On Admiralty and War Office Lists

CEAG LAMPS

SAFE · EFFICIENT · RELIABLE

First Prize in the Home Office Competition

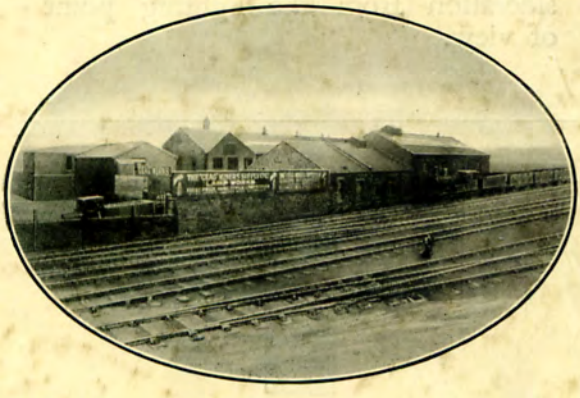
A CATALOGUE

of the products of the

CEAG WORKS

including

Standard Type Lamps
—— Cap Lamps ——
Officials' Lamps
Sinking Lamps



Directors :
R. J. PLUMMER. W. PLUMMER.

London Office
55 VICTORIA ST
S.W. 1

CEAG
LIMITED
MINERS ELECTRIC SAFETY LAMPS

Head Office & Works
BARNSLEY
YORKS

ALL THE LAMPS

described in this Catalogue have been approved by the Mines Department for use underground, and have been designed to stand the severe conditions usually met with.

SPECIAL LAMPS

In addition to the Lamps illustrated in this Catalogue, a number of lamps for special duties, such as head-lamps for "Paddy Mail" trains or man haulages, and lamps for special shaft examinations, have been designed from time to time for our Colliery friends. We invite enquiries for Lamps for any duty which demands special consideration from the lighting point of view.

ALL GENUINE "CEAG" PARTS
BEAR THIS MARK

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MINERS ELECTRIC
SAFETY LAMPS

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FOREWORD

IT was in 1912, when, anxious to bring forward the best Electric Safety Lamp, the Home Office inaugurated an international competition for which some 200 Lamps were submitted.

The "CEAG" Lamp was awarded the first prize of £600, no other Lamp being awarded more than £50.

Far from resting on its laurels, the "CEAG" Lamp has progressed, and to-day its position as the premier lamp is more than maintained.

Whilst many of the original features have been retained, the result of scientific research, combined with a wide and prolonged experience, is shown in the many improvements on the original Lamp.

THE SAFETY FUSE.—Operating in case of Wellglass breakage, the "CEAG" Patent Safety Fuse automatically and instantly disconnects all exposed live parts from the Accumulator, ensuring perfect safety. Incorporated with this is another exclusive "CEAG" feature. The bulb floats between two springs, the cushioning effect secured is such that the life of the bulb is more than doubled.

THE RETAINING RING.—Any device that saves time in the lamp-room demands serious consideration. Attention given in this direction has resulted in the production of the "CEAG" Lamp—a Lamp without screw threads—a Lamp that can be dissembled in a few seconds. A quarter turn of the Lamp Top will release it from the bottom. The interior fittings can be removed with the aid of a simple hand key in three seconds—bulb, wellglass, and other fittings all being released.

The effect of these on the labour and cost of upkeep is real and appreciable.

THE BULB.—The care and skill put into the "CEAG" Bulb, close inspection and test of every Bulb, combined with the life test taken on a percentage of the total, are shown in its remarkable efficiency and long life.

STANDARDISATION.—To maintain the standard of the "CEAG" Lamp and ensure the accuracy of spare parts, every component is gauged at different points in the process. This system of gauging and inspection is carried out in every department from the press shop to the bulb shop. Our Works are laid out solely for the production of Miners' Electric Lamps and accessories, and we invite our friends to visit us at Barnsley and see the different and interesting processes in the manufacture of the Lamp.

In conclusion, we present this Catalogue not as a comprehensive list of our products, but merely to give some conception of our manufactures, and hope that it will provoke a desire for further specific information, which will be readily given on request.

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THE STANDARD LAMP

THIS is the original type of Ceag Lamp, and thousands are in use, giving excellent service. Its construction is sound and simple, free from projecting parts.

The Patent Safety Fuse and Bulb suspension previously described are incorporated. The Patent Retaining Ring of the bayonet-ratchet type enables the interior fittings to be removed in a few seconds.

Screw Threads, by reason of their tendency to strip or jamb, are avoided, and the joint between case and top is made by engaging two wide lugs, which run in the groove in the Brass Ring on the case. It takes but a quarter turn after engaging the lugs to lock the Lamp.

THE CASE is a solid drawn steel tube, and the top and bottom are strong steel pressings. The bottom is spot-welded on to the Case, no part except the lock being soldered. All parts are standardised and interchangeable, and repairs are effected with ease and economy. The light is switched on and off by a turn of the Lamp Top, a self-cleaning rubbing contact being made by the accumulator terminals.

An indent in the Lamp bottom fits into a recess in the bottom of the accumulator, forming a simple arrangement to locate and hold it in the correct position.

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THE JELLAC (Regd.) ACCUMULATOR

AN unspillable and non-leaking accumulator with the consequent freedom from corrosion of details and damage to clothing, is an essential part of an Electric Safety Lamp. Even the slightest leakage can give trouble by causing flickering lights and increasing the maintenance costs by eating away comparatively expensive parts.

Of the many and interesting devices which have for their object the prevention of acid spilling and creeping, one stands out by reason of its simplicity and its certainty. This is "JELLAC," introduced by Ceag Limited many years ago after exhaustive experiments, and which still stands alone as the ideal solution of the problem, and particularly for the Miners' Lamp accumulator.

"JELLAC" is mixed with the acid before it is poured into the accumulator, and results in the production of a semi-solid or jelly electrolyte which cannot spill, leak or creep.

This means a definitely unspillable accumulator, with a sweeping reduction in the maintenance costs and a greatly increased reliability in the lamp, together with an absolute freedom from the many minor but irritating troubles and faults due to acid leakage.

"JELLAC" is guaranteed pure and free from harmful constituents, and is undoubtedly the safest and surest means of securing absolute freedom from trouble in a portable accumulator.

THE PATENT QUICK-ACTION ACCUMULATOR LID

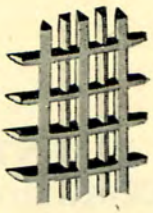
THE " CEAG " policy in design—speed and certainty in all joints—has resulted in the introduction of the Patent Quick Action Accumulator Lid.

Although of all the joints, that on the accumulator is operated the least, there is no doubt that if the electrodes can be dismantled quickly, much time is saved and encouragement given to regular and frequent attention. The " CEAG " Patent Quick Action Lid is simplicity itself in operation—just a twist of the lid and it is free, bringing with it the electrodes, without the removal of a single terminal nut and without the assistance of any machine or other device.

The action is simple, but positive. The twisting of the lid causes three radial lugs to rise from three slots in the case, and, conversely, the act of pressing on the lid causes these lugs to drop and lock in the slots.

The lugs are of special design, being bevelled on the sides and lower edge to permit easy and free movement when twisted, but giving definite security when in position.

THE ACCUMULATOR



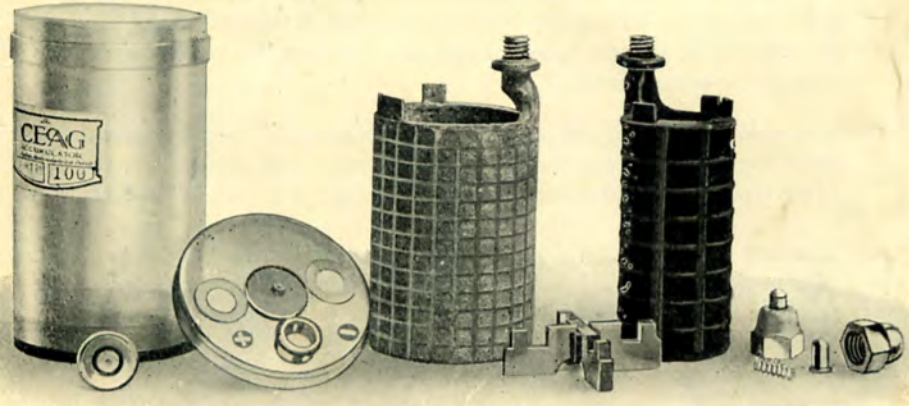
THE remarkable strength and long life of the "CEAG" Accumulator is the result of a combination of a number of unique features in the design, in particular the circular concentric electrodes and the peculiar construction of the grids.

The circular electrodes give greater strength and freedom from buckling, and the construction of the accumulator is made remarkably clean. A simple spacing cross holds the electrodes in position, and there are no separators between them, so that the electrolyte alone completely fills the space, giving increased efficiency.

This simplicity in construction is a valuable asset, for cleaning out and assembly are greatly facilitated.

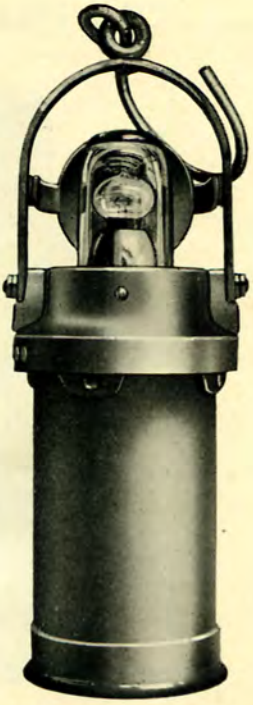
The grids are wedge shaped, and the point of the wedge is towards the centre of the electrode, and this securely holds the active material in position, giving a long and useful life.

The whole construction is remarkably simple and strong, and with the added advantages of the "JELLAC" Electrolyte, undoubtedly presents an accumulator which cannot fail to give reliable service even under the most arduous conditions.



All the component parts of the "CEAG" Accumulator are shown above, including the simple spacing cross.

THE PILLARLESS LAMP

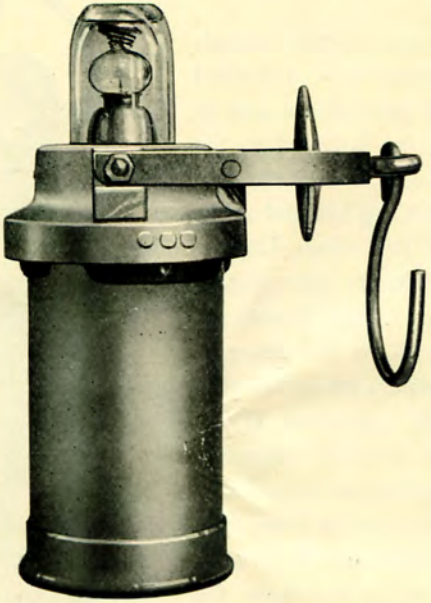


TO increase the resultant amount of light, attention has been directed to removal of obstructions and to concentrating the light on to the work. Prolonged experiments undertaken by Ceag Limited at the instigation of the Mines Department resulted in the introduction of the Pillarless Lamp. In this the four Protector Rods are removed, and in their place a Bridle carrying a Reflector. Its appearance, at first sight, suggests a certain unprotectedness or fragility, but, in practice, this is found to be far from fact. Indeed, this appearance is an asset in securing better treatment for the Lamp.

