THE TECHNIQUES AND MATERIALS USE TO MAKE BOOKBINDINGS ON INCUNABLES

Thomas Frognall Dibdin once referred to the 'nameless host of Heroes of Bands and Blind Tooling',[[1]](#footnote-1) conjuring up the traditional image of an incunable in a contemporary binding as a book with substantial wooden boards, covered in leather, with raised bands on the spine, clasps on the fore-edge and perhaps metal bosses and corners. Such bindings will indeed be found on the majority of surviving examples that retain their first or early bindings, but the survival of such books tends to hide the much smaller numbers of books which have come down to us in much less elaborate bindings that were less likely to find their way intact into institutional libraries. These are the books that might either have been bound within the booktrade and then kept by owners who either would or could not pay for anything more substantial, or were bound for owners who perhaps led itinerant lives where lighter-weight, flexible covers might be found more convenient. Even though they are less well represented in the published literature of bookbinding and rarely, if ever, have any tooled decoration, it is likely that they would once have been much more numerous than they are now. Many are likely to have been replaced almost immediately, whilst others will have fallen victim to the expensive tastes of wealthy collectors from the eighteenth century onwards, to whom gold-tooled goatskin was the *sine qua non* of a collection of rare early editions, and the taste for which led to the destruction of many early bindings. As a result, many plain parchment- and paper-covered bindings will have perished, and it is impossible therefore now to estimate the relative numbers of all the different types of binding originally to be found on incunables, but enough survive (and more wait to be found) to provide an idea of the full spectrum of bindings available to a contemporary book-buyer.

The arrival of printing did not have an immediate impact on the ways in which books were bound and the typical inboard binding on an early incunable is impossible to distinguish from the sort of bindings that were being made for manuscript volumes at the same time. One practice, however, that preceded any sort of binding, made a somewhat surprising transition from manuscript to printed book. This is the use of quire tackets, small loops of thread or parchment originally intended to hold all the bifolia within a single gathering together and in the right order as the leaves were written on. As the leaves of printed books were already completed before they could be secured with quire tackets, their presence raises some interesting questions about the handling of incunables as they moved from the printing house to their eventual purchaser. The earliest example so far recorded, on an Esslingen edition of 1473,[[2]](#footnote-2) preserves thread quire tackets in almost all its gatherings. The leaves are neither paginated nor foliated, but each gathering is supplied with a manuscript catchword at the bottom inner corner of the final verso, giving the first word of the following gathering. As these would only allow the correct ordering of each complete gathering, the quire tackets would have been needed to keep the unsigned bifolia within each gathering in order as the book was handled within the booktrade and subsequently bound. It would seem likely that this would have been the work of a bookseller, possibly Fyner, and that the book would have been sold in tacketed gatherings, in which state it would have been thought of as unbound. The presence in a copy of the *Schatzbehalter* of 1491 of a single surviving quire tacket in the final gathering in a volume with printed foliation,[[3]](#footnote-3) is more puzzling, as quire tackets would not have been needed to guide the binder in assembling the leaves in the right order, as the book is fully signed. More examples of this practice presumably lie unobserved in more incunabula and have yet to be recorded.

It would appear that incunables were sold in a variety of states ranging from unbound sheets to full bindings in boards covered in leather and there is evidence that they could be bought at an intermediate stage in their construction, as sewn bookblocks[[4]](#footnote-4) without either boards or covers but with substantial sewing structures to which wooden boards could be added once purchased.[[5]](#footnote-5) In other cases, inexpensive but durable structures were used which, to modern eyes, may appear somewhat unconventional, but which were in regular use in archival practice. These include longstitch and chainstitch through pierced sewing supports, primary tackets and unsupported sewing, in which it is often difficult to know, when they were given covers of limp parchment, whether they would have been thought of as permanent or temporary bindings. Both these and the more ‘conventional’ bookblocks sewn on sewing supports had the advantage for the bookseller both of keeping the leaves in order without either adding too much weight to a book that might need to be shipped some distance across Europe and of not pre-empting the choice of cover for an unknown customer.

The typical permanent structure was sewn on substantial sewing supports of tanned or alum-tawed skin, or, increasingly, on German bindings from the 1480s, on cord. These supports would most often be double rather than single[[6]](#footnote-6) and there is one recorded instance of triple supports.[[7]](#footnote-7) In Germany, possibly mainly in southern Germany, different combinations of single and double supports were used, with single supports (*Kapitalbünde*) at head and tail of the spine and either double or paired single supports in between them. Alternatively, a single support might be sewn in between each of the double supports (sometimes known as halfbands) or just one single support in the centre of the spine with the other supports being double.[[8]](#footnote-8) In all recorded cases, the books were sewn all-along, that is they were sewn around each sewing support in each gathering, as the economies of bypass and multi-section sewing were not introduced until the sixteenth century. Up until the 1480s, sewn paper bookblocks will often have parchment sewing guards in the centre of all the gatherings, in response to a belief that paper was not strong enough to hold the sewing thread without tearing. Increasingly in the last two decades of the century, the use of sewing guards was reduced, probably in response both to a realisation that they were not entirely necessary, and also, more importantly, as a result of the need to reduce the cost of bindings (and therefore the time taken to make them) in response to the growing numbers of books being printed. At first, the sewing guards were restricted to a few gatherings at each end of the textblock and then to the first and last gatherings only, or even just the first, before being more or less abandoned altogether by the first decade of the sixteenth century. As early as the 1480s, the single supports found on some German sewing structures which combined single and double transverse sewing supports, were replaced by false bands, to preserve an appearance that was presumably attractive to their owners at a lower cost.[[9]](#footnote-9)

The bookblocks once sewn could then be treated in different ways. They might have been sold as they were, either with uncut or cut edges and, particularly, it appears, in Italy, with cut edges and endbands, or they might have boards attached by means of the slips of the sewing supports (inboard bindings), case-type covers of parchment attached by means of secondary tackets (tacketed bindings) or by lacing the slips through the cases (laced-case bindings). The latter are most often found where the supports were made of animal skin, as cord slips were rarely laced through limp covers unless they were of an obviously temporary nature. With such substantial sewing structures, laced and tacketed cases could easily be removed and replaced by boards and leather without needing to resew the books.

The slips of transverse double cord sewing supports found on books now with tacketed parchment cases, which may sometimes (and more commonly in the early sixteenth century) be found with loops in the cords on one joint (which would have been used to secured the double supports to the sewing frame), had the cut ends of the slips on the other joint whipped with thread to stop them untwisting.[[10]](#footnote-10) This would appear to indicate that the books were bought as sewn bookblocks prepared for the addition of boards and leather, and given a parchment cover either as a temporary expedient or as an inexpensive permanent cover. It is not always easy to identify those that were subsequently given boards or some other form of cover unless there is clear physical evidence to show this, but it is sometimes possible to do so. An Italian edition of 1501 sewn on typically Italian-pattern split-strap alum-tawed sewing supports with endleaves made from a fifteenth-century Italian manuscript now has a tacketed calf parchment case-cover of an unmistakably German type, and would therefore presumably have arrived in Germany as a sewn bookblock from an Italian bookseller.[[11]](#footnote-11) Other books survive with early bindings in boards covered in leather with decorated edges on which the decoration does not go under the endbands. This shows that the book had been sewn with the edges cut and with primary-sewn endbands before a decision was made to add the edge decoration, followed by the boards and leather.[[12]](#footnote-12)

