

CLASS 412, BOOKBINDING: PROCESS AND APPARATUS

SECTION I - CLASS DEFINITION

This is the residual class for processes and apparatuses for the manufacture of a book(*) its associated elements, including the assembly of any or all its elements to each other or to the book(*). The term book(*) as well as its associated elements are defined in the Glossary of Terms.

SECTION II - GLOSSARY

The following words, terms, or phrases have been defined in an effort to maintain consistency as to their meaning and also to minimize space in the titles and definitions. Each word, term, or phrase will be followed by an asterisk (*) to indicate that reference should be made to this glossary for its specific meaning.

- (1) Note. The terms making and manufacturing appearing in the glossary terms, titles, or definitions of this class are considered synonymous and may be used interchangeably.

BOOK(*)

A book consists of two or more sheets(*) secured together either: (a) only at their margins; or (b) only at a restricted field within the margins; or (c) only at their margins and at a restricted field within the margins. When a margin of one sheet is attached to a margin of another sheet(*) to obtain in effect a single sheet(*) or greater area, the resulting article is still regarded as a sheet(*) rather than a book. A folded sheet is not considered to be a book. Book and bound book are synonymous terms and in both, a covering member has not yet been applied. See this Glossary for the definition of the term completed book(*).

BACK(*)

The back is that portion of a book formed where and when the sections of it are united by sewing, stitching(*), or stapling. The term back is sometimes erroneously used to describe the portion of the outer covering member which encloses the back, but the term spine(*) is preferred for this portion of the covering member.

BACKING(*)

The book making operation referring to the step for making the back(*) of the book(*), wherein the back(*) has been previously sewn and glued, whereby the back edge of the sheets(*), signatures(*), quires(*), etc., which make up the book(*) are splayed outwards from the center of the book(*) and gives the back(*) a convex shape. This adds to the permanence of the back and provides an abutment for the boards in the book(*) covering member. Rounding and backing(*) are considered synonymous for purposes of the terms of this Glossary.

COMPLETED BOOK(*)

A book(*) which has had its covering member attached.

CRASH(*)

A loose weave binding cloth which is generally applied with adhesive to the back(*) of a bound book(*) as a reinforcing material prior to the application of the book(*) covering member.

END SHEETS(*)

The sheet(*) of paper at the front(*) and end of a book(*) overlaying the inner sides of the boards of the covering member serving with the linings(*) to secure the book(*) to its associated covering member.

FRONT(*)

The first page or first sheet(*) of a book(*).

FREE EDGE(*)

The edge or edges of the bound book(*) which are not involved with the fastening together of the sheets(*), etc., into the book(*). The free edge is opposite the back(*) e.g., where the binding, stitching(*), sewing, etc. is located; the other edges are known as the head, i.e., the top edge and foot or bottom edge also known as the tail.

JACKET

A protective structure, e.g., dust cover, assembled to but not fastened to a completed book(*).

LINING(*)

The material used for or process of reinforcing the back(*) of a bound book(*) by gluing a strip of the material to the back(*) of the book.

PAGE(*)

A side of a sheet(*).

QUIRE(*)

A term of art meaning 24 sheets(*) of paper.

SHEET(*)

A body, usually paper, having two parallel surfaces both dimensions of which are large in comparison with the third dimension of the body. Sheets can be printed on or blank.

SIGNATURE(*)

A book(*) section, composed of a plurality of sheets having a common fold; thus, the term signature is usually used synonymously in this class with sheets(*) and quires(*) to indicate printed or unprinted matter which is being fastened together at the edges to form a bound book(*).

SPINE(*)

The hollow or portion of the covering member which connects the boards.

STITCHING(*)

The process of fastening together sheets(*), signatures(*), or quires(*) at one edge thereof to form a bound book(*). Usually this is done by sewing with needle and thread, but this may be done by a similar fastening operation.

SUBCLASSES**1****PROCESS:**

This subclass is indented under the class definition. Process .

SEE OR SEARCH CLASS:

53, Package Making, subclass 395 for methods of making matchbooks.
281, Books, Strips, and Leaves, subclasses 3+ for books and leaves, per se; and subclasses 15+ for books, per se.