The "CEAG" Pillarless Lamp conforms with the "CEAG" standard of strength and simplicity. The bridle is supported by two bases rivetted to the Lamp top, and runs on steel bushes. The Reflector and Bridle, which is a one-piece pressing, heavily nickelled, is held by rivets and flat double spring washers, which enable it to be moved and remain in any position. Thumb screws and any parts that could work loose have been entirely dispensed with.

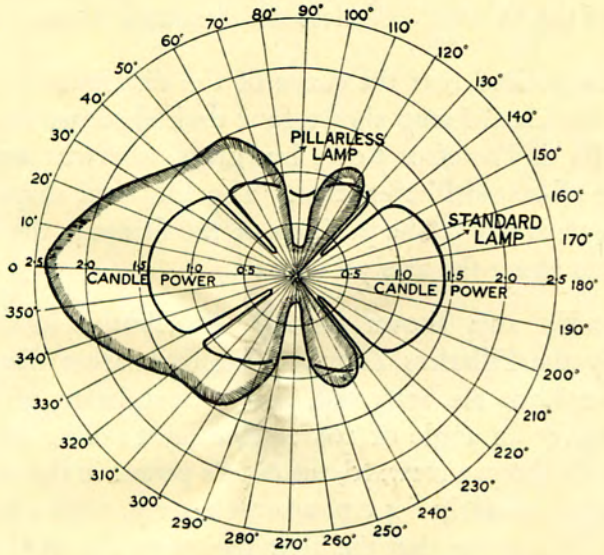
The essential features, such as the Accumulator, Retaining Ring and Bulb suspension are retained, the difference being only in the substitution of the Bridle and Reflector for the Protector Rods.

THE PILLARLESS LAMP



ONE of the many advantages possessed by the " CEAG " Pillarless Lamp is that by moving the Reflector, several different working positions are secured. In the illustration, the Lamp is shown with the main Bridle down, so giving an all round light, a useful position for roof examination. With the Reflector behind or down the light is thrown forward over an arc of 160 degrees, giving an increase in light of 70%.

When the Lamp is being carried, the Reflector can be so adjusted that the light is kept out of the eyes of the man following behind. In conjunction with Tinted Wellglass, the Pillarless Lamp presents the best means of securing more illumination at the coal face, and at the same time giving a soft diffused light, without streaks or bands.



The Pillarless Lamp

THE Polar Curve of horizontal light distribution of the "CEAG" Pillarless Lamp, compared against a Standard type Lamp.

The Candle Power Curve of the Pillarless Lamp

THE curve on the previous page shows the horizontal candle power of the "CEAG" Pillarless and Standard Miners' Lamps.

It will be noticed that the curve of the distribution of light for the Standard Lamp shows four dark shadows caused by the Pillars or Protector Rods, but gives otherwise an almost uniform all-round illumination. The Elliptical shape of the light curve is due to the position of the filament, the bow of which lies along the axis 90°—270°.

The shaded area shows the light distribution in the same plane by the Pillarless Lamp. The dark areas due to the Protector Rods are removed, and a clear beam of light is thrown over an angle of 160°. The light falling on to the Reflector is thrown forward, the candle power in this direction being approximately 2·4 c.p. against 1·4 c.p. with a Standard Lamp. This means that the illumination on the work is 70% greater and the arc of light between shadows is increased from 85° to 160° thus giving a wide area of light of greater intensity. When the bridle is lowered as in the illustration, the light given is represented by the Standard Lamp curve without any shadows. In this position the vertical distribution of light is very nearly ideal, and minute examinations of the roof, etc., can be made.

The Pillarless Lamp is more adaptable than the Standard Lamp, and gives an increased light at the coal face and greater freedom from shadows.

OFFICIALS' LAMPS

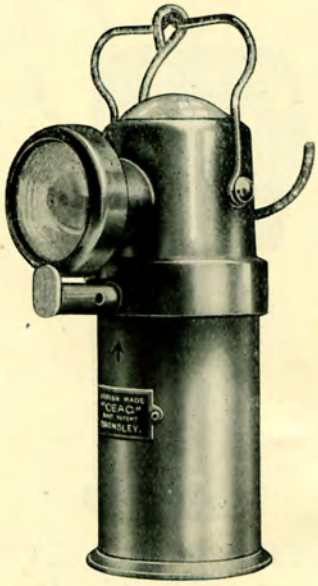
A RANGE of Lamps designed specially for the use of officials embraces four types, each using the same size Accumulator and Case. The Accumulator is similar in construction to the Standard—concentric electrodes securing maximum strength and freedom from buckling—and is designed for use with "JELLAC." The Case is made of copper, finished with a high polish or nickel plated. All these Lamps can be made suitable for Surveyors.

THE TORCH

THE BULLS EYE LAMP (No. 3)

THE first of the series is the Bulls Eye Lamp, No. 3. This is fitted with a bi-convex lens giving a wide angle beam of light, being most suitable for general use underground. The joint between case and top is of the screwed type, and secured by a lead rivet lock which also holds the lens ring.

The Torch is fitted with a silver-plated parabolic reflector, giving a concentrated light, more useful for close examination of roofs, machinery, etc., where a small intense circle of light is required.



THE DEPUTY LAMP

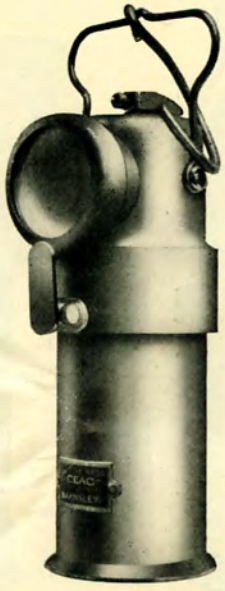
TO secure the advantages of the Bulls Eye Lamp and Torch a combination lamp known as the Deputy Lamp has been designed and patented. By rotating the top, a wide or narrow angle beam of light can be produced alternatively.

THE BONNET carries at the side a fitting with a silver-plated reflector and bi-convex lens, and a specially designed silver-plated parabolic reflector in the top. It is fitted with separate bulbs and reflectors designed for each intensity and angle of light, possessing an added advantage in the event of failure of one of the bulbs. For general travelling the side light is used, but for examinations of roofs, machines, etc., a turn of the top brings the concentrated beam into action, and so minute inspections can be made without loss of efficiency for general use.

A serviceable and efficient lamp.

A similar Lamp was presented to H.R.H. the Duke of York by the Pooley Hall Colliery Co.

THE SIGNALLING LAMP



A LAMP specially designed for Surveyors, producing a red, green, or white light, changed by turning a small lever on the head, which has three definite stops corresponding with the colours.

The Accumulator and Case are the Standard B.E.3 pattern, being interchangeable with that type. A circular carriage holding the red and green glasses is fixed in the Lamp top. With the white light a wide angle is given, so that the Lamp can be used for travelling and general use.

"The most useful Lamp a Surveyor could have."

BULLS EYE LAMPS

FOR official use and rescue work, in addition to the B.E.3 range, two sizes of Bulls Eye Lamps are made. The joint between case and the top is made by a heavy screw thread. The top is of polished copper, and the case a solid drawn steel tube, but a brass case can be fitted, if desired. A bi-convex lens is fitted.

The larger size, the B.E.1, carries the same Accumulator as the Standard Lamp, and has the same burning capacity. The smaller size, the B.E.2, is identical in all features, but the Accumulator and Case are shorter, with a corresponding reduction on length of burning hours and weight.

They are strong, serviceable Lamps, suitable for work requiring a brighter light, and demanding ability to stand rougher treatment than the B.E.3.

For rescue and repair work, these Lamps are without equal.

The Cap Lamp

ONE of the most remarkable increases in the use of Miners' Electric Safety Lamps is the increase in the use of Cap Lamps.

This may be partly accounted for by the various forms of naked lights carried in the cap in a number of definite areas.

The change over—on account of the pit becoming a "safety lamp" pit or by reason of the increased light and economies effected by the "CEAG" Electric Lamp—naturally leads to the adoption of a similar type of lamp, which has much to be said in its favour.

The "CEAG" Cap Lamp presents a solution of the lighting problems, concentrating the light on to the work. If the wearer turns, the light follows in that direction, so that the maximum illumination is always available; further, both hands are left free—a decided advantage.

The Accumulator has rectangular plates carried in a strong celluloid case, and is designed for use with "Jellac," the "CEAG" solid electrolyte. It is carried in a strong and light aluminium case which is supported on the wearer's back by a strap passing through two lugs. The Headpiece is also made of aluminium, and consists of a body carrying the central contact, reflector and bulb. It is held in position by a strip, no special cap being required, as the cable is in a straight line with the Headpiece, and on this account being very comfortable to wear. A screwed aluminium ring, locked by a lead rivet, holds the glass in place. In the event of the glass being broken the bulb is at once disconnected, and the fuse operates. The fuse is situated in the Case, and so all the parts are disconnected from the Accumulator. Connection between Accumulator and Headpiece is made by special twin cab tyre cable, supported by rubber sheaths.

The advantages of the Cap Lamp are such that its field is bound to extend very considerably. Much care and thought has been put into the present design of the "CEAG" Cap Lamp. It has been carefully watched through its embryonic stages, many inherent difficulties overcome, and we now have a sound and thoroughly reliable Cap Lamp.

We invite your enquiries.