Although the great majority of surviving bindings have sewing supports of the type just described, a wide variety of different light-weight sewing structures were also used, often taken from the archival binding trade, which provided less expensive but perfectly functional and durable alternatives, but to which in most cases it would have been impossible to add boards and leather. These often survive in very small numbers, even single recorded examples, and it is hard to know how common they might once have been. They include sewing with unsupported sewing structures without adhesive on the spine, of which German and Italian examples have been recorded (genuine Greek-style bindings also made use of unsupported sewing, but of a rather different type). A variety of longstitch structures can also be found, sewn through pierced sewing supports placed either directly on the spines of the bookblocks (in which case they will usually have had parchment cases attached them by secondary tackets), or placed outside parchment cases, through which the sewing thread would also have been taken as the books were sewn. These books would therefore have been covered once the sewing was completed, and would as a result have been less expensive to make. Such structures were made in contemporary archival bookbinding practice, where they were in common use across Europe in the late middle ages. In north-western Europe, the pierced supports themselves seem usually to have been made of thick, stiff pieces of tanned skin, parchment or hide (pieces of wood have also been found as pierced sewing supports),and may be continuous, and therefore run from head to tail of the spine in one piece or in separate pieces with two or three sewing stations in each separate support. An example with a continuous pierced support made of beech wood can be found on a Günther Zainer edition of 1476 [[13]](#footnote-13) and another, with a continuous lining of thick leather with a patterned longstitch sewing, on a Delft edition of 1487 has a case of blind-tooled tanned goatskin with an envelope flap extending from the right fore-edge with a lining of medieval parchment waste attached to the pierced support by four loop-type tackets.[[14]](#footnote-14) The supports may either be sewn separately or in a single sequence from end to end of each gathering. A small number of surviving examples of this type of structure has survived with uncut edges on the text leaves, suggesting that these books were most probably sold in this state, possibly without covers, and would not therefore have been commissioned by the customer after the purchase of the book in sheets. Most would probably have been taken apart for rebinding as soon as they were sold.

One example with uncut edges, printed in Cologne in about 1485,[[15]](#footnote-15) is held together, without endleaves, by primary tackets taken through pieces of parchment at the head and tail of the spine with each primary tacket reinforced inside each gathering with short parchment sewing guards. This simple, non-adhesive structure was subsequently given a parchment case, secured to each of the pieces of parchment at the head and tail of the spine by four secondary tackets of thin cord. The cover does not look like professional work, and may therefore be that of the Father Nicolas who wrote his name inside the left cover and who, if this was the case, would have bought the text leaves held together by the primary tackets without any other form of binding or cover.

Three other incunables with uncut edges, printed in 1483, 1484 and 1495[[16]](#footnote-16) have longstitch structures sewn through pieces of parchment placed at or towards the head and tail of the spine. The sewing of each example is different from the others and all have case-type covers attached by secondary tackets, each is also of a different type. Two of them have no (and never had) endleaves, a sign of very low cost and probably a further indication of temporary status. The covers on these books, especially the rather amateur-looking one on the Quentel edition of 1495, are probably later additions to books sold without covers.

Two other incunables that retain uncut edges were sewn on sewing supports, both with double supports of alum-tawed skin, but one has the split and twisted type of rather wide, soft skin stained with a colour on the fleshside that is reminiscent of some French inboard bindings of the period,[[17]](#footnote-17) whilst the other[[18]](#footnote-18) has supports, also of soft tawed skin (though not stained), that are laced back into the reversed parchment case through separate holes, creating the v-shaped lacing (split-lacing) so characteristic of many Spanish bindings until the eighteenth century.[[19]](#footnote-19) This binding, however, has endleaves of parchment, suggesting higher expense if not permanence.

The final example known to me of an incunable with uncut edges[[20]](#footnote-20) is also remarkable both for the use of an unsupported sewing structure and the presence of quire tackets. Unsupported sewing structures, which are quick and very cheap to execute, are known to have been used on some Carolingian bindings[[21]](#footnote-21) and may possibly have been used on archival bindings in the Middle Ages, though no examples appear to have been recorded. Their appearance, or reappearance, in the late fifteenth century has not been recorded previously, and very few examples have so far been found. The most famous of these, by virtue of the printed woodblock used as the outer lamination of its laminated (and tacketed) paper case, is on an edition printed by Erhard Ratdolt in1493.[[22]](#footnote-22) Its simple 3-station unsupported sewing structure to which the cover was attached by a continuous thread tacket,[[23]](#footnote-23) suits what must have been a cheap temporary binding for a book presumably sold in this binding by Ratdolt himself.

The three other recorded examples of unsupported sewing structures are certainly Italian,[[24]](#footnote-24) and were given parchment cases attached by secondary tackets. A 1489 Ficinus was neatly prepared for sewing by adhering separate sewing guards of thin parchment to the inside of the spinefolds of the central bifolium at each of the sewing stations in the first and last gatherings, as well as to the outside of the outermost bifolia at head and tail, indicating that this was not a particularly cheap expedient. The book also has endleaves and endbands, to which the reversed goatskin parchment case was attached by secondary endband tackets as well as by secondary saltire tackets[[25]](#footnote-25) laced through the sewing guards in the outermost gatherings. The 1500 Polydor Vergil, by contrast, has neither endleaves nor endband tackets, even though it does have endbands, but has two sets of doubled saltire secondary tackets laced through the first and last gatherings and through pieces of dark brown leather placed on the spine of the reversed parchment case. Both bindings had fore-edge envelope flaps, turn-ins folded to give four thicknesses of parchment at the corners and corner tackets to secure the turn-ins of their reversed parchment covers, all of which are typical features of contemporary Italian stationery binding practice.

Tacketed covers of this sort can be found on other incunables bound in Italy, one of which,[[26]](#footnote-26) sewn on the split-strap alum-tawed sewing supports that are so typical of late-medieval Italian bindings, retains both long endband-core slips and transverse sewing support slips that would have allowed their tacketed cases to be replaced by wooden boards and leather had their first owners asked for this. This in turn suggests that the covers of these books were seen at the time within the booktrade as expendable, to be replaced if an owner so desired. Had they been thought of as permanent, it is hard to see why the endband slips would not have been cut off at the joints (as many were). The binder who sewed the copy of the *Etymologicon Magnum* printed by Kalliergis in 1499 and now in Sinai,[[27]](#footnote-27) laced each of the endband slips through the nearest sewing supports slips to keep them out of harm’s way and ready to be used to attach boards, which strongly suggests that this book was prepared for sale as a sewn bookblock without a cover, after which a parchment case (now lost) was attached to it by secondary tackets, for either temporary or permanent protection.

Not all the books with tacketed covers sewn on sewing supports could have had boards attached, but were sewn with structures either deriving immediately from the archival world, such as that found on a Deventer edition of 1491 with sewing supports made from 10 strips of printed paper waste wrapped round with tanned skin and cut off at the joints,[[28]](#footnote-28) or the Müntzbüchlein of the early sixteenth century presumably bound for a merchant to carry with him on his travels in the style of a miniature account book, complete with a parchment cover with an envelope flap with a leather strap and frame buckle to hold it shut, leather bands across the spine, and decorative lacing with narrow parchment thongs to attach the leather straps to the sides of the cover.[[29]](#footnote-29) The seven volumes of the works of Bartolus de Saxoferrato from the Court Library at Donaueschingen, printed in Venice between 1480 and 1485, were all sewn on three widely-spaced double transverse sewing supports without separate changeover stations.[[30]](#footnote-30) Slight differences in their structures show that they were bound in at least three groups as they were shipped across the Alps in sheets, and the changeover from sewing supports of alum-tawed skin to cord after the four volumes of the *Digestum Vetus* and *Digestum Novus* marks the point, early in 1482, at which the workshop responsible for them changed to using cord, which increasingly from the 1480s onwards became the most commonly-used (and, until the late sixteenth century, almost uniquely) German sewing-support material for books bound in boards. The structures on the volumes of the Bartolus are, however, relatively insubstantial, and not suited to the addition of heavy wooden boards (as folios printed on Super Royal paper they are very large books), and it would appear that they were sewn in order to have the plain calf parchment cases, without turn-ins in the typical Germanic manner, attached to them by continuous cord tackets laced through rectangular reinforcements (some made of wood covered in red tanned skin) on the outside of the spines of the parchment cases.[[31]](#footnote-31)

