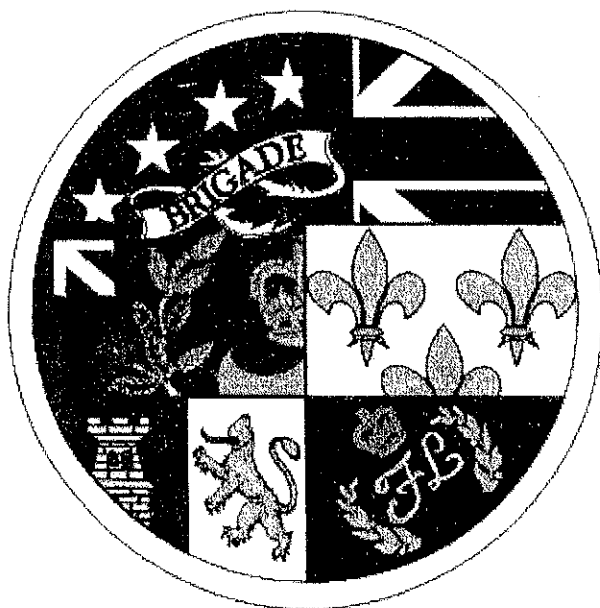


# The Brigade Dispatch



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*Vol. XXXIII, No. 1*

the Journal of the Brigade of the American Revolution

*Spring 2003*

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# *The Brigade Dispatch*

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## Journal Of *The Brigade Of The American Revolution*

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Spring 2003

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# Spectacles, 1760 - 1783

Alan McBrayer

*[Editor's Note: Alan McBrayer is a researcher and collector of spectacles who is preparing a book on the subject.]*

Reliable information about the styles and types of spectacles in use during the years of the American Revolution is sparse and difficult to locate. This paucity of information is not due to lack of research, but rather to a general lack of primary source material. Writers and advertisers of the period, blissfully unaware of the future interest in this subject, rarely described spectacle frame styles except in the most basic of terms. Illustrations, drawings or paintings dated before 1800 that show the sitter wearing spectacles are uncommon. The few trade catalogues of the period are not illustrated, and they offer limited information. The secondary sources that discuss the development of eyewear styles are uneven in quality, and although some are quite good, others are extremely poor sources of information.

Some of the best information about period spectacles comes from the artifacts themselves. Assigning dates to authentic surviving examples, however, can be difficult. Even silver examples, which we might expect to bear hallmarks, often carry no markings at all and only a relatively small percentage have maker markings. The English system that required the hallmarking of silver items with the city of assay and a letter representing the year of manufacture was amended in 1738 to exempt certain silver items. The Plate (Offenses) Act exempted some items such as stock clasps, sliding pencils, "jeweller's works" and similar small silver objects. The list of exempted items was updated in the Silver Plate Act of 1790.<sup>1</sup> Although the secondary sources that discuss the Act of 1738 do not state explicitly whether spectacle frames were excluded from the assay process, English spectacle frames assayed and date lettered earlier than 1791 have not been found even in the largest and oldest collections.

Even marked examples can be deceptive, however, as individual spectacles may have been

repaired or modified. Also, spurious examples attributed to famous individuals have appeared over the years.

Despite these limitations, one can make reasonable conclusions concerning the style and form of spectacles used during the American Revolution. The examination of large numbers of specimens helps in determining the common styles of the period. Examples bearing the markings of spectacle makers can be attributed to the years they were active. The characteristics of these spectacle frames are compared to those shown in datable paintings and drawings. Advertisements of the period provide some useful descriptive information, and by comparing this data to paintings, catalogues, broadsides, trade cards and estate inventories, a picture slowly emerges of the types of spectacles in use from 1760 through 1790.

The evidence indicates that the styles of spectacles in use during these years were the same in America as in England. No substantial evidence has been located that spectacles available on the market changed much in style during these three decades. However, the frequency of use of particular spectacle styles did change over this period.

## Frame Styles

Two basic styles of spectacle frames were in use during the 18<sup>th</sup> century — those without supporting sidepieces (hereafter called "nose spectacles") and those with supporting sidepieces (hereafter called "temple spectacles"; the side pieces are called "temples"). Note that spectacle frames were individually produced and that there are numerous variations in the construction of the surviving examples. The purpose here is to discuss the commonplace, not the eccentric or unique.

## Nose Spectacles

Nose spectacles of the period consisted of two circular lenses connected by a "C" shaped bridge. These sat across the bridge of the nose without any other means of support. The bridge often had some flexibility to better hold to the bridge of the nose,

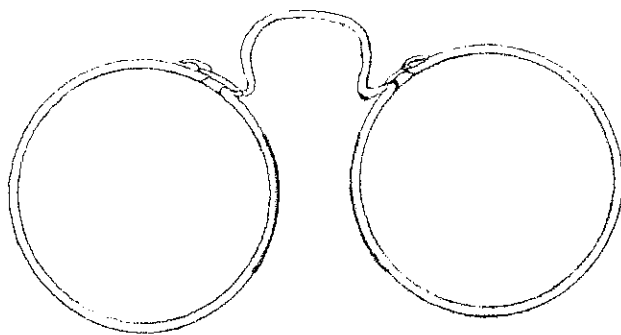
but sometimes it was rigid and held to the nose only by friction. Early newspaper advertisements did not have a special name for nose spectacles – they were referred to simply as “spectacles.” With the introduction of temple spectacles, some advertisements spoke of the continued availability of “common” or “Dutch” spectacles, probably a reference to nose spectacles.

A common genre painting of 17<sup>th</sup> and 18<sup>th</sup> century Dutch artists was that of the spectacle seller. These merchants are usually depicted as holding or displaying nose spectacles. Delft tiles are also found with illustrations of spectacle merchants holding a pair of nose spectacles.

Philadelphia resident John F. Watson wrote in 1830 that

Old Mrs. Shoemaker, who died in 1825 at the age of 95, said that she had lived many years in Philadelphia before she ever saw temple spectacles – a name then given as a new discovery, but now so common as to have lost its distinctive character. In her early years the only spectacles she ever saw were called “bridge spectacles,” without any side supporters, and held on the nose solely by nipping the bridge of the nose.<sup>2</sup>

(Despite this statement, the term “bridge spectacles” has not been found in 18<sup>th</sup> century source materials, “nose spectacles” being the term most commonly found.) Nose spectacles were available from merchants throughout the 18<sup>th</sup> century, although the use of these seems to have declined during the 1780s and 1790s until they were uncommon by the beginning of the 19<sup>th</sup> century.



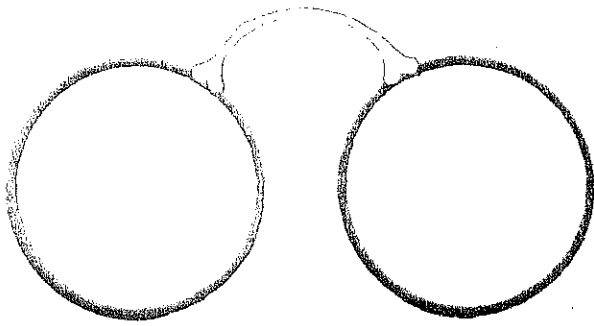
*Nürnberg single-wire spectacles. Drawing adapted from an original manuscript in a private collection.*

Many nose spectacles were made in and around the towns of Nürnberg and Furth in what is now Germany. These inexpensive eyeglasses were turned out in enormous quantities during the 17<sup>th</sup> and 18<sup>th</sup> centuries and exported all over the world. The simple single-wire construction of these Nürnberg frames made them easy to manufacture. Round wire (an elastic copper wire, often silver plated) was passed through rollers to flatten it, and then through another hand-operated machine that pressed a channel into one side. Sometimes the spectacle maker would impress his name, city and even the year of manufacture on the wire so that this information showed on the outside of the lens frames. One such example is marked “IONAS SCHWARTZ WONHAFFT IN FURTH .1749.”

