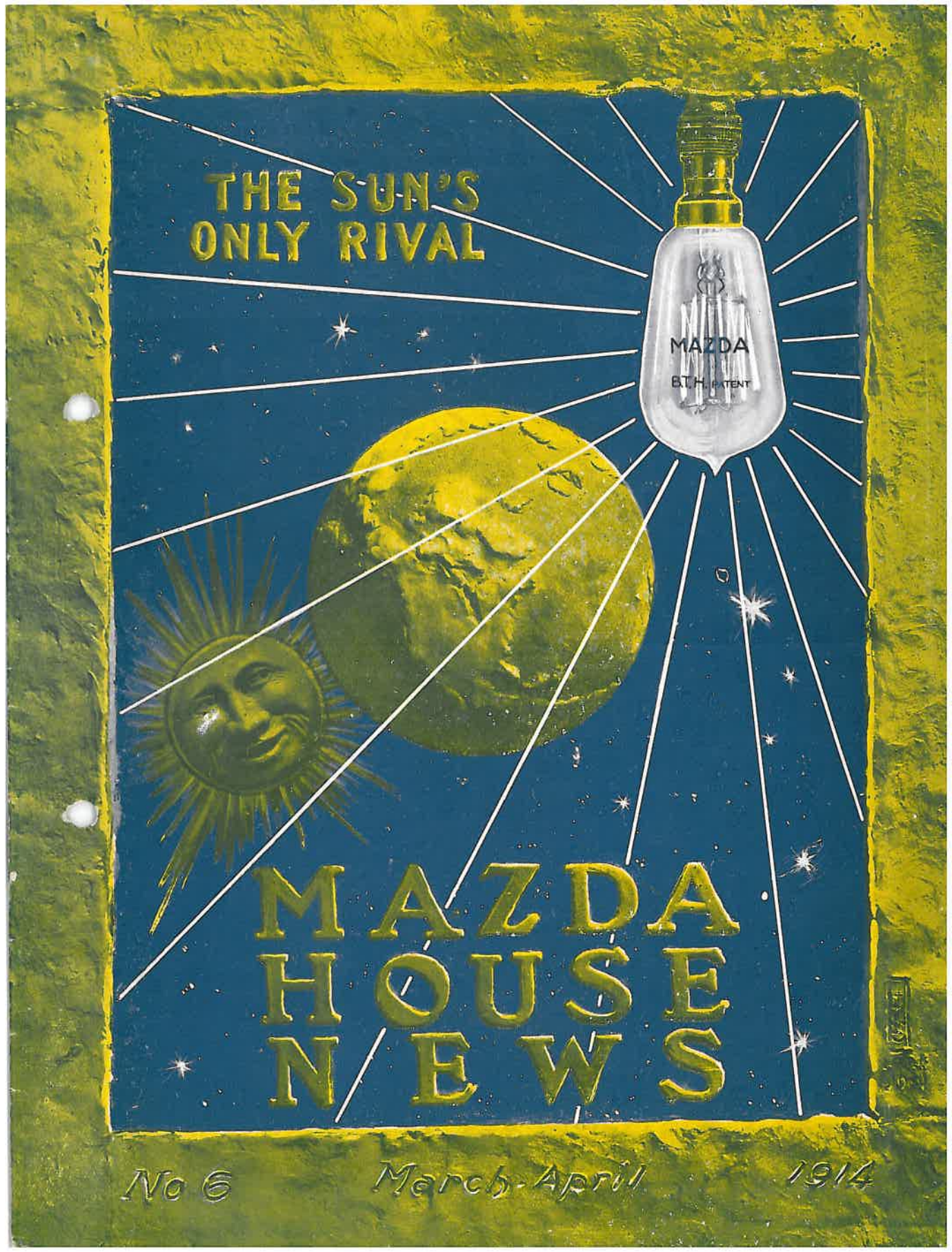

THE SUN'S
ONLY RIVAL
MAZDA
B.T.H. PATENT
MAZDA
HOUSE
NEWS
No 6
March-April
1914

Veluria Semi-Indirect Lighting Fittings.

Look at the Price

VELURIA HEMISPHERE FITTING
Complete with glassware and lamp holders, but not lamps or wiring.

F 8933, for one 30-40 w. Mazda - **18/9**
F 8935, for one 100 w. Mazda - **24/6**
F 8937, for one 400 w. Mazda - **44/-**

The fitting illustrated is one of a number of inexpensive but very effective semi-indirect units which we have recently designed. This fitting consists of a Veluria Hemisphere supported by three arms which hold the lip of the glassware by means of thumb-screws.

Veluria Hemisphere fittings are supplied with either chain suspension (as illustrated) or with central tube suspension. We shall be pleased to send full prices and particulars on request. *See addresses on back cover.*

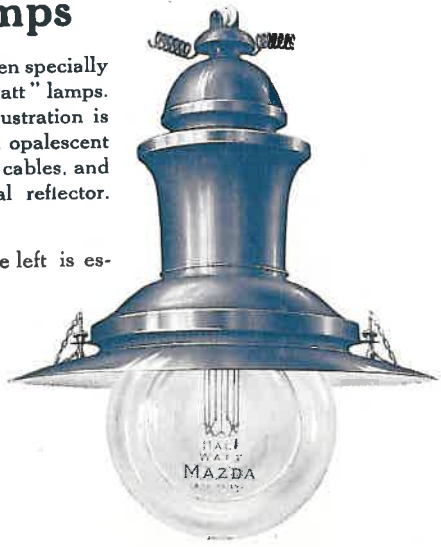
Weatherproof Lanterns for Half-Watt Lamps

Weatherproof Angle Lantern
F 8938, for 1000 or 1500 w. lamp, **33/-**
(Without Lamp)

These Weatherproof Lanterns have been specially designed for use with Mazda " Half-Watt " lamps. The one shown in the right hand illustration is fitted with internal reflector, ventilated opalescent globe, Goliath holder and connecting cables, and either with or without external reflector. Finish : Black vitreous enamel.

The Angle Lantern shown on the left is especially suitable for lighting shop windows from the outside. It consists of an upper bell-shaped casing containing the Goliath holder, and a vitreous enamelled reflector attached to the casing by a screw sleeve. Finish : Black vitreous enamel.

Send for full particulars of these and other Weatherproof Lanterns for Half-Watt lamps.



Weatherproof Lantern
F 9357, for 300 or 500 w. lamp, **42/-**
Other sizes from **38/6**
(Without Lamp)

Mazda Saves Money by Increasing Durability

Before the introduction of the Drawn Wire filament—first developed and embodied in

MADE IN RUGBY.

Mazda

DRAWN WIRE

ELECTRIC LAMPS

The Mazda Drawn Wire filament is in one length.

It is wound freely on the mount in wide loops.

The supporting wires are light and act as springs to absorb shock.

