

An Extravagant Jewel: The George Watch

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WATCHES HAVE not always been valued primarily for telling time. In the first hundred years after their appearance in late fifteenth-century Italy, watches were often a great deal closer to being jewels that incidentally gave indications of time than to modern timekeepers. Few of these early jewels survive, most having succumbed to advances in technology and to the changes in fashion or fortune that equally have taken their toll on objects made of precious materials.

A number of visual and written documents do survive, however, to demonstrate the ways in which a watch could be incorporated into a jewel or some other small precious object. For example, in 1541 the Renaissance scholar Lilio Gregorio Giraldi (1479–1552) wrote, “I myself have often seen a watch, which admirably showed the hours, placed in the handle of the eyeglass of Pope Leo X [reigned 1513–21], of which he availed himself while hunting and traveling.”¹ Twenty years later, the publication in Lyon of a book of designs for rings by the French artist Pierre II Woeiriot included one for a ring in which a tiny watch is embedded (Figure 1).² An enameled gold ring watch in the Schatzkammer in Munich dating from shortly after 1584 attests to the fact that such objects were actually made (Figure 2).³

The Flemish artist Hans Collaert engraved a series of designs for pendent jewels that was published in Antwerp in 1581 by Philip Galle. Among the designs there is one with a watch in an elaborate frame that was undoubtedly intended to be executed in gold ornamented with colored enamels and set with gemstones (Figure 3).⁴

Queen Elizabeth I of England (reigned 1558–1603) owned several jewel-like watches, including one set in a bracelet described as an “armlet or shakell of golde, all over fairly garnishedd with rubys and dya-

monds, haveing in the closing thereof a clocke.”⁵ But the ultimate in conspicuous display seems to have been reached by 1623, when the watchmaker Andreas Hipp (working 1575–probably 1624) of Kempten in South Germany offered a watch set in a garnet suitable for a lady to wear in her hair, evidently as a variety of ornamental hairpin.⁶ When this watch was in place, the dial could only have been seen by someone other than the wearer.

The epitome in prestigious watches, however, was the “George watch,” made in the shape of the ensign of the English Order of the Garter and named after Saint George (Figure 4). Elias Ashmole (1617–1692), in his history of the order, listed as part of its insignia the Greater George, an elaborate pendent image of the saint fighting a dragon worn on a collar as part of the full ceremonial dress, and the Lesser George, a simpler pendant which the knights were obliged to wear in daily dress. Of the Lesser George, Ashmole said, “This George was for the most part made of pure Gold, curiously wrought by the hand of the Goldsmith, but we have seen divers of them exquisitely cut in Onixs, as also in Agats. . . . In this Jewel is St. George represented in a riding posture encountering the Dragon with his drawn Sword . . . this George is allowed to be enriched and garnished at the pleasure of him that wears it.”⁷ Accompanying this text is an engraving showing a Greater George and three views of a Lesser George (Figures 5, 6). Ashmole described the latter as the quite extraordinary George worn by King Charles I (reigned 1625–49) to his execution “curiously cut in an Onix, set about with 21 large Table Diamonds, in the fashion of a Garter: On the back side of the George was the Picture of his Queen, rarely well limn’d set in a Case of Gold, the lid neatly enamel’d with Goldsmith’s work, and surrounded with another Garter adorned with a like number of equal sized Diamonds, as was the forside.”⁸

Two historical references to Georges incorporating watches have so far come to light. The first is in a 1587

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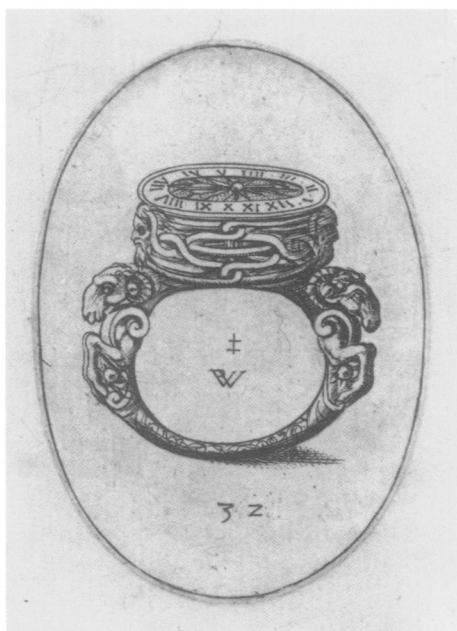


Figure 1. Pierre II Woëriot (French, 1532–after 1589 or after 1596). Design for a ring watch, 1561. Engraving, 7.9 x 5.6 cm. The Metropolitan Museum of Art, Harris Brisbane Dick Fund, 1926 (26.57.50)

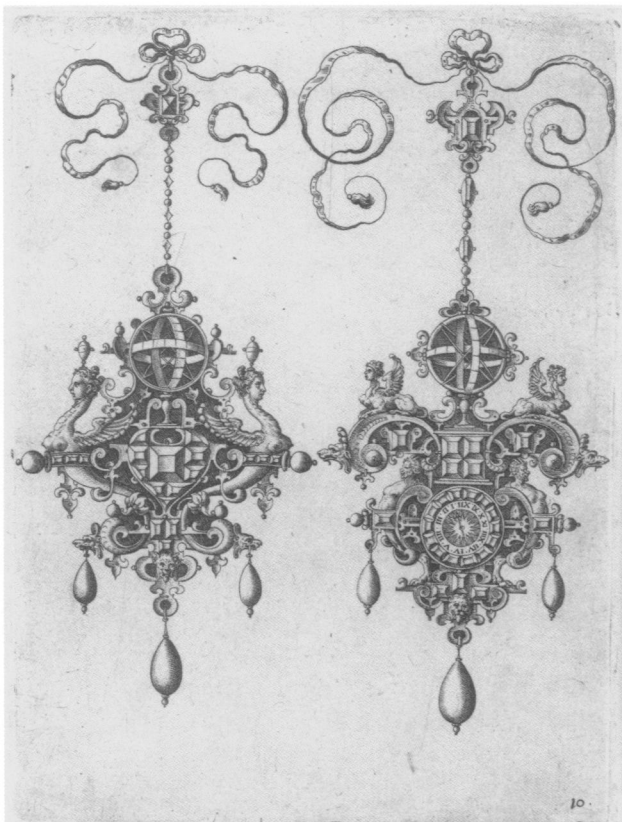


Figure 3. Hans Collaert (Flemish, 1566–1628). Designs for two jeweled pendants, the one on the right incorporating a watch, 1581. Engraving, 17 x 12.6 cm. The Metropolitan Museum of Art, Harris Brisbane Dick Fund, 1923 (23.85.12)