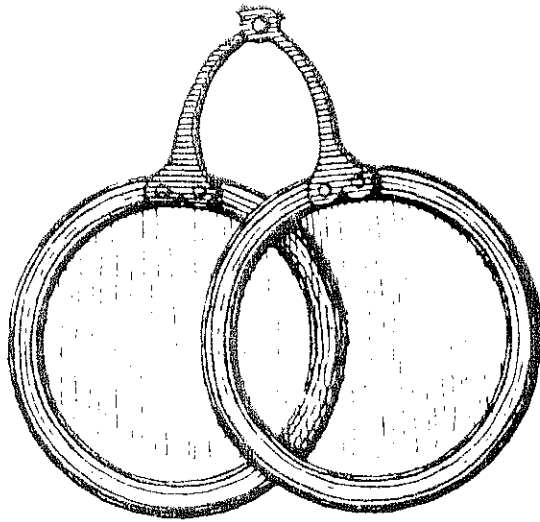
A single length of this wire formed the frame of the spectacles, with the free ends formed into hooks and attached to the base of the bridge on either side with binding wire. The lower inside curve of both lens frames, where the nose made contact, had a wrapping of silk thread. Green, white, brown, red and blue silk have reportedly been used for this purpose. The lenses are usually about 35mm in diameter, and many have a polished bevel about 2mm wide around the edge. The higher-grade lenses were sometimes inscribed “London” near one edge in tiny cursive style. This gave an impression of quality, but did not indicate that the lenses were ground in London. Professor R. Greeff describes the packing of Nürnberg spectacles:

The ready spectacles were packed into white tissue-paper, eight at a time, and put into thin wooden cases provided with labels. With the finer qualities, a so-called “hallmark” was printed on the tissue paper. Ten of such cases with spectacles constituted a spectacle-maker’s hundred = 80 each, which were again packed into special cases.<sup>3</sup>

Nürnberg-type single-wire spectacles were not the only nose spectacles available. English makers were also very active and known for the high quality of their products. English-made examples of silver, horn and tortoiseshell are known. During the last half of the 18<sup>th</sup> century, a common style consisted of a flexible spring bridge of steel or silver connecting the lenses framed in horn, tortoiseshell, or metal. A popular variation of these nose spectacles first appeared in England in the first half of the 18<sup>th</sup>



*English spring bridge nose spectacles. Drawing adapted from a drawing in an original manuscript.*



*English folding bridge nose spectacles. From a 1763 broadside by Pablo Minguet. This Spanish broadside shows several types of vision aids.*

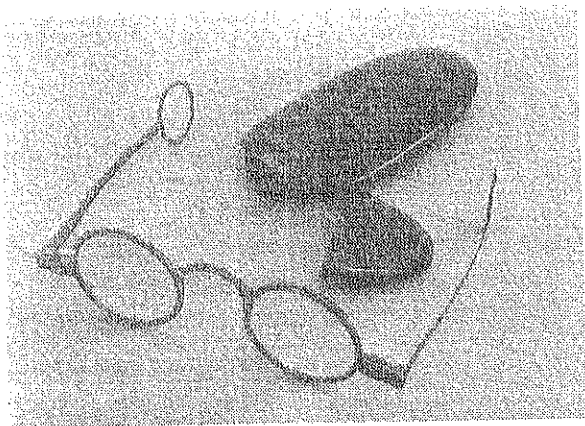
century. In this style, the steel or silver bridge had a pivot hinge at the center of the bridge that allowed the spectacles to be folded. The lens frames usually were of tortoiseshell, or sometimes horn or metal. (For the American Revolution period, tortoiseshell was the most frequently used material.) One lens folded over the other for storage and fit into a squat banjo-shaped case. These flip-top cases are usually covered with shagreen or ray skin, but are also found made of steel or brass; the latter sometimes decorated with mother-of-pearl.

Some spectacle frames were made from baleen ("fish bone" or "whalebone"), taken from the upper jaw of several whale species, most notably the right and bowhead whales. These spectacles were often made of a single length of baleen formed into spectacle frame shape, much in the style of Nürnberg single-wire frames. However, it is unknown whether this style of spectacle frame saw common usage during the Revolutionary period – their fragility has doubtlessly contributed to a low survival rate and consequent scarcity, so that few examples exist for inspection.

Spectacles with frames of specially hardened leather were commonly used from the 16<sup>th</sup> century until the first half of the 18<sup>th</sup> century. The earlier frames were all leather, including the bridge. Later examples had protrusions at the top of the leather lens frames to which were riveted a spring steel bridge. However, the manufacture of these spectacles had ended by the third quarter of the 18<sup>th</sup> century, and the last known American advertisement for leather spectacles appeared in 1761. There is no evidence that leather frames were available for purchase during the American Revolution.

#### *Temple Spectacles*

The earliest spectacles with rigid temples "clamped" onto the sides of the head at the temples, and were thus called temple spectacles. The first documented evidence of these rigid temples is from the trade card of Edward Scarlett of London, published in the late 1720s. It shows a pair of spectacles with hinges (joints) on the outsides of the lens frames, and with short temples ending in a flat spiral of wire. By 1742, the term "temple spectacles" appeared in newspaper advertisements in Philadelphia.<sup>4</sup> The width of these spectacles (measured across the front of the frames including the joints) averages about 115mm to 120mm. The most common style of temple spectacles during the period 1760-1790 were known as "single-jointed" temple spectacles. These had short temples averaging about 100mm to 110mm in length, including circular temple end rings. The circular rings were either brazed on, or made as an integral part of the temple. Occasionally the rings and temples were covered with cloth (usually velvet) or wrapped with cloth ribbon, but mostly they were not covered. These rings ranged from 18mm to over 30mm in diameter.



*Steel temple spectacles with a steel case. The dark finish is a patina from age; originally these had a polished steel finish.. Author's collection.*



*Rev. Jacob Duché wearing temple spectacles. The National Portrait Gallery (US) dates this c.1775 - 1800. NPG inv. # 77.207.*

Their purpose was not to attach ribbons for fastening the spectacles to the head, but rather to increase the area of contact between the face and the temple end, to better keep the spectacles in place. Occasionally examples are found with ribbons tied to the temple loops, so it is reasonable to believe that some were tied on with ribbons. Single-jointed temple spectacles with circular end rings were available until after 1800.

In 1752, a London instrument maker named James Ayscough first described the double-jointed temple, a longer temple hinged not only at the lens frame, but also with a second hinge back near the ear. These added hinges extended the temples and "wrapped" them around the head. This style of temple reached past the ear, and was often worn on the outside of the hair or wig. Ayscough wrote that he:

... has likewise some double-jointed frames, entirely of a new contrivance, being an exceeding great improvement, seeing they obviate all the objections made to the common spring-spectacles, as they neither press upon the nose nor the temples; the complaint against these being the pressure on that place, which stops the circulation of the blood, and thereby occasions to many people violent head aches.<sup>5</sup>

Double-jointed spectacles of the Revolutionary War period also had large circular temple end rings. Spectacles with double-jointed temples and circular end rings continued to be made until after 1800.

Frames of both single and double-jointed spectacles were most often made of steel, and sometimes brass or silver. These frames were not blued, painted, japanned, or given any other special finish beyond polishing. Gold was rarely used for making frames during this period. John F. Watson (1779-1860) noted of spectacles, "Now they are occasionally seen of gold — a thing I never saw in my youth."<sup>2</sup>

Frames made entirely out of tortoiseshell or horn (except for the metal hinges) were in use during the last quarter of the 18<sup>th</sup> century, but the date of earliest use and frequency of use has not yet been determined, and few examples in horn have survived. In 1767, Jonathan Zane advertised tortoiseshell spectacles with steel bows, but these were probably nose spectacles.<sup>6</sup>

Teardrop-shaped temple end-loops appeared late in the century and gradually replaced the circular loops. There is no known primary source evidence that indicate teardrop-shaped loops came into use as early as 1783, and if they did, they were uncommon. The earliest known evidence for these is a 1791 newspaper advertisement showing very large teardrop-shaped loops.<sup>7</sup>

The telescoping temples found on many antique eyeglasses were not in use until well after the end of the Revolution.<sup>8</sup> Likewise, the pivot temple, which has a temple extension that swivels on a rivet, had not yet been introduced. The inventors of these types of temples are not known, nor are the dates of

earliest usage. Neither of these temples are shown in drawings or paintings of the period, nor are they mentioned in any advertisements. Single-jointed and double-jointed temples are, on the other hand, specifically and frequently referred to by name in both advertisements and trade catalogues.

