

DECALCOMANIA

Some preliminary investigations into the history of transfer slides

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A lecture given to the Society on 6 October 1979

You all know the beautiful story about the biology student who adored worms and, because he loved them, acquired all available knowledge of them. When the examination finally came, he was asked to write about elephants and he started his essay like this: "The elephant is a four-footed mammal which has a large trunk. This trunk is shaped like a worm. Worms range in size from three-sixty fourth of an inch to several feet in length..." Research into the history of the magic lantern is like this: it leads from one thing to another and you never know where to start or, for that matter, where to stop.

If I begin, therefore, with a short summary of the history of painting on glass, it will, predictably, lead to my subject of transfer lantern slides: the monk Theophilus in his work *Schedulua diversarum artium*, written about 1100, described in detail how to prepare colours for glass-painting, the kilns for firing the painted glass, and how such painted and fired glass could be used in church windows. In 1460, the limited colour range of black, red, and blue was extended by the glass-painter Jacob Griesinger (known as Jacobus Alamanus) of Ulm by adding yellow to the range of enamel colours; this meant that by mixing red, blue, yellow, and black, the entire range of colours could be obtained which could be made permanent by firing.¹

In 1716, Christian Gottlieb Hertel in his instruction book on the grinding of lenses², mentioned that, what he called *burned-in*, that is to say, *fired* lantern slides were being used. The abbe Nollet in vol. 5 of the 1755 edition of his *Leçons de physique expérimentale* pointed out that lantern slides could be made more durable by painting them with enamel colours and firing them. This information was repeated by Krunitz in 1794 in his mammoth 242 volume Encyclopaedia.³

By that time the production of *printed transfers* which could be applied as decoration on pottery and porcelain and then fired was by no means new, although up to about 1793 it was confined to one colour only, either black or blue. (The willow-pattern is a good example of blue transfer printing.) Printed transfers are said to have been employed first at Liverpool by John Sadler and Guy Green about 1756, but there is strong evidence that the process was discovered by John Brooks of London around 1753 and that it was first used at Battersea for enamelled copper-ware.

By the time the first transfer slides, the so-called *Copper-plate sliders* were manufactured in England by Philip Carpenter, neither the idea of firing slides to make them permanent, nor the use of transfers to decorate ceramics was new; it is only surprising that nobody had thought of combining the two processes before 1823.

In that year Philip Carpenter published his

Elements of zoology; being a concise account of the animal kingdom, according to the system of Linnaeus. Intended for the use of young persons, and as a companion to the new copper-plate sliders. To which is added, a short account of the copper-plate sliders, and a description of an improved phantasmagoria lantern.

I have quoted the complete title because it describes the contents of the book very well. Carpenter was the first to go about the production of lanterns⁴, and lantern slides in a practical and systematic manner. He understood the potential of the lantern as an educational instrument and was one of the first to supply the lecturer with the text to accompany the slides. For the first time a method had been found which allowed manufacturing processes to be used for the production of lantern slides. At the same time the process made it possible to represent an object very much more precisely and accurately than had previously been possible.

Outlines and details which could be represented in black were engraved on a copper-plate which was inked with black enamel colour; after the surplus ink had been wiped off so that only the ink in the recesses remained, thin sheets of glue were used to lift the ink from the plate and transfer it to the glass. This was then fired in a low temperature kiln. The slides were then painted by hand by professional slide-painters who also scraped away any fine lines which appeared white on the screen and who added the black background to isolate the pictures in the manner of the phantasmagoria slides.

John Barnes has pointed out that 'The success of Carpenter's phantasmagoria lantern and copper-plate slides led to the establishment of Carpenter & Westley'⁵ who continued manufacturing these slides. Each of these was 14 inches long and 3½ inches wide; each contained four circular pictures, 2½ inches in diameter, set into the wooden frame and held there by a metal ring. The entire set consisted of 56 slides. They were made of pine wood, not mahogany, and painted a matt rusty brown. They were stamped: *Carpenter & Westley, 24 Regent Street, London. Copper-plate slider* and with a description of any of the six Linnean categories, like *Mammalia*. When the animals were not known or where no reliable reference existed, the artist invented strange creatures which one feels ought to have satisfied Linee's passion for order and classification.

