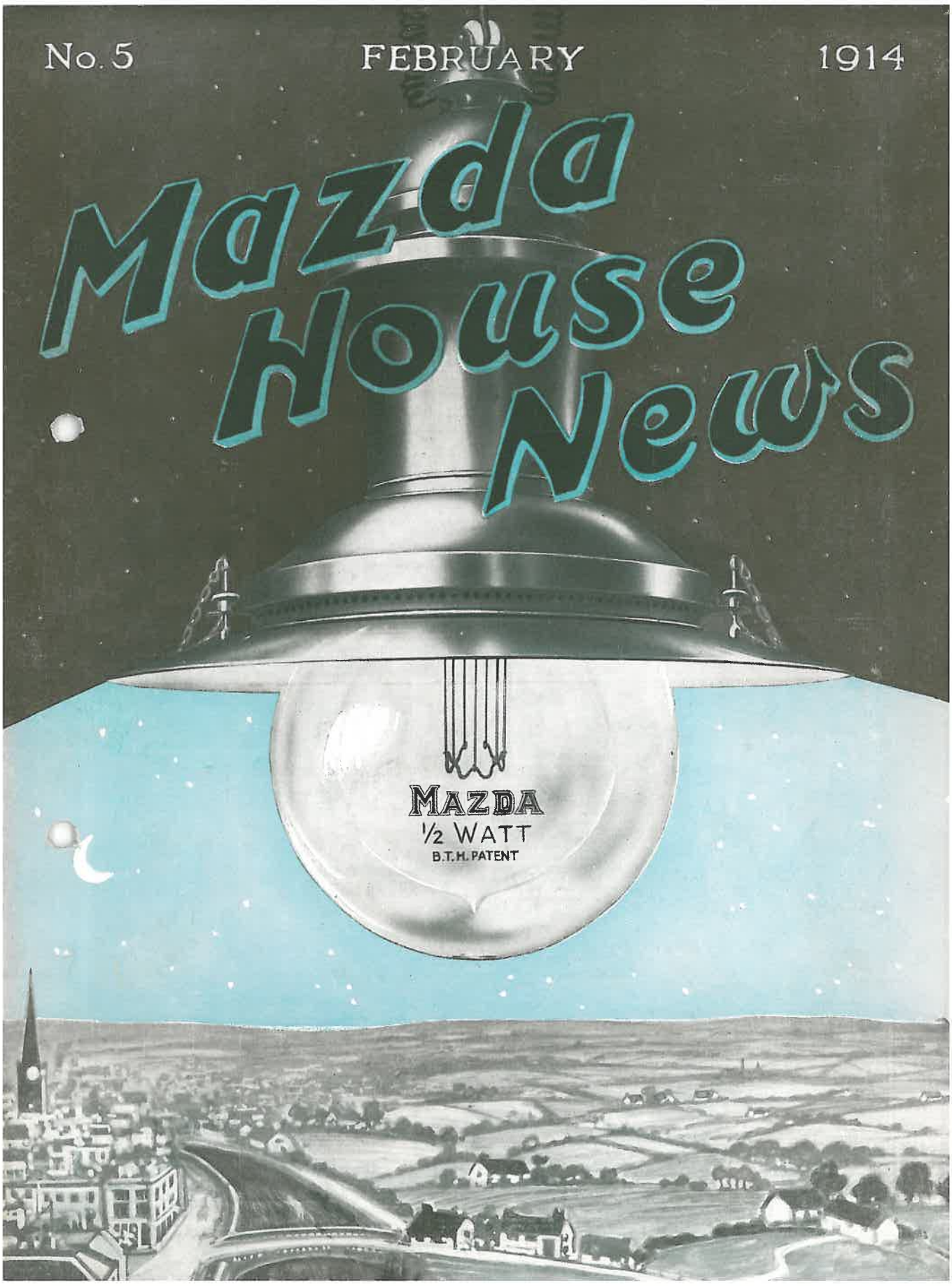
No. 5 FEBRUARY 1914

Mazda House News



One cannot talk about "Half-Watt" Lamps without talking about

GOLIATH E.S. HOLDERS

A 298

We illustrate the types which we have available.

Order from Mazda House or :: :: nearest Branch :: ::

A 299

A 317

Cat. No.	Description.	Price each. s	d.
A 298	Brass with ventilated case	3	0
A 299	Porcelain with shade carrier, steel suspension ring and side cable inlets	3	0
A 317	Porcelain with brass top drilled with $\frac{1}{2}$" gas thread. Fitted with rubber ring	3	0
A 318	Do. do. Fitted with brass cord grip and nipple...	4	0
A 319	Do. do. Fitted with brass suspension hook...	4	0

A 318

A 319

Wires, Cables, Flexible Cords, Etc.

OUR STOCK OF

'Paramho'

Wires, Cables and Flexible Cords is one of the largest in London.

¶ It includes all types necessary for Lighting and Power work, and is in several grades to suit varying conditions of service.

¶ B.T.H. Wires and Cables are the product of extensive manufacturing experience, and are made in accordance with the Cablemakers' Association formulæ.

Send your orders to nearest Branch.

Quality Unsurpassed—Prices Right.

The Lamps govern the Bill

Some Lamps give a very poor light and a heavy bill.

Mazda Drawn Wire Lamps give bright light and a small bill.

Therefore—

see that there is a Mazda Drawn Wire Lamp in every one of your lampholders and thus ensure your light bills being the lightest light bills possible.

Mazda

DRAWN WIRE LAMPS

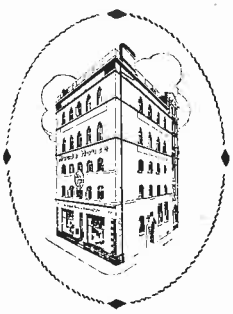
and small accounts are inseparable—you can't have one without the other.

The Aeroplane and the Mazda "Half-Watt" lamp are both typical of modern progress in the field of applied science.