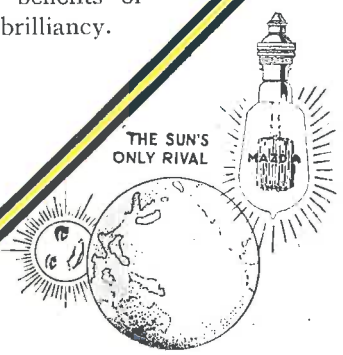
—metal filament lamps were fragile and the necessity for frequent renewals discounted the economy of current consumption of this type of lamp. The Mazda Drawn Wire process changed all that; fragility was conquered, uncertainty of performance was banished, and very considerable savings have been and are being effected for electric light users. Gone are the days when metal filament lamps had to remain uncleaned because of the risk of breakage—nowadays the durable drawn wire lamps are despatched all over the world with very little precautions as to packing, and the percentage of breakage is infinitesimal. So sturdy are they in construction that millions are in use to-day for motor-car lighting, and millions more in factories, mills, steamships, and battleships. Therefore see to it that **you** use Mazda exclusively and obtain to the full the benefits of great strength, great economy and great brilliancy. Sold by all Electrical Dealers and Stores.

Informative Booklets and Leaflets sent free on request.

THE BRITISH THOMSON-HOUSTON Co., Ltd.,

Mazda House, 77, Upper Thames Street, London, E.C.

Works: RUGBY. See back cover for Branches.



SELLING ON SIGHT

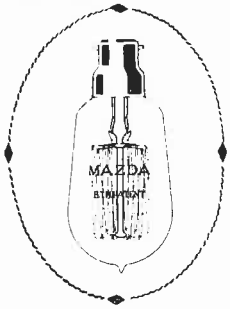
IF you want to keep your stock, put it under the counter; if you want to sell it, show it.

Amongst those things which sell on sight, lighting appliances are surely the easiest to dispose of in this way, because they can be shown in operation.

But the appliances must be the best available, and they must be displayed in the most effective manner, if this sales method is to bring its full harvest of profit and prestige.

Let us tell you what to show, and how to show it. Mazda lamps and B.T.H. lighting appliances always make an attractive display, and their illuminating results speak more eloquently and convincingly in their favour than the most skilful salesman could do.

MAZDA HOUSE NEWS



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

No. 6. MARCH—APRIL 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."

The Period of Renovation.

ALTHOUGH this month is near the end of what is generally called the "Lighting Season," it should be nevertheless a time of considerable prosperity for all engaged in the art, business, trade or science of electric lighting. Easter is past, and with its passing people become infused with that Spirit of Renovation which finds practical expression in the somewhat chaotic activities known as Spring Cleaning. This is what we call the Period of Renovation, and this is the time when most householders cast around to see what additions or renewals are required in their domestic equipment. If this period is not a profitable one for the electrical industry it must be due to the unaccountable supineness of those engaged in the business.

Follow the man with the whitewash brush. Wherever he finds work to do it should be easy for you to get business in new fittings, lamps, etc.

It may be true that people do not buy electric lamps to any great extent in the spring (although they might be persuaded to make an exception in favour of Mazda lamps—for even summer savings in electric lighting cost are not necessarily insignificant), but if there is any question of installing new and more effective electric light fittings, then surely this is the appropriate and accepted time for such a change.

Have you (we are addressing electrical contractors at the moment) ever considered the matter in this light? We know that there is a tendency amongst those engaged in the electrical industry to limit their active and aggressive missionary efforts to the dark days. We suggest that there is need for some of this selling energy in the *salad* days and the *dog* days—certainly in the former.

When a man is having his ceilings whitewashed and his walls re-papered he is open to reason in the matter of new fittings, especially if his old ones are likely to look out of place in the renovated surroundings. The householder is open to suggestion, but as a general rule he won't make the change unless somebody else makes the suggestion. And he won't consider the suggestion unless it refers to fittings **which are** not only **new** (newness, as Mr. Chesterton has pointed out with considerable emphasis, is in itself no virtue), but are also more effective and beautiful than the old ones.

You know where to come for the most effective and beautiful electric light fittings and reflectors. You know where to come for supplies of overprinted literature of the most persuasive character. If you don't know, and it's not our fault if you don't, we may say at once that it's the nearest B.T.H. Office. *(See back cover).*

Here, then, are the weapons to your hand—Mazda lamps, B.T.H. fittings, and B.T.H. literature. Are you going to let slip this present opportunity for good lighting business? We don't think you will; but to make sure that you seek business in the right quarter we would

whisper one word of advice: *Follow the man with the whitewash brush.*

And don't forget the hotels and boarding houses at holiday resorts. This is, for them, not only the time of spring cleaning, but it also marks the beginning of *their* lighting season.

The Sun's Only Rival

New Methods of Indirect Lighting.

THE principle of the B.T.H. "Eye-Rest" system of indirect lighting has recently been applied in a number of new and interesting directions.

Hitherto "Eye-Rest" lighting has always been associated with ceiling points, that is to say, with bowl fittings suspended from the ceiling. There is, however, no good reason for this restriction, and the ingenuity of our own engineers, and of architects who have

This restaurant is lighted by means of Mazda lamps and X-ray reflectors in plaster column brackets or wall pockets. "Eye-Rest" lighting in this form is in complete harmony with the interior architecture.

co-operated with us, has shown that the "Eye-Rest" principle can be employed in an infinity of delightful and effective forms.

The essential feature of the "Eye-Rest" system is of course the combination of Mazda lamps and X-ray reflectors, and so long as this unit is directed towards a light coloured ceiling it doesn't matter how it is disguised or hidden. X-ray indirect units can be fixed on pedestals, in standard lamps, wall-brackets, cornices, column brackets, on tops of railings and partitions, extensions of bookcases, backs of settees, etc.

In the illustrations on this and the next page are shown a few of these new "Eye-Rest" applications. The third illustration on this page shows an extremely interesting form of indirect lighting by means of an "Eye-Rest" table standard.

Hitherto the table or floor standard has not been considered or employed as a general lighting unit. Indeed, in a good many cases its function has been a purely decorative one, and at the best its usefulness has been confined to the local illumination of a desk or table.

The lighting of this drawing office is carried out in an interesting and very effective fashion. Upturned silvered-glass trough reflectors containing Mazda lamps are fixed along the top of the concrete beams, and the light is thrown on to the long slope of the saw tooth roof, whence it is uniformly diffused over the working plane.

The new "Eye-Rest" standard *(see illustrations on page 20)*, while possessing all the artistic and attractive features of the ordinary standard lamp, can, if required, be used for the general illumination of the room. In appearance the "Eye-Rest" standard does not differ greatly from ordinary patterns. The difference is in the illumination results. The "Eye-

Drawing-room lighted by "Eye-Rest" table standard. The standard is equipped with an upturned X-ray reflector which is concealed by the silk shade. *(See page 20.)*

Rest" standard has a single upturned X-ray silvered glass reflector concealed in the silk shade. The light is thrown on to the ceiling and reflected down into the room again, in the same way as with suspended "Eye-Rest" fittings.

In addition to the indirect unit in the top of

the silk shade, there are also two or three low wattage Mazda lamps uniformly spaced around the pedestal underneath the X-ray reflector. These lamps can be used for the direct illumination of a table or desk.

Since the lamps are separately switched, it is possible to use the "Eye-Rest" standard either as an indirect or a direct lighting unit, or as a combination of both.

Perhaps this last application will be the most generally favoured. Imagine the comfort and attractiveness of having a low, uniform intensity of light from invisible Mazda lamps for the general illumination of a study, drawing room or boudoir, while the table or some other selected spot can be more intensely lighted for the purpose of reading or writing.