Besides nose and temple spectacles, there were some less conventional styles in use. One interesting design had a strap of metal bar attached to the bridge that fit over the top of the head under the wig. The extreme rarity of surviving examples indicates this was not a commonly used style.

### Lens Shape and Color

Lenses were circular throughout the period – no definitive evidence suggests otherwise. Lens diameter varied from 28mm to 35mm, but most examples are set with 33mm lenses. Although some secondary references state that oval lenses were in use, no known primary source material supports this opinion. If oval lenses existed during this era, they were not common.

Researchers have not identified any paintings, caricatures or illustrations from the Revolutionary War period that clearly show oval lenses.<sup>8</sup> A pair of oval spectacles with the date “1787” engraved on one temple has been seen, but it is not clear if this represented the date of manufacture. The earliest known advertising woodcut showing oval lenses appears in a 1791 advertisement for Philadelphia optician William Richardson.<sup>7</sup> Single-jointed temple spectacles with circular end rings and oval lenses are very uncommon, suggestive of later arrival on the scene than those with round lenses, which are frequently found. Those spectacles positively dated to the Revolutionary era invariably have circular lenses. Octagonal and rectangular lenses did not come into general use until around 1830 and later.

Most lenses were clear, but colored lenses were also widely used. Colored lenses were commonly blue or green. Advertisers of the period, if mentioning lens color, most often used the term “green”.<sup>9</sup> The overwhelming majority of examples I have seen are a difficult-to-describe blue-green. The April 11, 1771 Virginia Gazette advertisement of John Greenhow offers “purple” spectacles, but the use of this color must have been extremely limited. I know of only one example with light violet lenses and one

example with purple lenses that have been identified in modern collections.<sup>10</sup>

These colored spectacles were most often worn as sunglasses, published information to the contrary notwithstanding. They were also recommended for people with “weak” or “watery” eyes.

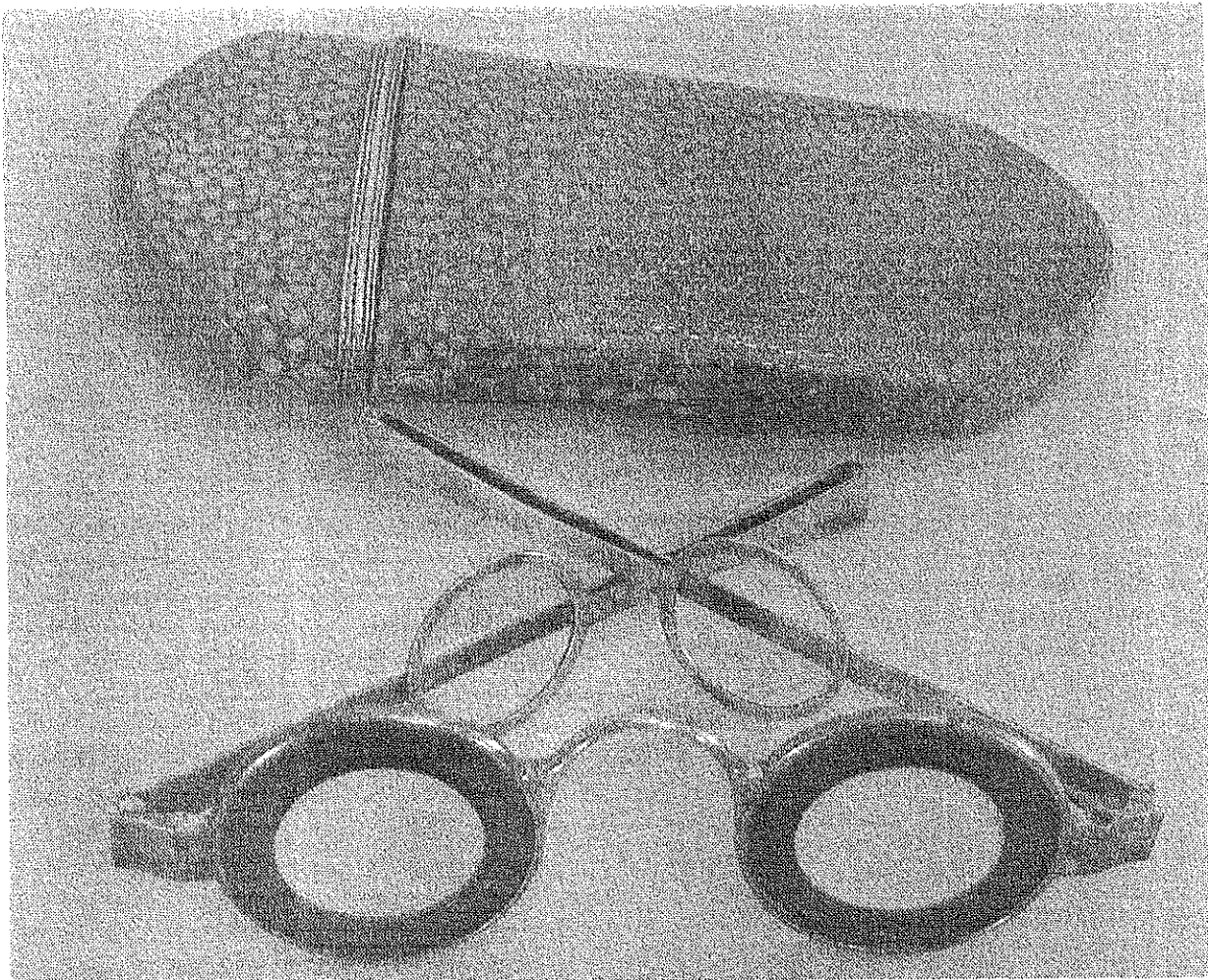
Most lenses were made of glass, but some lenses were made of quartz crystals – these were known as “pebble” or “Brazil pebble” lenses. Pebble lenses were considered by many to be the best quality, and were more costly than glass lenses, since they were very hard and therefore difficult to work with. Crown glass, made from the plate glass of the period, was a hard glass used for lens grinding. Flint glass was softer and easier to scratch (due to lead content), but had slightly better optical quality.

Some makers offered the same frames with different lens materials; for example, an advertisement of Henry Pyefinch (circa 1770) offered “the best silver spectacles, with double joints” at 1/4/0; the same spectacles mounted with Brazil pebbles cost 1/18/0.

Clear lenses were usually in either concave or convex configurations. Colored lenses were usually plano (flat) but were also made in convex configurations. Some existing examples have lenses that are clear and flat, with no magnification or correction at all. Perhaps these were worn as a symbol of intellect, showing a change in perception from spectacles being a sign of infirmity to a sign of wisdom and learning. However, it is also possible that these were used as protective glasses by workmen or by actors on stage – nobody knows for certain. In any event, these specimens are rarely found.

Lenses (called “optick glasses” or “spare eyes”) were imported into the colonies during the 18<sup>th</sup> century, usually already fitted in spectacle frames, but also as loose lenses. These “spare eyes” could be fitted into spectacle frames to suit the vision of the owner. One individual advertised the grinding of lenses during the 1750s, but no other evidence has been located that indicates lenses were being manufactured anywhere in colonial America.