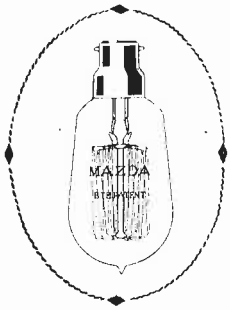
The Aeroplane is the lineal descendant of the kite and the glider, but it could never have been born without the previous development of the petrol engine. In the same way the genesis of the Mazda "Half-Watt" can be traced through the carbon, Gem and "pressed" tungsten lamps, but only with the invention of the Mazda drawn wire filament did it become commercially practicable.

Mazda Progress is the result of constant endeavour and skilled scientific research, and it has brought about an eight-fold increase in the efficiency of electric lighting within the last decade.

Through Mazda Service we give the benefits of Mazda Progress to the world at large.



MAZDA HOUSE NEWS

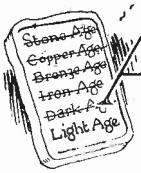


Published to give information on Mazda House matters and to stimulate Electric Lighting business.

No. 5. FEBRUARY 1914.

Published by the British Thomson-Houston Co., Ltd., 77 Upper Thames Street, E.C. All communications should be addressed to the Editor, "Mazda House News."

A New Era in Lighting.



ALL that is new is not necessarily good, but it is the fashion nowadays to herald every new invention and development with the phrase "epoch-making," when it is very often nothing more than the result of misguided ingenuity. If anybody is anxious to use the phrase, and has a penchant towards exactitude, he cannot do better than apply the words to the Mazda "Half-Watt" lamp, which we have pleasure in introducing to our readers in the present number of "Mazda House News."

The Mazda "Half-Watt" lamp is indeed epoch-making, and its arrival undoubtedly means the beginning of a new era in electric lighting. For many years the incandescent electric lamp has been recognised as the supremely best illuminant for all interior lighting conditions. For outside lighting, at all events where very high candle powers were required, the incandescent lamp has not attained the same position, because, for one thing, it did not fully compete on the score of economy with the flame arc lamp and the high-pressure gas lamp, and, for another, the range of sizes in which standard tungsten lamps were made did not extend beyond 1,000 c.p.

EDISON'S FIRST LAMP.

This picture shows the first commercial carbon filament lamp with an efficiency of 5 watts per candle, as developed by Edison in 1885. Overleaf is illustrated and described the Mazda "Half-Watt" lamp, which consumes 0·5 watts per candle —an improvement of 900 per cent. in 29 years.

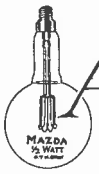
The Mazda "Half-Watt" lamp is twice as efficient as the best ordinary tungsten lamp, and it is at present made in sizes up to 3,000 c.p. This double gain, represented by the 100 per cent. increase in efficiency and the 400 per cent. extension in the range of available sizes, means that the incandescent lamp has at last made an effective entry into the field of high candle-power outside lighting—the only field which remained for it to conquer.

There is now a graduated range of Mazda drawn wire lamps from the 1 c.p. flashlight lamp to the 3,000 c.p. "Half-Watt" lamp —in other words, there is a Mazda lamp for *every* lighting condition.

At the beginning of the new era in incandescent electric lighting stands the Mazda "Half-Watt" lamp. Imagination boggles at what future years may bring forth now that the 1,000 c.p. limit has been removed. Maybe in twenty or thirty years time large tracts of country will be lighted by single incandescent lamps equipped with extensive reflectors and suspended a few miles high in the air, thus realising a prophecy made by Mr. H. G. Wells in one of his scientific novels.

And mark our words, if this thing ever does come to pass, the lamp will be a Mazda—the Sun's Only Rival.

The Mazda "Half-Watt" Lamp.



A *FEW* months ago preliminary announcements of the Mazda "Half-Watt" lamp were published. This new type of drawn wire tungsten lamp, invented, developed and perfected in the research laboratories of the B.T.H. and associated Companies, is now on the market.

Several characteristics distinguish the Mazda "Half-Watt" lamp from the ordinary drawn wire tungsten lamp. It has the exceedingly low energy consumption of about 0·5 watts per candle-power (hence the name "Half-Watt"). The filament is in appearance much shorter than that employed in the older lamps, but it is actually formed of a very closely wound spiral, suspended in a series of short loops. It does not burn in a vacuum, but in a bulb filled with nitrogen at something less than atmospheric pressure.

Briefly stated, the theory underlying the Mazda "Half-Watt" lamp is as follows:—

As is well known, the ordinary tungsten lamp can be operated at a very much higher efficiency than the standard efficiency of 1·0 to 1·25 watts per candle, but when so operated the filament rapidly vaporises and forms a black deposit on the bulb, and the life of the lamp is shortened to an extent which renders the practice commercially impossible. An ordinary 100 volt lamp will operate on a 200 volt circuit at an efficiency of about 0·5 watts per candle, but its useful life will be something under 25 hours.

The problem which the inventors of the Mazda "Half-Watt" lamp had to solve was to find some method of preventing the disintegration of the filament and blackening of bulb when operated at high efficiency. Investigations showed that the use of nitrogen in the bulb had the desired effect. The pressure of the gas prevents the filament from vaporising, in the same way as water can be prevented from boiling at the usual temperature by subjecting it to pressure.

The use of nitrogen had one disadvantage, however, as it carries away the heat from the filament. This difficulty was surmounted by employing a special form of filament wound in a very close spiral, so as to give a relatively small exposed surface in proportion to its volume. From the heat-preserving point of view such a filament has all the advantages of a thick solid wire.

The long neck of the Mazda "Half-Watt" lamp serves as a cooling chamber for the nitrogen and also as a receptacle for any vaporised particles of tungsten which may be carried up by the heated gas. By this means the lower part of the bulb is kept clear of deposit.

The high efficiency of the Mazda "Half-Watt" lamp is thus the result of the combination of two factors: the use of nitrogen to prevent bulb blackening when the filament is operated at high temperature, and the arrangement of the filament in a concentrated form so that it preserves its heat and loses as little as possible through convection.

Below is a brief tabulation of the chief features of the Mazda "Half-Watt" lamp.

Efficiency (approx.): Half watt per candle.

Average Useful Life: 800 to 1000 hours.