The B.T.H. "Eye-Rest" standard is the only fitting of its kind which can be used for

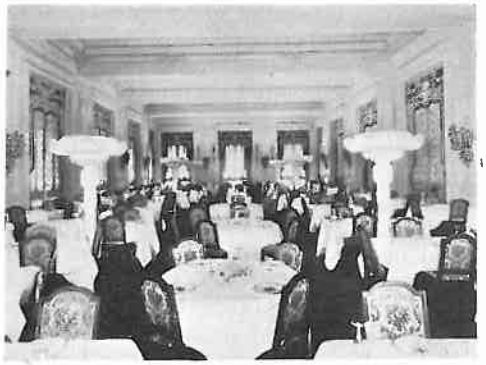
In this Church cornice "Eye-Rest" lighting is employed, the Mazda lamps and X-ray reflectors being concealed in a recess behind the cornice.

the general illumination of a room. A single "Eye-Rest" standard will light a room uniformly without the help of ceiling fittings or wall brackets. It will also serve all the purposes for which ordinary floor or table standards have been hitherto employed.

Lovers of well-diffused illumination, who have not installed indirect lighting, because of the presumed necessity for changing their ceiling fittings, should welcome the new "Eye-Rest" standard, which can be placed anywhere in the room and connected either to a wall socket or lamp-holder.

B.T.H. "Eye-Rest" standards are made in some very beautiful and unusual patterns, either of metal or composition, and in two main types for floor and table use respectively.

It should be noted that, in all its varied applications, "Eye-Rest" lighting preserves its characteristics of high efficiency, perfect diffusion, and total absence of glare.



"Eye-Rest" lighting with pedestal fittings in hotel dining-room. The Mazda lamps and X-ray reflectors are fitted into the bowls of the pedestals.

Architects, especially, will be interested in the "Eye-Rest" developments mentioned above, because they open up tremendous possibilities in the effective lighting of public halls, churches, and other large interiors. Many of these buildings are designed on original and sometimes bizarre lines, both as regards architectural features and interior decoration; and the lighting of such places cannot be satisfactorily carried out by ordinary means.

In the B.T.H. "Eye-Rest" system, employing Mazda lamps and X-ray reflectors, we put at the disposal of architects and illuminating engineers a method of lighting which can be

Bank lighting by means of X-ray reflectors and Mazda lamps contained in the eight boxes or troughs on top of the partitions.

adapted in one form or another to the most extraordinary as well as to the most utterly commonplace interiors.

"Shop Lighting."

IN our last issue we threatened you with a Shop Lighting booklet. This publication is now available, and we shall be pleased to supply single copies on request. As there will only be a limited first edition, early application is recommended.

This Shop Lighting booklet is, so far as we are aware, the most complete, informative, and best arranged publication on the subject. It consists of forty pages and cover, the latter being printed in two colours, and there are twenty-five illustrations of shops, stores, and showrooms lighted by Mazda lamps and special B.T.H. reflectors and fittings. The majority of the installations shown in "Shop Lighting" were designed by our Illuminating Engineers in consultation with the contractors who carried out the work.

Cover of "Shop Lighting."

The first three pages are occupied by an introduction and a general discussion on the subject of shop lighting; then follow twenty-five pages, each containing an illustration of a shop or store installation, with suitable descriptive matter underneath. At the end of the book descriptions of the various B.T.H. systems of shop and window display illumination are given.

The lamps and appliances employed in the installations shown are themselves illustrated and described in the last eight pages.

Anyone who has to design a shop lighting installation will obtain valuable suggestions from a perusal of this booklet.

Mazda

Super-Efficiency.

MARVELLOUS illumination results have been obtained with Mazda lamps and X-ray direct lighting reflectors in the Ford Motor Co.'s Building, San Francisco.

The illumination intensity on the third floor (first illustration) averages 4·13 foot candles, with an energy expenditure of ·57 watts per square foot. The lighting is uniform, too—there is practically no difference between the average and the maximum and minimum intensities.

Illuminating engineers will appreciate the high degree of efficiency in the lighting results; motor engineers and users, with a recollection of the efficiency of Ford Cars—the cheapest cars in the world, will only say: How very Fordian!


THIRD FLOOR OF FORD BUILDING.
This photograph was taken by the light of the X-ray-Mazda units, and has not been retouched in any way.

Whether you use a Ford Car or not, you must realize that its price demands the utmost efficiency and economy in factory production and equipment. Hence, X-ray lighting.


GARAGE FLOOR OF FORD MOTOR Co.'s BUILDING.
The illumination here is excellent for its purpose. One X-ray "Beehive" reflector equipped with a 250 watt Mazda lamp is used in each bay.

The installation on the third floor consists of X-ray ("Beehive" type) silvered-glass reflectors with 100 watt Mazda lamps, fixed close to the ceiling. There are four units to every bay. The bays measure 25 ft. by 28 ft.; ceiling height 12 ft. 2½ in. The reflectors are suspended 11 ft. 5½ in. from the floor. The ceiling is white, and the floor is made of concrete.

X-ray "Beehive" Reflector.

The results obtained in the Ford Building are typically X-ray. X-ray reflectors are the most powerful made, and there is superlative satisfaction in using them—in selling them — in specifying them.

An X-ray-Mazda installation means super-efficiency in lighting.

New Automobile Lamp Folder.

OUR Publication Department has just issued what it considers to be its *chef d'œuvre* in the folder field. This is an eight-page folder in two colours, containing prices and illustrations of every type, size and variety of Mazda Automobile lamp. These include headlight, side-light, tail and dash light, steering pillar light, festoon, tubular, and dome lamps; the first two types being listed in both English and American styles. The American styles have a special form of cap, and are suitable for any of the American motors in use in this country.

A useful feature of this new Mazda Automobile lamp folder is the page of dimensioned diagrams showing the exact measurements of all the lamps listed. It may be mentioned that the dimensions of these lamps were decided upon in consultation with the leading manufacturers of motor cars and motor accessories, so that they represent in all cases the most satisfactory standards for the particular purposes for which they were designed.

Another point: the folder is so arranged that all of the lamps and price tables are shown on the central four-page spread. It is thus possible to open it out and pin it to the wall, so that it forms a valuable and ready reference for all essential data on Automobile lamps.

If you sell electric lamps for motor cars we shall be pleased to send you a supply of Mazda Automobile lamp folders, overprinted with your own name and address. A careful distribution will bring you much desirable business.

ANOTHER "EYE-REST" CINEMA.

This hall is lighted by "Eye-Rest" fittings equipped with Mazda lamps and X-ray reflectors. The illumination results testify more eloquently to the value of "Eye-Rest" lighting in theatres than any verbal commendation could possibly do.

The Sun's Only Rival

A Home-Made Window Display.

WHEN a contractor's Mazda lamp sales for a certain month show an increase of about 300 per cent. over any previous month's record, and when this increase is chiefly in small counter orders, one is justified in looking around for some definite reason.

We didn't have far to look. Our first diffident enquiry (asking a man why he has sold more lamps is rather like looking a gift horse in the mouth) brought the triumphant reply that the increased sales were simply due to a very attractive window display which had been running during the month in question.

