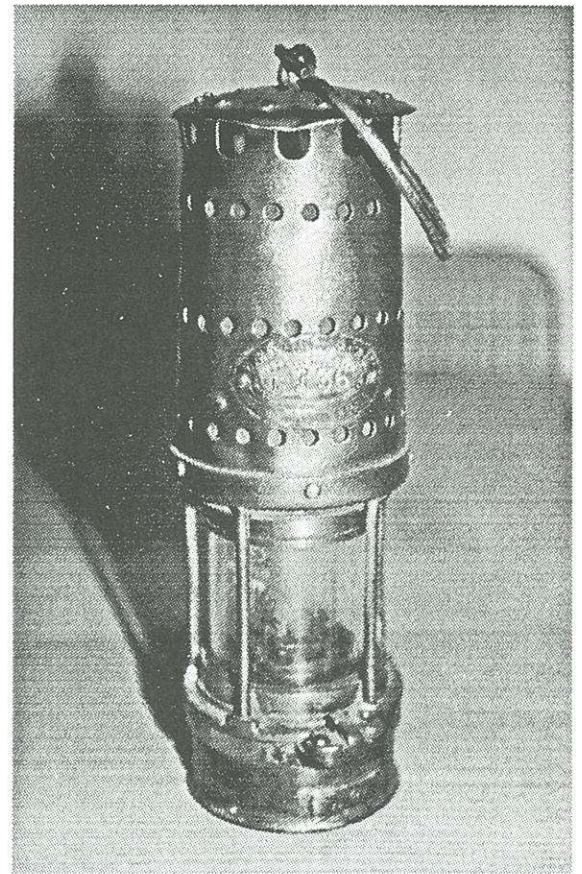
FIG. 35—DAVIS-DERBY "DALIGHT" LAMP, APPROVED "SCHEDULE A" PATTERN

## W.E. Teale Lamps

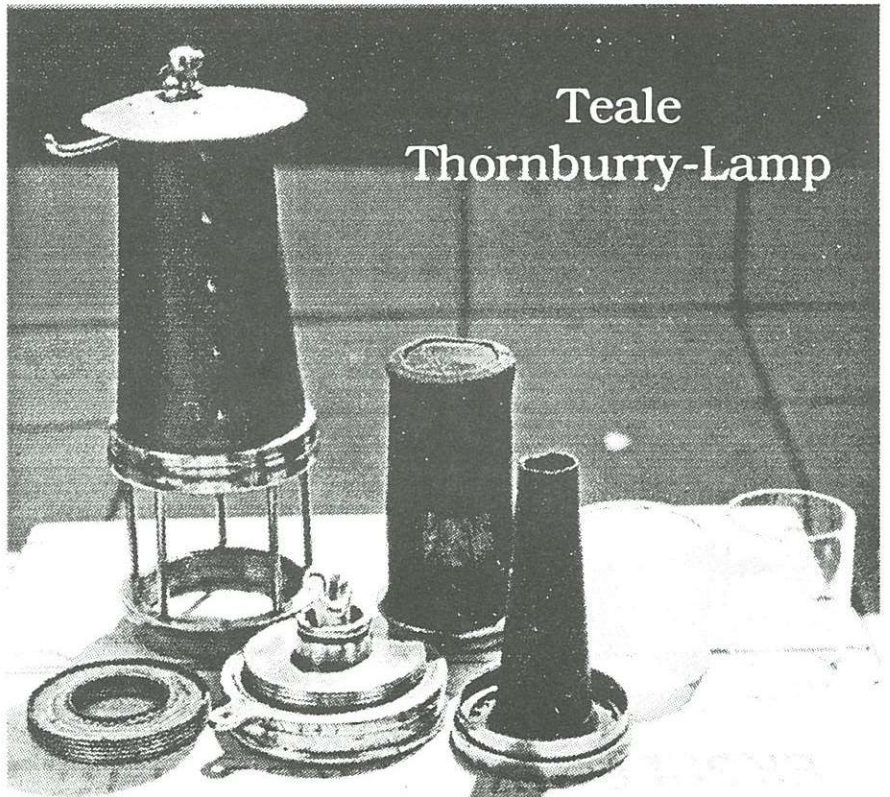


Teale  
Mark VII

*W.E. Teale & Co. Ltd, Swinton, Lancashire. Type No. Mark VII H.C.P. Lamp, approved under Lighting Schedule.*



Teale  
Thornburry-Lamp



*Combustion Tube Lamp made by W.E. Teale & Co. Ltd, Swinton, Type No. 6, also known as Thornburry-Lamp.*