Quality of Light: Owing to the high temperature of the filament the light is much whiter in colour than that of the ordinary tungsten lamp, and approximates very closely to daylight.

Intrinsic Brilliancy: The intrinsic brilliancy of the Mazda "Half-Watt" lamp is eight times as high as that of the ordinary tungsten lamp. For interior lighting this high intrinsic brilliancy renders it essential that Mazda "Half-Watt" lamps should be enclosed in suitable diffusing spheres or bowls in order that the light may be agreeably diffused and effectively distributed.

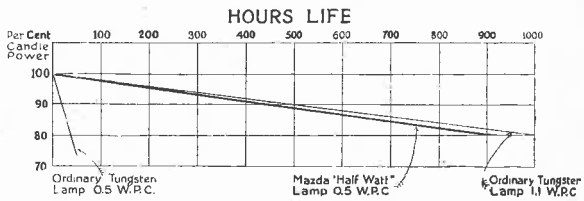


Diagram showing useful life of a Mazda "Half-Watt" lamp and of an ordinary tungsten lamp at 1·1 and at 0·5 watts per candle.

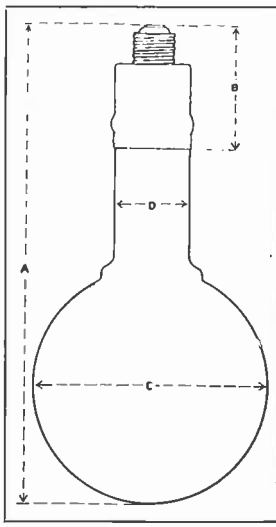
The outstanding characteristic of the Mazda "Half-Watt" lamp is its extremely high efficiency—0·5 watts per candle—more than

double that of the ordinary tungsten lamp. This epoch-making advance in lamp efficiency was only rendered possible by the invention of the drawn wire tungsten filament, which was also a Mazda development, covered by fundamental patents owned in this country by the B.T.H. Co. These two developments, the drawn wire filament and the "Half-Watt" lamp, not to mention other minor improvements, are evidences that the name "Mazda" really represents what has been claimed for it, namely, the embodiment of all that is latest and best in incandescent lamp manufacture. The table below shows the voltages and sizes in which the Mazda "Half-Watt" lamp is available.

Volts	Watts	Approx. British c p.
50—65	300 500	600 1000
100—130	500 1000 1500	1000 2000 3000
200—260	1000 1500	2000 3000

With the placing on the market of the "Half-Watt" lamp there is now a range of Mazda lamps from 1 c.p. to 3,000 c.p., suitable for all commercial voltages and applicable to every conceivable lighting purpose.

In addition to the Mazda "Half-Watt" lamp we have developed a range of special "Half-Watt" fittings which are described elsewhere in this issue.



DIMENSIONS OF MAZDA "HALF-WATT" LAMPS.

Watts	300	500	1000	1500
	ins.	ins.	ins.	ins.
A	$12\frac{3}{8}$	$15\frac{5}{8}$	$17\frac{3}{4}$	$19\frac{1}{2}$
B	$4\frac{1}{2}$	$4\frac{1}{2}$	5	5
C	5	6	8	10
D	$2\frac{3}{16}$	$2\frac{9}{16}$	3	3

Further information and prices of Mazda "Half-Watt" lamps and fittings will be found in our Price List No. 11,000.

Mazda

(with apologies to a real poet).

I am the Lamp of the Present,
In me the virtue stays.
I shall be burning brightly
After many days.

I am the Lamp of the Future:
When other lights shall wane
I shall be waxing stronger,
Shedding light amain.

Mazda's my name, and brilliant
The light I give always.
I shall be burning brightly
After many days.

A Coming Booklet.

IN a week or so our new Shop Lighting booklet will be available for distribution. This is merely a preliminary announcement, so please don't write in for copies at once and expect them by return of post. Our immediate object is to prepare you for the publication of the best and most complete booklet ever compiled on the subject of shop lighting. We want you to look forward to it, and to make plans for getting business by its aid directly it does appear.

One of the illustrations in the Shop Lighting booklet, showing the windows of a furniture store illuminated by means of Mazda lamps in X-Ray reflectors.

The booklet will be attractively arranged

and lavishly illustrated, and will deal with the artificial illumination of all kinds of shops and stores by means of Mazda lamps and B.T.H. fittings and reflectors.

You know what a huge field for business there is in connection with shop lighting on modern lines, and you know that until recently this field has been almost entirely unexploited. With your help, and by means of our Shop Lighting booklet and trade paper advertisements, we intend to get a considerable slice of this business.

We count on our booklet and advertisements to interest the shopkeeper in good lighting. They cannot fail to do that. But most of all we count on you, because you can get into personal touch with the trader and turn his interest into conviction, and his conviction into order-giving.

"*The Quality of Mazda is not strained.*"—So Shakespeare might have written had the Merchant of Venice been an Electrical Contractor.

The Sun's Only Rival

The True Origin.

A man named Langmuir in the States
Thought much about lamps and "juice" rates.
The result of his "swot"
Is the Mazda "Half-Watt"—
Do you want patent numbers and dates?

The Effective Lighting of Churches.

CHURCH lighting is an art, and too little consideration has been given in the past to the appropriate and artistic illumination of places of worship as distinguished from the lighting which is merely adequate and efficient. Adequacy and efficiency are of course important factors, but church lighting, if it is to serve its highest and fullest purpose, must possess other qualities—qualities which cannot be interpreted in terms of the pounds, shillings and pence of lighting costs, but are expressed rather in the reverent and exalted moods which they inspire.

ST. ANDREW'S CHURCH, PLAISTOW.
Original gas lighting, which merely accentuates the gloom.