2**Of making multiple books(*) from a single book(*):**

This subclass is indented under subclass 1. Process for making a plurality of smaller books(*) by dividing a single larger book into smaller sections.

SEE OR SEARCH CLASS:

281, Books, Strips, and Leaves, subclasses 16+ for multiple books, per se.

3**Of making a case(*):**

This subclass is indented under subclass 1. Process for making a paper, board, cloth, or leather covering member, formed by machine, intended to be fastened to a book(*).

SEE OR SEARCH THIS CLASS, SUBCLASS:

17, for apparatuses for making a case(*).

SEE OR SEARCH CLASS:

281, Books, Strips, and Leaves, subclasses 29+ for covers, per se, in a book.

4**Of applying a cover to a book(*):**

This subclass is indented under subclass 1. Process for assembling a book(*) or a plurality of unbound sheets(*), signatures(*), or quires(*), etc., to a paper, board, cloth, or leather covering member.

(1) Note. The assembly is permanent, e.g., it should involve some form of permanent fastening, such as stitching(*), gluing, etc.

SEE OR SEARCH THIS CLASS, SUBCLASS:

19, for apparatuses for applying a cover.

SEE OR SEARCH CLASS:

264, Plastic and Nonmetallic Article Shaping or Treating: Processes, appropriate subclasses for methods of molding plastic material.
281, Books, Strips, and Leaves, subclasses 29+ for covers, per se.

5 Casing in:

This subclass is indented under subclass 4. Processes for assembling a book(*) to a paper, board, cloth, or leather covering member previously formed by machine.

- (1) Note. The assembly is permanent, e.g., it should involve some form of permanent fastening, such as stitching(*), gluing, etc.

SEE OR SEARCH THIS CLASS, SUBCLASS:

21+, for apparatus for casing in.

6 Of edge fastening:

This subclass is indented under subclass 1. Processes for fastening together a plurality of sheets(*), signatures(*), or quires(*) along one edge.

- (1) Note. The fastening is usually by stitching(*), gluing, or similar methods and usually is permanent.

SEE OR SEARCH THIS CLASS, SUBCLASS:

33+, for apparatuses for performing an edge binding operation.

SEE OR SEARCH CLASS:

281, Books, Strips, and Leaves, subclasses 21+ for bindings, per se, of a book.

7 Marginally perforated sheet(*):

This subclass is indented under subclass 6. Process wherein the sheets(*), signatures(*), or quires(*) are provided with an aperture adjacent an edge thereof.

SEE OR SEARCH THIS CLASS, SUBCLASS:

38, for apparatuses for edge binding a marginally perforated sheet.

SEE OR SEARCH CLASS:

140, Wireworking, subclasses 92.3+ for processes including the interlacing of a rotated helix with marginal perforations of a plurality of sheets.

8 Of adhesive binding:

This subclass is indented under subclass 1. Process for fastening elements of a book(*) by the use of a sticky substance such as glue, cement, or paste.

- (1) Note. The elements can constitute such structures as sheets(*), signatures(*), quires(*), etc.

SEE OR SEARCH THIS CLASS, SUBCLASS:

36, for apparatus for edge binding utilizing adhesive tape, lace, or ribbon.

37, for an apparatus for an edge binding operation just using adhesive material.

SEE OR SEARCH CLASS:

156, Adhesive Bonding and Miscellaneous Chemical Manufacture, appropriate subclasses for laminating operations per se not specialized to book making; especially subclass 202 and 216 for pasting fabric coverings to boards with the edges turned over the boards.

281, Books, Strips, and Leaves, subclasses 21+ for bindings in books, per se.

9 APPARATUS:

This subclass is indented under the class definition. Apparatus .

SEE OR SEARCH CLASS:

53, Package Making, subclass 394 for apparatus for making matchbooks.

81, Tools, appropriate subclasses for vises intended to be used in making books.

281, Books, Strips, and Leaves, subclasses 3+ for books and leaves, per se; and subclasses 15+ for books, per se.