The other type of lace-attached cover is the laced-case, in which the cover is attached to the bookblock by lacing the sewing support slips (and/or the endband slips, if there are any) through the joints of the cover. Although very common in the sixteenth century, examples from the fifteenth century are harder to find, though enough Italian laced-case bindings covered in both new parchment (often reversed to show the creamy-white fleshside of the skin) and leaves of medieval manuscript waste survive from the last quarter of the fifteenth century to suggest that it was by then regarded as a regular feature of the Italian booktrade.[[32]](#footnote-32) As with tacketed cases, it would have been a simple matter to remove the laced-case covers and replace them with boards and leather if required. Covers could be attached through a combination of both secondary tacketing and slip-lacing, a technique only recorded on Italian bindings. This might be done by lacing the sewing-support slips through the cover and using endband tackets to secure the cover to the endbands,[[33]](#footnote-33) or reversing this process and lacing the endband slips through the cover and using secondary tackets to attach the cover to the sewing supports.[[34]](#footnote-34)

Outside Italy, laced-case bindings that can be dated with any confidence to the fifteenth century are much harder to find, but a single French example has been recorded on an edition of 1473, which is clearly of a very early date.[[35]](#footnote-35) The book was sewn on sewing supports made from a rather thin soft alum-tawed skin stained a reddish brown on the fleshside (a material every similar to the Houghton Library volume mentioned above, see note 8) and the head and tail edge turn-ins are wide enough to overlap each other on the inside of the cover, a feature found on some other French laced-case parchment-covered bindings in the sixteenth century. It also had an envelope flap extending from the right cover, originally with an elaborately-laced wrap-around tie. Without other recorded examples, it is impossible to say what part such bindings may have played in the French booktrade, but it is a well-made and quite sophisticated binding, as evidenced by the hidden lacing of the sewing-support and endband slips under the turn-ins, which suggests that it was not a one-off.

Limp laced-case covers of tanned skin can also be found, one, perhaps significantly, on a medical treatise that its first owner may have wanted to carry around with him.[[36]](#footnote-36) Another sort of binding with a limp cover was made by simply pasting a piece of tanned or alum-tawed skin to the spine and endleaves of a sewn bookblock with transverse sewing supports (and therefore raised bands), to create drawn-on covers. In the late fifteenth century, these inexpensive bindings, which do not have endbands, have been found on small-format editions and would appear also to have been made for books that would be carried around. A pocket-sized (142 mm tall) edition of the *Meditationes* of St Bernard of Clairveaux,[[37]](#footnote-37) in a binding with a drawn-on cover of blind-tooled tanned calf, has an envelope flap extending from the fore-edge of the left cover, confirming its status as a ‘portable’ book. As with other bindings without rigid boards, it is likely that many examples of this type of binding will have been replaced by more conventional library bindings, and they are now seldom encountered.

Medieval bookbinders across Europe also made frequent use of longstitch structures sewn through, and therefore supported by, their covers, for both archival and library books. These flexible, durable and above all inexpensive structures seem first to have been used on printed books by Italian bookbinders in the last two decades of the fifteenth century. The great majority of these early examples (the structure remained in use in Italy until well into the nineteenth century) also make the earliest known use on books of the thick cover paper known as cartonnage as their covering material, though a small number of recorded examples also made use of secondary covers, which were pasted around the primary cartonnage covers and hide the sewing thread visible on the spines of the primary covers. The secondary covers, which may well have been added to the bindings after they were purchased, might be of new parchment,[[38]](#footnote-38) medieval parchment manuscript waste[[39]](#footnote-39) or reversed alum-tawed skin.[[40]](#footnote-40) One remarkable survival has a secondary cover of paper, printed on the left side of the cover with a large woodcut of St George and the dragon and on the right the sacred monogram, each within a circular medallion and surrounded by renaissance ornament.[[41]](#footnote-41) The woodcuts, thought to have been produced in Ferrara in 1496, are separated on the spine by two narrow woodblocks of different widths but of the same height as the blocks used on the sides and cut with simple decorative patterns. These spine blocks were clearly intended, presumably with others of different widths, to be bought as a ‘set’, to allow the distance between the two large blocks to be adjusted to fit any thickness of book in the same Chancery quarto format. This in turn suggests that large numbers of books would once have had bindings of this sort, or the investment in the presumably expensive woodblocks would have been wasted.

As with the laced-case bindings, it is hard to find examples of contemporary longstitch bindings on incunables outside Italy, but a single example, on a Besançon edition on 1488,[[42]](#footnote-42) with a case-type primary cover made of paste-laminated board of printed paper waste and a secondary cover of reversed alum-tawed skin coloured with a yellow-ochre stain on the fleshside, could be either Italian or French. The presence of ties at the head and tail edges of each side of the cover is a feature that might suggest an Italian origin, though it was practice that was imitated elsewhere and binding practices in southern France often follow Italian rather than northern practices.

Secondary covers made from tanned skins together with added boards were also used by Italian binders working for owners who had bought their books in longstitch bindings sewn through plain cartonnage primary covers but who apparently wanted leather-covered books at low cost. These bindings have secondary covers of tooled leather, and at least four examples of such bindings have been recorded, all Italian, three of which date from the fifteenth century.[[43]](#footnote-43) The conversion was done by working primary-sewn endbands through the primary cartonnage cover, lacing the endband slips through the cover, and adding a secondary endband sewing of coloured thread. Thin boards of cartonnage were glued to the sides of the primary cover to stiffen them and the book was covered with the chosen covering material – a tanned hairsheep or goatskin in all the recorded examples. The covers could then be tooled, with ties laced through the sides (the covers are generally too thin for clasps). Where the covers are intact, it is not possible to be absolutely sure that the bindings were not intended to have leather covers from the start, but the 1511 Vitruvius, which has now lost its leather secondary cover, has an early manuscript title on the spine of the primary cover, indicating that it was first bought without the secondary cover. Because of the longstitch structure and the absence of sewing supports, these bindings have smooth spines, almost the only leather-covered bindings of this period to do so other than the Greek-style bindings described below.

The majority of incunables that survive in contemporary bindings have boards, and the great majority of those boards were of wood, most often of quarter-sawn or cleft timber, to reduce the likelihood that the boards would warp. Wood from beech and oak trees was used on the great majority of fifteenth-century European books. Both are close-grained hardwoods and beech was the wood most commonly used in both Germany and Italy and oak was commonly used in most northern European countries, though both will be found in both areas and wood from other trees can also be found.[[44]](#footnote-44) Not all wooden boards were made from indigenous trees, and Baltic oak has been found on bindings made in England during the fifteenth century.[[45]](#footnote-45) The use of wooden boards was inherited from the manuscript tradition, where they were used with fastenings to hold books written on parchment leaves shut under pressure to prevent the leaves from cockling.

The attachment of wooden boards to sewn bookblocks was done by means of securing the slips of the sewing supports and/or endband cores to the boards. This could be done in a bewildering number of different ways, generally using one of two basic types, using tunnels drilled from the spine edge parallel to the surface of the boards or through holes drilled from one surface to the other. Tunnels could only be used if the spine was flat, in which case the slips could be laced through tunnels drilled in the spine edges of the boards, which were placed flush with the spine of the bookblock. This technique was first used in the Romanesque period throughout Europe, and survived into the sixteenth century in Italy and Spain, while it was gradually abandoned through the fifteenth century in northern European countries, to be replaced by a technique in which the slips were pulled over the spine edges of the boards and then either laced through holes drilled through the boards (in which they were secured with wooden pegs or wedges) or by fastening them in channels cut into the external surface of the board where they were secured with either wooden (trenails) or iron nails. It is likely that many of the different lacing patterns found in the boards of medieval bindings, including those found on incunables, may be identified with individual workshop or binders, but not enough evidence has as yet been collected to make this possible. One extraordinarily elaborate method of board attachment, in which the untwisted and frayed out slips of paired single cord sewing supports were secured in dovetail channels by horizontal wooden plugs, the outer ends of which were carved to match the sewing supports, is almost certainly Bavarian, if not more limited to an area close to Munich.