London optician Benjamin Martin invented a controversial and unusual style that enjoyed some popularity before and during the Revolutionary period. Martin began to promote his “newly invented visual glasses” in 1756. His self-promoting pamphlet, *An Essay on Visual Glasses (vulgarly*



*Visual glasses. The frames exhibit many typical characteristics of the era, including round lenses and temple rings, double hinged temples, and uncoated metal construction. Author's collection.*

called *Spectacles*), argued that normal spectacles admitted too much light, that the axes of the lenses should converge at normal reading distance rather than be parallel, and that lenses should be tinted light violet because this color was "easiest on the eye." Martin reduced the amount of light reaching the eyes by surrounding each lens with a circular ring of horn. Despite the bizarre appearance, and also despite intense criticism from other opticians that this design was sheer quackery, visual glasses caught on and soon were produced by other makers.<sup>11</sup> The availability and use of visual glasses in America is beyond question. Williamsburg merchant James Craig advertised in 1768 "Just imported from London... some fine visual specta-

cles, fit for all ages."<sup>12</sup> Also in Williamsburg, John Greenhow had "...Visual spectacles of a new construction by Martin the celebrated optician."<sup>13</sup> Gararous Duyckinck advertised in 1766 that he had visual glasses for sale in New York.<sup>14</sup> Although paintings and dated examples prove that there was some use of visual glasses continuing into the 19<sup>th</sup> century, the heyday of their use passed in the 1780s. George Adams, Jr., noted in 1789 that

...the good sense of the world, which always, in the long run, justly appreciates the value of every invention, now leaves visual spectacles to the neglect they merit; they are worn by few, but those of long habit, have accustomed their eyes to these pernicious shades.<sup>15</sup>

## Spectacle Cases

Spectacle cases varied according to the style of spectacles. Nose spectacles often were kept in oval or rectangular flat wooden cases that opened clam-shell fashion. Another common form was a hollowed block of wood that allowed the nose spectacles to be slid in from the side or top. An example at the Smithsonian, dated 1769, is made to look like a miniature book. The "spine" slides up to allow the spectacles to be placed inside.

Temple spectacle cases were most often of steel or shagreen-covered wood, with one end that flipped open. The shagreen-covered cases were shaped like a tapered rectangle when viewed in profile, had a small hinge attached to the cover on one side, and when closed was held shut by a push-button clasp. The steel cases were shaped like an elongated oval when viewed from the side, and also had the flip-end attached with a hinge. These were held shut by friction.

As with spectacles, the cases were individually handmade, and there are numerous variations in design and materials. Cases, unlike the spectacles within them, are occasionally found with dates etched or carved into them. These dated cases assist in dating the spectacle styles described above. For example, all steel cases for temple spectacles that I have seen that are marked with dates between 1770-1785 were made for spectacles with circular lenses.

## Cost and Availability

A persistent and oft-repeated myth is that spectacles were a costly purchase not affordable by the common person. The idea that spectacles were very expensive and worn only by the wealthy during this period is simply untrue.

Richard Corson states that in 1773 London a pair of English-made nose spectacles could be purchased for about one shilling and a pair of German brass spectacles for about 4 pence.<sup>16</sup> The 1766 catalogue of George Adams listed nose spectacles for 0/1/0 (pounds/shillings/pence), temple spectacles at 0/3/0, 0/5/0, and 0/7/6, silver temple spectacles at 0/14/0, double-jointed temple spectacles at 0/9/0, and 0/12/0, and double-jointed temple spectacles in silver at 1/1/0.

Benjamin Martin's catalogues published in 1757, 1765, and 1770 listed various types of his

visual glasses priced from 0/2/6 to 0/16/0, with no price increases during this period. Martin lists double-jointed visual glasses in his 1780 catalogue at prices ranging from 0/4/6 to 0/10/0. Samplings of colonial estate inventories have spectacles valued from 0/1/6 to 0/5/0, with an average value of about 0/3/0.

The conversion of the cost of items purchased during the 18<sup>th</sup> century into comparable modern amounts is a task fraught with pitfalls, but attempts have been made by scholars to set guidelines for comparison. One method is offered by John McCusker in his book *How Much Is That in Real Money? A Historical Price Index for Use as a Deflator of Money Values in the Economy of the United States*. Using McCusker's conversion tables, a pair of nose spectacles that cost a shilling in 1776 would cost roughly \$6.00-\$7.00 today.

Another method compares the values assigned to spectacles in colonial period estate inventories to the assigned value of other items in the estate, and then by comparing these amounts to wages earned by workers during the 18<sup>th</sup> century. The details are beyond the scope of this article, but all conversion methods reach the same basic conclusion – that even a person of modest means could afford a pair of spectacles. The exact amount can be debated, but not the premise – spectacles were very affordable, not items of luxury. Men and women of all income levels used spectacles, depending upon their personal need for vision aids.

Buying a pair of spectacles did not require an examination or testing of vision acuity – the purchaser simply tried on pairs of differing optical power until one seemed to work. Spectacle frames were sometimes marked with numbers representing the focal length of the lenses. The lenses themselves also were sometimes marked with a small hand-etched number that represented focal length or the "age" of the lens – that is, the average age at which an individual was thought to need that power of lens for vision correction.

There has been speculation that the use of spectacles in public was considered unfashionable. This may explain the scarcity of 18<sup>th</sup> century paintings and drawings in which the sitter wears spectacles. John F. Watson (1779-1860) wrote in 1830 that during his youth he did not

...ever see one young man with spectacles- now so numerous! A purblind or half-sighted youth then deemed it his positive disparagement to be so regarded. Such would have rather run against a street post six times a day, than have been seen with them!<sup>2</sup>

George Adams, in his 1789 *Essay on Vision*, noted that

...such are the weaknesses of the human mind, and such the partialities of self-love, that we all endeavor to conceal, from ourselves and others, the approaches of age; and no one likes to appear as hastening to that *bourne* from which none have returned.

However, there is some evidence that this mindset began to change during the years before the Revolution. Oliver Goldsmith wrote about the customs of the English as seen through the eyes of a fictional Chinese visitor, Lien Chi Altangi:

Gentlemen and ladies ogled each other through spectacles; for my companion observed, that blindness was of late becoming fashionable; all affected indifference and ease, while their hearts at the same time burned for conquest.<sup>17</sup>

Nonetheless, it was considered unusual that Benjamin Franklin wore spectacles constantly (beginning in 1776), and that he sat for several paintings while wearing spectacles.<sup>18</sup> Although reading spectacles were sometimes used by officers (as demonstrated by the oft-repeated story of George Washington and the Newburgh Conspiracy), I have found no evidence indicating that Revolutionary War period soldiers wore spectacles frequently, if at all.

Spectacles were widely available from a variety of vendors, including silversmiths, clockmakers, watchmakers and shopkeepers that offered a wide variety of other merchandise. For example, during the period 1765-1785 at least fourteen different merchants in Charleston advertised spectacles of various sorts. All were apparently imported, as typically the name of the ship that imported the spectacles and other goods was included in the advertisements. Although at least two colonial immigrants listed their trade as "spectacle maker", there are no known advertisements or other records that indicate that any American colonial craftsmen specialized in making spectacle frames. Colonial

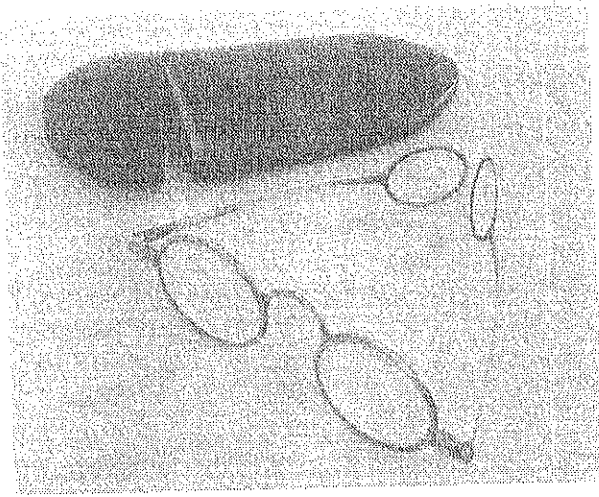


Benjamin Franklin, from the caricature "The March of the Paxton Men", 1764.

silversmiths did produce some spectacle frames, but surviving records show that this was infrequent. For example, the account books of Philadelphia silversmith Joseph Richardson show fewer than 10 pairs being made during a period of about ten years.<sup>19</sup> Thomas Sparrow, a silversmith in Annapolis, advertised in 1765 that he made numerous silver objects, including "...spectacle rims and cases."<sup>20</sup> However, no colonial period spectacle frames with the mark of any American silversmiths have been found in any collection. Similarly, no primary source evidence has been found suggesting that any colonial ironmongers, blacksmiths, whitesmiths or brass founders made spectacle frames. It was no doubt cheaper and easier to import spectacles than to attempt to make them in the colonies.