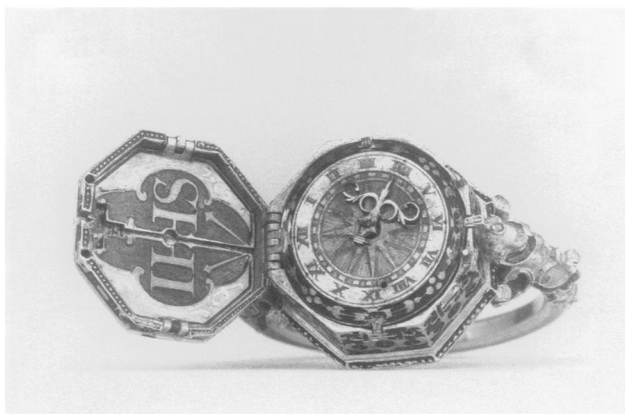


Figure 2. Ring watch, German (Augsburg), ca. 1585. Gold, partly enameled, with a movement signed *IW* with an Augsburg pinecone between the letters, probably the initials of Jacob Weiss (master 1584). W. of ring 3 cm; diam. of movement 1.7 cm. Schatzkammer der Residenz München (photo: Bayerische Verwaltung der staatlichen Schlösser, Garten und Seen)

inventory of the jewels of Queen Elizabeth: “one clocke of golde with a George on both sides garnished with sparkes of diamondes and a pendant of opalls.”⁹ An inventory of the possessions of Henry Howard, Earl of Northampton (1540–1614), made in 1614, provides the second. Listed are several Georges of various costly materials, one described as “Item a watche George,” which was in the hands of the goldsmith, Master William, at the time of the inventory.¹⁰

The George watch in the collection of The Metropolitan Museum of Art is apparently the sole surviving example of this kind of watch (Figure 4).¹¹ The movement of the Museum’s watch was made by Nicholas Vallin. Its case is of gold, decorated with various colored enamels, and it consists of an oval band



Figure 4. Watch in the form of a Lesser George, an ensign of the Order of the Garter, English (London), ca. 1600. Gold, partly enameled, with a movement by Nicholas Vallin, 3.6 x 2.4 cm. The Metropolitan Museum of Art, Gift of J. Pierpont Morgan, 1917 (17.190.1475). See also Colorplate 2

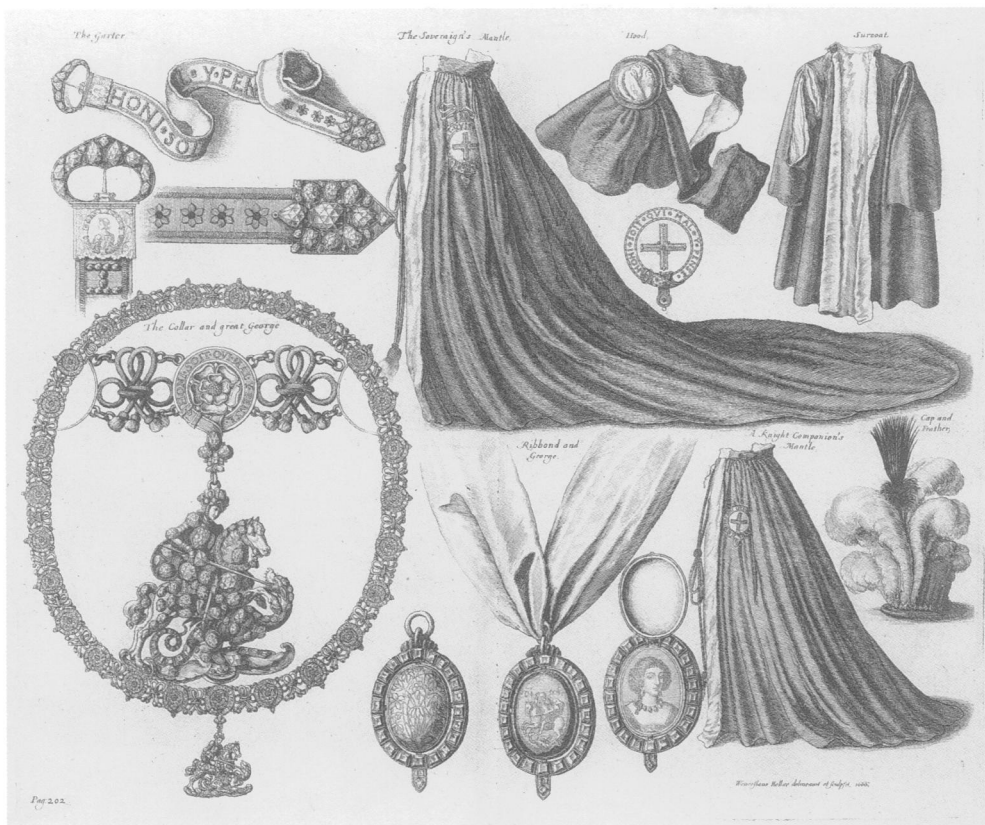


Figure 5. Wenzel Hollar (Bohemian, 1607–1677). “The Habit and Ensigns” of the Order of the Garter, dated 1666. Engraving, 35.5 x 40.6 cm. From the plate bound between pp. 202 and 203 in Elias Ashmole’s *The Institution, Laws & Ceremonies of the Noble Order of the Garter* (London, 1672). The Metropolitan Museum of Art, Thomas J. Watson Library

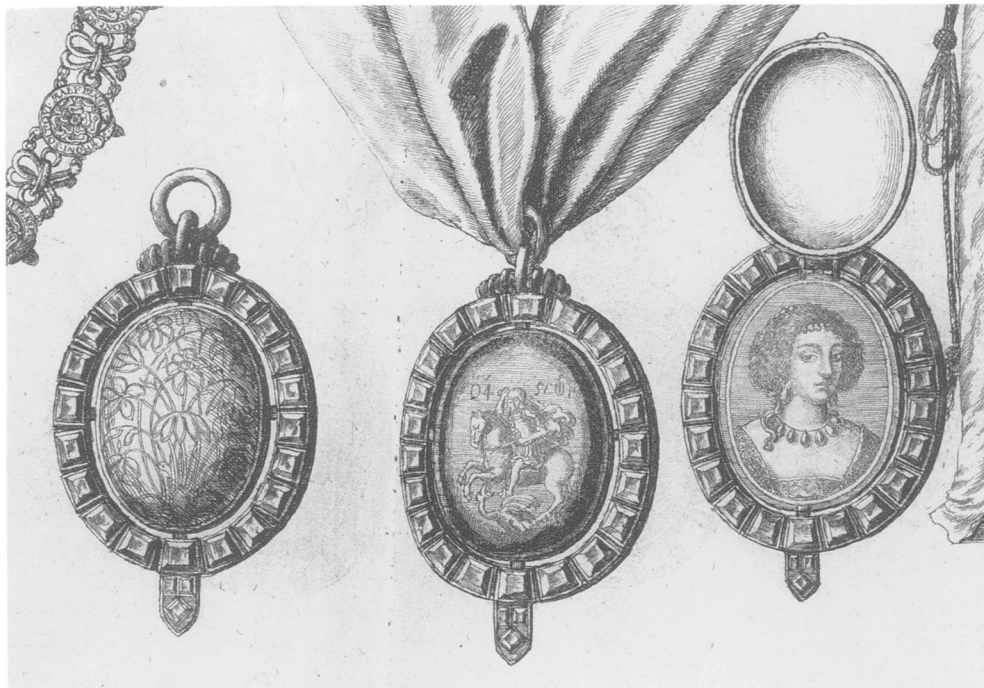


Figure 6. Detail of Figure 5, showing three views of the Lesser George said to have been worn by King Charles I of England

with a pendant and two hinged covers. The band and pendant are cast as a single piece (Figures 7, 8). The exterior side of the band has, between two beaded borders, a representation of the garter, symbol of the order, with its motto: HONI.SOIT.QVI / MAL.Y.PENSE. The beaded borders carry traces of opaque blue

enamel *en ronde-bosse*, or applied to a raised metal surface, as does the sculpted fleur-de-lis-like pendant, which also has a hole for the loose ring at the top by which the watch is suspended. The remainder of the band is decorated with champlevé enamel, a technique achieved by cutting away or excavating the underlying