The boards of Italian bindings with tunnels drilled in their spine edges will often be flat on both surfaces, with square edges, or bevelled on the inner surface around the head-, tail- and fore-edges, and only occasionally with a very shallow external peripheral cushion or bevel. The type in which the slips were pulled over the spine edges of the boards was well established in northern Europe before the introduction of printing and was combined with a much wider range of board shapes.[[46]](#footnote-46) Most of this shaping would appear to have been intended to reduce the apparent thickness of the boards around the edges, sometimes with a gentle curve from edge to edge (cushioned boards) removing 50% of the thickness of the board around the edges, or, more cheaply, by means of peripheral cushions or shallow bevels around the edges of the boards, which also had the advantage of preserving a flat surface in the centres of the boards suitable for the use of panel stamps. In the German world, boards might be beveled on either surface, but a very typical pattern emerged towards the end of the fifteenth century, in which continuous internal bevels on the head, tail and of fore-edges of the boards met short centre bevels which left the outer part of the board square at the corners. Such boards often have short clasp bevels above and below the catchplate and strap attachment sites on the boards.[[47]](#footnote-47)

Reference is made in some contemporary inventories to books bound in boards without covers[[48]](#footnote-48) and it is possible that books could also have been bought in this state so that the first owner could have decided on the sort (and cost) of the cover, while the bookseller protected his investment in the expensive bookblock by the addition of boards. Two examples have been recorded which have survived in this state, neither of which has any sign of ever having had any sort of covering,[[49]](#footnote-49) but other books have indications within details of their structures which show that they may have been bought in this state and been subsequently covered for their first or an early owner. These indications include the use of the outer element of the endleaves as board stabilisers, adhered to the boards before the books were covered and therefore lying under the turn-ins of the cover, secondary endband braiding in thin lengths of alum-tawed skin or parchment of a type most often worked through the cover and around the primary endband, but which was worked before the book was covered or, as mentioned above, the decoration of the head and tail edges stopping short of the endbands. All of these features may indicate that the books could have been covered (and the edges of the bookblocks decorated) at any time after the rest of the forwarding was completed.

The use of paper boards has been recorded from long before the invention of printing,[[50]](#footnote-50) but they are not common in surviving contemporary bindings on incunables, and when described or even examined, the means by which these laminated boards were made is not always clear. They could be made, following the well-established Islamic practice, by pasting sheets of already-made (and usually already used) paper together until the desired thickness was achieved, and these paste laminates (or pasteboards), are the type thought to have been first used in Europe, and were certainly in use by the mid-fifteenth century in northern Italy, and remained so throughout the sixteenth and well into the seventeenth century. There is also evidence that French paper mills began to make couched laminate boards (or millboards), in which sheets of new paper were couched in the paper mill one on top of the other straight from the vat before being pressed heavily into boards, at the end of the fifteenth century, [[51]](#footnote-51) and it is possible that some of the early Bolognese paper boards may also have been couched laminates (it is not always easy to determine the manufacturing process). [[52]](#footnote-52) As the first purpose-made paper bookbinders’ board, it would seem likely that the use of couched laminate boards would have been more widespread than the currently available evidence would suggest, but many may have been discarded as a result of the softening of the boards though the separation of the layers of paper; it is only in bindings of the 1520s and later that they are found in large numbers. It is not at all clear how the decision between the use of wooden or paper boards was made, as early paper boards are found on bindings of all sizes and at all levels of cost, from those covered in undecorated reversed alum-tawed skin to very elaborately and fashionably decorated bindings, possibly influenced by Mameluke bindings from Cairo, where the use of pasteboards, of course, was well established.[[53]](#footnote-53)

The use of laminated paper boards seems to reflect a desire for a lighter-weight alternative to wooden boards, (which would also have been cheaper than wooden boards) and other materials were also tried out, using animal skin materials. A laminate of alum-tawed and tanned skin was used by the Unicorn binder in Cambridge in the 1490s[[54]](#footnote-54) and tanned leather only in a binding which combines both German and Italian features on a Koberger edition of 1496.[[55]](#footnote-55) A copy of *Amphorisimi secundum doctrinam Galeni* printed in 1489 is so well preserved in its cover of alum-tawed pigskin that the materials from which its somewhat flexible (and therefore not wooden) boards were made cannot be identified. *[[56]](#footnote-56)*

Most incunables in contemporary inboard bindings (and many in limp bindings) will have endbands sewn at the head and tail of the spine (unless they have Kapitalbünde, which take over much of the structural role of the late medieval endband).[[57]](#footnote-57) Primary endbands, in which a core running across the spine at head or tail was attached to the bookblock by thread, were most often at this date very carefully sewn without a front bead (to allow for a secondary sewing), tied down into the centre of each gathering with the thread emerging on the spine below the kettle stitches. In addition, the slips of the endband cores were attached to the boards (or limp covers), thus reinforcing the joints at their most vulnerable points. The endbands on less expensive bindings were often left like this, either ready to be given a coloured secondary sewing should the limp covers be replaced by boards and leather, or to be left as they were on the less expensive inboard bindings. Typical of these are the bindings with beech-wood boards and quarter leather covers popular in northern Italy until well into the sixteenth century.[[58]](#footnote-58) The equally common southern German examples of bindings with beech-wood boards and quarter spines of alum-tawed or tanned skin will almost always have stuck-on and not sewn endbands. Decorative secondary sewing, carried out after the primary sewing was completed and either before or after the books were covered, is found in a wide variety types. It could be sewn through the covering skin, if added after the book was covered, or inside the cover if executed before the book was covered, either in coloured thread (often silk), sometimes incorporating thin subsidiary cores, or, particularly in northern Europe, braided with narrow strips of alum-tawed skin or parchment. Covered endbands, in which the covering material was brought over the primary endbands down to the cut edges of the bookblock and sewn through under the endband core with a secondary saddle-stitch sewing, were also in common use across northern Europe, and remained so well into the sixteenth century.[[59]](#footnote-59)

Stuck-on endbands, in which strips of parchment, leather, alum-tawed skin or textile were glued across the head and tail ends of the spine and onto the external surfaces of the boards are found from the mid-fifteenth century, but only in the Germanic world. They were often folded over lengths of cord or animal skin, and then given a secondary endband sewing or braiding, and perform the same function as transverse spine linings, which by virtue of their position could be decorated with coloured thread or thongs. German binders also experimented with a number of what appear today to be unusual forms of endband sewing, including cores whipped to the bookblock with angled external tiedowns, and cores sitting in square-cut recesses at the head and tail of the spine secured by internal tie-downs only.[[60]](#footnote-60)

Endbands of an entirely different type were introduced into western Europe with a style of binding first found in Venice in the 1460s. These were bindings made in imitation of Greek-style bindings, the first known Italian-made examples of which were made for Gioachino della Torre (or Torriano), abbot of the monastery of SS. Giovanni e Paolo in Venice on a small group of manuscripts written in Greek.[[61]](#footnote-61) Genuine Greek-style bindings, with their unsupported structures, heavily rounded and smooth spines, bookblocks cut flush with their wooden boards (which usually have grooved edges), projecting endbands and fastenings consisting of edge pins on the left board and pin clasps attached to the opposite board by triple or double interlaced leather straps were entirely different from the typical inboard bindings then made in northern Italy. When asked to imitate them by their humanist patrons, many Italian binders, unfamiliar with (or not trusting) the unsupported sewing structures, sewed these books on the typical raised, split-strap, alum-tawed, sewing supports of late fifteenth-century Italian bookbinding practice. Others made use of thin, single raised sewing supports with thick spine linings between them to create the smooth spines characteristic of genuine Greek-style bindings. These hybrid Greek-style bindings began to be supplanted by the genuine sort, possibly made by Greek binders working in Venice, only in the last decade of the fifteenth century.[[62]](#footnote-62)