On Admiralty and War Office Lists

CEAG LAMPS

First Prize in the Home Office Competition

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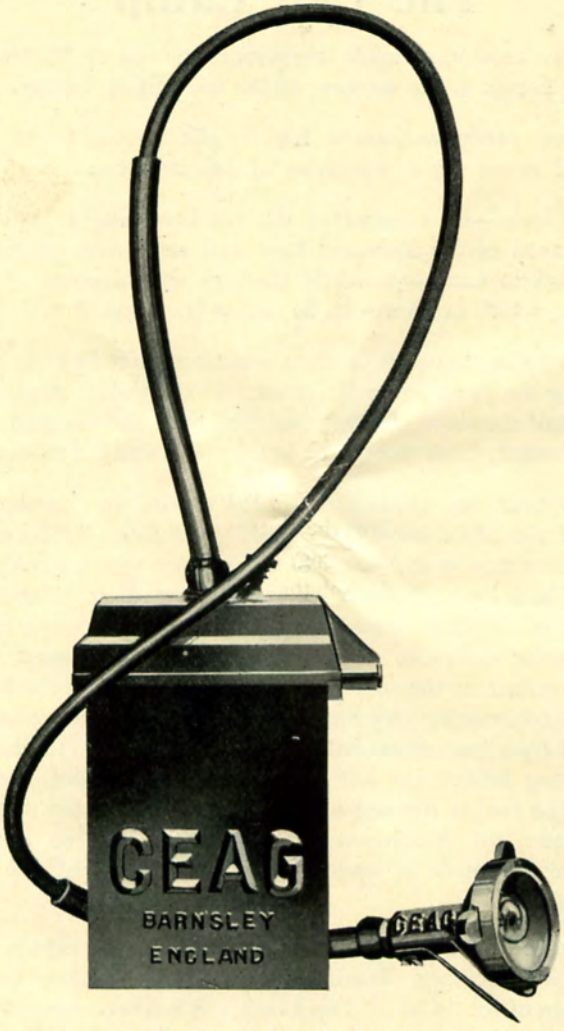

THE CAP LAMP

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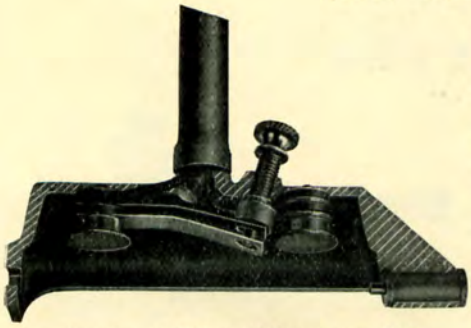
THE CAP LAMP



Interior of "CEAG" Cap Lamp Lid, showing switch contacts and simple arrangement of fuse and insulator units, which can be removed in a few seconds.

TO design a Cap Lamp having the same safety devices as the "CEAG" Standard Lamp—to be as simple, as reliable, and as efficient, is no mean undertaking, but the inherent difficulties have been faced and overcome.

For example, cable breakage, always a constant source of trouble on any equipment where there is strenuous movement, has been overcome after a prolonged study of the movements when the Lamp is in use. The Cab Tyre Sheathed Cable specially designed for the duty, with the rubber running right to the core, no packing or filling, has given a new lease of life to the cable. The size and number of the conductors is another contributory factor to the long life.

The points of entry and exit are protected by rubber sheaths, which permit just the right amount of flexing and are very comfortable to the wearer.

The interior fittings are simple and robust as the illustration shows. Two unit insulators are fitted to carry the contact and the fuse, and unscrewing the contact nut releases the whole of the fuse and switch movement.

Phosphor bronze switch plates are operated by a screw. If desired, the switch can be omitted so that the closing of the lid completes the circuit. This arrangement and magnetic locking on the head piece is our standard lamp for the Canadian Mines.

Charging Stands and Hanging Racks for this Lamp are illustrated on the pages referring to these accessories.

THE CAP LAMP

THE Headpiece is free from projections, simple in construction, as all the details are concentric and in line, the cable being in the same line, so making the fitting sit comfortably on the wearer's head. It is held in position on the cap by a brass strip.

Special attention has been directed to the reflection of the light, and the general design of the reflector is such that the maximum light is given, and over the most useful angle.

Two types of Headpieces are made, one embodying the Standard Safety Fuse Device, so that in the event of the glass being broken the bulb comes forward and the fuse operates, isolating all exposed parts from the accumulator.

The other design utilises a screwed socket bulb, the fuse device not being fitted. The reflector, too, is of a different design giving a wider angle of light, but in all other details the lamps are similar.

The retaining ring is held by means of a lead rivet, but a magnetic lock can be fitted if desired.

The design of the complete Lamp is such that the component parts are strong, replacements simple, and maintenance costs kept at a very low value, and the lamp at a very high state of efficiency.

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THE 4-VOLT LAMP

TO meet the demand for a Lamp giving a greater candle power than the 2-volt type, but not proportionately heavier, we have designed the 4-volt Lamp shown above. It carries two "CEAG" circular Accumulators, so preserving the desirable features of this type, at the same time enabling replacements to be made from stock, and the same charging arrangements used. Leakage between units, with the resulting short-circuit and failure, is also avoided. The Accumulators are carried in a cast aluminium case, strong but light. All connections are made by contacts in the Lamp top, which is an aluminium casting hinged from the case. These contacts are of the unit insulator type, and are so arranged that they can be quickly moved and the interior fittings removed in the usual manner by the bayonet type ratchet retaining ring. All the interior fittings are of the Standard pattern.

A very useful Lamp, and many uses, apart from use at the coal face, immediately suggest themselves.

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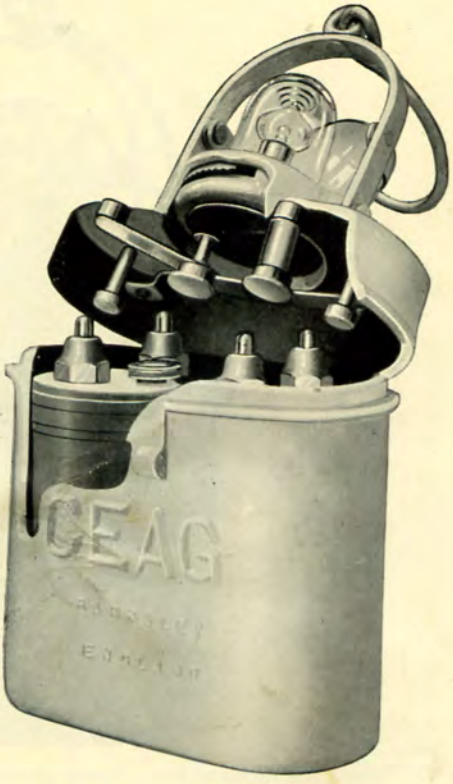
THE illustration shows the interior fittings of the 4-volt Lamp.

The bottom of aluminium case has two raised projections which locate the Accumulators in the correct position relative to the contacts in the lid. To ensure that the Accumulators are correctly connected in series, *i.e.*, positive to negative, two stops are fitted in the lid. If the Accumulators are inserted in the wrong position for polarity, these stops come to rest on the stoppers, and prevent the lid from closing.



The contacts in the top are simple, and can be removed in a short space of time. The Patent Retaining Ring and the Standard interior components are fitted, thus securing the advantages of interchangeability.

With the higher working voltage, the advantage of 'CEAG' Patent Safety Fuse is emphasised, as shown by the following extract from the Mines Department announcement of July, 1922 :—

> " Lamps with a working voltage of over 2·0 must be fitted with a contrivance for interrupting the current automatically in the event of the breakage of the Wellglass."

The " CEAG " Safety Fuse is a tested and proved device which ensures absolute safety in the event of Wellglass breakage, as all exposed parts are instantly and automatically disconnected from the Accumulator.

We invite enquiries for the 4-volt Lamp, as we are convinced that the increase in light carries with it many advantages, which you would appreciate on trial. Why not order a few and give them a good test at the coal face ?

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The Shaft Lamp

(Type B)

THE "CEAG" Shaft Lamp (type B) can be swivelled and locked in any position.

A strong cast aluminium case carries four Standard type "CEAG" Accumulators, which are connected in series automatically by one contact plate. There are no loose connections.

The lid and all exterior joints are heavy screw threads, packed by rubber rings, so making the Lamp watertight. A strong steel bridle running on trunnions carries the Lamp.

The Lamp is simple and robust, and well able to stand up to the rough usage usually associated with pit sinking. It gives a brilliant light for the full shift, and has proved very useful for pit bottom work.

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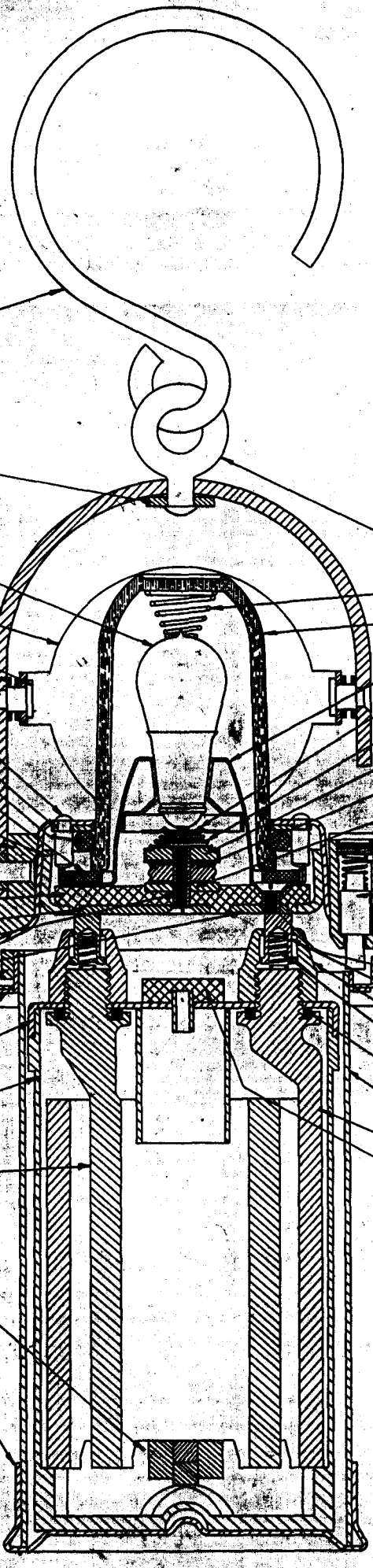
The Shaft Lamp

(Type A)

THIS Lamp differs from type B, being designed to give a downward light only. Four "CEAG" Standard type Accumulators are carried, connected in series. These are contained in a brass case, carried by a ring in the top. To concentrate the light, an enamelled reflector is fitted. The Wellglass is guarded by Protector Rods, on which the lamp can stand.



LAMP HOOK M.S.
SWIVEL EYE WASHER M.S.
2V. 0·9A. BULB
BRIDGE ARM
REFLECTOR.
REFLECTOR RIVET.
SPRING WASHER
WELLGLASS POSITIONING PIN M.S.
STRENGTHENING RING M.S.
WELLGLASS SEALING WASHER RUBBER.
WELLGLASS PACKING WASHER RUBBER.
PIN FOR RATCHET RETAINING RING. M.S.
RATCHET RETAINING RING. M.S.
PIVOT BASE.
PIVOT BASE BUSH.
PIVOT BASE NUT.
PIVOT BASE SCREW.
INSULATING PLATE. FIBRE
LARGE INSERT BR.
CENTRE CONTACT SCREW BR.
SMALL INSERT BR.
LUG FOR BAYONET JOINT. ST.
BAYONET RING FOR TOP M.S.
BAYONET RING FOR CASE M.S.
BATTERY LID. CELLULOID.
BATTERY CASE CELLULOID.
POSITIVE PLATE
SPACING CROSS CELLULOID.
LAMP BOTTOM M.S.
SCREWED JOINT RING FOR TOP. BR.
SCREWED JOINT RING FOR CASE BR.
CHEESE JOINT LUGS FOR TOP BR.
CHEESE JOINT RING FOR CASE BR.
RIVET FOR CHEESE JOINT RING. COPPER.
INTERNAL REFLECTOR RING BR.
EXTERNAL REFLECTOR RING BR.
NUMBER PLATE (FITTED AS REQUESTED) BR.
INSULATING PLATE (FOR 6A & 6B RINGS) FIBRE.
ASE COMP. ASSEMBLED, BAYONET JOINT.
ASE COMP. ASSEMBLED, CHEESE JOINT.
ASE COMPLETE WITH BOTTOM ONLY.
OP. COMP. WITH LOCK, JOINT RINGS, AND
NG PLATE RETAINING RINGS.