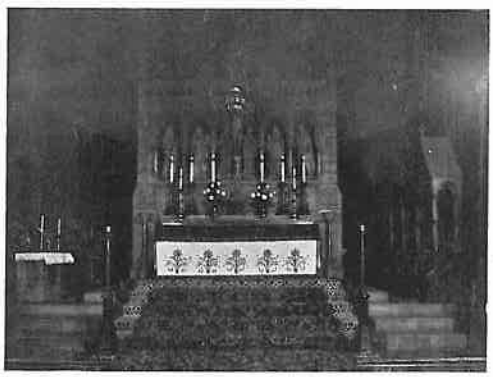
Psychologists tell us that our thoughts and ideas are moulded and influenced by material circumstances. If this be so in every-day life when we take pride in being unimpressionable,

ST. ANDREW'S CHURCH, PLAISTOW.
New lighting by means of eight 4-light Corona fittings, equipped with 60-watt Mazda lamps and Opalux reflectors. Note the improved appearance of the interior and the way the Altar stands out.

then it must be true to an even greater extent during public worship when we doff our armour of emotional reserve. It is of course a well-known fact that artificial lighting has a very marked psychological effect on those who are subjected to it. This fact has always been realised in the theatre where lighting plays a most important part, not merely as a stage accessory, but in the production of "atmosphere" and emotional appeal.

We do not wish to link the Church and the Stage in any irreverent comparison, but there is surely a certain similarity between the results which both should aim at in their artificial lighting.

In the November number of "Mazda House News" we referred to this question of church lighting and reproduced photographs of two installations in which Mazda lamps and B.T.H. reflectors were used. In both cases certain effects had been secured by the special arrangement and equipment of the light sources. That these effects were desirable and entirely appropriate we think all who saw the pictures will agree.



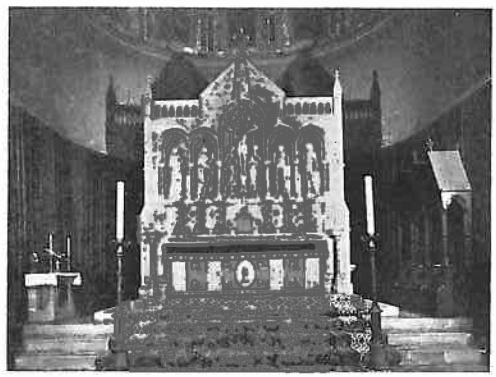
ST. ANDREW'S CHURCH, PLAISTOW.
This is how the Altar looked before Mazda lighting was employed.

We are now able to illustrate an even better instance of effective church lighting, and a comparison of the two pairs of photographs, showing the interior of the church before and after the new installation respectively, should be both interesting and instructive.

The church illustrated is St. Andrew's, Plaistow, and it was formerly lighted by gas. The new installation in the body of the church consists of Corona fittings equipped with Mazda lamps, and Opalux glass reflectors. The Altar is lighted by means of Mazda lamps in B.T.H. Mirolux silvered glass trough reflectors, arranged to project the whole of their light on to the beautiful reredos.

The light units themselves are invisible.

Apart from the increased effectiveness of the new installation in showing up the Altar and the whole interior of the church to better advantage the Mazda illumination is far more comfortable and agreeable to the congregation than the old gas lighting. By using efficient Opalux reflectors it has been possible to raise the light units above the line of vision without any sacrifice of illumination at eye-level. And, moreover, the Opalux reflectors screen the brilliant lamps and diffuse the light, distributing it in a soft mellow radiance which is very beautiful and restful.



ST. ANDREW'S CHURCH, PLAISTOW.

The Altar is now lighted by means of Mazda lamps in Mirolux trough reflectors. A length of trough reflector equipped with two 60 watt Mazda lamps is fixed vertically to the east side of each of two pillars which stand a little in front of the Altar and are, therefore, not seen in the picture. The light units are invisible from the body of the Church. The contrast between this picture and the last one is too striking to need any comment.

Our Illuminating Engineers designed the installation at St. Andrew's Church. They will be pleased to design an equally effective lighting installation to harmonise with the interior of any church in which you are interested.

Mazda

The one man in a thousand who doesn't appreciate Mazda lamps. He is almost worthy of a place in our "Silly Ass" series. This carbon lamp user is the man you want to get after.

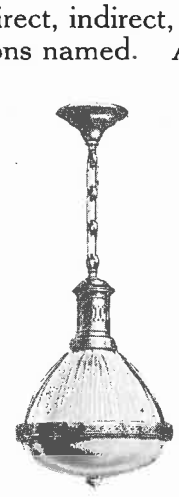
SOME MAZDA "HALF-W

On this page are shown direct, indirect, and semi-indirect fitting
roughly in the three divisions named. All in the top row are di
of the first, last, and
" Eye-Rest " fittings,
row and three in the
indirect fittings. All
lamp fittings are prov
ders and are pr


H.W. 1


H.W. 2


H.W. 3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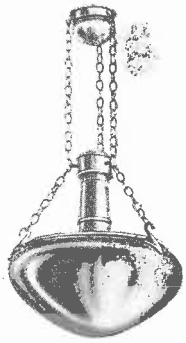
H.W. 5


H.W. 12


H.W. 13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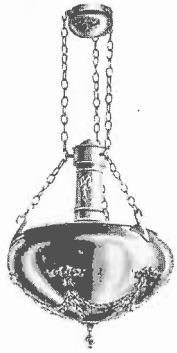
H.W. 15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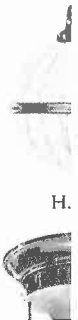
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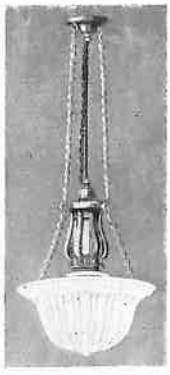
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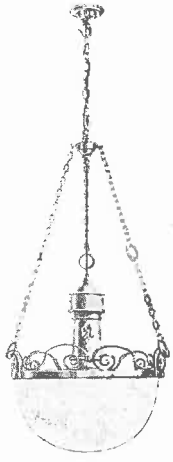
H.W. 25


H.W. 26


H.W. 27


H.W. 28


H.

NOTE.—The numbers under the illustrations are *not Catalogue Nos.* but are merely given for reference. I

'ATT" LAMP FITTINGS.

for Mazda "Half-Watt" lamps. These fittings are arranged
ect lighting fittings, those in the second row, with the exception
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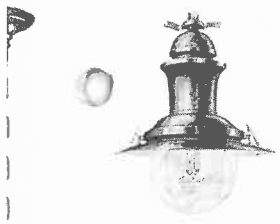
Mazda "Half-Watt"
led with Goliath hol-
perly ventilated.