As expensive bindings made for a wealthy and discriminating clientele, it not surprising the most of the Greek-style bindings, both genuine and hybrid, were covered in the imported coloured goatskins made fashionable by the Paduan humanists who first had their books bound in gold-tooled leather in the first half of the fifteenth century.[[63]](#footnote-63) This type of skin is recorded north of the Alps in Bruges in the 1470s,[[64]](#footnote-64) but did not come into regular use in northern Europe until the sixteenth century. Although the skins of some domestic goat would appear to have been used, as well as the skins of deer (possibly more often in imagination than reality), the skins of only a small number of animals was in regular use, prepared mostly in one of two ways, producing either white (alum-tawed) skins or brown (tanned) skins (the same skins turned into parchment are rarely found on fifteenth-century inboard bindings, their use being largely restricted to limp bindings at that date). The white alum-tawed skins were often stained on one or other surface (the use of reversed skins, with their fleshsides outwards, was a common practice throughout medieval Europe), with shades of pink as the most common colour, though blue, green and yellow will also be found. The skins of domestic animals are those most often found, with calf, sheep (including hairsheep) and pig predominating, the last of these being particularly associated with German bookbinding. For some reason, calfskin was seldom, if ever, used as a covering material at this period in Italy or Spain. Expensive woven textiles were also used for the highest quality work, though few of these have survived intact.[[65]](#footnote-65)

The tooled decoration of covers of tanned or alum-tawed skin was well established by the time of the introduction of printing, using combinations of the different types of finishing tool then in use. The decorative use of these tools lies outside the scope of this account of the techniques and materials of bookbindings made in the second half of the fifteenth century, but there is an extensive literature on the subject. The types of tool used were few in number, and two of them, the roll and the panel stamp came into common use during this period, no doubt in response to the increasing numbers of printed books to be bound and the economies of use that they offered. The most often-used finishing tools were the straight-line tools, either fillets (wheels rotating in axles fitted to wooden handles and machined with single or multiple lines around their circumferences), creasers (quadrant-shaped tools in wooden handles, the curved edges of which were engraved with single or multiple lines) or possibly pallets (also fixed tools with a curved surface fitted into wooden handles). These tools were primarily used to create rectangular frames and other geometrical designs (saltire crosses, lozenges, lattices, etc.) on the sides of bindings, which might then be further decorated with small hand tools. Panels allowed larger areas of the cover to be decorated with highly finished designs in single impressions and rolls, wheels rotating in axles fitted to wooden handles with a design cast and/or engraved into their circumferences, allowed the faster tooling of the large frames and simple geometrical designs with which covers were often decorated. An enormous number of smaller hand tools, with designs cut into metal was used, the identification of which can allow the decoration of covers to be ascribed to individual workshops.

Cut-leather decoration (also known as cuir ciselé), in which the surface of the skin around the design motifs was cut with a knife and the background depressed slightly by the use of repeated impressions of small dots, was used in several countries, most notably in Germany, from the second half of the fourteenth century.[[66]](#footnote-66) German binders also used a tool resembling the outline of the head and shoulders of the human body (Kopfstempel), repeated impressions of which within enclosed compartments in the design on a binding had the effect of tooling the background, leaving the untooled leather as the main design motif.[[67]](#footnote-67) In the Germanic countries there was also a tendency to tool the left cover more elaborately than the right, a practice no doubt related to the storage of books horizontally or on sloping shelves with the left board upwards, hence also the positioning of the catchplates of the fastenings (see below) and titling on the left board (in bindings made in England, France, Spain and most of Italy, the catchplates were typically fastened to the right board).

The tooling was primarily in blind (very occasionally picked out in colours), but gold-tooling was introduced in the mid fifteenth century from the Islamic world via either Spain or Italy, but was not established in other European countries until the sixteenth century. Small gilded or coloured gesso roundels stuck into holes of the same size cut into the leather covers of bindings (punch-gilt decoration or punte alla fiorentina) were also used in Italy to decorate more expensive bindings.[[68]](#footnote-68)

Inboard bindings, primarily those with wooden boards, were also often fitted with metal fastenings and furniture.[[69]](#footnote-69) The fastenings would typically consist of a fixed catchplate on the fore-edge (and at head and tail in Italy and Spain) on one side and a clasp on the other side, usually attached to the boards by means of a strap of tanned and/or alum-tawed skin or parchment (sometimes, in Italy, covered by a woven textile) secured in a recess in the surface of the board by nails driven through a shaped metal strap plate. The use of such fastenings was a continuation of a common medieval practice in which they were used to hold parchment leaves under pressure between rigid wooden boards when books were closed in order to keep them flat. The more sophisticated clasp designs, made of cast, carefully finished and engraved and stamped copper-alloy, or, at the most expensive levels, of cast silver or silver gilt, sometimes also enameled or with figurative or decorative paintings under transparent covers,[[70]](#footnote-70) would have been made by professional metalworkers and do not therefore necessarily offer much guidance as to where the bindings to which they are attached may have been made. A cheaper type, often found on German bindings, made from lengths of copper alloy sheet, itself often stamped with lettering or decoration which sometimes fits the design of the catchplates and clasps, but equally often appears to be cut at random from larger pieces of decorated metal, could have been made by the binders. In one typical type, the catchplate was bent over at a right angle at its outer end and a slot for the hook of the clasp was filed out of the fold (bent and slotted catchplates).[[71]](#footnote-71) Catchplates with ferrous or copper alloy bars held in their forked outer ends are also found on northern European bindings of the end of the fifteenth-century,[[72]](#footnote-72) but are much more common in the sixteenth, when they replace the bent and slotted type in the first half of the century. In Italy the typical catchplate has a raised lip formed by rolling back the outer edge of the catchplate.[[73]](#footnote-73) The shapes of catchplates as seen on the surface of the boards mostly follow a large number of standard shapes, often bifurcated at the inner end on German bindings (resembling the antlers of a deer in some elaborate cases,[[74]](#footnote-74) or a pair of duck’s heads in profile, placed back to back in others[[75]](#footnote-75)), or resembling a fish- or bird’s tail.[[76]](#footnote-76) The catchplates and clasps could also be pierced (gothic tracery and elaborate foliate designs were often used for this), allowing pieces of coloured paper or parchment placed under them to be seen through the holes.[[77]](#footnote-77)

The hooked clasps could be made from a single thickness of metal, secured to the clasp straps with a separate rivet plate on the other side of the strap to hold the rivets (this was the typical northern European pattern), or from short lengths of thinner metal folded in half and the folded end bent over to make the hook (this was the more common pattern in Italy), and the strap inserted between the two sides of the folded metal and riveted through both.

Both genuine and hybrid Greek-style bindings almost always used the very characteristic Greek pattern of fastening in which metal edge pins were inserted into the edges of the left board (often at head and tail as well as on the fore-edge) and ring clasps were attached to the right board by means of triple (occasionally double) interlaced leather straps laced through three (or two) holes close to the edge of the board. The earlier medieval pattern of using side pins, fastened to or driven into the surface of one board with long straps attached to the other with either a pin clasp at the end or a hole in the strap reinforced by plates of metal riveted on each side it is still occasionally found on printed books into the beginning of the sixteenth century. Two fastenings are usually found on the fore-edges of all but the smallest books, but single fastenings will be found on some less expensive bindings on larger books. Metal fastenings could be fitted to books with paper boards, but these were more often secured by ties, mostly made from alum-tawed skin, laced through single holes made in the boards and covering material, and these can be found at head and tail as well as on the fore-edges of books. Ties of various types were also used on most bindings with limp covers.