The slides were manufactured for well over 30 years; they were still exhibited by Carpenter & Westley at the 1851 Exhibition and their production was described in detail in the official catalogue.⁶ By then the range had been increased to include other natural history subjects, but this wider distribution brought with it just a hint of professional disapproval: the author of *The Magic Lantern* wrote in 1854:

"The better class of artist works entirely by hand... a second and somewhat inferior mode of production is by transfer."⁷

Transfer pictures as we know them now and struggled with as children originated in Austria: on 14 January 1825 Anton Rothmüller was granted a patent for a method of transferring originals painted with oil-colours from the paper on which they had been painted on to any object. This method he called *Elachalkographie*. Other Austrian inventors improved the method of making transfers, but it was not until lithographic printing became an established process that transfer pictures could be produced commercially. In the late 1850s, Carl Anton Pocher, a toy-manufacturer in Nurember, was offered a process for producing chromolithographic transfers which originated in Vienna. Pocher improved this process and in 1860 marketed the first cold-water transfer pictures which he called *Metachromotypes*.⁸ From Germany the craze for transfer pictures seems to have spread to England; it was 'much in vogue' between 1862 and 1864. It was called *Decalcomania* and a person who transferred the pictures, a

decalcomaniac. In *The Queen* of 27 February 1864, it was said that

"There are few employments for leisure hours which for the past eighteen months have proved either so fashionable or fascinating as decalcomania."

A porous paper was used, coated with a solution of starch, albumin and glycerin. The colour that is seen first was printed first. For instance, if one wanted a brown stipple on a blue ground, the stipple was printed first and the blue on top of it (a reversal of the usual sequence of colour printing). The transfer was then finished with a coat of water-soluble glue. When used, it was moistened and applied to the object to which it adheres; the moistened paper was then removed.

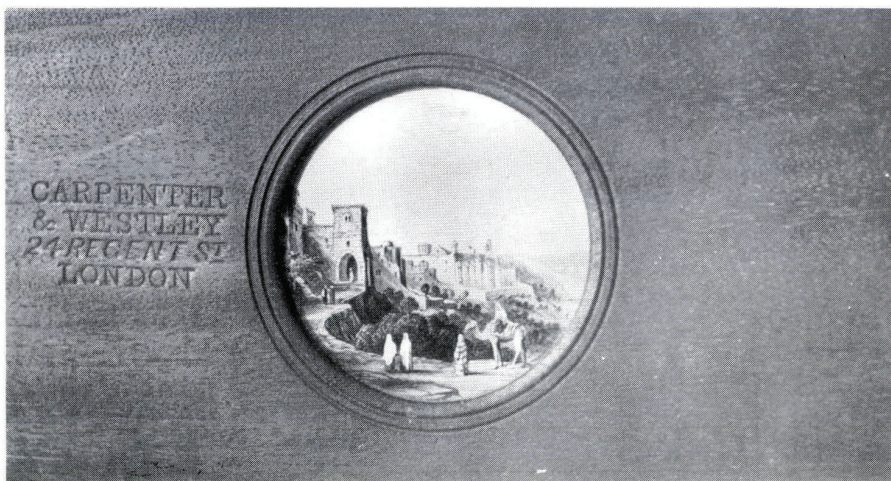
It was not until 1865 that the method was proposed for use on lantern slides. On 1 November, a patent was granted to Samuel Solomons for the process (no. 2815). The abridgment reads:

"Magic-lantern, phantasmagoria, and like transparent slides are produced by chromolithography, using transparent colours instead of the ordinary colours. An impression is taken upon a sheet of gelatine or other transparent material, which is afterwards mounted upon or between sheets of glass in a frame; or an impression is transferred to glass and varnished."

I am not sure whether anything came of this patent; Samuel and Benjamin Solomons were well-known opticians with shops in Albemarle Street and in King William Street in the City, and it seems unlikely that they would have gone to the trouble of taking out a patent for something that either did not work or was economically not viable. I have a set of *Punch and Judy* transfer slides in my collection which came in a box which has *Albermarle Series* printed on the label. One might conclude that the slides were produced by Solomons because his shop was in Albemarle Street, but this kind of deduction is always dangerous. Further research may throw some light on it. By the way, there were 180 sets in the Albemarle series.

(Slides made in accordance with Solomons' proposal of printing in full colour on gelatine sheets were definitely produced. They look like the usual transfer slides, but the gelatine has developed a bumpy, crinkly surface; the word *PATENT* appears in the bottom right-hand corner.)