Lock, Jt. Rings & Retaining Rings to be stated when ordering.

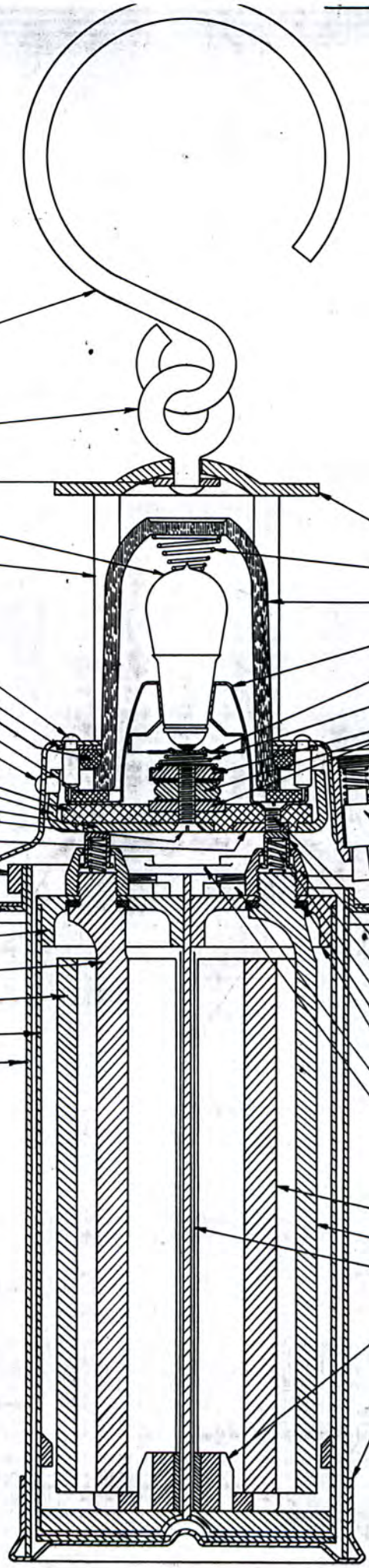
PART No.	DRG. No.	
7B	D 31	SWIVEL EYE M.S.
22	D 54	WELLGLASS PRESSURE SPRING.
21	D 70/A	WELLGLASS CLEAR.
3		REFLECTOR COMPLETE WITH BUI
13E	D 60	BULB CONTACT SPRING CAP BR.
13D	D 21	BULB CONTACT SPRING BR. ST.
13B	D 2/A	BULB CONTACT BASE WITH BR
61	D 83	FUSE COMPLETE
13A	D 59	FUSE WASHER BR.
24A	D 4/A	MAGNETIC LOCK CAP M.S.
24D	D 57	MAGNETIC LOCK SPRING. BR. ST.
24C	D 4/B	MAGNETIC LOCK PLUNGER M.S.
24B	D 4/C	MAGNETIC LOCK BODY BR.
2B	D 25	LAMP TOP PLAIN ST.
19	D 29/B	REFLECTOR CONTACT SCREW BR
119A	D 11/A	PLUNGER FOR CONTACT NUT
119B	D 11/B	BATTERY CONTACT NUT BR.
119C	D 55	FIXED CONTACT SPRING BR. ST.
106	D 12/A	BATTERY SEALING WASHER RUBBER
1B	D 26	LAMP CASE ST.
102B		NEGATIVE PLATE
116A	D 28	BATTERY STOPPER FIBRE
24		MAGNETIC LOCK COMPLETE.
13G		BULB CONTACT SPRING COMPL
13C		BULB CONTACT BASE FIBRE WA
3A	D 18	REFLECTOR ONLY BR.
3B	D 82	BULBHOLDER ONLY BR.
61A	D 80	FUSE CORE BR.
61B	D 75	FUSE CAP.
61C		FUSE WIRE COPPER.
103AQA	D 46	BATTERY LID. QUICK ACTION TY
104AQA	D 46	BATTERY CASE . . .
2C	D 25	LAMP TOP (PUNCHED FOR CHE

MATERIAL

2 VOLT STANDARD PILLARLESS LAMP

SCALE 2/1

PRING SPECN.
G. SP. ST.
08"
248"
FLAT.
:- ·080" PER 2oz LOAD.



PART No.	DRG No.	
7A	D 9	LAMP DOME M.S.
22	D 54	WELLGLASS PRESSURE SPRING 19 S.W.G.
21	D 70/A	WELLGLASS CLEAR. 21L WELLGLASS
3		REFLECTOR COMPLETE WITH BULBHOLDER
13E	D 60	BULB CONTACT SPRING CAP BR.
13D	D 21	BULB CONTACT SPRING SP. ST.
13B	D 2/A	BULB CONTACT BASE WITH BRASS COVER
61	D 83	FUSE COMPLETE (9 AMPS)
13A	D 59	FUSE WASHER BRASS.
24A	D 4/A	MAGNETIC LOCK CAP M.S.
24D	D 57	MAGNETIC LOCK SPRING SP. ST.
24C	D 4/B	MAGNETIC LOCK PLUNGER M.S.
24B	D 4/C	MAGNETIC LOCK BODY. BR.
2B	D 25	LAMP TOP PLAIN. ST
19	D 29/B	REFLECTOR CONTACT SCREW. BR.
63	D 20/B	PLUNGER FOR CONTACT NUT BR
62	D 20/A	BATTERY CONTACT NUT BR
119C	D 55	FIXED CONTACT SPRING. SP. ST.
67	D 12/D	BATTERY SEALING WASHER RUBBER.
75	D 65/A	BATTERY LID NEGATIVE SIDE EB.
73	D 86	NUT FOR HOLDING PLATES. COMPOSITION.
72	D 85	INTER-CELL CONNECTING STRAP LEA
66	D 28	BATTERY STOPPER EB.
68		POSITIVE PLATE WITH PIP.
71		NEGATIVE PLATE WITHOUT PIP
77	D 84.	EBONITE INSULATING STRIP
81	D 48	CELLULOID SPACING CROSS
27	D 13	LAMP BOTTOM M.S.
24		MAGNETIC LOCK COMPLETE.
13G		BULB CONTACT SPRING COMPLETE.
13C		BULB CONTACT BASE FIBRE WASHER
3A	D 18	REFLECTOR ONLY. BR.
3B	D 82	BULBHOLDER ONLY. BR.
61A	D 80	FUSE CORE EB.
61B	D 75	FUSE CAP
61C		FUSE WIRE COPPER.
2C	D 25	LAMP TOP (PUNCHED FOR CHEESE JOINT)

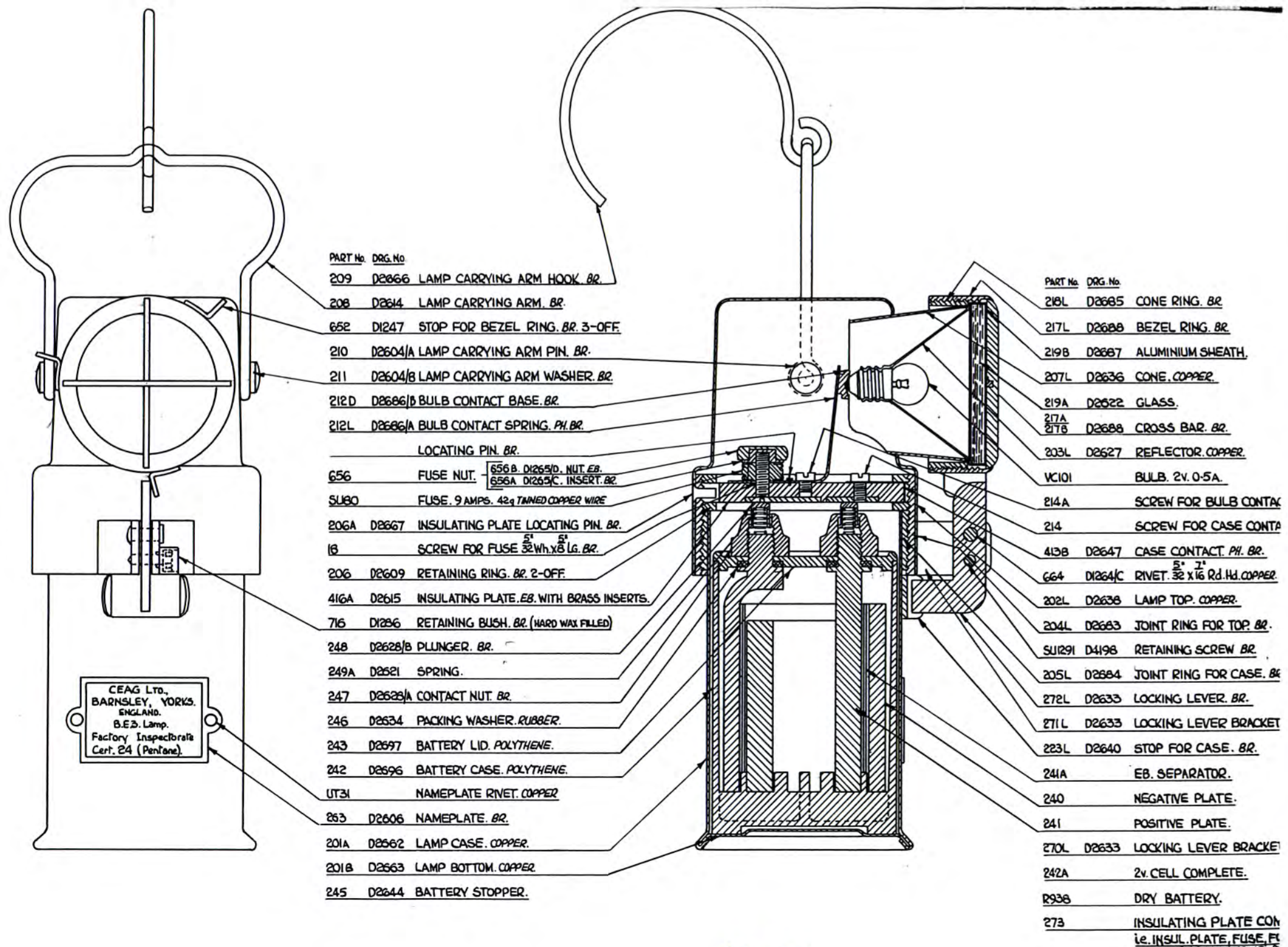
P HOOK M.S.
VEL EYE M.S.
VEL EYE WASHER M.S.
·75A. BULB ALSO AP43, KC43 & KP43.
TECTOR ROD M.S.
LLGLASS POSITIONING PIN M.S.
ENSTHENING RING M.S.
LLGLASS SEALING WASHER RUBBER.
LLGLASS PACKING WASHER RUBBER.
FOR RATCHET RETAINING RING M.S.
ULATING PLATE EB.
CHET RETAINING RING M.S.
GE INSERT BR.
NTRE CONTACT SCREW BR.
ALL INSERT BR.
FOR BAYONET JOINT. ST.
ONET RING FOR TOP M.S.
ONET RING FOR CASE. M.S.
TTERY LID POSITIVE SIDE. EB.
SITIVE PLATE WITHOUT PIP.
GATIVE PLATE WITH PIP.
TTERY CASE CELLULOID.
MP CASE ST.
EWED JOINT RING FOR TOP. BR.
EWED JOINT RING FOR CASE BR.
EESE JOINT LUGS FOR TOP BR.
EESE JOINT RING FOR CASE BR.
ET FOR CHEESE JOINT COPPER.
ERNAL REFLECTOR RING BR.
TERNAL REFLECTOR RING BR.
ULATING PLATE (TO SUIT 6A & 6B RINGS)
MBER PLATE (FITTED AS REQUESTED) BR.
OMP. WITH LOCK, JOINT RINGS, AND
PLATE RETAINING RINGS
Joint Rings & Ret. Rings to be stated when ordering.)
COMP. WITH SWIVEL EYE & WASHER
OMP. AS STATED WHEN ORDERING.
COMP. WITH BOTTOM & CHEESE JOINT.
COMP. WITH BOTTOM ONLY.

