

J.S.WILLWAY & SONS+LIMITED

STAUGUSTINE'S BRIDGE

· BRISTOL ·

Telegrams—
"WILLWAY, BRISTOL."

TELEPHONE No. 2794.



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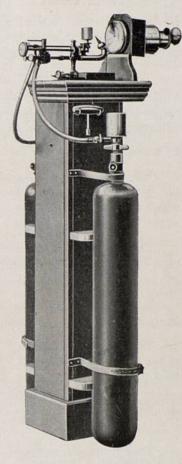
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Instructions to Foreign and Colonial Buyers,

PRACTICAL INSTRUCTION IN THE MANAGEMENT OF LIMELIGHT JETS.





XY-HYDROGEN LIGHT or limelight is produced by heating the surface of a piece of lime to a white heat by means of a flame produced by the combustion of hydrogen or oxygen. The hydrogen is supplied in several ways, and pure hydrogen is rarely used. The most general form is that of coal gas compressed in cylinders.

Another substitute for pure hydrogen that is rapidly becoming popular is obtained by passing Oxygen through ether or gasoline.

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When compressed gas is used, an automatic regulator is attached to the cylinder, in order to reduce the pressure, or a valve with a fine adjustment screw answers the same purpose, but in a much less perfect manner. Oxygen is generally now obtained from cylinders in the same way as coal gas. If coal gas and oxygen are mixed in certain proportions an explosion takes place if ignited. Neither coal gas or oxygen will explode if unmixed, or if there is an excess of either oxygen or coal gas beyond the explosive proportion. Should this mixture occur with our apparatus, the result can only be a startling detonation, and no danger can be experienced.

To prevent any risk of startling an audience, the operator has only to see that the proportion of coal gas is too large to allow an explosive mixture to be formed.

If the operator keeps this explanation in mind, he will be able to manage a jet with the greatest certainty.

When the oxygen and coal gas are supplied from two cylinders, the burner used is called a mixed jet. This has a chamber into which the two gases are passed for mixing, before being passed out at the nipple where they are burnt.

The temperature of the flame varies considerably with the kind of jet used Any disturbance of the gases in their passage causes a reduction in the temperature of the flame.

It is very essential, therefore, that the greatest care is taken in the construction of the jet and in its design,

To set up the apparatus the hydrogen cylinder is connected to the left-hand valve or tap of the jet and the oxygen to the right. Both the valves of the jet should be kept shut till the cylinder valves are opened. To light up, open the hydrogen valve of the jet and allow the gas to blow through for a second before applying a light.

Then turn on a little oxygen till the hydrogen flame disappears, and the lime is at a state of white incandescence. Then more hydrogen can be turned on, and a further supply of oxygen. This operation may be continued until the flame slightly roars. When this effect is produced, slightly reduce the oxygen, and then the hydrogen, until the flame is silent.

A little experimenting with the proportion of the gases will soon enable the operator to get the mixture that will produce the hottest flame.

All parts of the flame are not equally hot; you must therefore adjust your lime to bring it into the hottest part of the flame.

Attend carefully to the distance of the lime from the nipple of the jet, and do not forget that the more gas you turn on the greater the distance must be between the lime and the nipple, or you will get a black spot on the centre of lime instead of a bright one. This is done after you have adjusted your taps by working lime backwards and forwards until you have the light at its best. Roughly speaking, for a low pressure about \(\frac{1}{8}\) inch will not be far off, gradually increasing the distance to \(\frac{3}{8}\) or \(\frac{1}{2}\) inch, as you open the jet taps more and more to increase the light.

For the most powerful light, rack lime up until jet plays almost upon the bottom of the lime cylinder, which should be rendered incandescent right up to the top; and where it is imperative to maintain the light for a long time at the utmost power, it will be preferable to move the lime with the tongs and invert it rather than lower the level very much, so that no portion of its incandescent spot may be sacrificed.

For the greatest light use large limes of medium hardness, but when only a moderate light with extreme economy of gas is required, it will be far better to use a medium size lime; very large hard limes do not yield such a rich light with a very low pressure of gas as a moderately hard medium size lime. The limes must be turned frequently when used with full pressure of gas, and when working the jet at its utmost power. The smaller the bore of the nipple, the quicker the pitting of the lime.