No credit for the display is due to us, excepting in so far as Mazda supplied the central motive. There is no photograph of the window available, but the following description may be of interest:—

The chief item was formed by one flange of an old cable drum. Around the circumference were fixed 35 Mazda lamps, and this wheel of light was driven by a small motor. A placard alongside reads: "This wheel has run for 167 hours up to noon yesterday. No lamps broken." Another placard, pointing to a flashing lamp, says: "This lamp has flashed on and off 235,200 times up to noon yesterday, and not one lamp broken."

Some of the selling points of the display were:—(1) Liberal use of explanatory placards (33 in all). (2) Use of Mazda window transparencies. (3) A number of ingenious and original features, based on *motion* and *light*. (4) Price cards on a row of Mazda lamps.

Work out a Mazda display on these lines, and increase your lamp sales by a few hundred per cent. It's easy and profitable.

SAMPLE PACKAGES OF SCIE

PACKAGE No. 1.

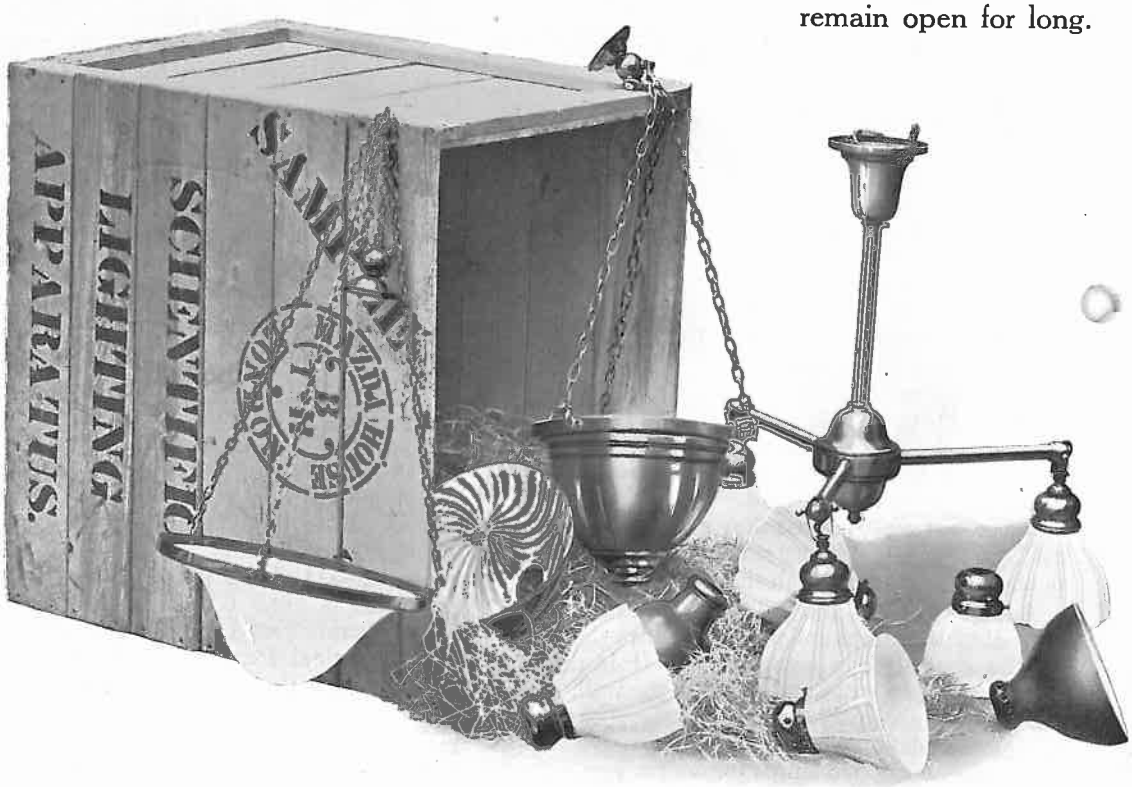
Number	Cat. No.	Description	Ordinary List Price £	s.	d.
One	F 8791	10" "Eye-Rest" Fitting with X-ray Reflector	1	5	0
One	F 8840	12" Semi-Indirect Fitting ...		17	6
One	F 9052	3-light Brushed Brass Mazdalier with Galleries ...	1	7	6
One	S 5201	Veluria Reflector and Gallery		3	9
One	S 5261	Pyro Reflector and Gallery ...		2	6
One	S 5500	X-ray Window Reflector and Gallery		15	6
One	S 5180	Sudan Reflector and Gallery ...		3	9
One	S 5370	Mazdalux Reflector		2	6
One	S 5411	Mazdalux Reflector		2	6
One	S 5251	Opalux Reflector and Gallery		1	9
		Total Cost at List Prices	£5	2	3

OUR SPECIAL PRICE FOR THIS SET £2 10 0

SPECIAL OFFER

With a view to inducing e and demonstrate our scienti prepared to supply Sample etc. (as illustrated and specif low prices. It should be (which include pack..g an complete sets; single article tionate prices.

Here is a good opportunity wish to make a representati material to do so at an extra ***at once*** about these Sample remain open for long.



NTIFIC LIGHTING APPLIANCES

TO RETAILERS

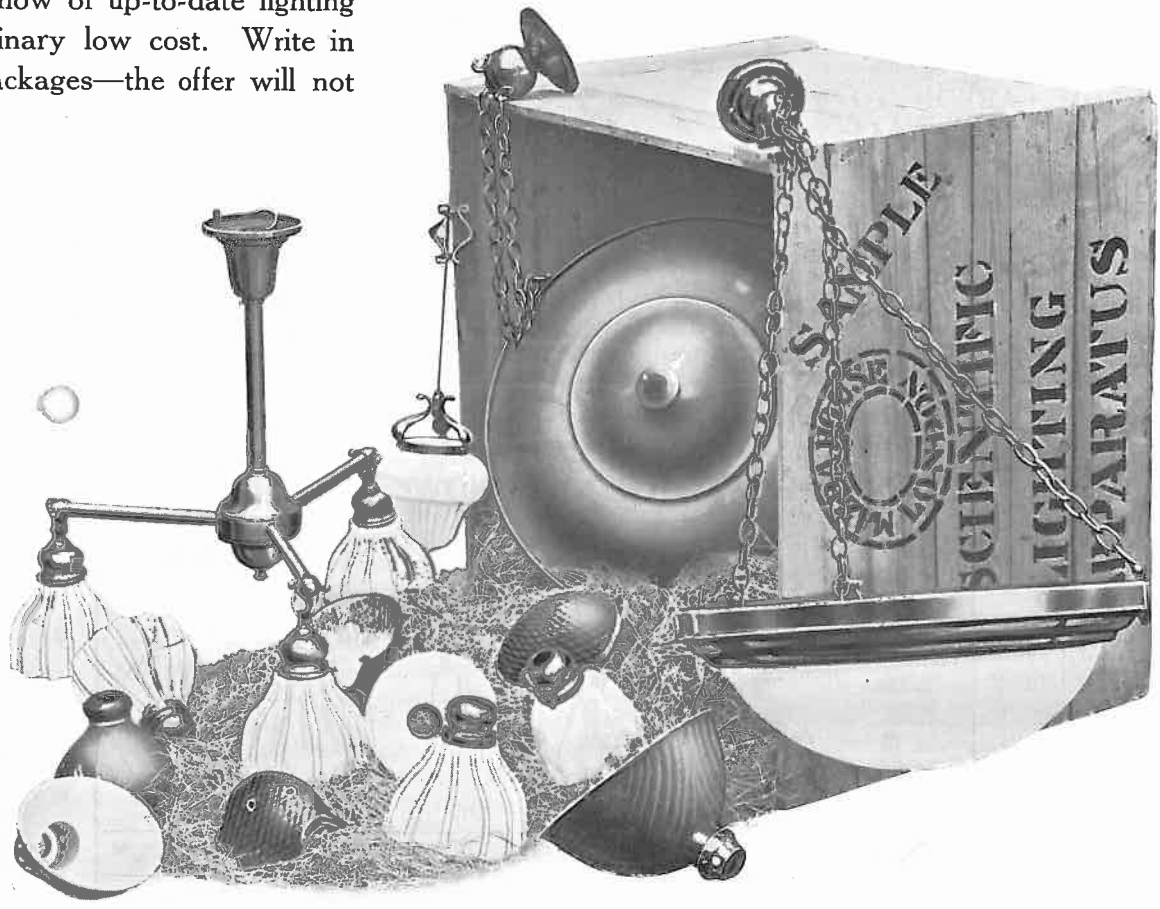
ectrical contractors to exhibit
ic lighting appliances, we are
ackages of fittings, reflectors,
d on this page), at specially
nderstood that these prices
delive.y) apply only to the
cannot be sold at propor-