## Summary

During the period of the American Revolutionary War, two basic forms of spectacles were commonly used – nose spectacles and temple spectacles. Both had circular lenses. The prevalence of nose spectacles had begun to decline as temple spectacles became more common, but they were still being used. Temple spectacles were most often made of steel, and occasionally of silver or brass. They had either single or double-jointed temples with large circular end rings. Nose spectacles most often were tortoiseshell with a steel or silver spring bridge, and some of these bridges had a pivoting hinge in the



*Silver spectacles with a sharkskin case. Author's collection.*

center of the bridge. These were the common forms; spectacles were individually handmade items, and there are seemingly endless variations to the basic forms.

I am not familiar with reproduction spectacles

that are currently offered for sale, so I cannot comment about them. I do not, however, encourage the modern use of original spectacle frames – these are historic artifacts to be preserved, not destroyed. Besides, most antique frames are far too small for modern heads. My suggestion for an authentic look – be fitted for contact lenses. There is little or no evidence that the common soldier during the Revolution used spectacles to any great extent, and there is some evidence suggesting that the use of spectacles in public was considered unusual, especially by younger individuals.

A final point – knowledge is not static, and research is never complete. This article attempts to describe the common types of spectacles that existed during the American Revolution, based on my own research and the research of others. As previously noted, I have no evidence for use of spectacles by Revolutionary War soldiers, although some use certainly must have occurred. Any reader that has discovered primary source information about this topic is urged to contact the author. Information that shows earlier known uses of a particular style or form is especially desirable.

### References

There are several good English language books on the subject that will help in learning about what is, and is not, appropriate to this period. While none of these books focuses exclusively on the 18<sup>th</sup> century, they all contain some useful information on the period. My comments follow the bibliographical information for each volume.

*Spectacles*, by Franca Acerenza. Milan: BE-MA Editrice, 1988. A good summary with nice photos. Emphasis on the 18<sup>th</sup> and 19<sup>th</sup> centuries.

*Spectacles, Longuettes and Monocles*, by D. C. Davidson and Ronald MacGregor. Shire Publications, LTD, 2002. This is a wonderfully done booklet with excellent photographs and reliable information. The authors are well versed on the subject. Highly recommended.

*A Spectacle of Spectacles*. Leipzig: Carl-Zeiss Foundation, 1988. An museum exhibition catalogue of an exhibit first shown at the National Museums of Scotland in Edinburgh in 1988. Excellent photography of both artifacts and art works.

*Spectacles and Other Vision Aids* by J. William Rosenthal. San Francisco: Norman Publishing Company, 1996. A great and massive guide for collectors with hundreds of photographs. Dr. Rosenthal focuses all styles and forms of spectacles over the centuries. Multiple appendixes covering a wide range of material – one appendix describes lens grinding during the eighteenth centuries. Highly recommended.

# Notes:

1. See John S. Forbes Hallmark, *A History of the London Assay Office*, London: Unicorn Press, 1999, p. 200-204.

2. Watson, John F., *Annals of Philadelphia*, Philadelphia, New York: E.L. Carey & A. Hart, G. & C. H. Cassill, 1830.

3. *Kindig Bilderausstellung zur Geschichte der Brille*, Amsterdam, 1929.

4. Advertisement of William Bradford, Jr., *The Pennsylvania Gazette*, September 16, 1742.

5. Ayscough, James, *A Short Account of the Eye and Nature of Vision*, London, 1754. The above quote is from the third edition.

6. Advertisement of Jonathan Zane, *The Pennsylvania Gazette*, June 18, 1767.

7. Advertisement of William Richardson, Dunlap's *Daily American Advertiser*, June 6, 1791.

8. An example cited by Richard Corson as supporting the early existence of oval lenses and telescoping temples is a pair of silver spectacles reputedly used by Benjamin Franklin. These spectacles, however, are known to be spuriously marked. Although engraved with the date "1788", they also bear the mark of American silversmith Daniel Boone Hempsted, who was born in 1782; this mark indicates manufacture in the 1820's.

The Swedish researcher Otto Ahlstrom claimed the existence of pair of spectacles in the Society of Opticians collection in Stockholm that had French silver marks proving it was made in Amiens 1781-1789. However, his description is of a pair with oval lenses and a maker's mark in a diamond cartouche "C. M. G." over a pair of scissor spectacles. The typically-French diamond-shaped cartouche was not used until after the years 1781-1789, and the maker mark in question has been seen only on distinctly 19th century frames.

9. For example, John Perkins advertises green glass spectacles in the *Boston Gazette*, June 13, 1763. John Greenhow offers green and blue spectacles in the *Virginia Gazette* (Purdie & Dixon), April 11, 18, and 25, 1766.

10. Both are nose spectacles.

11. The best information on visual spectacles is in John Millburn's *Benjamin Martin, Author, Instrument-Maker and 'Country Showman'* Supplement, Nade-Mecum Press, London, 1986.

12. Advertisement of James Craig, *The Virginia Gazette*, (Purdie & Dixon), April 7, 1768.

13. Advertisement of John Greenhow, *The Virginia Gazette*, (Purdie & Dixon), April 11, 1771.

14. Advertisement of Gararous Duyckinck, *The New-York Alercury*, October 6, 1766.

15. Adams, George, *An Essay on Vision*, London: R. Hindmarsh, 1789.

16. Corson, *Fashions in Eyeglasses*, p.63.

17. Goldsmith, Oliver, *Citizen of the World*. First published in 1762.

18. Sellers, Charles Coleman, *Benjamin Franklin in Portraiture*. New Haven & London: Yale University Press, 1962.

19. Fales, Martha Gandy, *Joseph Richardson and Family, Philadelphia Silversmiths*. Middletown, Wesleyan University Press, 1974.

20. Advertisement of Thomas Sparrow, *The Maryland Gazette* (Annapolis), March 21, 1765.

*An Essay on Vision* by George Adams, Junior. Printed by R. Hindmarsh and sold by the author. There are two editions: 1789 and 1792. This is the best volume about eyesight and spectacles written during the period. However, there is little specific information regarding the styles in use at that time. Modern reprints are available.

*Eyeglass Retrospective: Where Fashion Meets Science* by Nancy N. Schiffer. Schiffer Publishing Company, 2000. There are several pages of excellent photographs of 18<sup>th</sup> century spectacles.

*An Atlas on the History of Spectacles* by W. Poulet. Bonn: Wayenborgh, 1978-1980. This two volume set has been published in several languages. Volume one contains over two thousand photographs of spectacles from large European collections; volume two contains art works that show the use of vision aids over the centuries. The descriptive information on each item is sparse, but this is more than compensated for by the sheer volume of material. Highly recommended.

*Fashions in Eyeglasses* by Richard Corson. London: Peter Owen, 1967. The best overall history of eyeglasses, the author did an outstanding job of pulling together a wide range of primary and secondary sources. These are a few misidentifications, but mostly on target. Drawings rather than photographs are used to illustrate the spectacles. Highly recommended.

Two books I cannot recommend are *Early American Specs - An Exciting New Collectable* By Dr. L. D. Brunson, and *Illustrated Spectacles of the American Revolution 1650-1850* by Dominic N. Pietrangelo. Dr. Brunson has grossly misdated most of the 18<sup>th</sup> and 19<sup>th</sup> century examples in his book, and Mr. Pietrangelo appears to have been used Dr. Brunson's work as one of his primary references. For example, no serious researchers believe that the 17<sup>th</sup> century colonists wore double-jointed temple spectacles - however, both books advance this claim. There are some interesting photographs in each book, but - caveat emptor!

