

BULL'S-EYES AND ILLUMINANTS

John Barnes, Lindsay Lambert and John Taylor

John Taylor's item in the last issue ('Bits and Pieces', *NMLJ* Vol. 10 No.2) gave rise to responses from three MLS members on bull's-eye lanterns and their illumination. To give each gentleman his due, their contributions are presented here separately, rather than edited together – interestingly, they all come to broadly the same conclusion. – *Ed.*

John Barnes writes:

JOHN TAYLOR'S LANTERN was never meant for a candle, but for a tin-socket oil lamp burning colza or sperm oil. It had two solid cotton wicks and the base had a short tube that fitted into the assumed 'candle-sconce'. In the Barnes Collection (now in the Museo Nazionale del Cinema in Turin) there are several examples of this type of lantern, one still fitted with its original lamp. The Science Museum, London, also came to the wrong conclusion about the type of illuminant used.

These early lanterns were not made by opticians, but by tinsmiths, to the optician's specifications. They are all very similar in design and are fashioned out of Cornish tin and finished in black lacquer known as 'japanning' (from its Japanese origins). The bent-wire catch was the cheapest and simplest method of securing the door, and the ribbed end of the chimney was not cosmetic, as suggested by Taylor, but a method of strengthening the tube at its end to prevent it being bent out of shape. The same idea can be found today applied to plastic bottles containing mineral water. The angled chimney is to prevent extraneous light from escaping into the room. The lanterns stand on spherical feet composed of lead balls.

Such lanterns were popular in the early 19th century and were eventually superseded in the 1820s by Philip Carpenter's 'Improved Phantasmagoria Lantern', which contained a superior optical system and a superior 'solar' oil lamp.

Lindsay Lambert adds some further points:

CANDLES HAVE NEVER BEEN PRACTICAL for magic lantern illumination, as they quickly burn down past the optical centre of the lenses. Perhaps candle lanterns were cheap ones, sold as toys to the unknowledgeable.

However, it's possible that the 'candle sockets' may have been fitted with 'peg-lamps', small lamps with a bottom projection for converting a candlestick to oil burning. These were available for whale and vegetable oils from the early 19th century, and paraffin versions were sold into the 20th.

Another conjecture would be that the lanterns could have had candle holders like those in carriage lamps, with the candle enclosed in a metal tube, constricted at the top, and was pushed upwards from the bottom by a coil spring as the wax burnt away to maintain the flame at the same position.

Meanwhile *John Taylor* has been doing some further research:

MARTIN GILBERT ALLOWED ME TO MEASURE his lantern (shown on the cover of *NMLJ* Vol. 9 No. 6) and it proved to be close to, but not exactly the same size as any of the original six from Vol. 9 No. 5, although it does have the large (5-inch) slide stage of 'Lantern No. 2'. Like mine it also has the narrow illuminant-holding runners, but there is no hole in the front for an adjusting rod. The 'candle-holder' is missing, having been forcibly removed.

Because it is capable of taking slides up to 5 inches high, using a candle for illumination seems absurd. Another feature which may not have been obvious is that the whole slide stage with lens tube is mounted in vertical runners and can be detached, presumably for transit (Fig. 1). The lantern has no feet. The rear panel to the pediment hinges out and up, which presumably is for increased ventilation even though it was already pierced for such purpose. A look at John Barnes's lantern (also in Vol. 9 No. 6, p. 94) suggests it may have the same facility. The collar to hold the chimney is tapered to the same degree as the chimney itself, unlike mine which is near vertical. From this I conclude Martin Gilbert's chimney is original and mine is not. A vertical collar is more appropriate to the columned chimney.

Ray Gilbert drew my attention to an extract from Samuel Highley's publication *The Popular Recreator* (c.1873). This book contains a series of articles on the magic lantern in which Highley recounts 'the days when I was young' and illustrates a lantern he was given and promptly took to pieces to see how it worked (Fig. 2).