or all those contractors who
e show of up-to-date lighting
ordinary low cost. Write in
Packages—the offer will not

PACKAGE No. 2.

Number.	Cat. No.	Description.	Ordinary List Price. £ s. d.
One	F 8780	22" "Eye-Rest" Fitting with 3 X-ray reflectors ...	2 14 0
One	F 8851	16" Semi-Indirect Fitting ...	2 7 6
One	F 9052	3-light Brushed Brass Mazdalier with galleries	1 7 6
One	F 8413	Alba Acorn Pendant	12 0
One	S 5201	Veluria Reflector and gallery	3 9
One	S 5261	Pyro Reflector and gallery ...	2 6
One	S 5500	X-ray Window Reflector and gallery	15 6
One	S 5180	Sudan Reflector and gallery ...	3 9
One	S 5370	Mazdalux Reflector	2 6
One	S 5411	Mazdalux Reflector	2 6
One	S 5251	Opalux Reflector and gallery	1 9
		Total Cost at List Prices	£8 13 3

OUR SPECIAL PRICE FOR THIS SET £4 10 0



Mazda Traits.

I'm harder to keep than to sell.
I'm easy to use and to fit.
I'm light and I'm strong (not to smell).
In the speech of the common, I'm IT.

Though constant, my light never bores.
Though saving, I haven't a cent.
I save, not my money, but yours,
If used in the way I was meant.

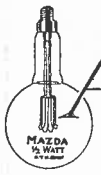
There's Fortune and Fame within reach
Of sellers who sell me always—
Good lighting for all and for each
Who buy me and burn me—it pays.

Perspicuous readers will guess
Who I am from the verses above.
I'm MAZDA—the name that you bless
When you look towards the light that you love.

The Sun's Only Rival

Incandescent Electric Lamp Progress.

FROM CARBON TO MAZDA "HALF-WATT."



AS the diagram on this page very strikingly illustrates there have been tremendous and progressive reductions in the average cost of electric light during the last 29 years. It is probably not realised by the ordinary consumer that electric light is 30 times as cheap to-day as it was 29 years ago, and that he can get more light for a half-penny now than he could for a shilling in 1885.

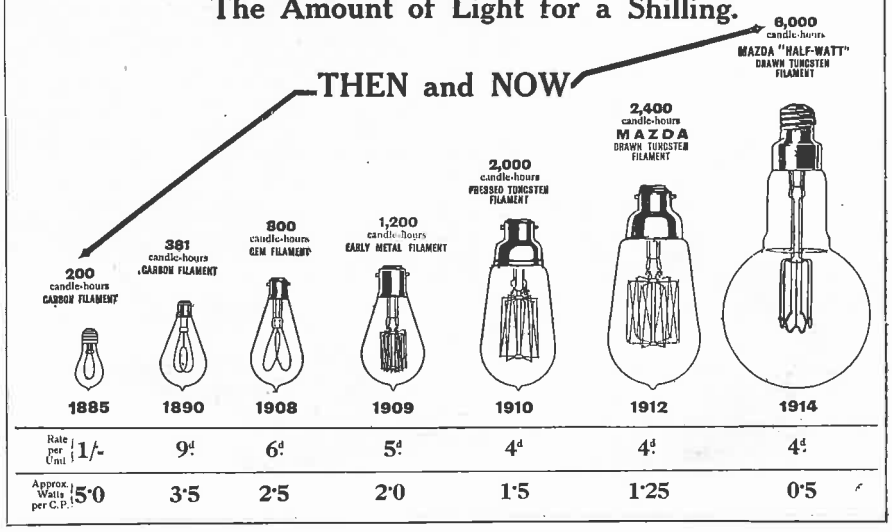
This reduction in cost is partly due to the lower Supply Company rates which now obtain. It is more largely due, however, as the diagram shows, to the improved efficiency of modern electric lamps. The biggest advance, of course, was in the year 1910 when the first tungsten electric lamp came into fairly general use, superseding the carbon lamp which, in spite of intervening lamps of slightly higher efficiency, had been almost universally employed up till that time. Even between 1910 and 1912 a decided improvement took place in the efficiency of the tungsten lamp. Whereas the pressed filament lamp of 1910 had an average efficiency of 1·5 watts per candle, the ordinary Mazda drawn wire lamp of to-day possesses an average efficiency of 1·25 watts per candle (British candle-power be it noted). In many sizes the efficiency is as high as 1·1 watts per candle.

In the early days of 1914 another striking advance in lamp efficiency had to be recorded—the advent of the Mazda "Half-Watt" lamp, with its efficiency of 0·5 watts per candle, cutting down the cost of electric light by one half.

These facts simply substantiate our claim that Mazda means and will continue to mean the Master Light, so that when you buy a lamp bearing that name, whether you buy it to-day, to-morrow, next month, or at any future time, you will be buying a lamp embodying every feature of efficiency and economy that has been or may be discovered by the ablest lamp experts in the world.

This statement, although it may sound high-falutin', is strictly and absolutely true. The Mazda lamp is the best incandescent electric lamp on the market, because its manufacture is backed by the greatest scientific experience and most complete research facilities ever employed for this purpose.

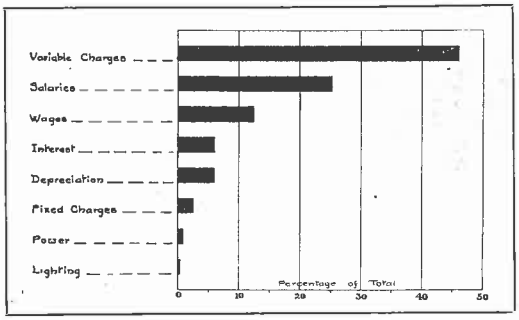
The Amount of Light for a Shilling.