Figure 7. The watch in Figure 4 seen from the side, with the first part of the motto of the Order of the Garter: HONI.SOIT.QVI

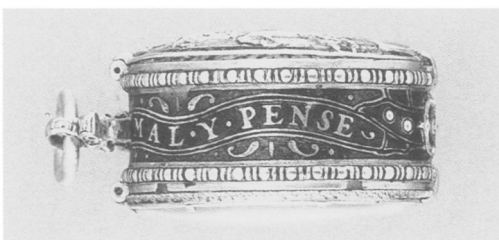


Figure 8. The watch in Figure 4 seen from the side, with the second part of the motto: MAL.Y.PENSE.



Figure 9. The exterior of the back cover of the watch in Figure 4



Figure 10. The watch in Figure 4 open to show the back plate of the movement and the inside of the back cover

gold ground so that various colored enamels can be applied to the hollowed-out areas, then fired in a kiln, and subsequently polished down to the level of the gold ground, creating a design in which each color is separated by a gold border that is actually part of the metal plate. The colors of the band are translucent blue for the garter, opaque white for the buckle and holes of the garter, and translucent red for the back-ground. Close examination shows that the surface of the blue enamel exhibits greater decomposition than does that of the red. (See the discussion of the enamels and

their composition by Mark Wypyski in the Technical Appendix, pages 14–16.)

The back cover is also cast, and its exterior bears an image in relief of Saint George slaying the dragon (Figure 9). These figures are enameled *en ronde-bosse* on a matte gold ground. The colors are white for the horse and the flesh of the saint, green for the dragon and the helmet and shield of the saint, blue for the saddle and trappings of the horse, blue and green for the scarf of the saint, and red for the skirt of his tunic. The entire representation is framed in red. The green, blue, and red enamels are translucent; the white is opaque. The interior of the cover is decorated with scroll ornament in opaque black *champlevé* enamel on a stippled gold ground (Figure 10).

The front cover is a hinged gold bezel set with an oval plaque of rock crystal (Figure 11). The plaque is held in place by seven tags, the one at the opposite end from the hinge now broken off. The inside of the bezel is engraved with a simple ornamental pattern.

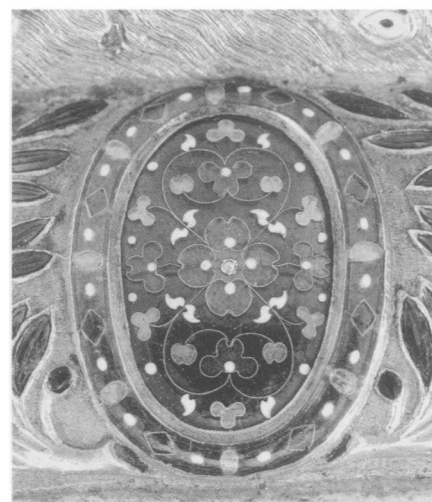
The dial is attached to the movement, and together they can be made to slide into the band of the case, held by two latches attached to the back plate of the movement that engage two holes in the band of the case (Figure 10). The dial has four lugs which fit into slots in the band of the case and three feet by which it is pinned to the movement. The back plate of the movement carries the signature of the watchmaker, *N. Vallin*.

The decoration of the dial is executed in *champlevé* enamel, with the numerals and half-hour marks in



Figures 11 and 12. The front of the watch in Figure 4, with the cover closed (above) and open to show the dial





Figures 13 and 14. Parade shield of King Charles IX of France, French (Paris), ca. 1570, and detail of an enameled oval in the border. Gold, applied to a base of iron, and partly enameled, H. 68 cm. Musée du Louvre, Paris (photos: Réunion des Musées Nationaux)

gold on a translucent blue chapter ring (Figure 12). The remainder of the dial is ornamented on a background of translucent red. The top and bottom portions are filled with scrolls in opaque white and green, and the center portion has an ornament of six radiating bud-shaped balusters in translucent green and yellow interspersed with opaque blue dots and framed by scrolls of opaque white enamel. The single sculpted hand is of gilt brass with traces of a black filling. It is mounted on a riveted plug, and the rivet is covered by a tiny punched quatrefoil.

To date, the George watches that have been found in late sixteenth- or early seventeenth-century records have been the possession of Englishmen or Englishwomen, and this is hardly surprising as the order is English. It would therefore seem likely that the Metropolitan Museum's watch case was made in England. As we shall see, however, there is a tradition that this watch is of Continental European origin, which is not implausible.

It is not unknown for English and Scottish watchmakers to have made movements for French cases,¹² and until comparatively recent scholarship established the identity of the watchmaker who signed the movement *N. Vallin*, the name could easily have been supposed to be French.¹³ In addition, some of the ornament of the watch case does resemble French goldsmiths' work of the third quarter of the sixteenth century.

One comparison can be made between the design and brilliant colors of the watch dial and those of sixteen small ovals found in the border of a parade shield of King Charles IX of France (reigned 1560–74). Now in the Musée du Louvre,¹⁴ the shield (Figures 13, 14) and its accompanying helmet, both made of enameled gold applied to a base of repoussé iron, are the work of the Paris goldsmith Pierre Redon (died ca. 1572), perhaps working from designs by Étienne Delaune (1518/19–1583).¹⁵ The most striking feature of the parade shield is the marvelously worked repoussé



Figure 15. Pendant with an antique agate cameo depicting a centaur and putti. The frame is French (Paris), probably third quarter of the 16th century. Gold, partly enameled, 8.4 x 6 cm. Cabinet des Médailles, Bibliothèque Nationale, Paris (photo: Bibliothèque Nationale)

scene depicting the battle between the Roman general Marius and Jugurtha, king of Numidia, that is partly enameled in translucent greens, blues, and reds, with opaque white with pink highlights for the human and horse flesh, in a way that is quite similar to the image of Saint George on the back cover of the Metropolitan Museum's George watch.

But there are differences as well. The embossed portions of the shield are very much grander in scale, and the details are finer. Moreover, the technique of enameling used for the ovals differs markedly from that of the George watch, for the ovals are cloisonné enamels, in which the various colors are separated by gold wire attached to the underlying gold ground, rather than by the narrow ridges that are an integral part of the hollowed-out metal plate of the *champlevé* enameled watch dial. The designs of the ovals, too, differ. They are composed of floral forms radiating from a central blossom, whereas the watch dial is decorated with abstract scrolls organized around radiating bud-shaped balusters interrupted by the chapter ring.