Alan McBrayer

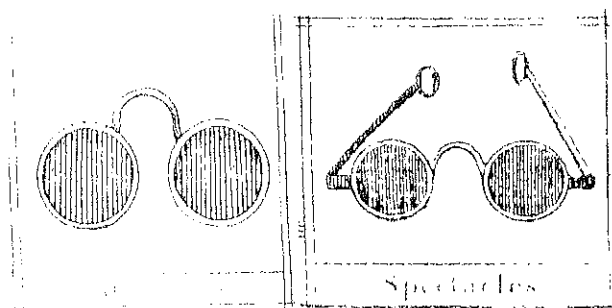
# Taking a Look at 18th Century Spectacles

Ian Anderson  
33<sup>rd</sup> Regiment of Foot

[Editor's Note: The late Ian Anderson was a Board Certified Optician.]

Spectacles are worn by many members of the reenactment community. Although they are highly visible, the authenticity of these items is often neglected. Even though a great deal of effort goes into acquiring hats, shirts, and coats that are (at least visually) accurate to the smallest detail, a surprising number of us accept any sort of spectacles that "look old". This is a shame, since accurate spectacles are readily available and at costs not significantly more than the inaccurate alternatives.

Finding accurate information regarding proper styles of spectacles can be difficult. There are a number of reference books available, but most do not focus solely on our period of interest, showing only a few examples from the 1770s and 1780s. The quest is complicated by the fact that few original examples are dated, and many reference works include examples that are incorrectly dated — sometimes more than 100 years off.



*Two examples of spectacles from period prints, showing the two common styles of frames - nose spectacles, and temple spectacles with solid temples. Prints by Bowles & Carver of London, reprinted in Catchpenny Prints (Dover Publications, New York, 1970)*

## *What is Right? General Guidelines:*

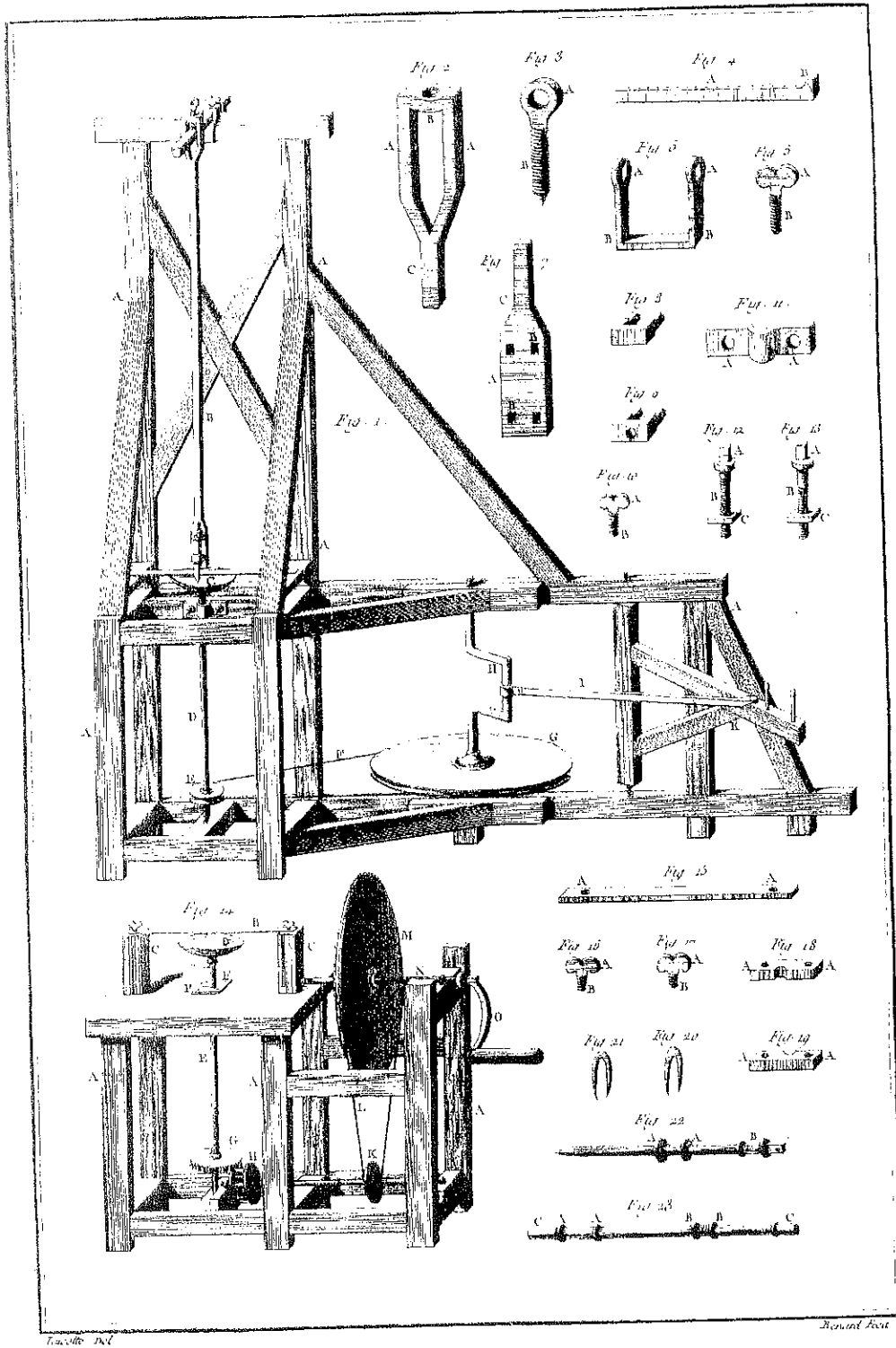
Rather than invest the time, expense and effort required to become an expert on the subject, we are better off relying on information provided by experts, and using readily available spectacle frames that are recognized as accurate. There are a few simple guidelines to follow:

- Lenses should be round and roughly  $1\frac{1}{8}$  to  $1\frac{3}{8}$  inches in diameter.
- Frames may be made of many materials. Expensive ones were made of silver. Less expensive were those made of steel or iron. Tortoise and horn were also used, though by our period horn was falling out of favor because of its tendency to split.
- Temples (those pieces that go over the ears) might be short or long; long temples might be solid or hinged, but not sliding.
- The loops at the end of the temples should be round and should be up to an inch in diameter.

## *The Reason for Round*

Probably the most common, and glaring error in reenactor's spectacles is the shape of the lens. We can state categorically that round lenses were the only type in general use during our period. If other shapes were used at all, they were so rare as to be of no concern to us.

Lenses were made by grinding quartz or glass into the appropriate lenticular cross section. By the middle of the 18<sup>th</sup> century, European lenses were produced using machinery to accomplish the lengthy and laborious grinding and polishing. The most effective way was to rotate the face of the lens against a mandrel. The round shape was easiest and most efficient to grind in this manner. A round lens was simple to produce by machine; since there was no demand for other shapes, there was no reason to



*Lunetier, Machines à couper et à polir*

*Lens grinding equipment, as illustrated in L'Encyclopédie Diderot & D'Alembert.*

create machinery to make other shapes. The diameter was influenced by the need not to have too heavy a lens, and the challenge of maintaining the optical quality in larger size pieces of quartz or glass.

The best quality lenses were made from quartz. Quartz is heavy, very hard, and difficult to find in larger pieces without cracks or defects. These characteristics limited the size and added to the importance of keeping the manufacturing process simple. Glass lenses were quite common because the material was easier to obtain and work with, but they were also prone to be inferior; poor lenses might have bubbles, inclusions of debris, and striations or linear distortions within the glass itself. Opticians were fully capable of choosing pieces of glass with minimal inclusions or defects, but optical glass of high quality would not appear until well into the 19<sup>th</sup> century.