Light and Labour.

NO one disputes the value of good lighting as an aid to factory operation. Without any light at all no work could be carried on after dark. From the zero or "no light" point up to what we may call the 100 per cent. standard of illumination (this of course varies with the purpose for which the light is required) it may be said that the efficiency of the operators is directly proportional to the degree of perfection possessed by the daylight or artificial light under which they have to work.

If the light is inadequate the work will be slow and the spoilage considerable, and there will also be a certain risk of accident from moving machinery. If the light is adequate, but badly arranged, there will be sharp black

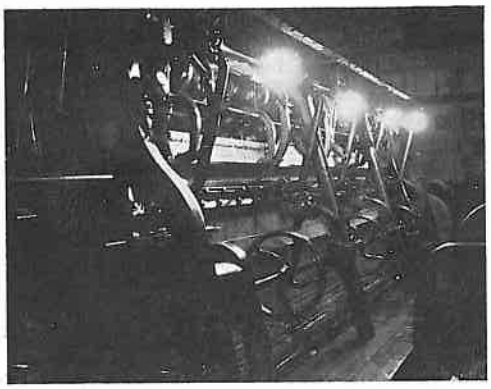


Percentage charges against a typical machine tool, showing the comparative insignificance of the lighting costs in terms of the total.
(A. C. Popoke, "Electric Journal.")

shadows to hinder the workers, and the glare of the lamps will cause premature fatigue.

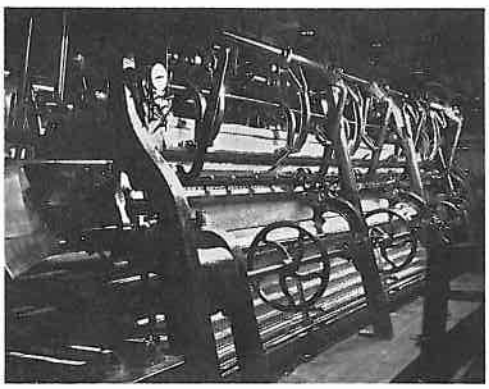
As to the cost of good lighting--that need never operate as a bar to its adoption. Electric lighting with efficient appliances, such as Mazda lamps and Mazdalux reflectors, represents an almost negligible proportion of the total factory costs. Good lighting is, as a matter of fact, generally less costly than bad lighting, but it would be worth while if it were twice as expensive, because even then the cost is exceedingly small compared with the indirect economies in the cost of labour and production which improved lighting should effect.

The accompanying diagram shows that the cost of energy and maintenance of the lighting equipment is much the smallest item in the various charges against a particular machine tool. The charges shown may be larger or smaller than the average, but they have been selected from a typical instance. It will be seen that the lighting is an insignificant expense compared with the other charges. In spite of the comparative inexpensiveness of the lighting, it may, if inadequate or glaring, be the cause of failure on a particular piece of work. For example, the cost of energy and maintenance for a single lamp may amount to about 1/- per month. The workman who depends on this



BAD LIGHTING.
This lace machine was originally lighted by five 64 watt (16 c.p.) Carbon lamps in enamelled iron shades. The expenditure of 320 watts produced inadequate and glaring illumination, as the picture shows.

lamp receives 8/- per day in wages; hence the daily cost of lighting is equal to two minutes' wages. A workman can easily lose 20 or 30 minutes every day (10 to 15 times the value of the day's lighting) if handicapped by insufficiency of artificial illumination. When the losses due to defective work are added to this loss of time, it will be seen that,



GOOD LIGHTING
A vastly better illumination at lower cost is produced by the new equipment of six 40 watt (48 c.p.) Mazda lamps in Mazdalux (angle) reflectors. There is no glare, and the operatives can see to repair broken threads on the lower part of the loom without pulling down the batten of lights as they had to do before.

although good lighting may cost very little, its economic possibilities are very considerable.

Photography by Mazda "Half-Watt" Lamps.

SINCE the Mazda "Half-Watt" lamp was placed on the market in January last, there has been a good deal of discussion and speculation as to its suitability for photographic purposes.

Experiment has proved that Mazda "Half-Watt" lamps can be used quite successfully for photography in place of arc lamps. The actinic value of the "Half-Watt" lamp is very high, and we have been able to obtain the most excellent photographic results without any special arrangement of the light units. At Mazda House, for example, we have taken a large number of photographs of fittings, etc., by the light of Mazda "Half-Watt" lamps. These lamps—two 500 watt and two 1000 watt—are those employed for the general illumination of the counters. Had they been specially arranged for the photographer he could have managed with considerably less candle-power.

A "HALF-WATT" PHOTOGRAPH.
This photograph was taken by the light of Mazda "Half-Watt" lamps totalling 2000 watts: exposure 2 seconds; stop F 6. The lamps were fitted up for the general illumination of one of the warehouse floors at Mazda House. If they had been specially arranged for photographic purposes, a much lower candle-power would have given equally good results.

The photographer is very pleased with the result, and states that the detail is better than he has been able to obtain in any similar photographs taken by arc light. Practically all of our recently developed fittings have been photographed by "Half-Watt" light, so that you will be able to judge of the quality of the photographs when they are reproduced in our price lists.

Mazda "Half-Watt" lamps have also been installed in a kinematograph studio, and the proprietors assure us that the outlook for the new lamp in the field of moving picture photography is very promising.

We hope to be in a position to publish further information on this point as soon as our experiments are completed. These experiments are merely to ascertain the best method of arrangement and the candle-power required in particular cases. So far as general suitability for moving picture work is concerned, there is no doubt of the all-round pre-eminence of the Mazda "Half-Watt" lamp.

A "Glaring" Paradox.

TO regard the "Half-Watt" lamp, which, as everyone knows, is the "very dickens" for glare, as our deliverer from this evil may sound a bit paradoxical at first. But it's really quite straightforward. The brilliancy of the "Half-Watt" lamp is so intense that, as someone has put it, there will be absolutely "no living with it" unless its light is modified in one way or another by diffusing glassware or indirect fittings. The new "Half-Watt" lamp will advertise the danger and discomfort of glare so blatantly that people will begin to realise that practically all modern light sources are too brilliant to be exposed to the eyes.

In our opinion the Mazda "Half-Watt" lamp will do a great deal more than increase the efficiency of electric lighting; it will advance the cause of illuminating engineering by teaching people that even less powerful and efficient light sources must be arranged with due regard to the well-being and comfort of that most delicate of human organs—the eye.

When this lesson is learned, there will be a bigger demand than ever for the improved systems of lighting which we have designed to eliminate glare.

"DO IT ELECTRICALLY."
A rolling-pin has several uses. It is only for its legitimate purpose of dough flattening that we recommend the B.T.H. radiator lamp as a substitute. The wooden implement, beloved of our grandmothers, is still the best arbiter in cases of domestic strife.

Mazda Lighting in Railway Trains.