On 13 March 1867 a patent (no. 732) was granted to Edward Lee for transferring designs or photographs from transfer-paper or photographic paper to wood, metal, glass, etc. The designs were to be 'transferred to the surface to be coloured or ornamented by a novel and expeditious process'. Although lantern slides as such are not mentioned in the abridgment, Lee must have been able to interest the firm of Brodie & Middleton of 79 Long Acre in applying his process to the production of lantern slides. (Brodie & Middleton's shop on the corner of Long Acre and Drury Lane is still there and I am told that they still



have lantern slides for sale!). They returned to the original idea of producing only outlines on glass which the customer had then to colour at home.

Lee set up the *Omni-Chromo Printing Company* at no. 3 Red Lion Court, Fleet Street, drew the outline pictures himself and printed the transfers for Brodie & Middleton who published a book, written by Lee, in 1868:

"Glass painting for the million. The art of water colour painting on glass, in connection with the prepared outline, by Edward Lee, (Patentee). With illustrations drawn and engraved by the author."

In the introduction Lee said that outlines on glass were 'an entire novelty' and then gave detailed instructions for painting the slides using Brodie & Middleton artists' materials. 110 subjects were then available in three sizes: 2, 2½, and 3 inches in diameter. "A Mere Phantom" in the 1870 edition of *The Magic Lantern* lists outline slides among, what he calls, the 'better class of pictures'. He says:

"Important improvements have lately been made by enlisting the services of the lithographer in the production of lantern slides. Outlines of great delicacy and beauty are prepared on suitable paper, and these being transferred to glass discs, are coloured by competent artists, thus insuring greater accuracy than was formerly possessed by the cheaper kind of slides."

This was all very well as long as the outline slides were in fact 'coloured by competent artists', but when an amateur painted them badly the results could be really dreadful. Charles Middleton (of Brodie & Middleton) no doubt realised this and, in his book on slide painting published in 1876⁹, he gives very good advice 'to those who are desirous of receiving instruction in the Art'.

In 1869, J. Martin in *The Photographic News* complained that photographic slides 'deluged the market with useless trash' and proposed that lithographic full-colour transfer pictures should be produced especially for use as magic lantern slides. Attempts, he said, had been made to use transfer pictures, but these were seldom to be found in the right size and attempts to transfer them on to glass usually resulted in failure.

This suggestion seems to have been taken up by J. Barnard & Son who produced the first full-colour transfer slide about 1870 (I have as yet been unable to confirm the exact date). Their shop was at

339 Oxford Street and their wholesale department at 19 Berners Street. They were manufacturing Artists' colourmen and 'Drawing paper Stationers' and they published what what we would now call craft books, including books on decalcomania. Barnard's first slides were marketed as *Patent Enamel Slides*, which means that the transfers were printed in enamel colours and that the slides were fired after the pictures had been applied. They were sold in mahogany frames 7 inches long and 4 inches wide with a circular picture, 3¼ inches in diameter, fitted in the centre, and had a protective cover glass fixed with a metal ring. They had a light-green label reading *Patent Enamel Slides for the Magic Lantern*.

J. Barnard & Son, Makers, London. Followed by a description of the slide. The wood has *B & S Patent* stamped into it and the slide itself is identified by having either *B & S Patent* or a symbol (*B* and *S* entwined) incorporated in the transfer. The later Barnard transfer slides were not identified in this way. In those days, the artist (and most of them were listed by Barnards) had to determine how the colours were to be separated for printing the different colours and he had to draw the original for each colour himself on to the lithographic stone. The transfer for *The Life of Our Saviour* were printed in five colours: light blue, dark blue, pink, a flesh colour, light yellow ochre, and a dark brown which was mainly used for the outlines. This personal involvement of the artist in the choice of colours makes the early Barnard slides so unique and is the reason why their quality has not been surpassed.

The list of Barnard slides was not too extensive and provides an excellent idea of the subjects then popular for magic lantern exhibitions. There were only 20 sets in the first issue and they included religious subjects, fairy tales, topographical views, animals, and six dissolving view sets. Title-slides could be bought separately and so could 'Motto' slides like *God Save the Queen, Farewell*, etc. Readings were published separately and could be bought from opticians who sold the slides as well as from book-sellers; they were also included in compilations of *Lantern Readings* published later.¹⁰ The strange description of the giraffe in the animal series:

"Giraffe – another name for this beautiful and to us curious animal is the camel-leopard, bearing some resemblance to both these animals."

is simplicity itself compared to the description of the scene when Man Friday meets Robinson Crusoe:

"The follow, as soon as he heard the loud sound,
That came from the musket of Crusoe
Ran straight up to him, then fell to the ground,
'Twas his fear that caused him to do so."