Inboard bindings with wooden boards were also often fitted with metal corner and centres, sometimes elaborately decorated, often incorporating integral bosses and with the corners typically folded over the edges of the boards, where they were secured with nails.[[78]](#footnote-78) Separate bosses of metal, turned bone or wood[[79]](#footnote-79) were also used, usually placed in the corners and the centres of the boards. They were intended to protect the binding and its cover as well as to decorate it, but the protective function could be enhanced, especially in Germany, by the addition of metal rubbing strips.[[80]](#footnote-80) An unusual piece of metal furniture, the fore-edge stabilizer, found on some German bindings, was intended to hold books square on sloping shelves, and prevent the left board dropping and twisting the spine through gravity. It did this by means of a fitting attached to the left board with a hole in its outer end which projected beyond the fore-edge of the board and fitted over a metal bar attached to the right board when the book was closed.[[81]](#footnote-81)

This is the type of binding that Dibdin had in mind when he wrote of the 'nameless host of Heroes of Bands and Blind Tooling', but the range of contemporary bindings to be found on incunables is far wider, from the simplest structures in limp parchment cases to the most refined bindings with gold-tooled filigree work in imported tanned goatskin over thin paper boards. The survival of the former often only in single instances has made them as rare today as the latter, completely distorting our picture of bookbinding in the second half of the fifteenth century. It is to be hoped that more examples of both are still to be found and recorded, allowing us in time to construct a more balanced picture of a very diverse field.

1. # Thomas Frognall Dibdin, *The Bibliographical Decameron: Or, Ten Days Pleasant Discourse Upon Illuminated Manuscripts, and Subjects Connected with Early Engraving, Typography, and Bibliography*, 3 vols, London: for the Author, 1817, vol. II, p. 425