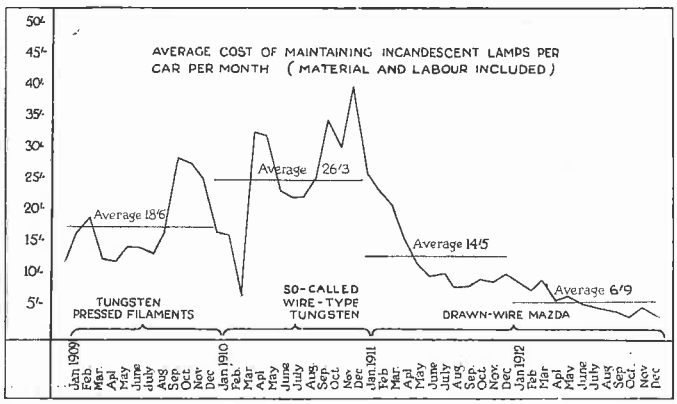
IN railway service it is absolutely essential that the electric lamps used for lighting the cars should be mechanically strong, and able to withstand the constant vibration and jolts to which they are subjected.

Even the question of current consumption, although important, is less important than that of mechanical strength and general reliability of operation. Thus, for several years after the introduction of the "pressed" tungsten filament lamp (which was, of course, exceedingly fragile), railway companies preferred to use the old carbon filament lamp which, although much less efficient, was a great deal more durable.

The invention of the Mazda lamp, with a filament of drawn, not "pressed," tungsten wire, has made it possible for traction authorities and railway companies to get the tungsten advantages of high efficiency without losing anything in the matter of strength. As a consequence Mazda Drawn Wire lamps are now being used instead of carbon lamps on many railways and tramway systems, both here and abroad.

Mazda lamps and Holophane reflectors attached to special fittings in dining car.

The accompanying diagram is self explanatory, and it is interesting because it translates the improved strength of the Mazda lamps into the pounds, shillings and pence of reduced maintenance costs. The curve was prepared by the Chicago Rock Island Railway of America, and shows the average maintenance cost per car per month for lamps, renewals and labour over a period of four years.



In the first year ordinary "pressed" filament tungsten lamps were used, and the average monthly cost per car was 18s. 6d. In the second year so-called "wire" lamps were used, and the maintenance cost was £1 6s. 3d.

Mazda Drawn Wire lamps were employed in the third and fourth years, and the average monthly maintenance cost per car was 14s. 5d. and 6s. 9d. respectively. The lower figure in 1912 was due to the improved strength of the Mazda lamps used in that year.

Street railway car lighted by Mazda lamps in Veluria (glass) reflectors.

The remarkable reduction in the average maintenance cost during the second two years is evidence of the tremendous strength of Mazda Drawn Wire electric lamps. And this strength, be it remembered, is combined with an efficiency which is considerably better than that of the older types of tungsten lamp, and nearly four times as high as that of the carbon lamp.

We shall be pleased to give on request full information relating to our scientific fittings and reflectors for train lighting. For description and prices of the small bulb Mazda Train Lighting lamp (20–24 volt) with special vibration-proof filament and support, see our folder No. 2335.

Much Light in Little Space.

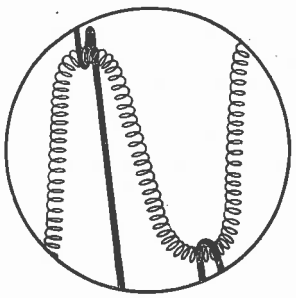
THE new Mazda Focussing or Stereopticon lamp is a remarkable production in every way. The object of its design was to get a filament approximating as closely as possible to the theoretical point source of light.

The Mazda Focussing lamp is made in the following sizes: (70–89 volts)—40 and 60 watts; (100–130 volts)—40, 60 and 100 watts; (200–260 volts)—100 watts. The filament is made of drawn tungsten wire wound in a very narrow spiral, which is formed into a series of loops bunched closely together. By this means it is possible to get a very high candle-power filament in a small compass. For example, the 100v. 100 watt (100 c.p.) lamp has a filament occupying a space of approximately $\frac{1}{2}$ in. × $\frac{5}{8}$ in. × $\frac{5}{8}$ in.

Mazda Focussing lamp.

This new Mazda lamp has been designed for use in headlights and searchlights, magic lanterns, photographic enlarging lanterns and cinematograph projectors. For these purposes the Mazda Focussing lamp is unrivalled, because it has all the advantages of the ordinary incandescent electric lamp in regard to cleanliness and safety, and in addition gives the concentrated light source necessary for accurate reflection with parabolic reflectors or by means of lenses and condensers.

Gas, oil and arc lamps get very hot and give off fumes, and ventilation is therefore necessary. For these reasons it is impossible to set the lamp back in a deep reflector, and consequently only a small portion of the sphere of light emitted by the flame is reflected. With the Mazda Focussing lamp, there is no need for ventilation, and as very little heat is given off by the lamp, it can be set in a deep reflector without injury to the surface. The efficiency of reflection in the latter case is obviously greater than in the former.


Magnified view of one loop of Mazda Focussing lamp filament.

The Mazda Focussing lamp provides the most effective light source for all purposes where it is desired to throw a powerful beam of light in one direction. It should prove a boon to photographers and others who have hitherto had to rely on gas or arc lamps, which are admittedly dirty and inconvenient in use, and, in the case of the latter, require special and expensive subsidiary apparatus.

Mazda

It doesn't matter how, when, where or why you want light—Mazda in one or other of its many forms will give you what you want at the lowest cost.

Illumination Extraordinary.

A NEW USE FOR MAZDA LAMPS.

WE have received a note from our Continental correspondent to the effect that, during the recent carnivals, there was a large demand for illuminated artificial ears and noses. These are made of tinted glass in all sorts of grotesque shapes, and are lighted by pea lamps supplied from pocket cells. Our correspondent states that these devices added greatly to the gaiety of the carnivals. That may be, but it seems to us that there must be a certain danger in wearing illuminated ears and noses on such occasions, because, in the free fights in which these functions usually end, the lights would indicate one's vital parts with an extremely inconvenient accuracy.

The Sun's Only Rival

SILLY ASS!

Door Switches.

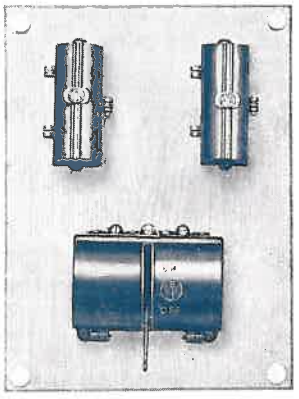
RELIABLE WIRING SUPPLIES B T-H

Weatherproof Holders.

Angle Holders.

Distribution Boards.

WE sell everything necessary for electric lighting, from the Supply Cable in the cellar to the Mazda Lamps in the fittings. A few of the things "in between" are illustrated here. May we quote you for these and the rest?