The inside of the back cover of the watch, with its black scrolled tendrils on a stippled gold ground, also



Figure 16. Detail of the reverse of the pendant in Figure 15 (photo: Bibliothèque Nationale)

has a counterpart in French goldsmiths' work: the back of the enameled gold frame incorporating an antique cameo that was formerly in the French royal collections and is now in the Cabinet des Médailles at the Bibliothèque Nationale in Paris (Figures 15, 16).¹⁶ The front of the cameo pendant consists of an architectural structure ornamented with translucent red and opaque white enamels, and with translucent blue in the broken pediment supporting two semi-reclining female figures personifying Force and Fame. The design has been likened to those of Étienne Delaune, and the cameo pendant is thought to be the product of a Parisian goldsmith, probably working in the third quarter of the sixteenth century, although like many other precious objects, it was attributed in the nineteenth century to Benvenuto Cellini.¹⁷

In view of the fact that the parade shield could be freely inspected throughout most of the nineteenth century and that the cameo pendant, too, was well known, at least in the latter half of the century, it is perhaps understandable that the case of the George watch was thought to be French. Less well known in the nineteenth century, however, was a jewel with an unbroken history of English ownership from the early years of the seventeenth century, which can be usefully compared with the case of the George watch. Containing a portrait of King James I of England (reigned 1603–25; as James VI of Scotland, reigned 1567–1625) by the court limner Nicholas Hilliard, it was given by the king to Thomas Lyte (1568–1638) in 1611.¹⁸ The jewel, now in the Waddesdon Bequest at The British Museum, consists of a case with a hinged openwork cover of gold, partly enameled and set with gemstones (Figures 17, 18). Although the design of the cover is unlike that of the George watch, the translucent red, blue, and green, and opaque white enamels used to ornament the inside of the cover are remarkably similar to those of the watch. The back of the miniature case, too, consists of an abstract pattern of scrolls in gold, with geometric embellishments in translucent red *champlevé* enamel contrasting with pure white

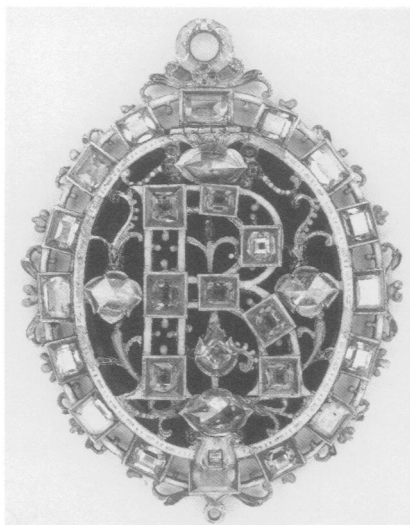


Figure 17. Miniature case (the Lyte Jewel), containing a portrait of King James VI of Scotland and James I of England, English (London), ca. 1610. Gold, partly enameled, set with diamonds, 6.5 x 4.8 cm. The Waddesdon Bequest, The British Museum, London (photo: courtesy of the Trustees of The British Museum)

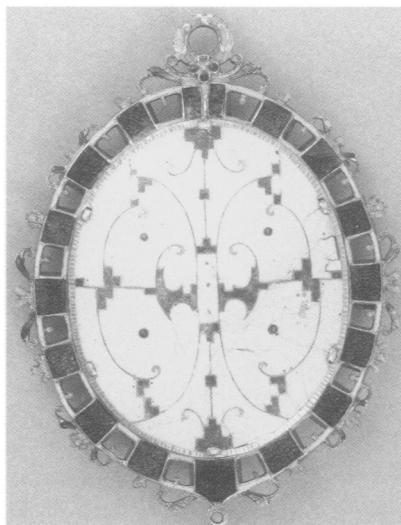


Figure 18. The back of the miniature case in Figure 17 (photo: courtesy of the Trustees of The British Museum)



Figure 19. The miniature case in Figure 17 opened to show the inside of the cover and the portrait of the king by Nicholas Hilliard (1547–1619) (photo: courtesy of the Trustees of The British Museum)

opaque champlevé enamel. The pattern is very different from the ornament of the George watch case, but the vivid enamel colors are similar and the enameling technique is the same. More particularly comparable to the George watch, however, is the way in which the oval border of the interior of the gold cover of the miniature case was given an ornamental pattern of stipplework (Figure 19). This jewel provides evidence that at least one English goldsmith working about the turn of the seventeenth century or a few years later could have made the case of the George watch.

With the movement of the Museum's watch we are on firmer ground. Spring-driven and constructed largely of gilt brass, it has two oval plates separated by four pillars that are pierced and ornamented in a shape commonly referred to among horologists as early Egyptian (Figures 20, 21). These pillars are riveted to the front plate and secured to the back plate by means of pins. The outside of the back plate is engraved with the signature of the watchmaker, and with a border of floral scrolls and the head of a putto in a fashion characteristic of English watches of the late sixteenth and first quarter of the seventeenth centuries (Figure 22).¹⁹ The back plate of the movement also carries a gilt-brass cock, which supports the circular steel balance; a steel click wheel, a brass-nosed steel click, and a click spring for setting up the mainspring (adjusting its initial force) that are mounted above the

balance; and two steel latches for securing the mechanism in the case. The latches may be seen on the left below the foot of the cock and on the right above the balance. The cock, click, and latches are richly decorated with pierced work, and among the ornamental elements on the table of the cock (the portion of the cock covering the balance) are two balusters and tripartite

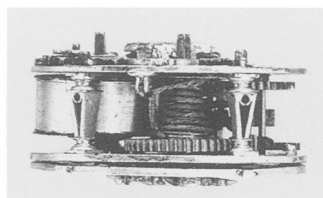


Figure 20. Side view of the watch in Figure 4 showing the fusee

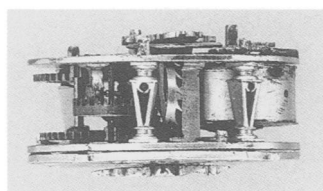


Figure 21. Side view of the watch in Figure 4 showing the crown wheel



Figure 22. The outside of the back plate of the movement of the watch in Figure 4

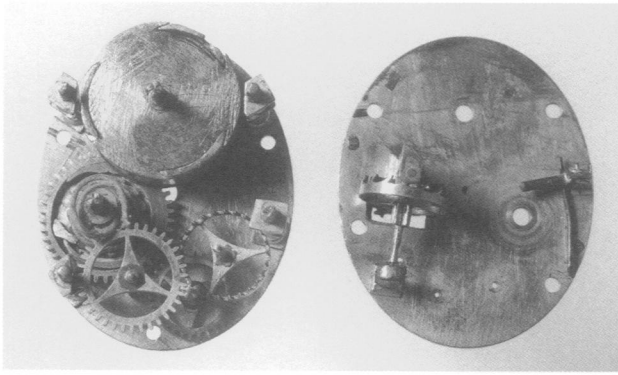


Figure 23. The train of the watch in Figure 4 after removal of the back plate. The interior of the back plate is shown at the right

floral ornament that are reminiscent of the ornament on the dial and on the side of the case around the representation of the garter. The cock is pinned over a stud, or post, which is riveted to the back plate. The steel parts, including the rim of the circular balance, carry traces of bluing.