   [↑](#footnote-ref-1)
2. Peter Lombard, *Glossa in epistolas Pauli,* Esslingen: C. Fyner, 1473 (Wellcome Institute Library, 4.f.2); Stephan Fridolin, *Schatzbehalter der Wahren Reichtümer des Heils*, Nuremburg: Anton Koberger 1491 (Houghton Library, WKR 2.2.1 (\*50R-62)); Joannes de Turrecramata, *Meditationes*, Ulrich Han & Simon Nicolai Chardella, 1473 (Bodleian Library, Bod-Inc. T-280+Auct. 6Q). [↑](#footnote-ref-2)
3. Stephan Fridolin, *Schatzbehalter der wahren Reichtümer des Heils*, Nuremburg: Anton Koberger, 1491 (Houghton Library, WKR 2.2.1 (\*50R-62)) [↑](#footnote-ref-3)
4. Definitions of the technical terms used throughout this text can be found in the Language of Binding On-line Thesaurus at www.ligatus.org.uk/lob. [↑](#footnote-ref-4)
5. For example: Michael de Dalen, *Casus summarii Decretalium, Sexti et Clementinarum*, Strasburg: Printer of the Jordanus (Georg Husner), 1485 (BSB, Inc.Extr.800). [↑](#footnote-ref-5)
6. Szirmai, 1999, p. 183 [↑](#footnote-ref-6)
7. *Codex (Corpus juris civilis)*, Mainz: Peter Schoeffer,1475 (Harvard Law School Rare Aa C822d 475 H9598) [↑](#footnote-ref-7)
8. Iamblichus, *De Mysteriis Aegyptorum, Chaldæorum, Assyriorum etc.*, Venice: Aldus Manutius, 1497 (University of Kentucky Special Collections Library, PA 4220.A4.D40) [↑](#footnote-ref-8)
9. Niccolò de’ Tudeschi, *Lectura super quinque libros decretalium*, Basel: Michel Wenssler, 1477 (Houghton Library, Inc 7482 (v.5)) [↑](#footnote-ref-9)
10. A copy of Michael Scot, *Liber phisionomie*, Basel: Johann Amerbach, 1485 (HAB, 104.20 Quodlibetica) retains looped slips in the double cord transverse sewing supports in the right joint and cut and whipped slips in the left. The parchment case is held to each of the supports by 2 loop-type cord tackets laced through the cover and small square leather reinforcements on the spine. A copy of Guillermus Parisiensis, *Postilla super epistolas et evangelia*, Nuremburg: Anton Koberger, 1488 (HAB, E 33.2° Helmst) retains loops in the left joint, laced through and tacketed to a case made from a parchment document, with long whipped slips in the right joint (one only surviving). [↑](#footnote-ref-10)
11. *Instituta cum summariis*, Venice: Paganinus de Paganinisa Brixiensis, 1501 (HAB, L 28 Helmst 8°). For a description and illustration see Pickwoad, 2000, pp.122-3 and Pl.1, p. 126. [↑](#footnote-ref-11)
12. By way of example, Astesanus de Ast, *Summa de casibus conscientiæ*, Venice: Leonardus Wild for Nicolaus de Francfordiæ, 1480 (Biblioteca Communale di Foligno, A.VIII.3.8) [↑](#footnote-ref-12)
13. The copy of *Barlaam et Josaphat*, Augsburg: Günther Zainer, 1476 (Berlin Staatsbibliothek, 4° Inc 35, ISTC ib00127000) has a continuous pierced support of beech wood through which the book was sewn. The book has been resewn and the pierced support and probably the parchment sewing guards are all that remain of the original binding. [↑](#footnote-ref-13)
14. *Die duytsche souter*, Delft; Jac. Jacobsz. van der Meer, 1487 (Leiden University Library, 1498 F 3, ISTC ip01070500) [↑](#footnote-ref-14)
15. Joannes Versor, *Dicta versoris super septem tractatus Magistri Petri Hispani, cum textu* Cologne: Heinrich Quentel, 1485 (HAB, O 22.2° Helmst). This book is discussed and illustrated in: Pickwoad, 2012, pp. 41-2 and Fig. 7. [↑](#footnote-ref-15)
16. Guillermus Parisiensis, *Postilla Guilerini super Epistolas et Evangelia de tempore et de sanctis et pro defunctis, summa diligentia iterum bene emendate*, Strasburg: printer of the 1483 Jordanus de Quedlinberg [Georg Husner], 1483 (Lambeth Palace Library IH 98.8); Pope Gregory I, *Dialogorum libri IV*, Cologne: Bartholomäus von Unckel, 1484 (HAB, 100.4 Theol. This book is described and illustrated in Pickwoad, 2012, pp.43-4, and Fig. 8) ; *Formularium instrumentorum ad usum Curiae Romanae*, Cologne: Heinrich Quentel, 1495 (HAB, 974 Helmst 4°). [↑](#footnote-ref-16)
17. *Summa perfectionis**magisterii* : [and other tracts], Rome: Eucharius Silber, 1483-90 (Huntington Library 5787) [↑](#footnote-ref-17)
18. Albertus de Saxonia, *Quaestiones in Aristotelis libros de caelo et mundo. Ed: Hieronymus Surianus*, Venice: Bonetus Locatellus, for Octavianus Scotus, 1492 (El Escorial, 81.IX.21) [↑](#footnote-ref-18)
19. The two slips of each of these supports are now knotted together inside the cover, though whether this was done by the binder responsible for the binding or subsequently it is impossible to say. [↑](#footnote-ref-19)
20. Joannes de Turrecramata, *Meditationes*, Ulrich Han & Simon Nicolai Chardella, 1473 (Bodleian Library, Bod-Inc. T-280+Auct. 6Q). I am grateful to Andrew Honey for bringing this book to my attention. [↑](#footnote-ref-20)
21. J. Szirmai, 1999, p.100-102 and Figure 7.2 [↑](#footnote-ref-21)
22. Obertus de Horto translated by Jodocus Pflantzmann, *Das Buch das Lehrenrecht*, Augsburg: Erhart Ratdolt, 1493 (British Library, I.B. 6739. Described and illustrated in Nixon, 1956, pp.14-17 and Pickwoad, 2012, p. 42 and fig. 7. The Pierpont Morgan Library has another example of the wrapper (PML 20611, described and illustrated in Needham, 1979, pp. 117-9) [↑](#footnote-ref-22)
23. Pickwoad, 2000, pp. 125 and 138, and plate 7 [↑](#footnote-ref-23)
24. Marsilius Ficinus, *Liber de uita. In tre libri diuisus : Primus de uita sana. Secundus de uita longa. Tertius de uita c[a]elitus*, Florence: Antonius Mischominus, 1489 (Cardiff University Arts and Social Studies Special Collections, Incunabula 79); Polydorus Vergilius, *Proverbiorvm Libellvs*, Venice: Cristoforo de Pensis or Joannes de Cereto de Tridino alias Tacuinus, 1500 (Bogisic Museum, Cavtat, 3504 A.VIII.3/17) and Guido da Pisa, *Incomincia il libro chiamato fiore de Italia: ilquale il re Consta[n]tino lo fece tradure de latino in vulgare: nelquale si tractano le magnanimitade de Italia ...*., Bologna: Ugo Rugerius, 1490 (HAB, 126.3 Historica) [↑](#footnote-ref-24)
25. Saltire secondary tackets, in which the lengths of skin laced across the spine form a saltire (or St Andrew’s) cross, are a feature of many Italian tacketed case-covers at all periods. [↑](#footnote-ref-25)
26. Ioanne Duns Scotus, *Reportata Parisiensia*, Bologna: Johannes de Annunciata de Augusta, 1478, bound with Hervé de Nédellec, *Quatuor quodlibetica*, Venice: Raynaldus de Novimagio, 1486 (Biblioteca Provinciale dei Frati Minore di Firenze, BPF INC.2.75a; BPF INC.2.95. The binding is described and illustrated in Frati Minore, 2012, pp. 209-10). Three other volumes in Italian tacketed cases have endband core slips that have been cut short at about 10 mm from the end of the sewing – too long for typical binding practice and too short to be used for any form of board attachment and would possibly have been cut of by an owner who did not want full length slips but didn’t dare cut them any shorter (Petrus Mantuanus, *Logica*, Venice: Bonetus Locatellus, 1492 (Bibliothéque Mazarine, Inc. 657D); Petrus Lombardum, *Liber Sententiarum*, Venice: Franciscus de Madis, 1486 (Bibliotheca Communale di Terni, A. VIII. 2. 5.) and Valerius Maximus, Facta et dicta memorabilia. Comm. Oliveruius Arzignanensis, Venice: Bartholomaeus de Zanis, 1497 (Philadelphia Free Library, Added 1968). [↑](#footnote-ref-26)
27. *Etymologicum magnum graecum.* Venice: Zacharias Callierges for Nicolaus Blastos & Anna Notaras, 1499 (St Catherine’s Monastery, Mount Sinai) [↑](#footnote-ref-27)
28. Alexander de Villa Dei, *Glosa prima partis Alexandri Joan[n]is synthes[is],* Deventer: Jakob von Breda, 1491 (HAB, 19.7 Grammatica) [↑](#footnote-ref-28)
29. *[Ein ausgerechnetes Müntzbüchlein]*, n.p., n.d. (HAB, 8 Arithmetica). Described and illustrated in Pickwoad, 1999, pp. 58-61. A copy of *Vocabularius: Gemma vocabulorum*, Deventer: Richardus Pafraet, 1497, also bound in an account-book binding with a covering of blind-tooled tanned hairsheep or goat, was included in: Gumuchian et Cie., *Catalogue des Reliures du XVe au XIXe siècle, en vente a la Librairie Gumuchian & Cie*, Paris, 1929, item 6 and plate III. [↑](#footnote-ref-29)
30. Bartolus de Saxoferrato, *Digestum vetus. Super prima [secunda] parte Digesti veteris*, Venice: Petrus Maufer, Joannes de Gregoriis, Hercules de Buscha et Socii, [I:] 1480, [II:] 1482; *Digestum novum: Super prima [secunda] parte Digesti novi*, Venice: Petrus Maufer et Socii, [I:]1482, [II:] ca 1482; *Codex super prima [secunda] parte Codicis*, Venice: Petrus Maufer et Socii, [I:] 1482, [II:] 1482; *Consilia, quaestiones, et tractatus*, Venice: Joannes et Gregorius, de Gregoriis, de Forlivio, 1485 (Sothebys, *Incunabula from the Court Library at Donaueschingen. Sold by Order of his Supreme Highness Joachim Prince zu Fürstenberg*, London: Sothebys, 1994, lot 44, pp. 54-55 [↑](#footnote-ref-30)
