Trammels/Beam compass

By Neil Searle

There are dozens if not hundreds of different designs, shapes and sizes, using many different materials for the production of trammels. I will include several from my collection and a few interesting and unusual varieties of trammels and beam compasses.

The beam compass invention is attributed to George Adams. George Adams the younger (1709–1772) was an English scientist, optician and scientific writer. He began making scientific instruments for the East India Company from 1735, was mathematical instrument maker to the Royal Ordnance from 1748 to 1753, and later instrument maker to the Prince of Wales and King George III. He also supplied the instruments for Captain Cook to observe the transit of Venus in 1769.

Fig.1. Made in 1775-1795 by George Adams in Fleet Street, London. He traded at Shoe Lane, London (1733-8), Tycho Brahe's Head, Fleet St., London (1738-57) & 60 Fleet St. (1767) succeeded by George Adam the Younger. The beam trammel in Fig.1. Consists of a mahogany beam inlaid with a boxwood scale of 0 - 33 inches and divided into tenths. The pointer can be finely adjusted by means of a micrometer screw one end.

Fig.2. A homemade beam compass.

Fig.3. Very Unusual Flat Bladed Trammel Points on a lacewood Beam. The trammels are 4 & 3/8” high.

Adjustable Trammels work great for marking over large distances; tracing contours and scribing circles. Trammel heads are used in layout work to scribe circles and arcs that are too large to be drawn with a divider or compass.

Like dividers, when used with a beam, trammel heads are an effective transfer measuring tool. The trammel points are positioned on either side of an object or set distance. The distance between the trammel points is then checked against a measuring device like a ruler.

Fig.4. Unusual Telescoping Beam Compass. For drawing larger circles or curvatures larger than those possible with the small compass sets. A scaled beam is required to carry the two trammels found inside the small casement. A telescopic beam compass having several tubular parts sliding one within the other, and clamping screws to fix them at the desired position. Possibly John F. Ellsworth patent 1901.

Older trammel point sets are fairly heavily embellished with decorative engraving and ornamental finishes. They were often exquisitely machined pieces occupying a place of pride in their owner's collection.

Fig.5. My Disston & Morss trammels. Joab Morss ran a Tool Shop Division (a "sub-partnership"), in conjunction with Henry Disston under the umbrella of "Henry Disston", thru the "Henry Disston & Sons" Company from 1867-1879. Morss passed away in 1879. His tool shop division produced tools not associated with saws and his name likely was carried on selected tools of that Division to 1900, when the Division was discontinued.

Made prior to about 1900 are marked "Disston & Morss". Joab Morss was Henry Disston's partner from 1867-1879, when he passed away. Disston & Morss became a Division of H. Disston & Sons from then until about 1900, when it was absorbed into the main company. This division made gauges, levels, bevels, squares and other measuring tools.

Fig.6. My Beam Compass, unmarked although possibly made by the Stanley Rule & Level Co. Possibly the Henry Haslam patent of June 7, 1892, for the pencil holder attachment. The manufacturer was The Stanley Rule & Level Co. - New Britain, CT and one of the witnesses was Justus A. Traut.

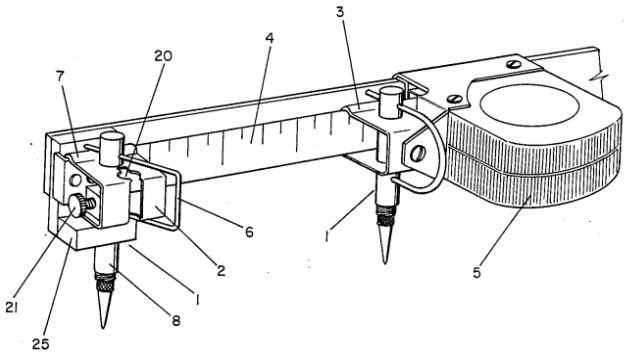

Fig.7. US patent 4547937. Oct. 22, 1985. Fred Owens invented a trammel point attachment to steel tape rule.