The watch's train, or series of wheels and pinions, is situated between the plates (Figures 20, 21, 23). It has

a cylindrical brass barrel with a steel cap for housing the mainspring and a fusee, a cone-shaped pulley for evening out the decreasing force of the unwinding spring. The watch is wound by a hollow-barreled key that fits over the square at the end of the fusee arbor. The fusee is connected to the spring barrel by a length of gut wound around a continuous spiral groove on the cone. The spring-and-fusee device drives four brass wheels and the brass crown wheel of the verge escapement. The hand is driven by a small pinion on the end of the arbor attached to the great wheel, or slowest moving wheel, which carries the fusee.

Technically, the importance of the watch lies in its diminutive size. This size created problems for the watchmaker in three ways. First, the small size of the movement requires reductions in the sizes of the wheels and their pinions. These reductions cannot be achieved without decreasing the number of teeth on the wheels, causing a reduction of the gearing ratios involved. Second, a small movement requires a small balance at the end of the train, and a small balance tends to tick faster. Third, a smaller movement requires a smaller fusee with fewer turns for the gut line. In other words, a smaller movement needs a larger gearing ratio in the train in order to accommodate the smaller balance, while the smaller size actually causes a reduction in



Figure 24. Watch with alarm, English (London), ca. 1600. Gilt-brass case with a chapter ring of silver and a movement by Nicholas Vallin, diam. 6.5 cm. The Metropolitan Museum of Art, Gift of J. Pierpont Morgan, 1917 (17.190.1476)



Figure 25. The back of the case of the watch in Figure 24

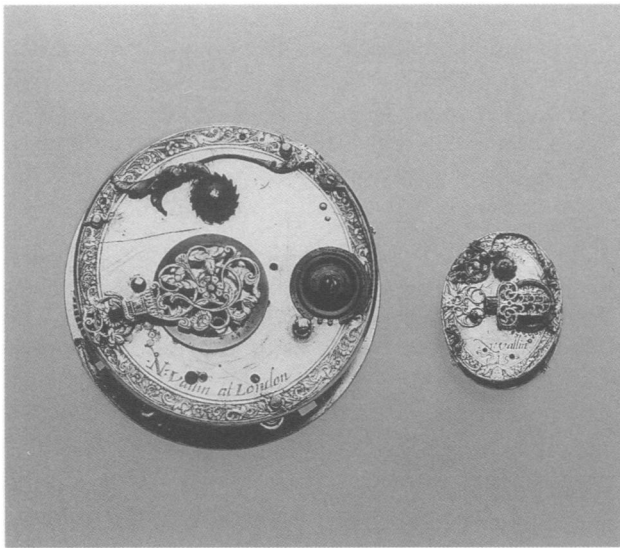


Figure 26. Movements of the watches in Figure 24 and Figure 4

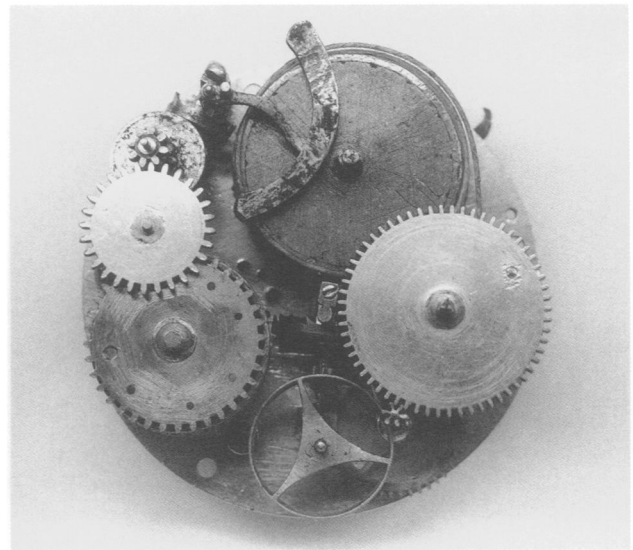


Figure 27. View of the movement of the watch in Figure 24 after removal of the front plate, with the wheels of the going train on the left

the gearing ratio. Moreover, there will be a lessening of the duration of the watch (the maximum period between windings) because a smaller fusee generally means that there are fewer turns to wind the gut line.

For a better understanding of these problems it is particularly fortunate that the Metropolitan Museum has another watch by the same maker. Its movement is signed *N. Vallin at London*, and it dates from about the same time as the George watch, but it is of a more conventional size for the period (Figures 24, 25). This watch has an alarm mechanism and is housed in a pierced, engraved, and gilt-brass case.²⁰ Comparison of the two movements (Figure 26) yields some insight into the way in which the maker coped with the problems outlined above. Figures 27 and 23 show clearly that in the larger watch the wheels have more teeth than in the smaller one. As a result the maker was forced to add an extra wheel to the train of the smaller watch, thus increasing the complexity of the movement. Moreover, the smaller watch has fewer turns to the fusee, which causes a reduction in the duration to about 15½ hours, whereas the larger watch runs for over 24 hours before needing to be rewound.²¹

Such considerations explain the small number of tiny watches that were produced before technical advances in the late eighteenth century made the small, flat watch practical. In fact, the oval shape of the George watch favored its diminutive size, for the oval allows a tight arrangement of the large spring barrel and the smaller wheels without wasting space. In addition, it may be noted that the shape of the watch closely

parallels that of King Charles I's Lesser George illustrated by Elias Ashmole (Figure 6).

Thanks to the research of H. Alan Lloyd and Charles Drover, we have a great deal more information about the maker of the Museum's George watch and alarm watch than we had before the middle of the twentieth century. Nicholas Vallin (ca. 1565–1603) was the son of Joannes, or John, Vallin (ca. 1535–1603), who was born in the town of Ryssel, or Lille, in Flanders, now part of France. By 1567 John was working as a clockmaker in Brussels, but undoubtedly as the result of the political troubles in the Netherlands, both John and his son Nicholas emigrated to London, probably shortly before 1590. John apparently did not make any clocks in London, but Nicholas soon became the leading clock- and watchmaker there. Both father and son died in the plague epidemic of 1603.²²

We do not know for whom the George watch by Nicholas Vallin was intended. The inventory of Queen Elizabeth's possessions which lists a George watch dates from 1587, or two years earlier than there is evidence that Nicholas Vallin was in London. In any case, the description of the queen's watch does not match that of the watch in the Metropolitan Museum's collection. The description of the one that belonged to the Earl of Northampton in 1614 is too concise to warrant any conclusion. Furthermore, the earl was not created a Knight of the Garter until 1605, or two years after Vallin's death.