In Highley's account this lantern 'was a small one, bought at a toy-shop, with pictures only one and a half inches diameter', so perhaps it was a 'junior' version of our so-called bull's-eye lantern. The illustration shows it had the adjusting rod for the illuminant – in this case a conical oil lamp. He says this lantern was too small for his needs, so he annexed the bull's-eye lantern [i.e. a hand-lamp – see Fig. 3] pertaining to the warehouse and [...] rigged a stage with double-convex power on



1. Martin Gilbert's bull's-eye lantern – detail of the vertically sliding detachable slide stage

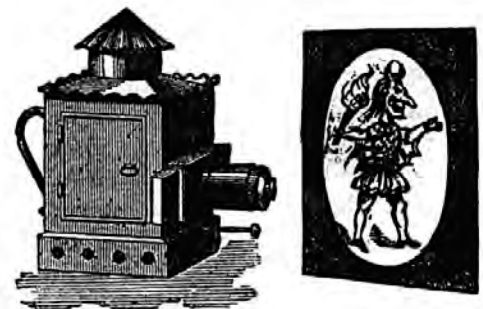


Fig. 2.

2. Highley's 'small lantern bought at a toy-shop' – Fig. 2 from 'The Magic Lantern', in *The Popular Recreator*, Vol. 1, 38–41

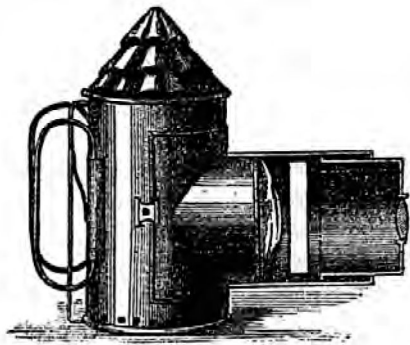
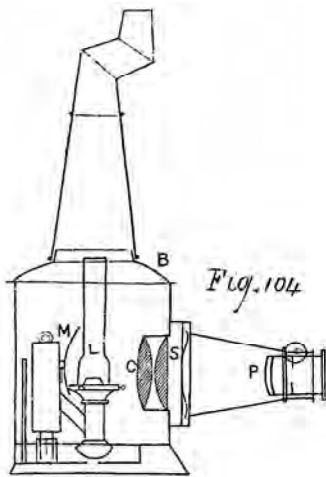


Fig. 4.

3. The bull's-eye hand lamp referred to by Highley (Fig. 4 of his *Popular Recreator* article)



5. Lantern 'lighting tray' with socket for insertion of lamp (Fig. 109 of Highley's *Technical Educator* article)

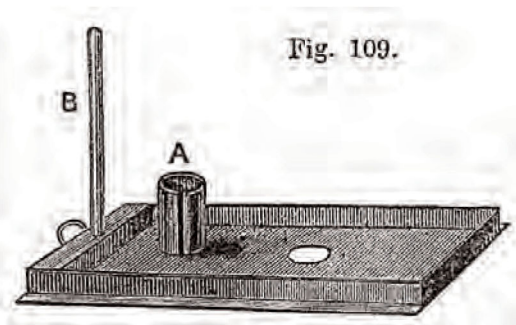


Fig. 109.

4. Argand-type lantern illuminant mounted on a peg (Fig. 104 of Highley's *Technical Educator* article)

NOTES

1. Samuel Highley, 'The Magic Lantern' in *The Popular Recreator* (London: c.1873), Vol. 1, 38–41. The quotations here are from page 39.
2. Samuel Highley, 'The Magic Lantern', in *The Technical Educator: an Encyclopaedia of Technical Education* (London: Cassell, 1872), Vol. 4, 231–3 and 257–8.
3. Maureen Dillon, *Artificial Sunshine: a Social History of Domestic Lighting* (London: NT Enterprises, 2002).
4. *Ibid.*, 109–10.
5. *Ibid.*, 119–20

in the front of the bull's-eye lens. This lantern [...] proved a decided improvement [...] but this in turn gave place to another [...] with an Argand-solar lamp.¹

Perhaps the main interest here is the adaptation of a bull's-eye hand-lamp. At no time in the article does Highley apply the term 'bull's-eye' to any magic lantern itself – his use relates solely to the fat plano-convex condensing lens immediately after the slide.