Spectacle lenses of our period corrected only myopia (nearsightedness), hyperopia (farsightedness), and presbyopia (the need for reading glasses). For these corrections, the lenses were either concave or convex. Both of these shapes are easy to create using rotational grinding, again making the circular shape the best to manufacture.

The lenses were secured within the eye wire by being ground with a ridge around the outer edge that fit a groove tooled into the inside of the eyewire. A small screw held the eyewire together, much as in modern metal spectacles. In the case of horn and tortoise shell frames, the lenses had ridges on the edges; after softening the frames with heat and moisture, the lenses could be snapped into one-piece frame, after which the frame dried and contracted to form a snug fit. Because the lenses were circular, the orientation of the lens made no difference in its effectiveness. Even if the lens rotated in the frame, it would provide the same benefit to the wearer.

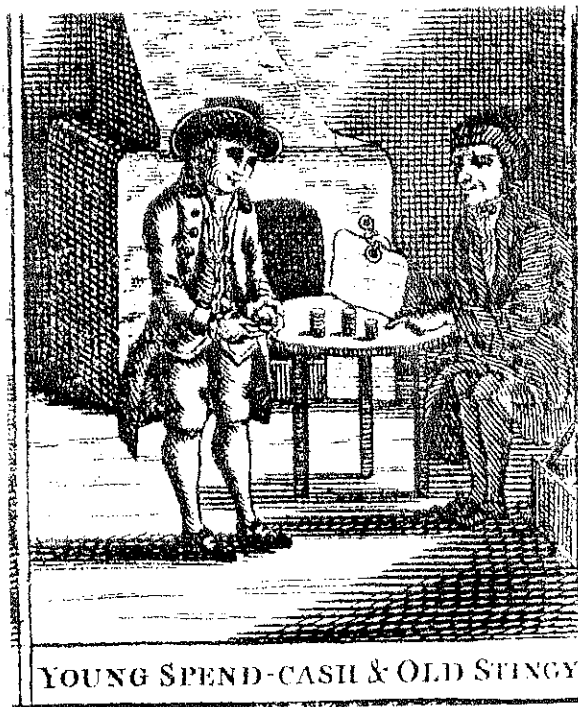
#### *Temples—one piece or hinged?*

The temples kept the spectacles in place. This is obvious enough, but it is important to understand how these were expected to work in order to recognize what is appropriate to our time period.

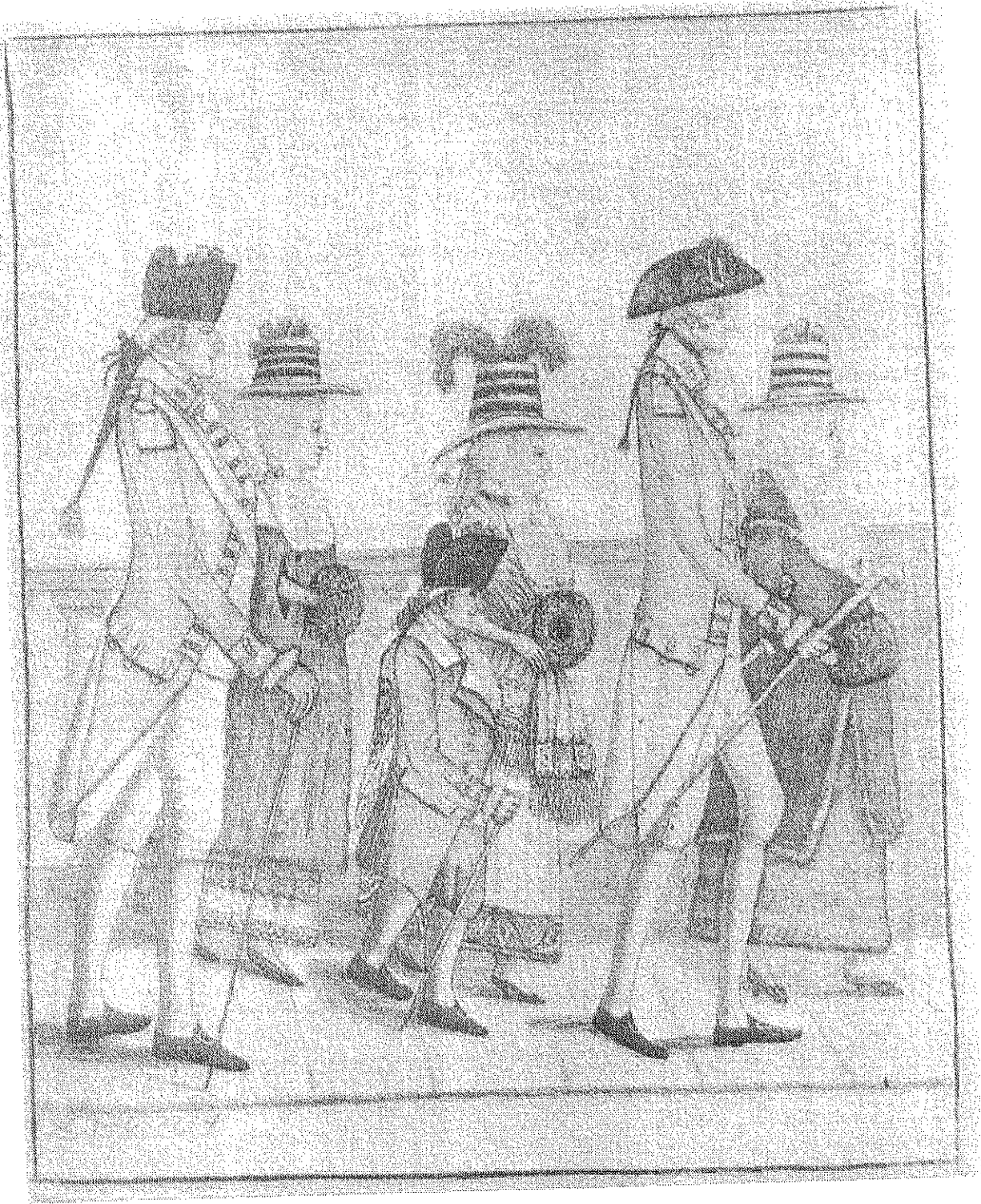
Temples were introduced around 1730 by the English optician Edward Scarlett. They were very different from modern glasses in the way they fit.

Originally, they were one piece, and fit with their ringed ends above the ears. The frame was adjusted to stay on by being bent so that the frame exerted enough pressure on the head of the wearer to keep the spectacles from slipping off. The rings on the ends of the temples could be used to tie the spectacles on with a ribbon, but their real purpose was to make the tight fit of the ends of the temples more comfortable by providing a larger surface. Around 1750, longer temples, hinged in the middle, were introduced. These improved the fit of spectacles greatly by enabling the grip of the temples to be extended around to the head behind the ears. Sliding temples appeared first in France in the 1780's, but were not in wide use until after our time period.

Compared to modern spectacle frames with silicon nose pads and comfortable temples that rest on the ears and anchor the glasses by fitting behind the ears, wearing 18<sup>th</sup> century spectacles can be a very uncomfortable indeed. Some relief may be had by wrapping the bridge with a strip of cloth to pad it, but there is not much else that can be done to make them as comfortable as modern frames. Still, pride knows no pain.



*In this Bowles & Carver print, spectacles give the moneylender an air of age and cunning.*



*In this 1784 print, probably by James Sayers, spectacles accentuate the infirmity of one of the British officers; they are probably caricatures of officers on half-pay, or militia officers. Editor's collection.*

## *How Common Were They?*

An important question is whether too many (or too few) reenactors wear spectacles. There are some interesting bits of evidence for both positions.

Spectacles were certainly affordable to almost anyone who wanted to wear them. Evidence of this can be found in period illustrations of European street sellers peddling spectacles. A search on the web for "spectacle seller" will locate a number of these from the 17<sup>th</sup> and 18<sup>th</sup> Centuries.