MATERIAL

ALTERATIONS

4VOLT TYPE 4 HAND LAMP

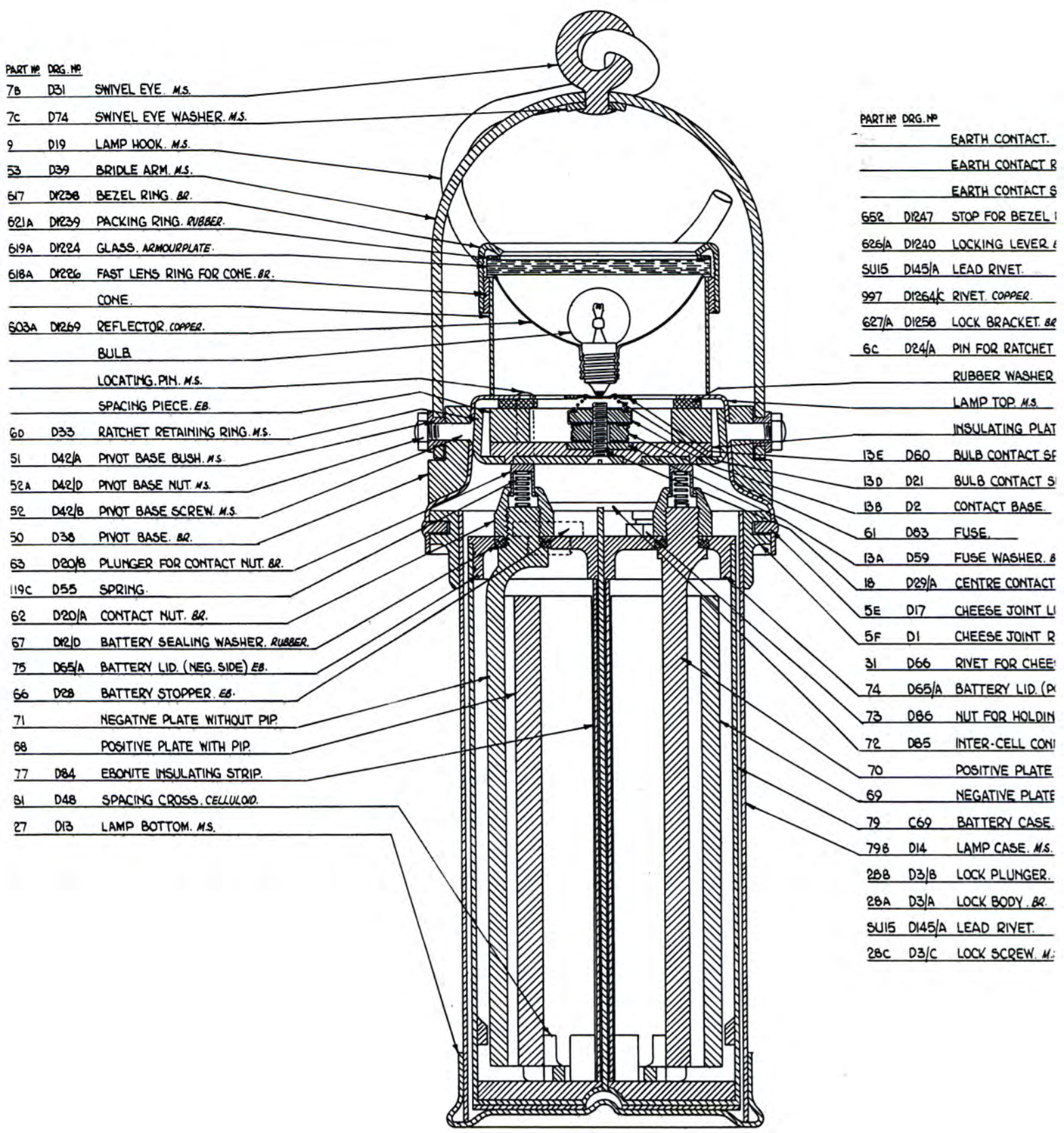
NOTE:- SEE DRG. No. C691 FOR PILLARLESS TYPE LA



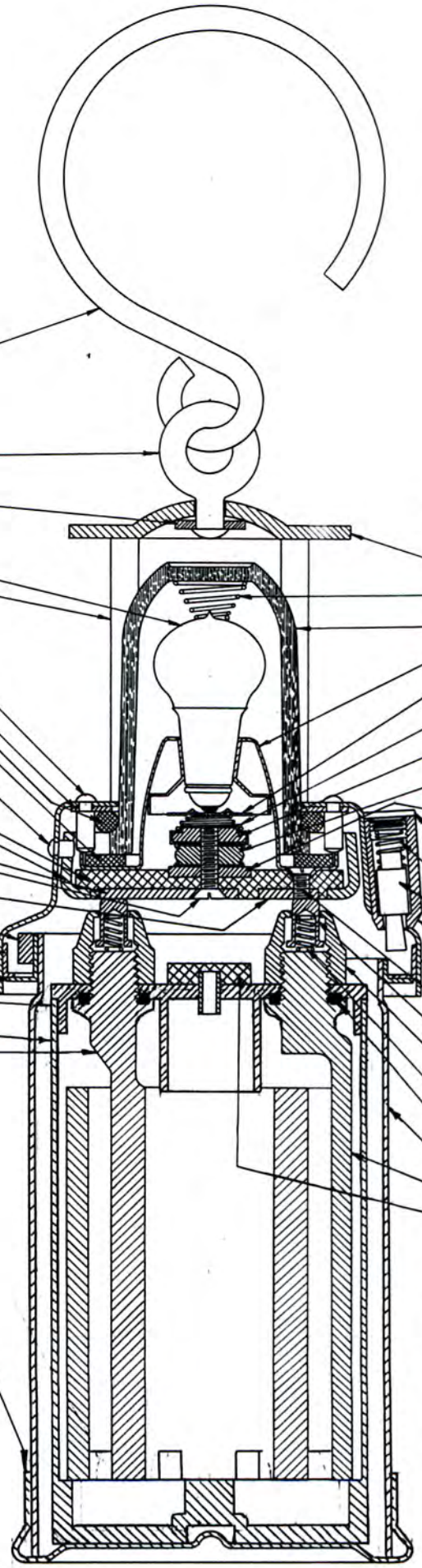
PART No.	DRG. No.	
209	D2666	LAMP CARRYING ARM HOOK. BR.
208	D2614	LAMP CARRYING ARM. BR.
652	D1247	STOP FOR BEZEL RING. BR. 3-OFF.
210	D2604/A	LAMP CARRYING ARM PIN. BR.
211	D2604/B	LAMP CARRYING ARM WASHER. BR.
212D	D2686/B	BULB CONTACT BASE. BR.
212L	D2686/A	BULB CONTACT SPRING. PH. BR.
		LOCATING PIN. BR.
656		FUSE NUT. 656B. D1265/D. NUT. EB. / 656A D1265/C. INSERT. BR.
SU80		FUSE. 9 AMPS. 42g TINNED COPPER WIRE
206A	D2667	INSULATING PLATE LOCATING PIN. BR.
18		SCREW FOR FUSE 5/32" Wh. x 5/8" LG. BR.
206	D2609	RETAINING RING. BR. 2-OFF.
416A	D2615	INSULATING PLATE. EB. WITH BRASS INSERTS.
716	D1286	RETAINING BUSH. BR. (HARD WAX FILLED)
248	D2628/B	PLUNGER. BR.
249A	D2621	SPRING.
247	D2628/A	CONTACT NUT. BR.
246	D2634	PACKING WASHER. RUBBER.
243	D2697	BATTERY LID. POLYTHENE.
242	D2696	BATTERY CASE. POLYTHENE.
UT31		NAMEPLATE RIVET. COPPER
263	D2606	NAMEPLATE. BR.
201A	D2662	LAMP CASE. COPPER.
201B	D2663	LAMP BOTTOM. COPPER.
245	D2644	BATTERY STOPPER.