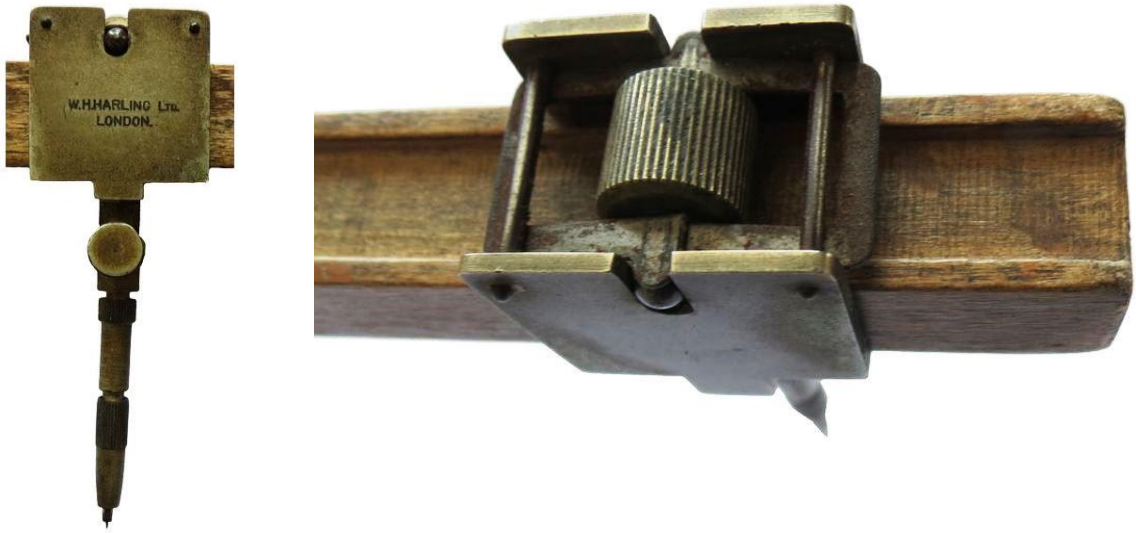

Fig.8. Beam compass/trammel made by WH Harling Ltd, London. “Quick set” beam compass/trammel made by WH Harling Ltd (c.1930), London consisting of a wooden beech (?) beam and two trammel points each bearing the maker’s name. The top of the beam is grooved to allow the trammels to be positioned by rotating the knurled wheel at the top of each trammel. One trammel would be clamped and the other has the roller.

W. H. Harling founded the firm in 1851 at 47 Finsbury Pavement, London. They specialised in making drawing instruments, with a factory at Grosvenor Works, Hackney, London. The trammel roller in Fig.4. Is similar set-up that Harling used in his ‘Parallel Rolling Rule’ that was used for ship navigation.

Fig.9. T. Alteneder & Sons, Beam Compass Set. Philadelphia, USA. The set would have been bought in a small case lined with velvet. Circa, Mid-20th Century. A set of wheels for extra stability and accuracy.

Fig.10. Often referred to as a Trammel of Archimedes. An Ellipsograph on display at Musée d'histoire des sciences de la Ville de Genève. A trammel of Archimedes is a mechanism that generates the shape of an ellipse. It consists of two shuttles which are confined ("trammeled") to perpendicular channels or rails and a rod which is attached to the shuttles by pivots at fixed positions along the rod.

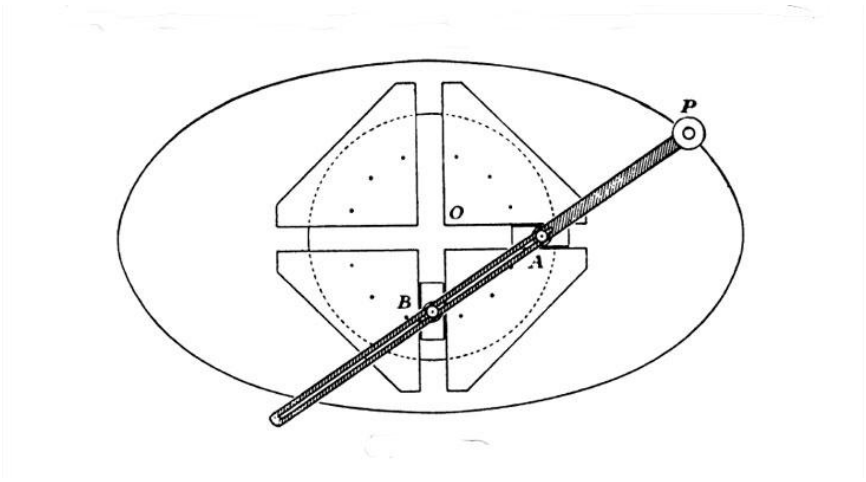

Fig.11. The 'Ellipsograph' or 'Trammel of Archimedes' showing the ellipse.

Fig.12. If my Ellipsograph looks like the handle has been chewed by the dog, it does because it has.

Versions are also made as toys or novelty items (Sold as do-nothings, nothing grinders, do nothing machines, smoke grinders, or bullshit grinders). In these toys the drafting instrument is replaced by a crank handle, and the position of the sliding shuttles is usually fixed.

Ref: Smithsonian. Sindelar tool museum. EAIA. Kings College, London. Jim Bode Tools.