Do not forget to clear out the hole in the lime until it will drop easily upon the pin; if the limes are forced down tightly upon the jet pin the expansion of the pin when heated must crack or burst the lime.

If the jet becomes unduly hot, combustion is probably taking place inside the mixing chamber or the tubes of the jet. This is generally caused through a leak in the jet, or the tubes leading to the jet.

Keep the nipple of the jet clean. If you find the flame roars when only a little gas is beng used, it is probably due to some foreign substance getting into the bore of the nipple.

There is danger of melting the end of the nipple if it is allowed to touch the lime. Unless the nipple is allowed to get too near the lime, it may be used any length of time without deterioration.

As oxygen has no smell, it may be easily wasted. Great care, therefore, must be taken in attaching the regulator and tubes. Test after attaching by means of a piece of brown paper made red hot, but not in flame. The incandescent portion will glow brightly if it comes in contact with escaping oxygen.

If after turning on more gas the light is unsatisfactory or even diminishes, the compressed coal gas is at fault and is coating the lime. If you have a Pendant Saturator, it may be charged and the coal gas passed through it. This will enable you to get the full amount of light. If you have not a saturator handy you can only reduce the pressure of gas and put on a new lime.

An excess of hydrogen is indicated by flame round the lime. Such a flame means excessive heating of the lantern, and should be avoided.



THE "GWYER" JETS.

INTIL 1896, scarcely any improvement had taken place in limelight jets for over 25 years. In January of that year the Gwver Tet was shown in public at the Limelight Competition, January, 1896, held at Anderton's Rooms, Fleet Street; since then it has distanced all rivals, and to the present its light has never been equalled by any other jet. Following the lead of the Gwyer, many jets have been put on the market professing to be equal in power and ease of management; but owing to the peculiar construction, and perfect workmanship of the Gwyer, no jet has been able to compete with it, and although we have entered into competition with others in all parts of England, we have never seen it equalled. This should be borne in mind by lanternists who have heard of or seen Gwyer Jets that apparently contradict this statement; they should write for a Gwyer Jet on trial, and test for themselves the accuracy of our claims. The best jet can, in a few seconds, be rendered second rate in unscrupulous hands.

We claim for it the following advantages:-

- 1.—A light of great brilliancy and whiteness of more than 2,500 candle-power—a light not hitherto produced by any other jet.
- 2.—Greater steadiness and ease of manipulation.
- 3.—Perfect silence of combustion at the highest power.
- 4.—Extreme economy. The Gwyer Jet will work satisfactorily with an oxygen consumption, varying from 2 cubic feet per hour to 10 cubic feet.

The **Gwyer** Jet we are now offering to the public is the result of our long experience in the manufacture of high-power jets. Not only does the peculiar design enable us to obtain high efficiency, but every part is the result of careful experiment and workmanship.

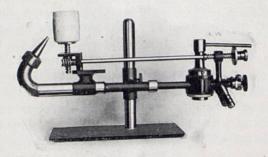
Free Trial.

Any of our Jets can be tried by the purchaser. In case of the jet not being purchased, carriage must be paid both ways. Facility is given to the trade who require jets for trial.

With customers not having ledger accounts a deposit or satisfactory reference is required before the jet is sent.

Description of the "GWYER" Jet.

No. 1.—Approximately giving a light of 1,500 candle-power. This jet is designed for small lanterns, and for use with condensers of short focus.



No. 2

No. 2.—Approximately 2,500 candle-power. This jet was specially designed for cinematographs, but is equally suitable for any lanternist requiring a powerful light.

It can be used in any ordinary lantern, or lantern-microscope, and is particularly suitable for the enlarging lantern.

This jet, which has been recently remodelled after exhaustive experiments, is the most powerful and efficient jet that has hitherto been produced. It has the following advantages over the older type; an increase of light of approximately 500 candle-power, capability of being worked at a higher pressure, greater compactness, enabling it to work closer to the condenser and bring the lime nearer the bottom, for shallow lanterns.