PART No.	DRG. No.	
218L	D2685	CONE RING. BR.
217L	D2688	BEZEL RING. BR.
219B	D2687	ALUMINIUM SHEATH.
207L	D2636	CONE. COPPER.
219A	D2622	GLASS.
217A / 217B	D2688	CROSS BAR. BR.
203L	D2627	REFLECTOR. COPPER.
VC101		BULB. 2v. 0·5A.
214A		SCREW FOR BULB CONTAC
214		SCREW FOR CASE CONTA
413B	D2647	CASE CONTACT. PH. BR.
664	D1264/C	RIVET. 5/32" x 7/16" Rd. Hd. COPPER.
202L	D2638	LAMP TOP. COPPER.
204L	D2683	JOINT RING FOR TOP. BR.
SU1291	D4198	RETAINING SCREW BR.
205L	D2684	JOINT RING FOR CASE. BR
272L	D2633	LOCKING LEVER. BR.
271L	D2633	LOCKING LEVER BRACKET
223L	D2640	STOP FOR CASE. BR.
241A		EB. SEPARATOR.
240		NEGATIVE PLATE.
241		POSITIVE PLATE.
270L	D2633	LOCKING LEVER BRACKET
242A		2v. CELL COMPLETE.
R938		DRY BATTERY.
273		INSULATING PLATE CON
		i.e. INSUL. PLATE, FUSE, FU
		CONTACT SPRING COMP. &

DE3 1951



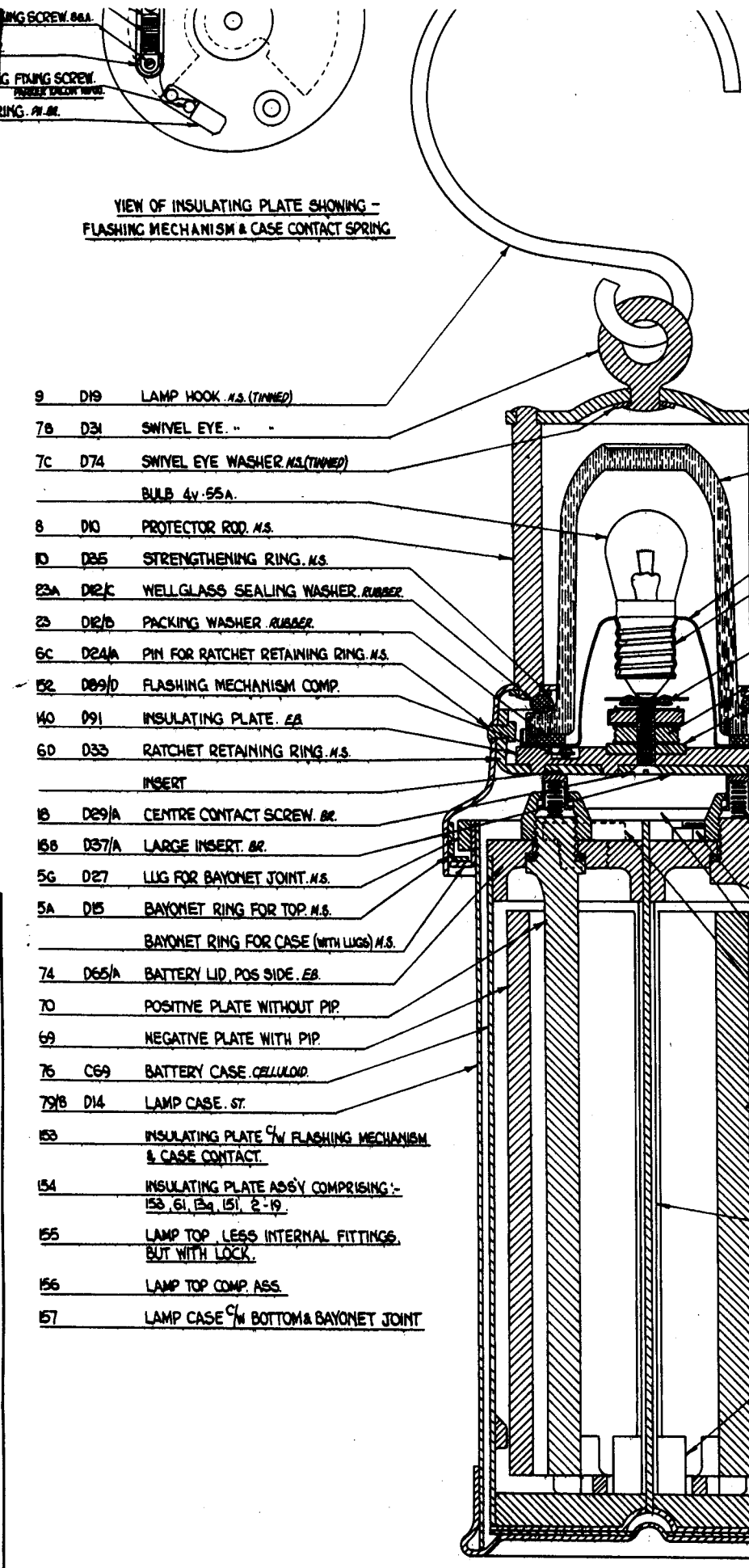
4 VOLT ROOF LIGHT



RT	DRG. No.	
	D 19	LAMP HOOK M.S.
	D 31	SWIVEL EYE M.S.
	D 74	SWIVEL EYE WASHER M.S.
		2V. 0·9A BULB.
	D 10	PROTECTOR ROD M.S.
	D 24/B	WELLGLASS POSITIONING PIN. M.S.
	D 35	STRENGTHENING RING M.S.
A	D 12/C	WELLGLASS SEALING WASHER. RUBBER.
	D 12/B	WELLGLASS PACKING WASHER RUBBER.
	D 24/A	PIN FOR RATCHET RETAINING RING M.S.
	D 77	INSULATING PLATE FIB.
	D 33	RATCHET RETAINING RING M.S.
B	D 37/A	LARGE INSERT BR.
	D 29/A	CENTRE CONTACT SCREW. BR.
	D 37/B	SMALL INSERT BR.
	D 27	LUG FOR BAYONET JOINT. ST.
	D 15	BAYONET RING FOR TOP M.S.
	D 22	BAYONET RING FOR CASE M.S.
5A	D 72	BATTERY LID. POLYTHENE
4A	D 71	BATTERY CASE. POLYTHENE.
2A		POSITIVE PLATE
6	D1225	LAMP BOTTOM. BR.
	D 23/A	SCREWED JOINT RING FOR TOP. BR
	D 23/B	SCREWED JOINT RING FOR CASE. BR.
	D 17	CHEESE JOINT LUGS FOR TOP BR.
	D 1	CHEESE JOINT RING FOR CASE BR.
	D 66	RIVET FOR CHEESE JOINT RING COPPER
	D 34/B	INTERNAL REFLECTOR RING BR.
	D 34/A	EXTERNAL REFLECTOR RING BR.
	D 76	NUMBER PLATE (FITTED AS REQUESTED) BR.
A	D 6	INSULATING PLATE (FOR 6A & 6B RINGS). FIB.
		LAMP CASE COMP. ASSEMBLED, BAYONET JOINT.
		LAMP CASE COMP. ASSEMBLED, CHEESE JOINT.
		LAMP CASE COMPLETE WITH BOTTOM ONLY.
		LAMP TOP COMP. WITH LOCK, JOINT RINGS, AND INSULATING PLATE RETAINING RINGS. (Type of Lock, Jt. Rings, & Retaining Rings to be stated when ordering)
		LAMP DOME COMP. WITH SWIVEL EYE & WASHER.

PART No.	DRG. No.	
7A	D 9	LAMP DOME M.S.
22	D 54	WELLGLASS PRESSURE SPR
21	D 70/A	WELLGLASS
3		REFLECTOR COMPLETE WITH
13E	D 60	BULB CONTACT SPRING C
13D	D 21	BULB CONTACT SPRING
13B	D 2/A	BULB CONTACT BASE WIT
61	D 83	FUSE COMPLETE
13A	D 59	FUSE WASHER BR
24A	D 4/A	MAGNETIC LOCK CAP M.
24D	D 57	MAGNETIC LOCK SPRING
24C	D 4/B	MAGNETIC LOCK PLUNGER
24B	D 4/C	MAGNETIC LOCK BODY BR
2B	D 25	LAMP TOP PLAIN ST.
19	D 29/B	REFLECTOR CONTACT SCRE
119A	D 11/A	PLUNGER FOR CONTACT
119B	D 11/B	BATTERY CONTACT NUT
119C	D 55	FIXED CONTACT SPRING
106	D 12/A	BATTERY SEALING WASHE
	D61	LAMP CASE. BR.
102B		NEGATIVE PLATE
116A	D 28	BATTERY STOPPER FIB.
24		MAGNETIC LOCK COMPLET
13G		BULB CONTACT SPRING
13C		BULB CONTACT BASE FI
3A	D 18	REFLECTOR ONLY BR
3B	D 82	BULBHOLDER ONLY BR
61A	D 80	FUSE CORE FIB
61B	D 75	FUSE CAP
61C		FUSE WIRE. COPPER
103AQA	D 43	BATTERY LID QUICK AC
104AQA	D 46	BATTERY CASE
2C	D 25	LAMP TOP (PUNCHED F

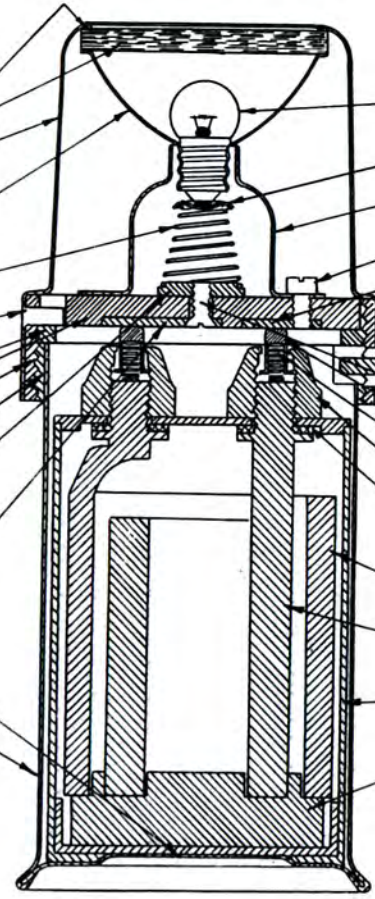
2 VOLT STANDARD HAND LAMP.