In fact, we know nothing of the provenance of the Metropolitan Museum's watch before the middle of the nineteenth century, although two beguiling,

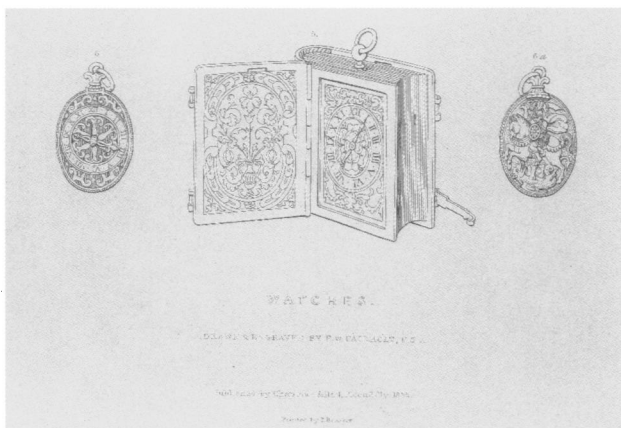


Figure 28. The George watch illustrated in pl. xxvi, figs. 6 (left) and 6a (right), of Frederick W. Fairholt and Thomas Wright, *Miscellanea Graphica: Representations of Ancient, Medieval and Renaissance Remains* (London, 1857). Thomas J. Watson Library, The Metropolitan Museum of Art

though mutually contradictory, theories have been propounded. The earlier is to be found in a catalogue of the collection of the English antiquary Lord Londesborough, published in 1857, where it is stated that the watch “was made for Louis XIII, to present to King Charles I of England.”²³ No evidence is cited, and this theory is not supported by what we now know about Nicholas Vallin: first, however French his name may have sounded, he was Flemish, and he made his watches in London; and second, he died three years after Charles I was born and twenty-two years before Charles became king of England.

The second theory appeared in the catalogue of the J. Pierpont Morgan Collection, where the author, G. C. Williamson, recognized that the watch was of English origin but found the date problematic, relating a tradition that the “watch was presented to a Duke of Bavaria on the occasion of his creation as a Knight of the Garter.” He continued, “if that was the case, it may have been made as early as 1633, and given to Karl Ludwig, Elector Palatine of the Rhine, who was a Duke of Bavaria and nephew of Charles I.”²⁴ Williamson also proposed several other dukes of Bavaria who were Knights of the Garter, but in no case did he present supporting evidence, and none of them, of course, could possibly have been the original owner, as we now know.

What we do know is that the watch was in England in 1855, when it was both described and illustrated as a part of the collection of Lord Londesborough (Figure 28).²⁵ Albert Conyngham (1805–1860), who later changed his name to Denison, was an immensely rich landowner with antiquarian interests. He was created first Baron Londesborough in 1850. In the same year he bought Grimston Park together with its collections. The house,

near Tadcaster in the West Riding of Yorkshire, was where he kept much of his collection, apparently including the watch that had perhaps come with the house.²⁶

What happened to the watch after Lord Londesborough’s death is unknown, but it subsequently came into the hands of the Paris antique dealer and collector Frédéric Spitzer (1815–1890). It is described and illustrated in the catalogue of his collection published in 1892,²⁷ and it was included in the auction of his collection that took place in Paris in the following year.²⁸ It then passed into the collection of Carl Heinrich Marfels (1854–1929), the German watch dealer and collector.²⁹ Marfels exhibited his collection in the Swiss watchmaking city of Neuchâtel in 1910, and on that occasion the collection was sold to J. Pierpont Morgan (1837–1913) despite a concerted attempt by local businessmen to keep it in Switzerland.³⁰ The watch finally entered the collection of the Metropolitan Museum in 1917, as one of Morgan’s many gifts to the Museum.

If the ensign of the Order of the Garter could be made to contain a watch, are there ensigns of other knightly orders that could similarly be used? One possible example is known to exist. It is a watch by Abraham Cusin of Nevers that has a silver case in the form of a Maltese cross with a descending dove in its center (Figure 29). It now seems all the more likely that this watch is indeed an ensign of the French Order of the Saint Esprit.³¹

ACKNOWLEDGMENTS

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NOTES

1. L. G. Gyraldus, *De annis et mensibus, caeterisque temporum partibus* (Basel, 1541), p. 196. For a discussion of the original Latin text, see J. H. Leopold, “L. G. Giraldi,” *Antiquarian Horology* 18 (Spring 1990), pp. 554–55. Giuseppe Brusa, “Early Mechanical Horology



Figure 29. Watch case in the form of a Maltese cross with a descending dove, an ensign of the Order of the Saint Esprit, French, early 17th century. Silver, partly gilt, and with traces of white enamel, 4.5 cm. At right, the movement by Abraham Cusin (recorded 1593–1621), gilt brass and steel, partly blued. Private collection (photo: Sotheby's, London)

in Italy," *Antiquarian Horology* 18 (Spring 1990), p. 510, suggests that the watch was made by Cherubino Sforzani of Reggio Emilia, who is known to have made such a watch before 1529.