The No. 1 and No. 2 jets are provided with a cut off, and arrangement for adjusting the lime.

The cut off tap reduces the gases in succession, leaving only a small hydrogen by-pass flame.

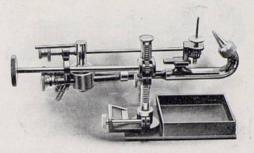
This is a great convenience if the light is not required during an interval in a lecture.

As the position of the valve screws is not altered, the light can be at once obtained without adjusting the mixture.

This jet is sent out fitted with either a $\frac{1}{10}$ -in. bore nipple or with one of our $\frac{1}{20}$ -in. bore.

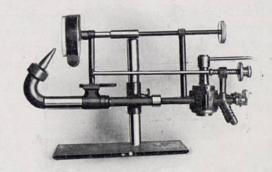
A line I_4^1 inches diameter is the best size to use to obtain a powerful light, but for a smaller light a 1-inch lime gives the best result.

In power of light a No. 2 **Gwyer** Jet is equal to an Electric Arc taking 20 amperes. In quality of light it is far superior, as while the Arc is never steady, the **Gwyer** light is. The latter has none of the blueness of the former, and being a pure white light, the picture is shown to much greater advantage.



No. 2 Gwyer Jet on Mechanical Stand.

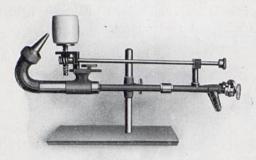
In order to meet the wishes of the numerous users of the **Gwyer** Jets, it can now be supplied with a mechanical stand for facilitating the centring of the light. This stand has been carefully designed and will be found to possess great advantages over any other mechanical stand now on the market. It is very rigid and remains fixed in any position. At the same time the jet has the full range from the tray to the top of the pillar.



Nc. 3

No 3.—This jet is made to take flat limes only, and is specially constructed for theatrical and illumination purposes, and for such will be found to be superior to the Electric Arc, the light being

free from blueness, and absolutely steady. It gives more light than an Electric Arc lamp taking 20 amperes. No. 3 is suitable for theatres, one jet being equal to about four of the ordinary jets, effecting a saving of gases and labour.



No. 5

No. 5.—The No. 5 **Gwyer** Jet is designed to supply a want for a less expensive jet, giving the powerful white light characteristic of these jets.

The light produced is greater than any other jet, except those previously described. It is fitted with screw adjustment valves and is made on the same plan as the more expensive, the mixing chamber and valves being cast in one piece. The light given will be found approximately equal to 1,500 candles.

No. 6.—This Jet is made on the injector principle for taking its supply of hydrogen from the gas supply pipes of the building. It will be found to be an extremely powerful jet for this type, but like all other jets designed on this system it will not produce the best light, and its consumption of oxygen is larger than with the jets described previously.



Prices.

					£	S.	d.
No. 1.	For small lantern				2	18	6
	Tray				0	2	0
No. 2.	For ordinary lanterns, cinema	tograph	lante	rns,			
	lantern microscopes, etc.				2	18	6
	Tray				0	2	0
	No. 2 Jet fitted on mechanical	tray		vija)	4	5	0
No. 3.	For Theatrical Stage lighting		1.8		3	8	6
	Tray					2	
No. 5.	For ordinary lanterns and cine	matogra	aphs u	sing			
	a small screen, with tray				1	10	0
No. 6.	For use with house gas supply				1	15	0

For the convenience of customers abroad, we give the weights and dimensions of jets packed for export by post:—

and din	nensions of jets packed for export by post:—	
		Code Name.
No. I.	Weight packed— $5\frac{1}{2}$ lbs	Bright.
	Size packed—13 in. by 7 in. by $5\frac{1}{2}$ in.	
No. 2.	Weight packed—6 lbs	Brightest
	Size packed—13 in. by 7 in. by $5\frac{1}{2}$ in.	
No. 2.	With mechanical stand, weight packed	
	7 lbs	Dazzle.
	Size packed in box—13 in, by 7 in, by $5\frac{1}{9}$ in.	
.7	W. i. i. a. a. a. a. a. the	Stage
No. 3.	Weight packed—7 lbs	Stage.
	Size packed—13 in. by 7 in. by $5\frac{1}{2}$ in.	
No. 5.	Weight packed—4 ³ lbs	No. 5 Useful.
	Size packed—13 in. by 7 in. by $5\frac{1}{2}$ in.	