9	D19	LAMP HOOK. N.S. (TINNED)
78	D31	SWIVEL EYE. " "
7C	D74	SWIVEL EYE WASHER. N.S. (TINNED)
		BULB 4v·55A.
8	D10	PROTECTOR ROD. N.S.
10	D35	STRENGTHENING RING. N.S.
23A	D12/C	WELLGLASS SEALING WASHER. RUBBER.
23	D12/B	PACKING WASHER. RUBBER.
6C	D24/A	PIN FOR RATCHET RETAINING RING. N.S.
152	D89/D	FLASHING MECHANISM COMP.
140	D91	INSULATING PLATE. FIB.
60	D33	RATCHET RETAINING RING. N.S.
		INSERT
18	D29/A	CENTRE CONTACT SCREW. BR.
158	D37/A	LARGE INSERT. BR.
5G	D27	LUG FOR BAYONET JOINT. N.S.
5A	D15	BAYONET RING FOR TOP. N.S.
		BAYONET RING FOR CASE (WITH LUGS) N.S.
74	D65/A	BATTERY LID, POS SIDE. FIB.
70		POSITIVE PLATE WITHOUT PIP.
69		NEGATIVE PLATE WITH PIP.
76	C69	BATTERY CASE. CELLULOID.
79/B	D14	LAMP CASE. ST.
153		INSULATING PLATE C/W FLASHING MECHANISM & CASE CONTACT.
154		INSULATING PLATE ASS'Y COMPRISING:- 153, 61, 13G, 151, 2-19.
155		LAMP TOP, LESS INTERNAL FITTINGS, BUT WITH LOCK.
156		LAMP TOP COMP. ASS.
157		LAMP CASE C/W BOTTOM & BAYONET JOINT

PART No.	DRG. No.	
7A	D9	LAMP DOME. N.S.
	D70/A	WELLGLASS (RED)
141	D90/A	REFLECTOR. BR.
142	D90/B.	BULBHOLDER. COPPER.
151	D90	REFLECTOR C/W BULBHOLDER.
13G		CONTACT SPRING COMPLETE.
61	D63	FUSE COMP. 2½A 6A/B 6A/C D80 D75 FUSE CORE. BR. FUSE CAP. FUSE WIRE.
13A	D59	FUSE WASHER. BR.
26	D25	LAMP TOP. N.S.
82	D24/B	WELLGLASS LOCATING PIN. N.S.
147	D92/A	PLUNGER HEAD. N.S.
145	D92/B	SPRING RETAINING CAP. N.S.
144	D92/D	LOCK SPRING. SP.ST.
146	D92/C	LOCK PLUNGER. N.S.
24B	D4/C	LOCK BODY. BR.
148	D93	BEARING FOR LOCK PLUNGER. N.S.
63	D20/B	PLUNGER FOR CONTACT NUT. BR.
62	D20/A	BATTERY CONTACT NUT. BR.
119C	D55	BATTERY CONTACT SPRING.
67	D12/D	BATTERY SEALING WASHER. RUBBER
75	D65/A	BATTERY LID, NEG. SIDE. FIB.
73	D86	NUT FOR HOLDING PLATES. COMPOSITION
72	D85	INTER CELL CONNECTING STRAP.
66	D28	BATTERY STOPPER. FIB.
68		POSITIVE PLATE WITH PIP.
71		NEGATIVE PLATE WITHOUT PIP.
77	D84	EBONITE INSULATING STRIP.
81	D48	SPACING CROSS. CELLULOID
27	D13	LAMP BOTTOM. N.S.
19	D29/B	REFLECTOR SCREW. BR.
150		LOCK COMPLETE.

4v TYPE 4 (FLASHING) LAMP.



PART No.	DRG. No.	
221	D2611	RUBBER PACKING RING FOR GLASS.
219A	D2622	GLASS. (ARMOURPLATE)
502A	D2674	LAMP TOP. COPPER.
203A	D2673	REFLECTOR (SILVER PLATED COPPER).
412C	D2660	CENTRAL CONTACT SPRING. SP. ST.
206A	D2667	INSULATING PLATE LOCATING PIN. BR.
206	D2609	INSULATING PLATE RETAINING RING. BR.
216T	D2671	INSULATING PLATE. EB.
204A	D2672	JOINT RING FOR TOP. BR.
205	D2664	JOINT RING FOR CASE. BR.
412A	D2603	CENTRAL CONTACT BASE. BR.
216A	D2615	INSULATING PLATE INSERT (LARGE) BR.
201B	D2663	LAMP BOTTOM. COPPER.
201A	D2662	LAMP CASE. COPPER.
201C	D2665	NAMEPLATE.
UT31	D1463/D	NAMEPLATE RIVET. 8 x 1/16 C'SK. HD. COPPER.
425A		REFLECTOR HOLDER (FOR ASSEMBLY ONLY).
412		CENTRAL CONTACT (COMPLETE)
216C		INSULATING PLATE (FOR ASSEMBLY ONLY)
201	D2608	LAMP CASE COMPLETE

PART No.	DRG. No.	
VC101		BULB 2v. ·5 AMP.
412B	D2675	CENTRAL CONTACT (TOP CAP). BR.
425C.	D2670	REFLECTOR HOLDER. COPPER.
214		REFLECTOR HOLDER SCREW. BR.
216B	D2615	INSULATING PLATE INSERT (SMALL) BR.
522	D2669	LOCK BODY. BR.
523	D2669	LOCK PLUNGER. BR.
SU15	D145/A	LEAD RIVET.
658	D1264/F	CENTRAL CONTACT FIXING SCREW. BR.
248	D2628/B	CONTACT PLUNGER. BR.
249A	D2621	CONTACT SPRING. S.S. NL. PL.
247	D2628/A.	CONTACT NUT. BR. LEAD PL.
67	D2634	RUBBER WASHER FOR PLATES.
240	D2631	NEGATIVE PLATE.
241	D2631	POSITIVE PLATE.
242	D2641	BATTERY CASE. CEL.
244	D2643	SPACING CROSS. CEL.
243	D2642	BATTERY LID. CELL.
242A	D2629	CELL COMPLETE.
502		LAMP TOP COMPLETE
R838		DRY BATTERY: ALTERNATIVE.

CEAG LTD.
BARNSLEY. YORKS.

GENERAL ARRANGEMENT
OF B.E.3. TORCH

SCALE. 1/1

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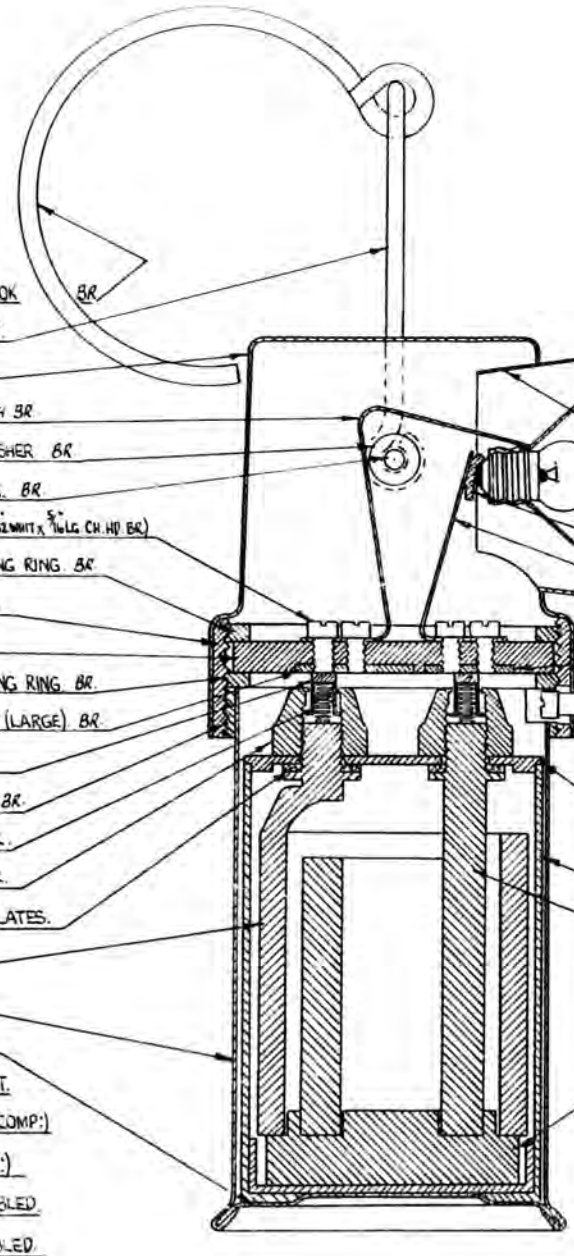
DATE. 22.10.47.

DRG. No. B738



PART No.	DRG No.	
209	D2666	LAMP CARRYING HANDLE HOOK
208	D2614	LAMP CARRYING ARM. BR.
202A	C2601	LAMP TOP. COPPER
213B	D2617/A	LONG CONTACT SPRING. PH. BR.
211	D2604	LAMP CARRYING ARM WASHER. BR.
210	D2604	LAMP CARRYING ARM PIN. BR.
214		CONTACT FIXING SCREW (5/32 WHIT x 5/16 LG. CH. HD. BR.)
206	D2609	INSULATING PLATE RETAINING RING. BR.
204	D2668	JOINT RING FOR TOP. BR.
216	D2615	INSULATING PLATE. EB.
206	D2509	INSULATING PLATE RETAINING RING. BR.
216A	D2615	INSULATING PLATE INSERT (LARGE) BR.
248	D2628/B	CONTACT PLUNGER. BR.
205	D2664	JOINT RING FOR CASE. BR.
249A	D2621	CONTACT SPRING. S.S. N.P.
247	D2628/A	CONTACT NUT. BR. LEAD PL.
G7	D2634	RUBBER WASHER FOR PLATES.
240	D2631	NEGATIVE PLATE.
201A	D2662	LAMP CASE. COPPER.
201B	D2663	LAMP BOTTOM. COPPER.
203S		REFLECTOR ALT. SPOT LIGHT.
212B		SMALL CONTACT SPRING (COMP:)
222C.		LEAD RIVET LOCK (COMP:)
201L		LAMP CASE COMP: ASSEMBLED.
202		LAMP TOP COMP: ASSEMBLED.
216C		INSULATING PLATE FOR ASSY.
201C	D2665	NAMEPLATE.
UT.31	D1463/D	NAMEPLATE RIVET (1/8 x 1/16 C/S HD COPPER)

PART No.	DRG No.	
217	D2613	GLASS RETAINING RING EXTERNAL. BR.
218	C2601	GLASS RETAINING RING INTERNAL. BR.
221	D2611	RUBBER PACKING RING FOR GLASS.
219A	D2622	GLASS (ARMOURPLATE)
203B	D2612	REFLECTOR (SILVER PLATED COPPER)
207	C2601	REFLECTOR HOLDER. COPPER.
VC.101	~	BULB. 2v .5amp.
212D	D2624	SMALL CONTACT SPRING PAD. BR.
212C	D2617/B	SMALL CONTACT SPRING. PH. BR.
216B	D2615	INSULATING PLATE INSERT (SMALL) BR.
222B	D2620	LOCK BODY. BR.
223B	D2620	LOCK PLUNGER. BR.
SU15	D145/A	LEAD RIVET.
424	D2620	LOCK PLUNGER SCREW. BR.
223C	D2620	LOCK FLAP. BR.
243	D2642	BATTERY LID. CEL.
242	D2641	BATTERY CASE. CEL.
241	D2631	POSITIVE PLATE.
244	D2643	SPACING CROSS. CEL.
250		CONTACT COMPLETE.
241A		EBONITE SEPARATOR.
245	D2644	BATTERY STOPPER
J20		POS. POLE SIGN FOR BATTERY
J20A		NEG. POLE SIGN FOR BATTERY.
243A		CELLULOID SEALING DISC.
243B.		CELLULOID SEALING STRIP
242A	D2629	CELL COMPLETE.
R838		DRY BATTERY (ALTERNATIVE)

CEAG LTD.