By coincidence, within a few days of obtaining this reference, Lindsay Lambert sent me an extract from a different article by Samuel Highley. This is from *The Technical Educator*, published in 1872.² Lindsay had previously suggested [see above – *Ed.*] that my 'candle holder' was not for a candle but was a socket for an oil-lamp known as a 'peg-lamp' because on the bottom of the lamp, instead of a foot or base, it had a short peg or stub of a size to fit in a candle-holder. Such peg-lamps were advertised in the USA and Canada to 'upgrade' domestic candlesticks and sconces to oil light without alteration. I had my doubts about their use in lanterns, as in over 30 years of collecting I had never seen any of the various designs of peg-lamp.

However, Highley's article illustrates a version of the Argand lamp with a peg on the base of its reservoir (Fig. 4), and also shows a standard size lighting tray with a socket (Fig. 5). I have to concede that this could apply to the narrow gauge holder in my 'bull's-eye' lantern – but as the usual vertical rod is not used, how would one adjust the height of the Argand to suit any particular lantern, unless they were specially made to suit each model of lantern?

By a further coincidence, while visiting the bookshop in a National Trust property, I came upon a book entitled *Artificial Sunshine: a Social History of Domestic Lighting* by Maureen Dillon.³ The author is the Trust's advisor on historic lighting. This book of over 200 pages covers lighting from rushlights to electricity, and naturally its main (but not exclusive) strength is the description of what can be seen at NT properties.

However, there are several passages with some relevance to the current subject. According to Maureen Dillon:

It was also possible cheaply to convert candle and oil fittings into paraffin lamps by using the simple expedient of peg lamps. As the name suggests, these lamps had a short tapered peg fixed below the oil reservoir that fitted neatly into sockets which had once held candles or oil [colza] burners. Peg lamps were a boon for the wealthy who had invested in Argand lamps at the beginning of the [19th] century but who wanted a cheaper and more easily maintained light. Very few fittings appear to have survived with their peg lamps intact.⁴

One notable survivor she mentions is at Erddig, Wrexham, where peg lamps were used extensively, for example on an ormolu chandelier. She also illustrates one fitted into an ornate gas bracket there. Other examples are in Northern Ireland.

Dillon says that Aimé Argand came to England in 1783 and went into partnership with Matthew Boulton and William Parker to manufacture his lamps at Boulton's Soho Manufactory in Birmingham. This arrangement lasted for only three years, until Argand lost his patent rights.

Some of the earliest Argand lamps were made at Boulton's Soho works and designers such as Robert Adam, James Wyatt and John Flaxman were commissioned to provide sketches for wares produced by the factory. Boulton's silver-plated lamps were elegant and expensive and included peg lamps in designs that harmonised with the patterns of candlesticks into which they could be fitted.⁵

So peg lamps were indeed made and used in Britain, but perhaps only for domestic use by the wealthy. If (as Highley suggests) they were used in magic lanterns, where there was no need for elegance and top quality, it seems to me that it is unlikely they were made by Boulton, who dealt with up-market designers and their rich patrons.

So does anyone have, or has anyone seen, a 'peg'-type Argand or simple oil lamp and/or a standard sized lantern 'lighting tray' with a suitable socket? These thoughts on illuminants are a slight (but hopefully interesting) digression from the main thrust of Deac Rossell's quest to find the origin of the bull's-eye lantern. But the information is out there somewhere, in literature, museums, private collections and so on.

Finally, two more small points. Firstly, in the diagram of the Lapierre lantern in the *Encyclopedia of the Magic Lantern* (p. 161) – apart from any likeness to a bull's-eye lantern, the oil lamp appears to be mounted on a stand or peg? Can anyone confirm this? And secondly, for those readers who have a copy of Hoffman and Junker's *Laterna Magica* – could the image at page 15, illustration 5, No. 483 be a peg-type oil lamp on runners? That is dated to 1794, and I'll leave it at that!