2. Plate 32 from the *Libro d'Anell A D Orefici Del Inventioni Di Piero Woerioto Di Oreno* (Lyon, 1561). See *Katalog der Ornamentstichsammlung der Staatlichen Kunstbibliothek, Berlin* (Berlin, 1939), no. 762. See also Peter Fuhring's entries for Pierre Woeiriot, in *The French Renaissance in Prints from the Bibliothèque Nationale de France*, exh. cat., Armand Hammer Museum of Art and Cultural Center, Los Angeles; MMA; and Bibliothèque Nationale de France, Paris (Los Angeles, 1994), pp. 394–95, nos. 140, 141.
3. See Hans Thoma and Herbert Brunner, *Schatzkammer der Residenz München* (Munich, 1964), p. 266, no. 649. The movement of the watch is signed with the maker's initials JW with an Augsburg pinecone mark between the letters. These initials were traditionally ascribed to the watchmaker Jacob Wittman, but are now correctly identified as referring to Jacob Weiss, who was made a master in Augsburg in 1584. See Klaus Maurice, *Die deutsche Räderuhr* (Munich, 1976), vol. 2, p. 62, no. 448, and fig. 448. A copy of this watch, formerly in the J. Pierpont Morgan Collection, is now in the Indianapolis Museum of Art. See Hugh Tait, *Catalogue of the Waddesdon Bequest in The British Museum: I. The Jewels* (London, 1986), pp. 254–56, figs. 227–30.
4. Plate 10 from the series titled MONI: / LIVM, / BVLLARVM, INAVRIVQVE / ARTIFICIOCISSIMAE ICONES. / IOANNIS COLLAERT OPVS POSTREMVM / 1581. See Marijnke de Jong and Irene de Groot, *Ornamentprenten in het Rijksprentenkabinet: I. 15d and 16d Eeuw* (The Hague, 1988), p. 57, no. 67.10.
5. John Nichols, *The Progresses and Public Processions of Queen Elizabeth*, 2nd ed. (London, 1823), vol. 1, p. 294. In this description the word clock appears to mean a watch that strikes the hours. For further watches in the queen's collection, see vol. 1, pp. 46, 381, 528, and vol. 2, pp. 2, 249, 301, 499.
6. Ronald Gobiet, *Der Briefwechsel zwischen Philipp Hainhofer und Herzog August d. J. von Braunschweig-Lüneburg* (Munich, 1984), p. 374, no. 662, "Das uhrlin in granaten kündte aine fürstin an ainer guldinen stekh nadel im haar tragen. . . ." See also "Die Uhrmachermeister Hipp in Kempten," in Peter Friess and Ingrid Seeger, *Uhren: Bestandskatalog des Museums für Kunst und Kulturgeschichte Kempten–Allgäuer Heimatmuseum* (Kempten, 1991), pp. 21–35. Such an object may have been similar to a surviving type of hairpin consisting of a long, tapered shaft with a pendent ornament at one end. When embedded in the hair, the dangling pendant was set in motion by the movement of the wearer's head. For an example found in the tomb of the Countess Palatine Amalia Hedwig (1584–1607) in the parish church in Lauingen, Germany, in 1781, and now in the Bayerisches Nationalmuseum, Munich (inv. no. T 4155), see Irmtraud Himmelheber, "Die Schmuckstücke," in Karen Stolleis, *Die Gewänder aus der Lauinger Fürstengruft* (Munich, 1977), pp. 123–25, no. 71, fig. 93; or the entry by Jan Walgrave, in *Een Eeuw van Schittering: Diamantjuwelen uit de 17de eeuw*, exh. cat., Province Council of Antwerp (Antwerp, 1993), pp. 164–65, no. 62.
7. Elias Ashmole, *The Institution, Laws & Ceremonies of the Noble Order of the Garter* (London, 1672), p. 226, Section IX, The Lesser George. Ashmole's history of the Order of the Garter remains the standard work on the subject.
8. Ashmole, *Institution, Laws & Ceremonies*, p. 228. "Limn'd," or limned, means painted or depicted. For further discussion of the jewels of the order, see Ronald Lightbown, "The King's Regalia, Insignia and Jewelry," chap. 7 in Arthur MacGregor, ed., *The Late King's Goods: Collections, Possessions and Patronage of Charles I in the Light of the Commonwealth Sale Inventories* (London, 1989), pp. 271–74.
9. "A booke of soche Jewells . . . delivered to the charge and custodie of Mistress Mary Radclyffe" (British Library, MS Royal Append. 68), quoted in Edward J. Wood, *Curiosities of Clocks and Watches from the Earliest Times* (London, 1866), p. 254; and subsequently in Frederick J. Britten, *Former Clock and Watchmakers & Their Work* (London, 1894), p. 61; and in John F. Hayward, *English Watches*, 2nd ed. (London, 1969), pp. 2–4.

10. See Evelyn Philip Shirley, "An Inventory of the Effects of Henry Howard, K.G. Earl of Northampton taken on his death in 1614, together with a transcript of his Will; prefaced by a Letter to Charles Spencer Perceval, Esq., L.L.D., Director," *Archaeologia* 42 (1869), pp. 347–78. For the watch, see p. 350. Howard became Earl of Northampton in 1604, and the following year he was installed as a Knight of the Garter. See *Dictionary of National Biography* (London, 1908), vol. 10, p. 30.
11. Acc. no. 17.190.1475, Gift of J. Pierpont Morgan, 1917.
12. For an example, see Cecil Clutton and George Daniels, *Clocks and Watches: The Collection of the Worshipful Company of Clockmakers* (London, 1975), pp. 8–9, no. 7, and figs. 7a–7d, for a star-shaped watch by David Ramsay (died 1660), appointed chief clockmaker to King James I of England in 1618, with a silver case signed *de Heck Sculp.* De Heck is believed to be Gérard de Heck of Blois (active 1608–29). Another example, with a movement signed *Simon Hackett Londini* (Clockmakers' Company 1632–died 1664) and a case made with panels of *émail en résille sur verre*, in a style not known to have been employed in the seventeenth century anywhere but in France, is in the Metropolitan Museum's collection (acc. no. 17.190.1477).
13. The listing of clock- and watchmakers in the 6th edition of Frederick Britten's *Old Clocks and Watches & Their Makers* (London, 1932), pp. 850–51, still included the maker of the George watch under the heading of Vallin, without either a first name or a place of work.
14. The shield and its associated helmet were acquired by the Musée du Louvre from the duc de Choiseul-Praslin in 1793. See Collection Réalités, *Les Merveilles du Louvre*, vol. 2 ([Paris], 1959), p. 73.
15. Redon was *valet de chambre* to Antoine de Bourbon, king of Navarre (reigned 1555–62). Redon's widow received a payment of 5,000 livres for the shield in February 1572. See Pierre Verlet, "Le Bouclier d'or de Charles IX," *Bulletin de la Société Nationale des Antiquaires de France* (1950–51), pp. 165–66. See also Bruno Thomas, "Die Münchner Waffenvorzeichnung des Étienne Delaune und die Prunkschilde Heinrichs II von Frankreich," *Jahrbuch der Kunsthistorischen Sammlungen in Wien* 58 (1962), p. 124 and fig. 101.
16. The pendant entered the royal collection in 1670 from the collection of Toussaint Lauthier, who held the titles of *capitaine de vaisseau* and *maitre d'hôtel* to Henriette-Anne (1644–1670), daughter of King Charles I of England and wife of Philippe, duc d'Orléans, brother of King Louis XIV of France. It was no. 196 in the inventory made of Lauthier's collection in 1664. See Ernest Babelon, *Catalogue des camées antiques et modernes de la Bibliothèque Nationale* (Paris, 1897), vol. 1, pp. 52–53, no. 97.
17. Babelon, *Catalogue des camées*, p. 52, considered the frame to be a masterpiece of sixteenth-century goldsmiths' work, but he had doubts about its attribution to Cellini. He also noted that the cameo, although of Hellenistic origin, had been recut in Renaissance times. For more recent attributions to French Renaissance goldsmiths working under the influence of the designs of Étienne Delaune, see Yvonne Hackenbroch, *Renaissance Jewellery* (Munich, 1979), pp. 82, 83, figs. 201A, 201B; and Michèle Bimbenet-Privat, *Les Orfèvres parisiens de la Renaissance (1506–1620)* (Paris, 1992), pp. 199, 200, 214. Bimbenet-Privat suggests that the goldsmith might have been the court jeweler François Dujardin I (recorded working 1538–75).
18. Bequeathed to The British Museum in 1898 by Baron Ferdinand Rothschild. See Tait, *Catalogue of the Waddesdon Bequest*, pp. 174–88 and pls. XXVA, XXVB, and XXIV.
19. Hayward, *English Watches*, p. 6, notes that this decorative treatment of the back plate of a watch "might almost be described as a national characteristic." See pls. 1, 2, 5, 7, and 9 for further examples of the type.
20. Acc. no. 17.190.1476, Gift of J. Pierpont Morgan, 1917. Vallin's signature on the movement of this watch makes it the only known piece that reveals his place of work. The front cover of the case has been restored by fitting a disk of German origin into the space that had previously held a glass; the glass itself would have been a later addition. The design of the original front cover would have been more in keeping with the design of the back of the watch. The silver alarm disk in the center of the dial is also a replacement. The spring barrel is not original; it has a snap-in barrel cap of the type usually found in eighteenth-century watches, whereas the George watch has a steel barrel cap that is dovetailed into the barrel. The larger watch originally struck a single blow at each hour (one-at-the-hour striking).
21. These results can be calculated when the numbers of teeth on the wheels and of leaves on the pinions are known. In the larger watch the going train consists of a great wheel of 60 teeth, a second wheel of 45 teeth with a pinion of 6 leaves, a third wheel of 40 teeth with a pinion of 5 leaves, a 'scape wheel of 19 teeth with a pinion of 5 leaves. A pinion of 7 leaves on the great wheel arbor drives the hour-hand wheel of 40 teeth; this wheel makes one revolution in 12 hours. This results in a beat rate of $\frac{1}{12} \times \frac{40}{7} \times \frac{60}{6} \times \frac{45}{5} \times \frac{40}{5} \times 19 \times 2 = 13,029$ beats per hour, or 3.62 beats per second (the factor 2 reflects the fact that in the verge escapement each tooth of the 'scape wheel acts twice per revolution). The fusee, mounted on the great wheel, has 12 turns, which results in a duration of $12 \times \frac{7}{40} \times 12 = 25\frac{1}{5}$ hours. In the George watch the train consists of a great wheel of 42 teeth, second wheel of 35 teeth with a pinion of 6 leaves, third wheel of 30 teeth with a pinion of 5 leaves, a fourth wheel of 25 teeth with a pinion of 5 leaves, and a 'scape wheel of 15 teeth with a pinion of 5 leaves. A pinion of 4 leaves on the great wheel arbor drives the hour-hand wheel of 25 teeth; this wheel makes one revolution in 12 hours. This results in a beat rate of $\frac{1}{12} \times \frac{25}{4} \times \frac{42}{6} \times \frac{35}{5} \times \frac{30}{5} \times \frac{25}{5} \times 15 \times 2 = 22,969$ beats per hour, or 6.38 beats per second. The fusee, mounted on the great wheel has eight turns, which results in a duration of $12 \times \frac{4}{25} \times 8 = 15\frac{2}{5}$ hours. Comparison shows that the smaller watch has wheels with fewer teeth and that this watch ticks much faster than the larger one. Moreover, in spite of having an extra wheel in the train, the George watch has a much shorter duration. It should be noted that a duration of more than 24 hours is unusually long in watches of this period.
An alarm watch by Nicholas Vallin in The British Museum (reg. no. CAI 2241), which is comparable to MMA 17.190.1475 and originally also had one-at-the-hour striking, has a fusee of $10\frac{1}{2}$ turns and a duration of about 16 hours.
22. See H. Alan Lloyd and Charles B. Drower, "Nicholas Vallin (ca. 1565–1603)," *The Connoisseur Year Book* (1954), pp. 110–16, for the definitive study on the Vallins. The authors list and illustrate all the clocks and watches by these makers that were known at the time. Since then a few others have come to light. For a large spring-driven musical clock by John Vallin, made in Brussels in 1567 and preserved in the Collegio delle Vergini di Gesù, Castiglione delle Stiviere, see Giuseppe Brusa, *L'Arte dell'orolo-*