A German traveler in England, John Phillip Moritz, made two interesting diary entries in 1782 (*Journeys of a German in England: Carl Phillip Moritz, a Walking Tour of England in 1782*, Eland Books, 1983). While in the London area, he wrote:

The road from Greenwich to London was actually busier than most popular streets in Berlin. What struck me particularly was the number of people on horseback wearing spectacles—some of them apparently very young

While in London, he made a similar observation, this time offering an opinion as to why spectacles were so common:

I must admit that the warmth from sea coal burnt in an open fire grate comes out more comfortably than in our own closed stoves; the look of the fire, too, brings pleasure. Only, one is obliged to avoid looking straight into it continuously, and now I can understand how from that habit there are so many oldsters riding or walking about the English street with spectacles on their noses, employing in the bloom of their youth a blessing for the senile. Indeed, spectacles are sold under the slogan: 'The blessings of old age'.

The author's choice of words gives an important insight into a possible reason why spectacles do not appear as often in period artwork as we might expect. As items associated with old age or infirmity, they apparently were not fashionable, any more than a cane or a walker would be today. On the other hand, Moritz's observations of the widespread use of spectacles by relatively young people suggest that they were becoming less associated with age, and more acceptable for everyday use. Perhaps London's "young oldsters" found spectacles too useful to be shunned for the sake of vanity.

There were no refractions or eye examinations

as we know them now. Many lenses had numbers scratched into them that the seller had arbitrarily determined to be the proper age to begin wearing that lens. Usually, the buyer tried on any number of lenses to determine those that worked best for him.

This hit or miss process was used by General Washington while the Army was encamped at Newburgh. At the age of 46, he developed Presbyopia, or "old eyes," and badly needed reading glasses. He summoned all his staff, and tried on their glasses one pair at a time until he found lenses that worked for him. These were sent to Philadelphia to a fellow named David Rittenhouse, who duplicated the lenses.

In America, period newspaper ads illustrate that spectacles were in sufficient demand to be carried by several merchants in a given city. The frequent use of such terms as "at the lowest prices", "cheap", and "for ready money" suggests that the wealthy were not the only customers.

From 1770 through 1783, newspaper advertisements in Philadelphia offered an interesting assortment of styles. Merchants offered temple spectacles, as well as Dutch spectacles (which fit rather like the later pince nez and had no temples), and mentioned the material of the frames and sometimes the color of the lenses. Many merchants offered cases as well. Steel was perhaps the most common; other materials mentioned include papier-mache and shagreen (shark skin, also called nursel or nurser). It might be better to call the variations in spectacles types rather than styles; style in spectacles as we know it today simply did not exist. Spectacles were to help you see better - period. Except for the jewel encrusted whimsies of royalty, they were utilitarian tools, not fashion accessories.

As plentiful as spectacles were, they were seldom mentioned in descriptions of common people. Only one mention of spectacles has been found to date among the hundreds of deserter and runaway advertisements. This would seem to suggest that wearing glasses to correct distance vision was by no means as common as it is now. Looking at life in the 18<sup>th</sup> century, a person with poor eyesight could get by very well in most agricultural or laboring trades.

Reading spectacles would have been a necessity for just about any person past their late 30's in any



*Illustration of a European street spectacle seller, from the 1750s.*

occupation requiring close vision or a lot of reading and writing, such as engraving, printing, silversmithing, lawyering or shopkeeping. The vast majority of the original spectacles the author has himself examined have lenses made in the plus powers most typically used in reading glasses, which along with the above, has led him to the conclusion that most spectacles in use in the 18<sup>th</sup> century were for reading rather than for correcting distance deficiencies.

### Colored Lenses

Among the spectacles mentioned in the Pennsylvania Gazette advertisements are "Venetian green spectacles for weak and watery eyes". The use of spectacles for purposes other than the correction of visual deficiencies also appears to date from the 18<sup>th</sup> century. James Ayscough offered green and blue lenses to reduce the glare that came through clear lenses. A Spanish spectacle maker named Pablo Minguet sold green, turquoise, and yellow lenses, but advised against amber or red ones.

A British naval officer, Captain Thomas Pasley, wrote in his diary of his attempts to protect his eyes while cruising in the West Indies on the 50 gun ship *HMS Jupiter* in the summer of 1782 (Pasley, Thomas, *Private Sea Journals, 1778--1782*. London: J.M. Dent and sons, 1931). On June 6 he wrote:

The situation of my Eyes distresses me not a little. The Inflammation is reduced, but they remain so very weak that they constantly Run Water, and my sight both by day and Candle Light is so imperfect and confused that without spectacles I can do nothing. To write this little Journal I am even obliged to use them at this moment. Captain Samber fortunately had by him two pairs of an old Aunt's; one pair of green ones fitted my eyes and he indulged me with them. Never before had I a complaint in that Delicate Organ, and consequently, my fears multiply for the result. God Forbid that they should fail me—I should be wretched indeed.

On August 2, he continued:

So very weak is my sight that I do not even dare use a Spy Glass, and God knows my sight is very imperfect without assistant Glasses. I use now, on all occasions, reading or writing, Spectacles of the Green kind which reduce the glare, saves my Eyes, but does not magnifie.

It was common for those with "weak and watery eyes" to be provided with tinted lenses. If they worked as sunglasses, they would have been an improvement, although because of the smaller size of the lenses they would not compare favorably with modern sunglasses. Tinted lenses were also popular for people who used reading glasses in the belief that they somehow helped make the vision clearer (they didn't). Another very popular use of tinted lenses was to ease the photosensitivity that was one of the many symptoms of syphilis.

If a man at arms feels it is more authentic to do without 18<sup>th</sup> century spectacles, but must have some kind of correction in order to see clearly, contact lenses might be the answer. They don't show, and they will enable you to see what's going on. New types of lenses are being developed all the time, and the soft lenses available today are more comfortable and less expensive than ever. An officer or CCM type might want to wear 18<sup>th</sup> century frames for reading or even distance correction. If you need the glasses for reading, simply have a set of lenses made with your reading prescription in it, and wear them down low on the nose. Look through the lenses when you need to read, and over the tops of the frames when you need to see something farther away than 14 to 18 inches. When not in use, spectacles were frequently worn on top of the head to keep them out of the way but still handy.

If you need bifocals, some of the larger frames available may be fitted with progressive lenses, so that no segment will show and they will appear as if they are single vision lenses. Consult your optician. One type of progressive lens that works well in a narrow frame is the AF Mini.

Bifocals were worn in the 18<sup>th</sup> century, but are not relevant to our activities. Ben Franklin first mentioned them in writing in 1784, and there is evidence to suggest that he wore them before that time. There is, however, no evidence of anyone other than Franklin himself wearing bifocals during the era that we portray. Franklin's bifocals consisted of two identically shaped sets of lenses, one with the power to correct for distance and one for near. They were then sawn in half, and placed together with the distance lens on top, and the near lens on the bottom, and mounted in a frame. These worked in exactly the same fashion as do modern

segmented bifocals. They apparently worked fine for Franklin, but did not come into general use until well after our period.

A few words of advice to those seeking to have lenses mounted in reproduction frames would be in order. Try to find an optician who works for a smaller chain or a single store. These opticians are likely to be better trained than those in the local Megalomart. Sometimes you may be told that they can't mount the lenses in the frames, even though the reproductions have the same sort of mounting system as modern frames, which allows them to be edged and the lenses mounted exactly as modern lenses are. Opticians have an aversion to not getting it right the first time, and some would rather say no than run the chance of doing it wrong and then re-

quiring a redo. If the first one you ask seems nervous or reluctant, keep looking.

Sometimes, you will be told that one or all of the above suggested lenses just won't work. Usually this will have to do with the size of the lenses or width of the frame, the distance between your pupils, or how high the frame sits on your face. Until there are more reproduction frames made in different sizes, this will remain a problem. Happily, it will be a problem to only a small number of potential spectacle wearers.

A final word for the Ladies-all indications are that in America spectacles were considered so unflattering for females that only decrepit grannies who would be blind without them would even dream of being seen in public wearing them.



*In these Bowles & Carver illustrations, the characters wear spectacles to emphasize their comic appearance.*

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