H.W. 7

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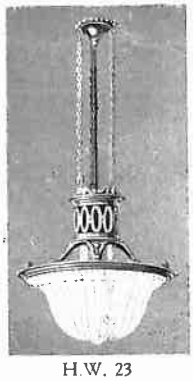

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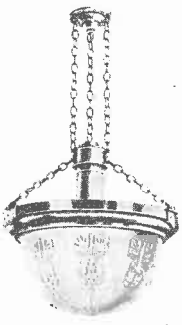

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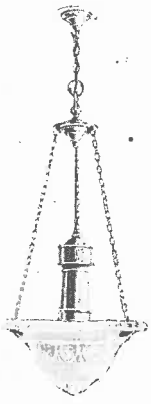


H.W. 31

H.W. 32

H.W. 33

H.W. 34

you write about any fitting shown on this page please *quote No. and mention February "Mazda House News."*

Fittings for Use with Mazda "Half-Watt" Lamps.

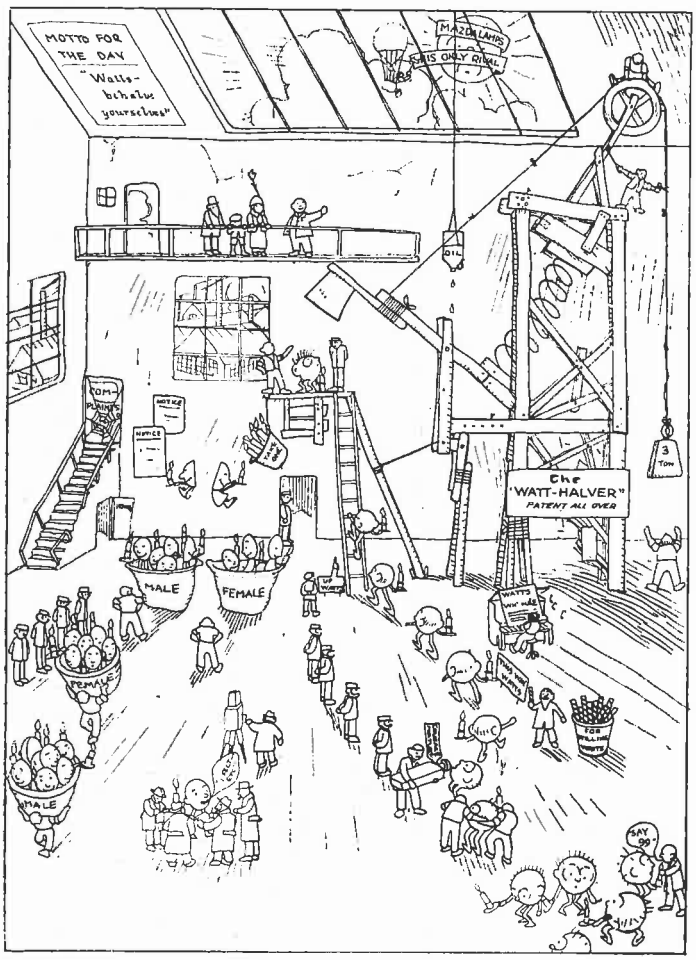
SINCE the introduction of the Mazda "Half-Watt" lamp on January 12th, we have bestirred ourselves to some purpose in the matter of designing suitable fittings. There are at the present moment over forty different B.T.H. "Half-Watt" lamp fittings available, most of which are illustrated on pages 10 and 11. There are B.T.H. "Half-Watt" fittings for direct lighting, semi-indirect lighting, and "Eye-Rest" indirect lighting. All are fitted with Goliath holders and provided with proper means of ventilation.

DIRECT LIGHTING.

Under this head there are weatherproof lanterns fitted with opalescent globes and special reflectors for outside lighting; Radial Wave reflector fittings for street lighting; and various types of glass sphere fittings for interior lighting. All these fittings have been properly designed and constructed for use with Mazda "Half-Watt" lamps; they are not hurried adaptations of ordinary fittings.

SEMI-INDIRECT LIGHTING.

From what has been said in an earlier article about the high intrinsic brilliancy of the "Half-Watt" lamp, and from what you all know of the harmful effects of glare, it will be obvious that for interior lighting these lamps must be adequately screened from view, either by means of fairly dense diffusing glassware, or of opaque bowls such as are employed in totally indirect lighting. All the semi-indirect fittings shown on pages 10 and 11 fulfil this requirement, because they are all equipped with bowls made of one or other of the various types of scientific glassware which we have developed. Some have Alba bowls, some Calla, and some Veluria, but all have the effect of diffusing the light and protecting the eyes from the brilliance of the "Half-Watt" filament.



WATT HALVING.

Our artist has tried to depict an important process in the manufacture of Mazda "Half-Watt" lamps. While admiring the artistic and imaginative qualities of the sketch it is easy to see that the executant is not an engineer. We halve our watts in a much more humane fashion, and our machinery differs in important details from the ingenious device illustrated.

INDIRECT LIGHTING
(B.T.H. "Eye-Rest" System).

In this category there are some nine different patterns of "Eye-Rest" fittings available, some with metal and some with plaster bowls. These fittings are equipped with X-ray silvered glass reflectors, and, indeed, are the same in every respect as standard "Eye-Rest" fittings, with this exception, that they are provided with a suitably ornamented top housing to accommodate the extra length of the "Half-Watt" lamp.

In this matter of "Half-Watt" fittings we think we have cause for self-gratulation. Anyway, whether or no we deserve any special credit for the accomplish-

ment, the fact remains that within a few short weeks we have designed and *made* a complete range of fittings for Mazda "Half-Watt" lamps.

A Mazda Window Display.

IN all the world there is no more potent form of advertising than a well-arranged window display. It brings immediate and easily traceable results, which is rarely the case with press and poster advertising.

The important thing in arranging a window display is to specialize. Don't try to show a hundred things at once. You will do a great deal more good by concentrating the attention of the public on one or two articles than by spreading it thinly in casual glances over a miscellaneous multitude.