Here is some more tortuous verse from *Cinderella*:

"The Cinderella – sly puss – asked that she
Might "just to try, you know", permitted be:
When lo, it fitted her as if 'twere made
For the small foot; which you know well, it had."

A book written by Perran Garnier, *A manual of painting on glass for the magic lantern* was published by Barnards about 1873.¹¹ In it a completely new way of producing slides was first made public. Again, it is so simple that it is surprising that nobody had thought of it before. Instead of buying complete slides, sheets of transfers could be bought (at 5/- a sheet), and after being cut up, the pictures could be transferred on to glass to make lantern slides. These sheets were printed in Germany and could be bought from Barnards, together with the glasses, mahogany frames, and rings. The pictures on these transfer sheets were 3½ inches square and one can find sets where these transfers have been applied to 3¼ square glasses and the circular picture had to be cropped on four sides by the binding-strip.

Barnards appear to have given up the process of firing the slides a year or so after their introduction. In another book published by them, written by Samuel T. Pike, *On the use of Chromo-printed pictures for the Magic Lantern*, which like the previous one is undated, the author refers to 'the new invention of transferring pictures for the use of the magic lantern', and states that a patent had been granted and that the system was not the same as that employed in the *Enamel Slides*, though similar, and that the latter were '... now tolerably well

known'. By then the list of subjects had been extended to include new sets, panorama, and rack-work transfer slides.

Yet another undated book was published by Barnard Barnards, *Evening entertainment for the magic lantern*, written by the Revd. M.G.W. of Great Houghton. In it the slides are referred to as *Patent Varnished Slides* to confuse nomenclature even further, especially since no patents seem to exist (at least, I have been quite unable to find any in spite of an extensive search in the Patent Office). After some sensible hints to exhibitors, the writer stresses the need to include musical accompaniment on the piano or some other instrument for a successful entertainment. He then gives the text of the commentary to be spoken when exhibiting six quite separate programmes: 1) *Sacred*, 2) *Nursery Lore*, 3) *Robinson Crusoe*, 4) *Instructive*, 5) *Comic*, and 6) *Miscellaneous for Children*. Each programme starts and ends with a motto slide; one set of dissolving views and/or one mechanical slide were meant to be shown in the intervals between two or three story-sets which make up the largest part of the entertainment.

In the late 1870s and in the first half of the 1880s a large number of German transfer slides were imported into this country. Many of these were meant to be shown by adults to children, rather than by the children themselves, and fit only large 'professional' lanterns. The quality of the printed transfers and illustrations were usually better than in the English slides of that period. The subject-matter and type of illustration were unmistakably German and the best of the pictures are reminiscent of the work of the German 'romantic' painters like Bocklin and Leibl.

After 1885, when there was a marked increase in the use of magic lanterns and 3¼ inch square slides were beginning to be accepted as standard, transfer slide-sets became more and more popular, probably to supplement sets of rather boring home-made photographic slides. One of the most prolific of English manufacturers of transfer slides were J. Theobald & Co. In 1890, the eighth edition of their catalogue was published and in a review of it in the *Optical Magic Lantern Journal*¹² it was stated that 'Sets of every conceivable subject in coloured lithographs are to be found in the lists we have received'. Sheets of transfers were also, of course, for sale: in a letter published in January 1891 Theobalds say that the transferring of their pictures was 'now so simple that a child could work it with ease and thoroughly satisfactory results'. By that time, Theobalds were the only firm in England manufacturing chrome-litho slides, Theobald claimed.¹³

Also in 1891 Theobalds brought out transparent *paper* slides. The patent for these originated in Germany. The paper was lithographically printed and then treated with oil of creosote and a solution of colophony which made the paper completely transparent. (Colophony is a resin obtained by distilling turpentine). It is difficult to tell these apart from ordinary transfer slides, but the word PATENT appears in the right-hand bottom corner and the border has a silvery sheen.¹⁴

In 1892, a reporter from the *Optical Magic Lantern Journal* visited Theobalds' factory – then at 43 Farringdon Road – and was told that their stock of lithographic transfer pictures was between two and three million. He was then taken to another floor of the building to see for himself how the slides were manufactured. The following is part of his report:

"As water plays an important part in this department, many of the tables were provided with a gutter immediately below the edges of the sides. Going down one side of the room we observed a very interesting division of labour.

"The glasses having been washed, were passed on to the next table, when they were polished with paper, and racked up; these racks, as soon as full, were passed to the next table, which had large vessels containing what appeared to be gelatine.