31. For a more detailed description of these bindings see: Pickwoad, 2000, pp. 134-5 and 143 [↑](#footnote-ref-31)
32. For example: Roberto Carraciola de Licio, *Predicationum de adventu Christi*, Venice: Johann da Colonia & Johann Manthen, 1474/5 (Biblioteca Communale di Foligno, A.VI.4.11) [↑](#footnote-ref-32)
33. Petrus Mantuanus, *Logica*, Venice: Bonetus Locatellus, 1492 (Bibliothèque Mazarine, Inc.657D) and Michael de Carcano, *Sermonarium de poenitentia per adventum et quadragesimam*, Venice: Georgius Arrivabenis, 1496 (Biblioteca Communale di Foligno, A.VI.1.6) [↑](#footnote-ref-33)
34. This arrangement has not yet been recorded on an incunable, but has been found on a copy of: Plato, *Opera*, Venice: Aldus Manutius, 1513 (St Catherine’s Monastery (Mount Sinai), 2423/1724) [↑](#footnote-ref-34)
35. Nicolas de Hannapes, *Auctoritates utriusque testamenti*, Paris, 1473 (Cambridge University Library, Inc.5.D.1.2a[2392]). A slip of paper covered in manuscript in a fifteenth-century hand discovered tucked in under the turn-ins of the right side of the cover suggests an early date for the binding. [↑](#footnote-ref-35)
36. Johannes de Gaddesden, *Rosa Anglica Practica Medecine* Ed: Nicolaus Scyllacius, Pavia: Franciscus Girardengus and Johannes Antonius Birreta, 1492 (seen in the stock of Hamish Riley Smith, bookseller, in July 1980) [↑](#footnote-ref-36)
37. Bernardus Claravallensis, *Meditationes de interiori homine*, Paris: Pierre Levet, 1495 (National Library of Scotland, Inc. 260) [↑](#footnote-ref-37)
38. Rufius Festus Avienus, *Arati phaenomena*, Venice: Antonius de Strata de Cremona, 1488 (Houghton Library WKR 1.1.10) [↑](#footnote-ref-38)
39. Publius Ovidius Naso, *De arte amandi*, Venice, 1500 (HAB, 95 Poetica) [↑](#footnote-ref-39)
40. Robertus Caracciolus, *Q[ua]dragesimale de peccatis [sermones] f[rat]rem Robertu[m] caracholu[m] de licio*, Venice: Andreas Torresanus de Asula, 1488 (Princeton University Firestone Library, BX1756.C37 S5 1488). This secondary cover was almost certainly added north of the Alps. The book is described and illustrated in: Sothebys, 1994, lot 85, pp. 88-9. [↑](#footnote-ref-40)
41. Battista Fregoso, *Anteros, sive Tractatus contra amorem*, Milan: Leonardus Pachel, 1496 (Library of Congress, Rosenwald 313). Illustrated and described in: Foot, 1999, p. 248 and pp. 335-7 [↑](#footnote-ref-41)
42. Rodericus Zamorensis, *Speculum humanae vitae*, Besançon: Peter Metlinger, 1488 (Royal Library, Copenhagen, Inc. 4369) [↑](#footnote-ref-42)
43. St Bonaventura, *Opuscula sancti Bonaventure ordinis minorum de obseruantia Cardinalis & doctoris eximii Aureis notis digna, Imprime nuperrime in lucem edita*, Brescia: Bernardinus de Misintis: for Angelus Britannicus, 1495 (Biblioteca di San Francesco della Vigna, RAR-B.II.20); Santa Caterina di Siena, *Dialogus Seraphice ac Dive Catharine de Senis cum non[n]ullis aliis* orationibus, Brescia: Bernadinus de Misintis, 1496 (Biblioteca Communale di Siena,Bargagli Petrucci 1545**)**; Giovanni Battista Cantalicio, *Epigrammata Cantalycii et aliquorum discipulorum eius,* Venice: Per Matheum Capcasam Parmensem, 1496 (Countway Medical Library, Harvard, Ballard 248); M. Vitruvius, *M. Vitrvvivs per locvndvm solito castigatior factvs cvm figvris et tabvla vt iam legi et intelligi possit,* Venice: Joannes de Tridino alias Tacuino, 1511 (Getty Institute Library, NA2515.V6 1511) [↑](#footnote-ref-43)
44. Szirmai 1999, pp. 216-7 [↑](#footnote-ref-44)
45. Hadgraft, 1998, p. 100 [↑](#footnote-ref-45)
46. Some writers, including Szirmai, have characterised these different types as ‘Romanesque’ and ‘Gothic’, but, while these chronologically-limited terms might reflect their origins, the use of both extends far beyond the defined historical periods and are indeed found concurrently in the fifteenth century. It is therefore less confusing to avoid using them to describe specific structural features, especially as both periods made use of a variety of other structures which cannot then be described as ‘Romanesque’ or ‘Gothic’. [↑](#footnote-ref-46)
47. A binding made for Hildbrand Brandenburg with the external surface of the boards shaped like in this manner is described and illustrated in: Goldschmidt, 1928, vol. 1., p. 137, no. 6 and vol. 2., plate V. [↑](#footnote-ref-47)
48. Hobson, 1989, p. 252 [↑](#footnote-ref-48)
49. Albertus Magnus, Mariale, Basel: Michael Wenssler, 1474 (Aarau Kantonsbibliothek, Austria, Inc 313) and Guidonis de Monte-Rochen, *Manipulus curatorum*, Lyon(?): Johann Siber, ca 1485 (University Library, Uppsala, Ink 35b.280 8°) [↑](#footnote-ref-49)
50. Hobson, 1989, pp. 252-3, where he suggests Bologna as the first place where such boards were made and used. [↑](#footnote-ref-50)
51. A copy St Bonaventura, *Stimulus divini amoris*, Paris: Michiel le Noir, 1499 (Cambridge University Library, Inc.5.D.1.32[2592]) has a contemporary binding with couched-laminate boards covered in reversed alum-tawed skin, stained on the fleshside. [↑](#footnote-ref-51)
52. The paper boards on the five manuscript volumes of *Johannes de Anania Lectura in librum primum Decretalium Gergorii IX*, Bologna 144(?), now in the library of the monastery of St Gallen, would appear to be couched laminates. They are covered in reversed alum-tawed skin, stained on the fleshside, with the sewing-support slips sewn to them. [↑](#footnote-ref-52)
53. Hobson, 1989, pp. 22-3. [↑](#footnote-ref-53)
54. Boethius, *De Consolatione Philosophiae*,Deventer: Jacobus de Breda, 1490 (Englefield House, Berkshire, UK) [↑](#footnote-ref-54)
55. Pope Pius II, *Epistole Enee siluij*, Nuremburg: Impensis Anthonii Koberger, 1496 (Academy of Arts and Science, Zagreb, Ink 3) [↑](#footnote-ref-55)
56. Moses Maimonides, *Amphorisimi secundum doctrinam Galeni*, Bologna: Franciscus (Plato) de Benedictis, for Benedictus Hectoris, 1489 (Worcester College, Oxford, H.12.11) [↑](#footnote-ref-56)
57. Binding without endbands (and without Kapitalbünde) are presumably to be thought of as less expensive. [↑](#footnote-ref-57)
58. Examples of this style of binding have been recorded into the second half of the century, viz. Nicephorus, *Byzantinæ historiæ Libri XI*, Basel: Joannes Oporinus, 1562 (Franciscan Monastery, Ljubljana) [↑](#footnote-ref-58)
59. Szirmai, 1999, p. 207-8 and Figure 9.23 [↑](#footnote-ref-59)
60. A single example only of this type has been recorded, on a copy of: Robert Gaguinus, *De origine et gestis francorum*, Lyon: Iodocus Badius for Joannes Trechsel, 1497 (Edinburgh University Library Special Collections, INC 215) [↑](#footnote-ref-60)
61. Hobson, 1989, p. XXX. [↑](#footnote-ref-61)
62. Pickwoad, 2008, p. 181. See also a Venetian binding in the genuine Greek-style in Hobson, 1989, p. 66 and plate 51. [↑](#footnote-ref-62)
63. Hobson, 1989, p. 36 [↑](#footnote-ref-63)
64. A binding of the third quarter of the fifteenth century by Livinus Stuvaert of Ghent on the Llangattock Hours in the Getty Research Institute Library in Los Angele (MS. Ludwig IX.7) is covered in a high-quality brown tanned goatskin. [↑](#footnote-ref-64)
65. See, for example, Marcus Tullius Cicero, *De oratore*, Venice : Andreas de Paltasichis, 1478, bound with Julius Caesar, *Commentarii*, Treviso : Michael Manzolus, 1480. (Pierpont Morgan Library, ChL1183M), described and illustrated in: Needham, 1979*,* pp. 105-8. [↑](#footnote-ref-65)
66. Needham, 1979, p.71 [↑](#footnote-ref-66)
67. See for example Goldschmidt, 1928, vol. 2, plate VII, and Miner, 1957, p. 72 no. 168 and plate XXXII [↑](#footnote-ref-67)
68. See, for example, Hobson, 1999, p. 16 and plate 7, Miner, 1957, p.87, no 195 and plate XLII and Foot, 2010, p. 297, no. 239. [↑](#footnote-ref-68)
69. See generally Adler, 2010, pp.82-114, who illustrates and describes a far wider range of metal fittings than can be described here. [↑](#footnote-ref-69)
70. Adler, 2010, p. 101, Abb.5-60 [↑](#footnote-ref-70)
71. See, for example Adler, 2010, p. 85 [↑](#footnote-ref-71)
72. See, for example, Adler, 2010, p. 98, Abb. 5-48a and Abb. 5-50. [↑](#footnote-ref-72)
73. Adler, 2010, pp.115-118 [↑](#footnote-ref-73)
74. Adler, 2010, p. 91, Abb. 5-29 [↑](#footnote-ref-74)
75. Adler, 2010. p. 91, Abb.5-26 [↑](#footnote-ref-75)
76. Adler, 2010. p. 96-97 [↑](#footnote-ref-76)
77. Adler, 2010. p. 99-100 [↑](#footnote-ref-77)
78. Adler, 2010, pp. 106-110 [↑](#footnote-ref-78)
79. Adler, 2010, p. 105, Abb. 5-69a-c [↑](#footnote-ref-79)
80. Adler, 2010, p. 104, Abb. 5-66, p. 110, Abb. 5-88a-c and p. 111, Abb. 5-89 [↑](#footnote-ref-80)
81. Adler, 2010, p. 111, Abb. 5-90 and 5.91 and Miner 1957, pp. 62-3, no 145 and plate XXXII [↑](#footnote-ref-81)