- geria in Europa (Busto Arsizio, 1978), figs. 95–97, and p. 409, nos. 95–97.
23. Frederick W. Fairholt and Thomas Wright, *Miscellanea Graphica: Representations of Ancient, Medieval, and Renaissance Remains* (London, 1857), p. 80 and pl. xxvi, figs. 6 and 6a, with caption; the plates are dated variously 1854, 1855 (the date of the plate with the watch), and 1856. The story is repeated in an unidentified clipping tipped into a copy of Edward J. Wood, *Curiosities of Clocks and Watches* (London, 1866), opposite p. 293, in the Thomas J. Watson Library, MMA.
 24. George C. Williamson, *Catalogue of the Collection of Watches: The Property of J. Pierpont Morgan* (London, 1912), pp. 136–37, no. 143, and pl. LXIV, no. 143. It may be noted that in 1850 Lord Londesborough had a “St. George, designed by Holbein and executed by Benvenuto Cellini for Henry VIII,” a citation that may refer to this watch, though the ascription needs no further consideration. See *Index to the objects of Science, Art, and Antiquity, exhibited or collected at 144, Picadilly. Compiled for the use of Lord Londesborough’s visitors, on Wednesday evening 8th May* (n.p., 1850), p. 17. A copy of this rare pamphlet is in the National Art Library, Victoria and Albert Museum, London.
 25. Fairholt and Wright, *Miscellanea Graphica*, p. 80, and pl. xxvi, figs. 6 and 6a, with caption.
 26. *The Gentleman’s Magazine*, n.s. 8 (March 1860), pp. 45–46. For Grimston Park, see Christopher Hussey, “Grimston Park,” *Country Life* 87 (1940), pp. 252–56, 276–80, and 393.
 27. See the chapter by Léon Palustre, “Les Horloges et les Montres,” in *La Collection Spitzer*, vol. 5 (Paris, 1892), Montres, p. 53, no. 3, and Horloges et Montres, pl. vii, no. 3.
 28. *Catalogue des objets d’art . . . composant l’importante et précieuse Collection Spitzer*, sale cat., Paris, April 17–June 16, 1893, vol. 2, lot 2711; and [Collection Spitzer], *Prix d’adjudication* (n.p., [1893]), p. 8, no. 2711, where the watch is stated to have brought 19,500 FF. According to Gustav Speckhart, *Kunstvolle Taschenuhren der Sammlung Marfels* (n.p., [1904]), pl. 2, nos. 1–3, it brought 21,500 FF (hammer price and auctioneer’s commission). Frederick J. Britten, *Old Clocks and Watches & Their Makers*, 3rd ed. (London, 1911), p. 760; and Williamson, *Catalogue . . . Morgan*, p. 137, reported the price to have been £860.
 29. Speckhart, *Kunstvolle . . . Marfels*, pl. 2, nos. 1–3. For Marfels, see Carl Marfels, “Wie ich Sammler wurde,” *Der Kunstwanderer* 3 (1921), pp. 51–56; and H. Otto, “Carl Marfels,” *The Horological Journal* (December 1929), pp. 62–63.
 30. See Williamson, *Catalogue . . . Morgan*, pp. 136–37, no. 143. Williamson knew nothing certain about the provenance of the watch before Spitzer’s time. For an account of the attempt to keep the Marfels collection in Europe, see “Mr. Pierpont Morgan’s Collection of Watches,” *The Horological Journal* (November 1913), p. 34; and “Collection of Watches,” *The Horological Journal* (June 1914), p. 161.
 31. For the watch, see *Catalogue of Scientific Instruments . . . [and] Fine Watches . . .*, sale cat., Sotheby’s, London, July 10, 1967, lot 116, and illus. facing p. 34; and *The Belin Collection of Watches*, sale cat., Sotheby, Parke Bernet, London, November 29, 1979, lot 60, and front cover. For records of Abraham Cusin, see Tardy, *Dictionnaire des Horlogers français* (Paris, n.d.), vol. 1, p. 152. In both catalogues, Sotheby’s suggested that the watch was a badge of the Order of the Saint Esprit.