A MAZDA WINDOW DISPLAY.

The accompanying illustration shows a successful window display devoted to one commodity—Mazda lamps. You can see from the photograph that it is quite a simple affair. In the centre at the bottom of the window is one of our Mazda Villas, one side of which is lighted by a 16 c.p. carbon lamp, and the other by a 20-watt Mazda. Cards at the side explain the difference in current consumption. Above the Villa is suspended a cardboard lamp (also supplied by us) flanked on each side by revolving piles of Mazda lamp cartons, surmounted by cardboard gargoyles. At the back and sides of the window are some of our showcards.

If we can help you to make a Mazda window display, on these or any other lines, please let us know by letter, or, better still, tell our representative the next time he calls. He can probably suggest a suitable arrangement and bring away with him a list of the material required.

Answers to Correspondents.

"LOVER OF ANIMALS."—No, we do not use glow worms for the filaments of Mazda "Half-Watt" lamps. While admitting the extremely high efficiency of the glow worm as a light giver, and the fact that its shape and ductility admirably adapt it to the formation of lamp filaments, we found after considerable experiment that the little beast would not lie still in position. Of course, a writhing light source is worse than useless, and we had to abandon the idea. Apart from this, the introduction of glow-worm food into the hermetically sealed bulb of the lamp at the necessary intervals was difficult of accomplishment.

"SEMI-WATT."—Your writing is indistinct. Should your last remark on the subject of the Mazda "Half-Watt" lamp read "Wot 'alf" or "Not 'alf"? If the former, our answer is that we don't know (*e.g.*, we wot not); if the latter, we can only refer you to our published figures.

Two "Half-Watt" Installations.

HERE are two "Half-Watt" installations photographed in a hurry in order to include them in this number. Topicality is a fine thing, but it imposes a terrific strain upon our photographer and block-maker. However, all's well that ends well, and although the photographs do not

"HALF-WATT" LAMPS AT SELFRIDGE'S.
A corner of the Bargain Basement lighted by Mazda "Half-Watt" lamps in Alba spheres. Where goods are sold below cost it is essential that the lighting should cost as little as possible. See ?

show all we would like they provide some indication of the lighting possibilities of Mazda "Half-Watt" lamps.

The first shows a corner of the Bargain Basement at Selfridge's, in which Mazda "Half-Watt" lamps have recently been substituted for

"Eye-Rest" lighting with Mazda "Half-Watt" lamps in Vauxhall Motor Co.'s showroom, Great Portland Street.

the enclosed arc-lamps formerly employed. The lamps are enclosed in Alba spheres, and the illumination, although intensely brilliant and white, is not at all glaring or uncomfortable, because the light is thoroughly and agreeably diffused by the surrounding glassware. A brilliant white light, approximating to daylight in quality, is very essential in department stores where colour matching and judging are frequently carried out. The Mazda "Half-Watt" lamp provides such a light, and provides it in an extremely simple and economical manner.

The Vauxhall Motor Company's showroom in Great Portland Street has also been equipped with Mazda "Half-Watt" lamps, and here again the illumination results are excellent in every way. The lamps are contained in specially designed B.T.H. "Eye-Rest" fittings which, of course, absolutely preclude any possibility of glare. In a motor showroom it is important that the artificial lighting should be so arranged as to facilitate the examination of all parts of the car—underneath the chassis, as well as the coach work. Indirect lighting fulfils this requirement owing to the perfect diffusion of the illumination, and the consequent absence of shadows at the sides, and the reduction and softening of the shadows underneath the cars.

"Eye-Rest" lighting with Mazda "Half-Watt" lamps is twice as efficient as ordinary indirect lighting, and can thus be employed with *economic* as well as artistic and hygienic advantages in place of direct lighting in showrooms, shops and all large interiors.

The two installations referred to above are typical of what the Mazda "Half-Watt" lamp can accomplish in the important field of shop lighting. Every shop that uses electric light is a possible buyer of Mazda "Half-Watt" lamps, not only for inside, but also for outside lighting. See to it that all the shopkeepers near you are approached on the subject.

The Sun's Only Rival

An Extension of the Drawn Wire Principle.

IN case the point has not been made sufficiently clear in previous articles we wish to emphasize it here: The filament of the Mazda "Half-Watt" lamp is made of *drawn tungsten wire*, and the lamp itself represents an extension of the drawn-wire principle which was originated in the standard Mazda lamp over two years ago.

The development of the Mazda "Half-Watt" lamp was only made possible by the previous inventions of the drawn-wire principle. In the ordinary tungsten lamp the adoption of the drawn-wire filament brought about a very considerable increase in mechanical strength and a slight gain in efficiency. In the case of the "Half-Watt" lamp, with its closely wound spiral filament, the employment of drawn tungsten wire was absolutely essential, because, obviously, a pressed or squirted filament could not be so formed.

The reader who contributed this sketch says that Mazda lamps take a lot of beating.

A Comparison of Costs.

By W. E. BUSH

(Illuminating Engineer, London Office).

COMPARISONS of the Mazda "Half-Watt" lamp with the enclosed arc lamp, on the basis of actual results, prove conclusively that the former is a great deal more efficient than the latter.

An absolute comparison is a somewhat difficult matter, but the following data, based on average results as found in commercial practice, shows that the overall efficiency of the Mazda "Half-Watt" lamp is about twice that of the enclosed arc lamp :—

Lamp	Amps	Volts	Watts	Mean Hemispherical candle-power	Cost of energy per 1000 hrs. at 3d. per unit	Renewals depreciation and carbons per 1000 hours*	Cost per candle-power hour in pence
					£ s. d.	£ s. d.	
Mazda "Half-Watt" ...	5	100	500	1000	6 5 0	1 15 0	·00192
Enclosed Arc	5	110	550	460	6 17 6	6 0	·00374

*The amounts under this heading represent, in the case of the Mazda "Half-Watt" lamp, the cost of one renewal per 1,000 hours; and in the case of enclosed arc lamp the cost of carbons and depreciation.