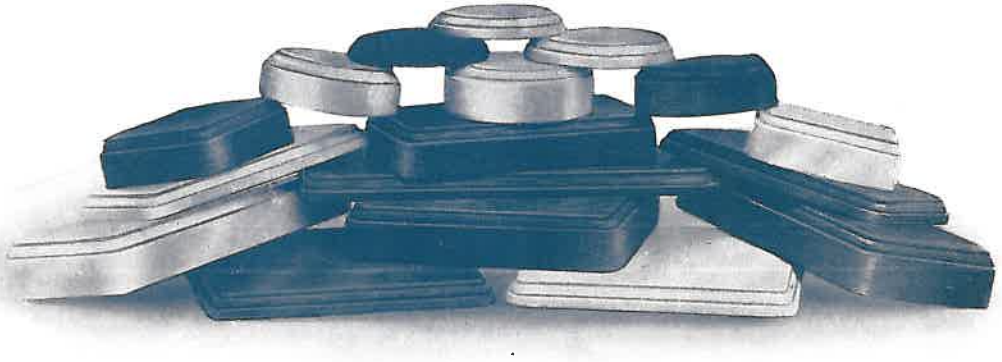


Switch and Fuse Boards.

Switch Holders.

Fuse Bridges.

Insulating Cleats.



Wood Blocks.

B.T.H. SEMI-INDIRECT FITTINGS

TYPE B
For Four 100 w. Mazda Lamps
Cat. No. F 8907
Price, without lamps, ceiling hook or chain. **30/-**

These fittings are suitable for the lighting of shops, offices and factories, and all interiors requiring an efficient and well-diffused illumination from inexpensive units.

TYPE A
For Four 100 w. Mazda Lamps
Cat. No. F 8910
Price, without lamps. **25/-**

¶ B.T.H. Industrial Semi-Indirect Fittings are made in two types, viz. : (A) Close Ceiling Type for use in interiors where there is a suitable ceiling to act as secondary reflector ; (B) Pendant Type for use in situations where the ceiling cannot be relied upon for reflection.

¶ Type A Fittings are provided with a small conical vitreous enamelled over-reflector, and are made for clusters of 3, 4 or 6 ordinary Mazda lamps, or for single Half-Watt lamps.

¶ In Type B Fittings a large vitreous enamelled over-reflectoris employed, and the lamps are fixed much closer to the reflector. These fittings can be used quite independently of the condition, or even existence of a ceiling, as the over-reflector throws *all* of the light downward on to the working-plane. In the matter of lamp capacity, Type B Fittings are similar to Type A.

¶ Both types are extremely efficient, and the fairly dense opal bowls, which can be lowered and cleaned without removal, ensure good diffusion of the light and absence of glare. All metal parts are finished in dull nickel.

TYPE B
For One 300 w. or 500 w. Half-Watt Lamp
Cat. No. F 8917
Price, without lamp, ceiling hook or chain, **57/6**

THERE IS A HUGE DEMAND FOR THIS CLASS OF FITTING

Will you write for full prices and for particulars of light distribution, etc. ?

TYPE A
For One 300 w. or 500 w. Half-Watt Lamp
Cat. No. F 8916
Price, without lamp, **42/6**

LUMINOUS BOWL
"EYE-REST" FITTINGS

The Luminous Bowl "Eye-Rest" fitting is not a semi-indirect lighting unit. It is an indirect fitting in which a small portion of the light (about 10 per cent.) is diffused through a translucent bowl, while the remaining 90 per cent. is reflected on to the ceiling by *opaque* X-ray reflectors.

The bowl, instead of being of metal or composition, is formed of an opal or delicately tinted glass dish, or of panels of tinted glass let into a metal or composition framework. Below the X-ray reflector units, which are arranged in the same way as in the ordinary "Eye-Rest" fittings, is suspended a low wattage Mazda lamp enclosed in a diffusing glass ball. This lamp, which need not be larger than one tenth of the total wattage, gives a soft, uniform radiance to the translucent bowl.

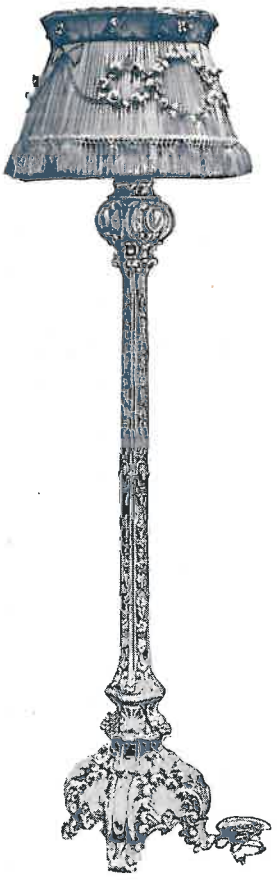
People have objected to the dark appearance of the bowls of ordinary indirect fittings. The Luminous Bowl fitting does away with this objection without sacrificing any of the essential qualities of indirect lighting.

This shows the exterior appearance of one type of Luminous Bowl "Eye-Rest" fitting. The bowl itself is made of opalescent glass, which is softly illuminated by a single low wattage Mazda lamp.

The arrangement of the interior equipment is shown here. In addition to the X-ray reflector units for indirect lighting, a single lamp enclosed in a diffusing glass ball is employed for illuminating the bowl.

"Eye-Rest"

FLOOR AND TABLE STANDARDS



"Eye-Rest" Floor Standard. Composition Pedestal.

The "Eye-Rest" Standard is the newest form of indirect lighting unit. By its use one can enjoy all the advantages of "Eye-Rest" illumination without making any change in existing ceiling fittings.

The diagram below shows the reflector unit employed in the "Eye-Rest" Standard. This unit is fitted to the top of the standard, and is concealed by the silk shade. As will be seen, there are, in addition to the large Mazda lamp inside the X-ray reflector, three small lamps which can be used for the direct local illumination of desk or table. The switching is so arranged that the standard can be employed as a direct or indirect unit, or as a combination of both.

The reflector unit shown in the diagram can be supplied either separately, for use with existing standards, or in conjunction with our own specially designed floor and table standards, one of which is illustrated herewith.

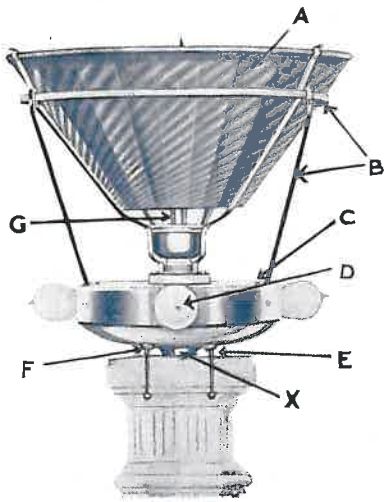
On page 6 of this issue is reproduced the photograph of a room lighted by an "Eye-Rest" Table Standard. From this picture and the accompanying text the reader may gain some idea of the wonderful advantages and possibilities of this new application of X-ray reflectors—the reflectors which made indirect lighting commercially practicable.

Write for prices.

KEY TO DIAGRAM

A. X-Ray Reflector (Cat. No. S 5525).
B. X-Ray Reflector Holder.
C. Reflecting Disc.*
D. Low Candle-power Lamps for local lighting (three in all).
E. Pull Chain Switch for three small lamps.
F. Pull Chain Switch for large lamp.
G. Large Mazda Lamp for general illumination.
X. ⅜" Iron Pipe and Lock-nut for fastening to floor or table standard.

** The bottom of the large Reflector is open, and a part of the light from the lamp strikes the top of reflecting disc C, and is reflected against the shade. In this manner the shade is illuminated even when the three small lamps are not alight.*



X-ray Reflector unit for "Eye-Rest" Standard.