BE3 1947
GENERAL ARRANGEMENT

SCALE. 1/1

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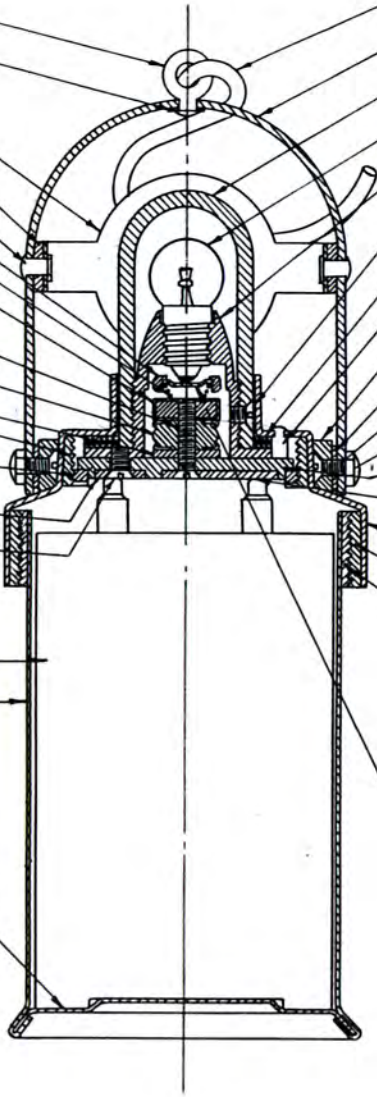
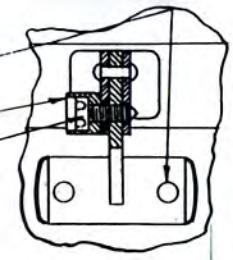
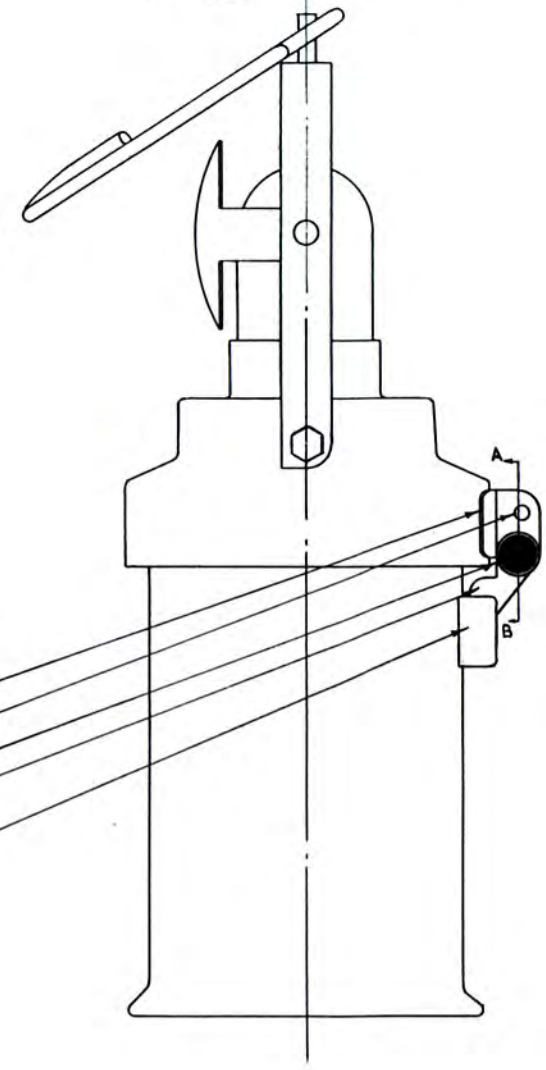


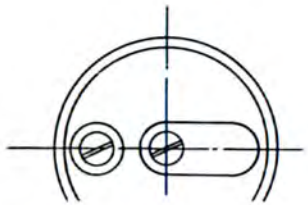
P1	D7906	SWIVEL EYE. BR.
P2		SWIVEL EYE WASHER. BR.
P3	D7902	REFLECTOR. BR. CHR. PL.
P4	D7906	REFLECTOR WASHER. BR.
		REFLECTOR RIVET.
21		WASHER FOR CUP. EB.
20		CENTRE CONTACT SPRING.
P5	D7912	BULB CONTACT BASE. EB. WITH BRASS COVER.
		CENTRE CONTACT SCREW. BR.
		FUSE. 9 AMPS. 42 S.W.G. TINNED COPPER WIRE.
P6	D7912	FUSE WASHER. BR.
P7	D7907	LAMP TOP FAST RING. BR.
P8	D7907	INSULATING PLATE RETAINING RING. BR.
P9	D7909	SMALL INSERT. BR.
		INSULATING PLATE SCREW. BR.
P23		LAMP TOP COMPLETE.
P24		LAMP CASE COMPLETE.
		DRY BATTERY. EVER READY 938
P28		LAMP CASE. COPPER.
18	D2663	LAMP BOTTOM. COPPER.
P25	D7913	NAMEPLATE. BR.
31	D1463	NAMEPLATE RIVETS. COPPER.

		RIVET. COPPER.
SU1289	D4179	RETAINING BUSH. BR. (HARD WAX FILLED)
SU1291	D4179	RETAINING SCREW. BR.
209		LAMP HOOK. BR.
BEP10	D7904	BRIDLE ARM. BR.
BEP11	D7911	WELLGLASS. PERSPEX.
		BULB. 3·5V. 0·3A.
BEP12	D7903	BULBHOLDER. BR.
		WELLGLASS LOCKING SCREW. BR.
BEP13	D7910	PACKING WASHER. BELUTE.
BEP14	D7914	INSULATING PLATE LOCATING PIN. BR.
BEP15	D7906	PIVOT BASE. BR.
BEP16	D7906	WASHER. BR.
		PIVOT BASE SCREW. BR.
UT50		PIVOT BASE NUT. BR.
BEP17	D7909	INSULATING PLATE. EB.
BEP18	D7909	LARGE INSERT. BR.
BEP19	D7901	LAMP TOP. BR.
BEP20	D7908	JOINT RING FOR TOP. BR.
BEP21	D7908	JOINT RING FOR CASE. BR.
P220		LOCKING LEVER BRACKET. L.H. BR.
P220A		LOCKING LEVER BRACKET. R.H. BR.
		RIVET.
SU1289		RETAINING BUSH. BR. (HARD WAX FILLED)
BEP22	D7905	LOCKING LEVER. BR.
BEP27		STOP FOR LAMP CASE. BR.
UT5		CENTRE CONTACT CUP. BR.
BEP26	D7910	DISTANCE PIECE. BR.



SECTION ON A-B
SHOWING LOCK





CG938
FACTORY DEPT. CERT.
No 175

'CG 938' HAND LAMP

Ceag

2v STANDARD

2v PILLARLESS

4v TYPE 4

Approved for use in mines and ocean-going vessels. Class II.

The **2v. Standard Lamp** won the Home Office prize for the best miner's electric safety lamp in 1912 and still holds premier place among lamps of the same type and capacity. Solid drawn steel case ; steel top ; bayonet action joint ; rechargeable jellac acid accumulator. The **4v. Type 4 Lamp** is a later development. Gives three times the light of the **2v. lamp.** Either type can be fitted with a pillarless top and reflector adjustable through 90°.

Weights :

Standard :	
2v.	**4v. Type 4**
5 lb. 14 oz.	**7¾ lb.**
Pillarless :	
6 lb.	**7¾ lb.**

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SPECIAL designs

This booklet details the standard range of Ceag Portabl Electric Safety Lamps. Experience has shown that on or other of these lamps will fill practically every nee for portable lighting equipment both in dangerous an safe atmospheres, but if this range does not includ exactly what you are seeking we will gladly conside making minor modifications or designing a lam specially for you. We invite you to consult us in a your portable lighting problems.

PRESENT USERS include :-

Municipalities	Fire Brigades
Gas Works	Electricity Undertakings
Oil Refineries	Oil and Petrol Depots
Shipping Companies	Breweries
Collieries	Garages, etc.

BATTERY charging

Ceag Portable Electric Safety Lamps can be recharged from any type of charging set, or by almost any radio dealer or garage. Full instructions are supplied with each lamp. No special treatment is required for jellac-filled accumulators but where both acid and alkaline lamps are in use care must be taken to see that the electrolyte for one type is not used for the other. It is imperative that alkaline batteries be kept well away from acid or they may suffer irreparable damage.

Ceag

PORTABLE *Safety* LAMPS

TYPE BE3
(CLASS I)

TYPE BE3

2v INSPECTION
(CLASS I)

Emergency Hand Lamps. Approved for dangerous atmospheres.

Specially designed for use in atmospheres containing petroleum and acetone vapours. Approved by Factory Department for petroleum depots and refineries; by the Ministry of Transport under Class I on ocean-going vessels carrying petroleum. Also comply with Lloyds Regulations. Deep threaded joints and bezel ring; guarded armourplate glass; non-magnetic. **Type BE.3 (Class I)** is in burnished copper. Rechargeable jellac lead acid accumulator rated 2v. and giving 5 hours' continuous burning or a dry

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battery rated 4.5v. with approximately 3 hours' continuous burning. **Type 2v. Inspection (Class I)** has brass case with 2v. jellac lead acid accumulator giving 10 hours' burning.

Approved for use in Mines.

Similar to the lamps described above but with unguarded armour plate glass. **Type BE.3** is non-magnetic and can be fitted with a signalling device in the lamp top to show a red, green, or white light. **Type 2v. Inspection** has a solid drawn steel case. Approved also by Ministry of Transport for use on ocean-going vessels. Class II.

Weights :

Type BE.3 (2v.)	**3 lb.**
Type BE.3 (4.5v.)	**2 lb. 3 oz.**
Type 2v. Inspection	**6 lb.**

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2v INSPECTION

Ceag

PORTABLE *Safety* LAMPS

Universal Safety Torch. Approved for use in mines, petroleum vapour and ocean-going vessels. Class III.

A safety torch in every sense of the term. Made from solid drawn brass tube ; guarded armourplate glass ; focussed bulb of CEAG make. Waterproof and morse signalling. Full chromium-plated finish. Takes single-cell dry batteries. Standard equipment on tankers, in petrol depots and refineries, and in all circumstances demanding strong construction and complete reliability. Made in *two* sizes only.

Weights :

2 cell	...	**1 lb. 7 oz.**
3 cell	...	**1 lb. 11 oz.**

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Can and Barrel Searchers. Approved by Factory Department for use in petroleum and acetone vapours.

Adapted from the 3-cell Universal Torch with special bulb housed in perspex lens fitted to the end of an extension rod of rigid or brass flexible tubing; chromium plated, overall length approximately 38″. Designed originally for inspecting petrol cans, barrels and drums. Equally indispensable for examining storage tanks, vats, enclosed machinery, etc.

Weights :

Rigid	... ...	**2¾ lb.**
Flexible	... ...	**3½ lb.**

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