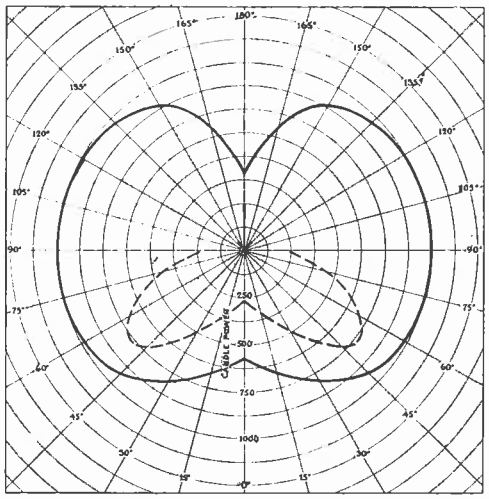
Tests recently made by the writer in a large store using both forms of illuminant gave the following results :—

Enclosed arc lamps, fitted with opal reflectors and consuming 780 watts each, gave an average intensity of 2·5 foot candles on a plane 3 ft. from the floor. The same number of 500 watt Mazda "Half-Watt" lamps enclosed in Alba spheres, gave an average of 7·5 foot candles under precisely similar conditions.

A saving in current of 36% was therefore effected, with an increase in light of 200%.

Tests were also made for colour matching, and it was found that an equal number of colours could be satisfactorily matched under both illuminants. For instance, blues, greens, greys, etc., are better matched by arc light; whilst reds, browns, yellows, etc., can be judged more accurately under the light of the Mazda "Half-Watt" lamp. It takes but a short time for the employees to become accustomed to the new conditions, and the installation of Mazda "Half-Watt" lamps in department stores and drapers' shops should not be attended by any difficulty on that account.

Mazda "Half-Watt" lamps can be more easily fitted with efficient reflectors than arc lamps; and where scientific reflectors are used the figures shown above (which apply to lamps equipped with Alba spheres) would be still more favourable to the new lamp.



POLAR CURVES OF ARC LAMP AND MAZDA "HALF-WATT" LAMP.

A 5-amp. 110 volt (550 watt) enclosed arc lamp (dotted line curve) has an efficiency of about 1·2 watts per mean hemispherical candle-power, the maximum candle-power being approximately 800 at an angle of 40 degrees below horizontal.

The 500 watt Mazda "Half-Watt" lamp, having an efficiency of 0·5 watts per mean hemispherical candle-power, gives its maximum candle-power in a zone between 40 degrees above and 50 degrees below horizontal, as seen from the outer curve.

A BRILLIANT GARAGE.

This motor garage is lighted by means of high candle-power Mazda lamps in Mazdalux reflectors. Angle Mazdalux reflectors are used on the wall brackets The illumination is well above the average standard for such places.

A Good Book.*

IF you want an informative, well-written, and well-illustrated book on incandescent electric lamps you cannot do better than buy a copy of Mr. D. H. Ogley's latest work. The appended list of chapter headings will give some idea of its scope and arrangement :—

The Production and Propagation of Light—Illumination and its Measurement—Standard Light Sources—Photometry and Photometers—Light Distribution from Incandescent Sources—Incandescent Electric Lamps—Characteristics of Incandescent Lamps—The Eye and the Principles of Vision—Lighting Systems (The Direct System)—Lighting Systems (The Indirect System)—Further Illumination Calculations.

Mr. Ogley emphasizes the importance of the drawn-wire filament in the development of the tungsten lamp, and reproduces some excellent curves and diagrams showing the improvements in mechanical strength and candle-power maintenance due to this Mazda invention.

The chapter on indirect lighting is especially interesting, and the author's remarks on the value of this method of illumination give a scientific cachet to all the claims we have made in regard to the B.T.H. "Eye-Rest" system. This chapter and also the one on direct lighting contains a number of pictures of typical installations carried out on modern scientific lines.

The book is one which every electrical contractor and lighting engineer should read.

*INCANDESCENT ELECTRIC LAMPS AND THEIR APPLICATION. DANIEL H. OGLEY, B. Eng. Crown 8vo., 105 pp., with illustrations. Longmans, Green & Co., 2s. 6d. net.

Mazda lighting is just as applicable to small shops as to large ones. The Confectioner's shop illustrated above has been rendered a great deal more attractive and prosperous by the installation of Mazda lamps and Veluria reflectors.

B.T.H. DRAWING OFFICE, RUGBY.
What do you think of this for drawing office lighting? High intensity of light; no shadows and no glare; in short, perfection. Mazda lamps in semi-indirect fittings with top reflectors are used here.

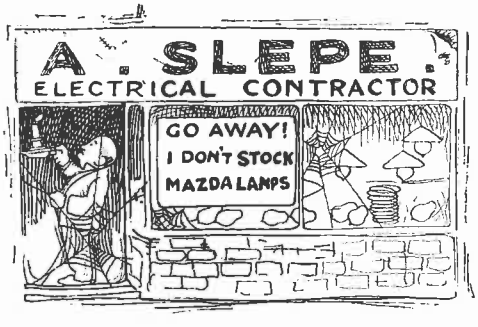
The Sun's Only Rival

"Half-Watt" Lamp Holders.

HITHERTO the lamp holder, although recognised as a useful accessory, has not been considered of sufficient importance to merit careful selection. With the coming of the "Half-Watt" lamp the lamp holder assumes a more important position in the installation, because it is required to carry comparatively heavy currents and to be capable of supporting the fairly considerable weight of the lamp.

The range of B.T.H. Goliath Edison Screw holders, part of which is illustrated on page 2, includes a number of patterns in brass and porcelain, fitted with cord-grip, suspension hook, or with brass tops drilled with ½" gas thread. All of these holders are substantially constructed, and have an ample margin of safety in the matter of carrying capacity.

Mazda



SILLY ASS!

Veluria REG'D

—the
GLASS
WITHOUT GLITTER
for

SEMI-INDIRECT LIGHTING

Veluria is universally admired for its beauty—it set the fashion for white glassware and, in the form of reflectors, quickly took pride of place over all other scientific white glass reflectors.