What some Users of the "GWYER" Jet say about them:

Lewis Maldon, Esq., 31 Ailesbury Road, Dublin:—"Last night I had a trial of the jet with most satisfactory results, as I have never before seen anything like the light."

Professor Thos. Wood, Douglas, Isle of Man:—"We received the jet and have tried it for over three weeks, with the result that we are delighted with it."

J. HAY TAYLOR, Esq., Charterhouse Square, E.C.:—"The jet will stand a very great pressure of gas without the slightest perceivable noise, and can be worked at a low pressure without the slightest chance of snapping. The light which can be obtained with the jet is enormous."

F. Bromhead, Esq., I Regent Street, Clifton:—"The patent jet performed most satisfactorily, and I consider it the most powerful jet I have yet used. On one occasion I had to use it at 100 feet from screen, across a public thoroughfare in the face of two street arc lamps and even then I was able to project advertisements in a clear and brilliant manner."

CHARLES J. Francis, Esq., Glenthorne, Bedford:—"The GWYER Jet was remarkably noiseless, very steady, and most easy of manipulation, while repeated adjustment of the taps seemed incapable of producing hissing. The light altogether was extraordinary as compared with other jets of in bore, and I have no hesitation in at once purchasing the instrument."

J. M. Chute, Esq., The Princes' Theatre, Bristol:—"It gives me much pleasure to speak in the highest terms of the new patent Gwyer limelight jet which has given the utmost satisfaction. Its power is very much greater than the old mixed jets, and it works quite smoothly and silently. I have pleasure in handing you an order for a further supply."

Messrs. The Warwick Trading Co., Ltd.:—"We have tested the No. 2 Jet to our entire satisfaction, and will send you a stock order for them."

Messrs. Ross, New Bond Street, E.C.:—"We have tested the two jets sent to us for trial on the 20th ult., and will keep the No. I sent as a sample. We hope we may be able to send you during the season a number of orders for these."

Messrs. R. & J. Beck, Ltd.:—"It worked most satisfactorily at the lecture on December 10th, and we think it a most excellent jet."

The GWYER gained the Highest Award, the Silver Medal, at the International Photographic Exhibition, Bristol, December, 1896.



THE PENDANT SATURATOR.



Patent No. 11,966

This Saturator is the most economical means of supplying the hydrogen for oxy-hydrogen light. It is a perfect substitute for the cylinder of compressed coal gas.

In order to produce the light it is only necessary to provide the oxygen either in a cylinder, generator, or tank. Owing to impurities in compressed coal gas the lime always becomes more or less coated which reduces the whiteness of the light. The Pendant Saturator supplies a perfectly pure gas and by its means the most powerful light obtainable by oxy-hydrogen can be procured. When using a Pendant Saturator, as the pressure is always from one source, that of the oxygen cylinder, it is the safest and simplest means of obtaining hydrogen. An admixture of oxygen and hydrogen in the cylinder is, of course, an impossibility. We always work our oxygen cylinders right out till all the gas is exhausted.

A good deal of misapprehension exists as to the safety of a saturator; accidents for which they are not in any way responsible are put down to them. Also, like all other apparatus of this kind, they have had to pass through many imperfect forms before they became what they are, as represented by the 1910 Pendant Saturator.

In the earlier types there was always a difficulty in getting to know exactly the quantity of liquid to put in, and the disagreeable process of blowing out had to be resorted to. With the Pendant