"The chromo transfer backed with paper was, after



being coated from this vessel, stuck on the glasses and placed in a rack; these as soon as dry, were passed on to the next table and immersed in water. After soaking for about five minutes, the paper backing was detached, and the slide again placed on a rack to dry. At the next table, a cover glass was placed upon each picture, and the binding strip gummed on the edge. Every now and again the pile of finished slides was taken away to the sorting department, boxed, labelled, and stored along the sides of the room, to eventually be placed in the lift, which conveys them to the packing room, and thence to the basement. We were informed that a consignment of 200 gross of assorted sizes of glass for slides was delivered each week throughout the year." 15

This would make the yearly output of slides about 777,600, or 2592 slides (216 sets of 12 slides) each working day. This is the reason why these slides are still fairly easy to come by and, even at today's prices, it is still worth while starting a collection. Almost all Theobald sets consisted of 12 slides and were published with a reading either in prose or verse. The look of the slides varied as much as does the subject matter, depending on the illustrator who drew the original pictures, on how well the originals were translated by sometimes indifferent craftsmen into lithographic prints, and on how well they were printed. Whether one likes one set rather than another is very much a matter of personal taste; a correspondent in the *Optical Magic Lantern Journal* damned them *all* out of hand:

"I should like the cheap nasty entertainer to die out, the man with a 25/- lantern and some horrible lithographed or other abominable slides, who drags down the status of the lantern and levels it to the dust." 16

Nobody appears to have taken the slightest notice and easier methods of printing as well as photographic, rather than manual, separation of colours, increased the number of slides available even further. One of the new manufacturers who started producing transfer slides were W. Butcher & Son, first at Blackheath and later at Farringdon Avenue. Butchers marketed the slides under their trade-name *Primus* (this they also used for lanterns and accessories). They issued their *Junior Lecturers Series* in sets of eight, in two series called *A* and *B*. The *A* series had the captions included on the slides and the *B* series had separate readings supplied with each boxed set. By the early years of the twentieth century many hundreds of sets were available and perhaps one day someone will perform a true labour of love and index them all.

Most of these sets were fairy and nursery stories; a commercially well-founded sense of patriotism produced *The British Army*, *The British Navy*, and *Our Colonies* (a set of 40 slides). News stories and anything which might interest a wide public were quickly added to the list: like *Peter Pan*, a triple set of 24 slides (c. 1904), *The Life of King Edward*, 32 slides (c. 1910), and *World War*, a set of 80 slides in 10 sets of 8 (1915). Comic subjects like *Gag-Jag the Rejected* and *Mr and Mrs Brown and the mouse* were of course best-sellers and can be found more easily. Another of the large sets was Butchers' *Famous Pictures of the World*: the mixture must be



an art-historian's nightmare and I cannot do better than to quote from the reading published with the slides:

"This produced the essential union of all pictorial art. Raphael and Murillo's sweet Madonnas come hand in hand with Michaelangelo's and Velasquez's virile figures; Titian and Corregio's Venetian beauties dance along with Franz Hals and Van Dyck's cavaliers; Watteau and Boucher's *fetes galantes* are foiled by Rubens and Rembrandt's religious rites and so on — an inspiring paean of sacred subjects; beautiful figures, speaking likenesses, refreshing landscapes, and scenes of humour and pathos."

A set of eight cost 4/- and the entire set of 80, £2; a polished mahogany transit box and the lecture notes were included in the price.

Butchers also produced the more popular of the 3/4 inch square sets in the form of strips for toy-lanterns. Their size ranges from 4 inches long by 1 inch wide to 8 inches long by 2 3/8 inches wide. There are always four pictures on one slide; they are not protected by an additional cover-glass and are simply bound, usually in a red or orange paper passe-partout strip mount. They can still be found in their original cardboard boxes, each containing 12 slides. A typical assortment is this:

Sinbad the Sailor (2 slides), *Views of London* (2 slides), *Alladin* (2 slides) and *Peter Pan* (6 slides).

There are three further assortments:

The Elephant's Revenge, *Robinson Crusoe*, *Tiger and Tub*, *Comical Cats and Dogs*, *Old Mother Hubbard*, and *Never ride a strange Horse*.

Life in our Army, *Life in our Navy*, *Our Lifeboat Men*, *Our Firemen*, *Willie's Revenge*, and *Sweet and Whitewasher*.

Jack and the Beanstalk, *Ten Little Niggers*, *The Three Bears*, *Cinderella*, *The House that Jack Built*, *Portraits of the King, the Queen, and the Prince and Princess of Wales*, *'Good Evening'* and *'Good Night'*.