But it is seen at its greatest beauty when used for semi-indirect lighting. Unlighted, Veluria has the pure charm and richness of white marble or alabaster; alight, it is suffused with a delicate ivory tint, and provides an illumination beautifully clear and soft, and suggestive of warmth and comfort.

"VELURIA" DISH.

VELURIA" BOWL.

The delicate neutral tint of Veluria glass will blend with any colour scheme, while the warmth and clarity of the reflected light accentuates the rich colourings of rugs, draperies and hangings.

Many charming designs are available, for which we have developed a special range of fittings.

Particulars and Prices from nearest Branch office.

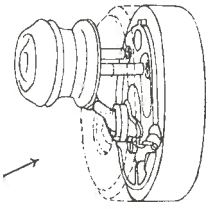
"VELURIA" URNOLITE.

A FOOL-PROOF SWITCH-PLUG

A 1007 White Porcelain (Switch on).
5 amps. Price 3/- each.
10 amp. and flush pattern in preparation.

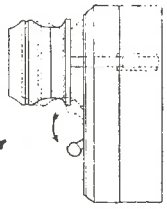
When the switch is in the "on" position, the plug cannot be inserted to make contact.

This shows why →



The act of withdrawing plug breaks the circuit before plug pins leave the contact.

This shows how →



The B.T.H. INTERLOCKING SWITCH-PLUG

English made throughout. (Patent No. 6673/1912.) Regd. No. 629181.

has been designed to meet the demand for a switch-plug for use with small Heating Devices, Radiators, &c.

The above illustration and diagrams will convince that a really fool-proof switch-plug is now available. No arcing—no shocks.

DELIVERY FROM STOCK.

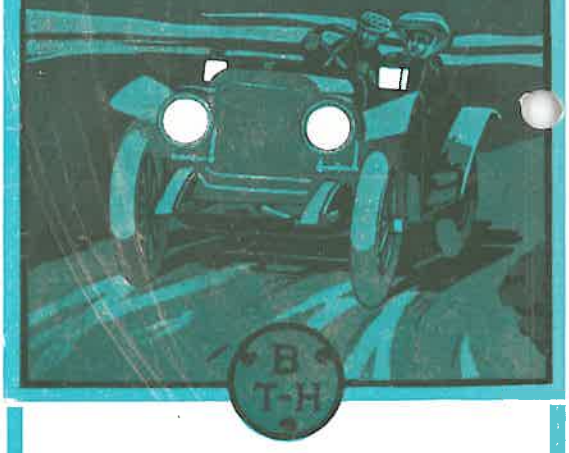
Further particulars from—

The British Thomson-Houston Co., Ltd.,
Mazda House, 77 Upper Thames Street, London, E.C.,
or any of our Branch Offices (see back cover).

Mazda

AUTOMOBILE Electric Lamps

(DRAWN WIRE)



Look at the filament construction of the Mazda Headlight lamp below—

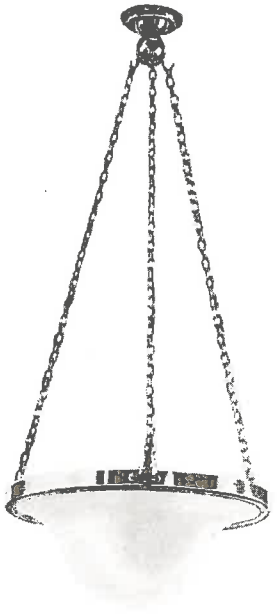
You will see it is a helical coil and as near as possible to the theoretical point source of light so essential for proper results with parabolic reflectors.

This method of construction which has revolutionized electric lighting for motor cars, was first developed and embodied in Mazda automobile lamps with drawn wire filaments.

Send for price list showing other sizes and shapes.

Mazda Headlight lamp with Helical Coil Filament.

Inexpensive Semi-Indirect Fittings



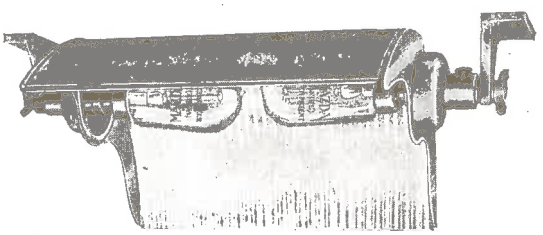
THE plain Semi-Indirect Fittings illustrated are equipped with special opal glass bowls. The greater part of the light is reflected from the ceiling, but a small amount is transmitted through the bowl.

The fitting shewn at the left is for use with a single Mazda lamp, and that on the right for a cluster of lamps. Ideal for office lighting. Send for particulars.

F8840 Polished Brass, 17/6 upwards

F8850 Polished Brass, 22/6 upwards

B.T.H. "MIROLUX" TROUGH REFLECTORS



B.T.H. MIROLUX FOR ORDINARY MAZDA LAMPS.

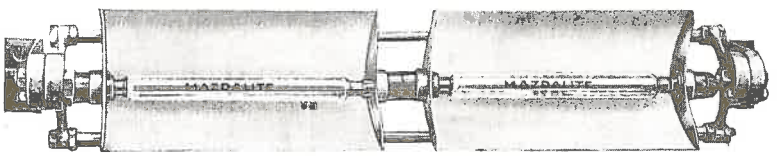
F8358. Standard 15 inch length - - - 21/-

F8359. End piece, consisting of distance piece and 2 adjustable brackets, each 3/-

THESE reflectors are for cornice lighting and for all lighting conditions where space considerations debar any but a trough reflector.

They are made of specially curved mirror, which is corrugated to prevent striation. Extra length is obtained by adding further standard lengths.

Apply to the nearest Branch Office for further information and data.



B.T H. MIROLUX FOR MAZDALITE LAMPS.

F8345. 12 in. length of reflectors wired complete with holders 10/-

F8346. End brackets with suitable lengths of rod, per pair 7/-

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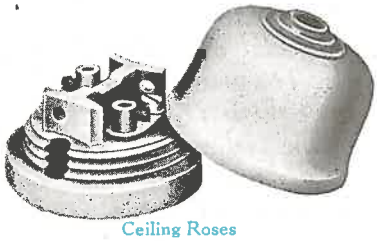

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