Saturator you can ascertain in a second how much more fluid is necessary to make a full charge. Many of the older saturators contained spaces in which gas could accumulate, which gave a possibility of bursting the saturator. In the new Pendant Saturator there is no possibility of vacant spaces occurring; it is therefore impossible to get an explosion in the interior. As an additional safeguard, we fit pumice chambers to inlet and outlet. The oxygen in passing through the ether takes up the lighter portion of the liquid, it therefore follows that a heavier part, unsuitable for saturating, is left behind in the saturator. This residue is nearly useless for saturating purposes, and in most saturators can only be got rid of by drying out, a tedious and uncertain process. The New Pendant Saturator is so arranged that this residue can be pumped out in a few minutes by means of an ordinary pneumatic tyre pump. This is an improvement of enormous practical value that will be appreciated by those who are in the habit of using a saturator. It frequently happens that the saturator, after a week or two's use, will be full of the residue of former charges, so that if the weather is very cold it will make the saturation of the oxygen imperfect. We use Pendant Saturators continually at our works for testing jets and experimental purposes; we therefore are competent to express an opinion as to their safety. The jets they are supplying are shut on and off scores of times during the day, and the oxygen is in all states of saturation, as we generally work the saturator till the fluid is exhausted. Of course, when used in public, care should be taken to see that the fluid does not run short, as, if exhausted, you may get a sharp but harmless detonation on burning out the hydrogen.

Most saturators worked at high pressure are liable to cause the liquid to be lifted into the jet tubes, and this has been frequently the cause of trouble. We have succeeded in our new type of saturator in entirely preventing the possibility of this happening, and also the ejection of fluid into the tube leading from the cylinder to the saturator, when the pressure of gas from the cylinder is suddenly taken off, the outlet valve of the saturator being closed. The latter defects are responsible for the sudden variation of the state of saturation of the oxygen which has been observed to occur.

The Pendant Saturator can now be offered to lanternists as a perfectly safe instrument for providing the hydrogen side of the jet, that even in the hands of unskilled operators can produce nothing worse than a harmless detonation. A saturator is the most economical means of producing the oxy-hydrogen light. Not only is the hydrogen produced at a lower cost than the compressed coal gas, but owing to the freedom from deleterious products less oxygen is required. The light produced by a mixed jet and saturator is much greater than can be obtained by means of a blow through, or any jet using gas from the house mains, while the consumption of oxygen is about half.

Prices.

£ s. d. Code Word

No. 1 Pendant Saturator . . . 2 2 0 "Sate."

Size, packed—13 in. by 7 in. by 4 in.

Weight, packed—7 lts. 2 oz.

This is intended for jets not consuming more than $3\frac{1}{2}$ cubic feet of oxygen per hour.

No. 2 Pendant Saturator . . . 2 10 0 "Satiate." Size, packed—13 in. by 7 in. by 4 in. Weight, packed—8 lbs.

This saturator is suitable for use with jets of any power.

No. 3 Pendant Saturator . . . 3 5 0 "Satiatism" Size packed—19 in. by 7 in. by 4 in. Weight, packed—13 lbs.

This is specially designed for very long runs with powerful jets.

The GWYER Jet is the most suitable to use with the Saturator.

A FREE TRIAL IS ALLOWED TO INTENDING PURCHASERS.

Instructions for using Pendant Saturator.

To Fill.—Unscrew the plug in the cup on top of the saturator, and also the upper small plug at front of saturator and pour methylated ether of about '717 sp. gr. slowly in through large opening until it runs out again through the small plug. Both plugs should then be screwed up firmly in their respective places. The saturator is then ready to be coupled to cylinder and jet or dissolving tap. There are two overflow plugs, the upper is to indicate the height of the fluid, the lower is only used when pumping the residue fluid out as directed below.

An illustration on page I shows the saturator connected for use.

To Connect.—Hang the saturator by a nail or hook in a vertical position near the lantern, and attach by means of short pieces of rubber tube. Connect the tubes as shown on page I.

Saturating Liquids.—The quality of the saturating liquid is of the utmost importance. The best is methylated ether '717 sp. gr., but, as this cannot always be obtained, ether of '720 sp. gr. has often to be used and will be satisfactory. In hot weather ether of '725 can be used. In tropical climates ether of even heavier sp. gr. can be used. Gasoline of '650 sp. gr. makes a good substitute, but pumping out must be done oftener, and in very cold weather it cannot be used without application of heat. It is recommended that the specific gravity of the liquid be tested by means of a densimeter. We can supply these at 4/6 each, but the same densimeter will not give range for both ether and gasoline, and it must be specified for which liquid the densimeter is required.