Similar sets of toy transfer slides were, of course, imported from Germany; they are sometimes contained in decorative wooden boxes and because of this extra protection, are often in better condition than the English ones. The principal German Exporters were Ernst Plank of Nuremberg: their trade mark is an oval containing a wheel with wings on either side and the initials *E.P.* Plank also supplied circular disc transfer slides with circular pictures round the periphery of the disc, to fit their toy-lanterns.

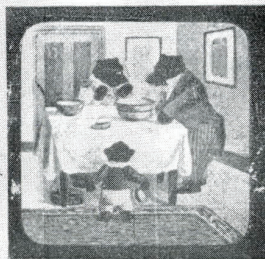
To sum up: with the exceptions cited above, not a single author of the many books that have been written about the magic lantern has mentioned these transfer slides; no doubt, they thought them beneath contempt. It has, therefore, been very difficult to piece together a chronological history and further research is needed. For decades, these transfer slides were very much a part of every child's life in Europe and in America, and I am very grateful to the Magic Lantern Society for having given me the opportunity to talk about their history and, in some way, for having helped to make up for many years of neglect.



- 1 Feldhaus, Franz Maria, *Die Technik der Vorzeit, der geschichtlichen Zeit und der Naturvölker*, 1965, München, col. 680-1.
- 2 Hertel, Christian Gottlieb, *Vollständige Anweisung zum Glasschleifen, wie auch zur Verfertigung derer optischen Machine die aus geschliffenen Gläsern zubereitet und zusammengesetzt werden*, 1716, Halle. (Another edition was published in 1758.)
- 3 Krünitz, Johann Georg (editor), *Oekonomisch-technologische Encyclopadie*, Berlin, vol 65, 1794, pp 467 ff.
- 4 Carpenter's lantern has been described in detail by John Barnes in: *Barnes Museum of Cinematography, catalogue of the collection, part 2, Optical projection*, 1970, Saint Ives, p 30. This was reprinted in: *The New Magic Lantern Journal*, February 1979, p4.
- 5 Barnes, John, op. cit.
- 6 *Great Exhibition of the Works of Industry of All Nations. 1851. Official descriptive and illustrated catalogue*, 1851, London, vol 1, p 425.
- 7 *The magic lantern, its history and effects. Together with an explanation of the methods of producing dissolving views, the chromatrope, phantasmagoria, etc.*, 1854, London.
- 8 Feldhaus, Franz Maris, op.cit col. 7.
- 9 Middleton, Charles, *Magic lantern dissolving view painting... Showing a progressive course of slide painting from the plain outline to the finished picture*, 1876, London. (The introduction is dated 1875.)
- 10 *Lantern Readings, Original and selected. To accompany sets of photographic transparencies. To be had of all book-sellers and opticians.* Three volumes of these were published in a number of editions.
- 11 The title may be misleading: Barnards, like Brodie & Middleton sold 'ready prepared' outlines on glass to be painted at home.
- 12 *The Optical Magic Lantern Journal and Photographic Enlarger*, 1890, vol 2, p 67.
- 13 *Ibid.*, 1891, vol 2, pp 77-78.
- 14 *Ibid.*, 1892, vol 3, pp 1, 25, and 41.
- 15 *Ibid.*: 'Our Visits. No. 3, Theobald & Co.'. 1892, vol 3, pp 135-6.
- 16 *Ibid.*: Taunt, Henry W., 'The decadence of lantern lectures and its cause'. 1894, vol 5, pp 225-6.

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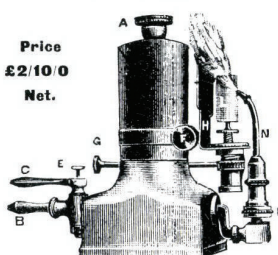


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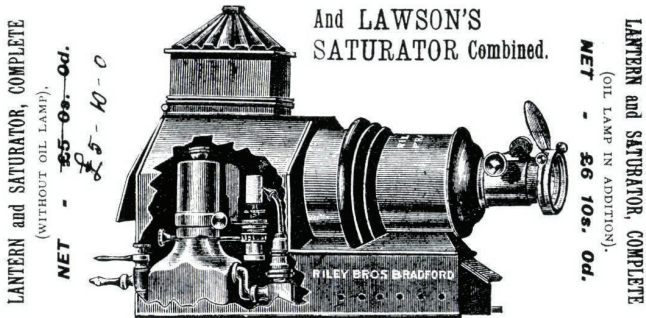
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