Management of Valves.

It is recommended to open both valves on the saturator fully and regulate by the valves on the jet. In lighting up proceed as in the instructions for the GWYER Jets.

To Turn out.—Jets may be turned off in the usual manner the same as the mixed gases, the saturator taps always being turned off BEFORE turning off main supply of gas at the cylinder. It should be noted, however, that after charging, a Pendant Saturator should be hung up, not laid horizontally.

If the saturator, at the conclusion of an entertainment, should show signs of exhaustion, which will be apparent by the light continuing after the oxygen tap or jet has been turned off, turn on oxygen tap again (pretty full) and then turn off Hydrogen tap FIRST and oxygen tap after, when the lime has ceased to be red hot. This method of putting out the light will effectually prevent any snaps or pops should saturator be exhausted.

Users of all saturators would do well to note this, as these pops never occur with saturators unless exhausted, and although not dangerous with modern forms of saturators, may startle an audience. Unsteadiness or wavering of the light at jet is due to the mixing chamber of jet not being packed, and therefore unsuitable for ether gas. The jet chamber can be packed at a small cost.

In very cold weather it will be found a very great advantage to place the cylinder of oxygen in a warm room some hours before use. This will ensure a better light, and also economise the gas. It will be found advantageous to do this even if some hours have to elapse before the cylinder is used, as the gas when once warmed in the cylinder does not become very cold again for a long time. By warming we mean heating only to the temperature of a dwelling room.

In cold climates it may be even necessary to raise the temperature of the saturator a few degrees, till water no longer condenses on the exterior. This may be done by placing under it a small spirit lamp, so that the warm air passes over the saturator. A slight rise of temperature is all that is necessary; it may even not be perceptible to the hand. If heated too much the light will vary much, and heat in the lantern may be developed to endanger the condensers, as there will be an excess of hydrogen. It may even boil the ether and force the ether into the tubes connecting the jet.

Gasoline or methylated ether can be used in these saturators, but on no account must petrol, benzoline, or methylated spirit be used. Gasoline varies in quality, but is cheaper, although there is more waste in it.

All the Pendant Saturators are now made to work with oxygen generators—or gas bags. If only a moderate light is required, the Pendant Saturator can be worked very satisfactorily with oxygen from a gas bag.

The length of time which a full charge of the saturating liquid will last varies with the nature of the liquid and the pressure at which you work the jet. Roughly the No. 2 Pendant Saturator will last $2\frac{1}{2}$ hours and the No. 3 $3\frac{1}{2}$ hours. That is with 717 ether and for ordinary lantern work.

The Pendant Saturator is intended for use with a Gas pressure of about 4 lbs. to square inch. Higher gas pressure than this must not be used.

The following Hints are worth the attention of Operators.

It frequently happens that the ether supplied as '717 sp. gr. has been kept a long time, and is no longer of this sp. gr. Heavy ether or gasoline may cause firing back in the tubes. Gasoline varies very much in quality, and should therefore be tested before starting.

The most important thing in using a saturator is to pay attention to the quality of the fluid and the quantity. If you run short there is always a possibility of getting a harmless but startling report on turning out the light.

Do not neglect to pump out the saturator occasionally. If used every night we advise pumping out every week.

Snapping in the tubes is frequently caused by leaky jet taps. As ether will dissolve grease in the jet tap, this is more likely to occur with the saturator than with mixed gases. A bad tap is often made to work by means of a little tallow. Do not expect to find the management of a saturator will be learnt in half-an-hour. The Pendant Saturator in the hands of one who has had experience will give a light unequalled by the ordinary compressed coal gas and oxygen.

If the saturator does not work as well as it ought to, remember it is nearly always the liquid that is at fault.

A few Extracts from Letters received from the Users of the Pendant Saturator.

From Mr. FRED POOLE.

" Poole's Myriorama, Colston Hall, Bristol.

"I have used your Pendant Staruators for over twelve months, in conjunction with the Gwyer Jet, with perfect success. Although used every night, there has never been the slightest trouble of any sort, and I consider them to be absolutely safe and reliable. In addition to the above, I may add that I have exhibited my Pendant Saturator to two Insurance Inspectors, who have certified that it is perfectly safe. I astonished them by pulling off the rubber tubes quickly while charged with oxygen and ether, and applying a light to the valve nozzles. A flame an inch or two long burnt at the nozzle for a few minutes and gradually went out."

From Mr. F. BROMHEAD.

" I Regent Street Clifton.

"I have been now using your Pendant Saturator for over twelve months, and have found it, in conjunction with the Gwyer Jet, give a most brilliant light. It behaves in a most satisfactory way."

From Mr. John Hooper.

"33 Paris Street, Exeter.

"I was unable to try your Saturator, owing to illness, until last Thursday, when running short of hydrogen, I used it at the Barnfield Hall, at Exeter, before a large audience to illustrate a Lecture. I began to work with fear and trembling, but I need not have feared, for the slides showed up splendidly, although I was standing sixty feet from the screen and working with a 12-inch lens. The Lecturer spoke of my splendid lantern during the Lecture, and complimented me at the close. I find it works a bi-unial as well as it does a single lantern, and it works most smoothly."

From Mr. W. H. PENTNEY.

"9 Narrow Street, Peterborough.

"When I got the Pendant Saturator I was obliged to use it or take a hydrogen cylinder, as where I was going to exhibit there were only oil lamps. I was showing two hours straight off, and I NEVER TOUCHED it again after lighting up. It gave the greatest satisfaction."

From A. Meager, Esq.

"Warwick Lodge, Anerly, London, S.E.

"I am pleased to be able to write that having now tried the Pendant Saturator, both at home and in public, I can say it has in my hands borne out all you claim, and it deserves to be known and largely utilised on its merits."

From Mr. J. W. Cooper.

"26 Manchester Street, Oldham.

"You will be pleased to hear that I am delighted with the performance of the saturator. I use it for the purpose of enriching the coal gas. I think if operators generally only knew the advantage of doing this, that your saturator would be generally used. I have used the saturator for years, and have always been troubled at times by the liquid getting into the tube; with yours this has never happened."

From Mr. Fredk. J. Balson.

" 17 North Allington, Bridport.

"I am pleased to write to you, having given the No. 5 Gwyer Jet and the No. 2 Pendant Saturator a thorough trial in our Town Hall. I was working with a 10-inch lens on a 144-ft. screen, and after adjusting the valves of the jet I did not require to touch them again for one-and-a-half hours. I only used $5\frac{1}{2}$ cubic feet of oxygen. After the Lecture I was complimented on the beautiful white steady light I got throughout. It is capable of doing all you claim for it. I have used all kinds of jets, but must say this is the simplest and best so far."

From Mr. Frank Colbourne.

"Lansdown, Stroud, Glos.

"I have used your Pendant Saturator constantly for two years, and am exceedingly pleased with its performance, never having had even the slightest trouble with it."

From J. Ingram Learoyd, Esq.,
President Halifax Camera Club. "Halifax.

"I have given your Pendant Saturator a trial, and find it most satisfactory."

From Chas. J. Francis, Esq.

"Glenthorne, Bedford.

"The Pendant Saturator answers admirably."

A free trial is allowed to intending purchasers.

LIMES.

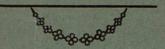
Owing to the difficulty experienced by many of our customers in getting Limes that will stand the intense heat of the GWYER Jets, we have been for some time selecting and making Limes. These are made from a special and carefully selected Stone, and will be found superior to any now on the market.

They are made in the following sizes:-

3 inch diameter, packed 12 in a tin.

Limes can be sent by Parcel Post to Operators abroad.

Some of the Theatres in which Gwyer Jets are used:



Her Majesty's Theatre, London.

Grand Theatre, Leeds.

Theatre Royal and Opera House,
Bradford.

Lyceum Theatre, Sheffield.

Grand Theatre, Hull.

Prince's Theatre, Bristol.

Lyceum Theatre, Edinburgh.

Court Theatre, Liverpool.



J.S. Willway & Sons

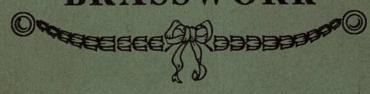
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