10 Padding press:

This subclass is indented under subclass 9. Apparatus for assembling and holding a plurality of sheets(*) under pressure so that one edge of a stack of the sheets can be coated with adhesive.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

22+, for presses utilized in a finishing operation for making a book.

SEE OR SEARCH CLASS:

100, Presses, appropriate subclasses for presses intended to be used in making books.

11 With control means responsive to sensed condition:

This subclass is indented under subclass 9. Apparatus provided with means capable of altering an operation of the apparatus in direct response to sensing means which can perceive a characteristic or change in a characteristic of either the apparatus or of work being operated upon by the apparatus.

12 And randomly actuated stopping or disabling means:

This subclass is indented under subclass 11. Apparatus further provided with means which automatically stops or interrupts an operation of the apparatus or a portion thereof upon the sensing of an abnormal or unpredicted occurrence of an event, condition, or state which can occur during any portion of the operation of the apparatus.

(1) Note. A typical abnormal condition could be a misfeeding of a workpiece, i.e., the workpiece does not properly register, or the workpiece is not of proper dimensions required, etc.

13 With programmed, cyclic, or time responsive control means:

This subclass is indented under subclass 9. Apparatus wherein control means is provided with either (a) means for storing coded instructions or other data necessary to regulate an operation of the apparatus, (b) means repetitively regulating a sequence of operational steps performed in or by the apparatus, or (c) means for determining the time at which an operation occurs or length of time taken to perform such an operation in or by the apparatus.

(1) Note. The type of cyclic control under (b) above to be found herein, includes limit switch arrangements of the inter-

lock type which control the sequence of operation based on the movement of apparatus elements to specific locations, e.g., the closing or opening of a door, etc.

14 With measuring, testing, or inspection means:

This subclass is indented under subclass 9. Apparatus wherein means are provided with either (a) determines a dimension, quantity, or capacity of a characteristic or property of the apparatus, a part thereof or material therein, (b) determine the presence or existence of a characteristic or property of the apparatus, a part thereof or material therein, or (c) examines or verifies a characteristic or property of the apparatus, a part thereof or material therein.

(1) Note. The measuring, testing, or inspecting means of this subclass may also provide a visual, audible, or other type of signal or indicator or a permanent record of the determined dimension, quantity, capacity, characteristic property, or examination or verification.

15 Repair means:

This subclass is indented under subclass 9. Apparatus specifically designed for reclaiming or rebuilding damaged books(*) or elements of books.

(1) Note. The reclamation or rebuilding of books(*) includes the rebinding of books.

16 With cutter:

This subclass is indented under subclass 9. Apparatus provided with means for severing some portion of a book(*) or elements thereof.

(1) Note. The cutter or severing means provided for in this subclass is typically used to trim pages or covering members, or perform similar operations on other elements of a book(*).

SEE OR SEARCH CLASS:

83, Cutting, appropriate subclasses for means for perforating sheets, preparatory to binding them, and saw means used in notching edges of sheets preparatory to binding.

- 144, Woodworking, for a clamp to be used in making a book or for means for notching the edges of sheets preparatory to binding them.
- 408, Cutting by the Use of Rotating Axially Moving Tool, subclasses 72+ for the combination of drilling means with a work support used in making books.
- 17 Case maker:**
This subclass is indented under subclass 9. Apparatus especially adapted for making a paper, board, cloth, or leather covering member intended to fastened to a book(*).
- SEE OR SEARCH CLASS:
281, Books, Strips, and Leaves, subclasses 29+ for covers, per se.
425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclasses 383+ for apparatus for reshaping a plastic sheet or web.
- 18 Finishing apparatus:**
This subclass is indented under subclass 9. Apparatus for performing an operation upon a previously assembled book(*) and its paper, board, cloth, or leather covering member or fastening together a book and a paper, board, cloth, or leather covering member.
- (1) Note. The typical operation, provided for herein, would be attaching a protective jacket(*), or decorating the pages(*).
- 19 Cover applier:**
This subclass is indented under subclass 18. Apparatus for fastening together a bound book(*) and a paper, board, cloth, or leather covering member intended to be fastened to a book.
- SEE OR SEARCH CLASS:
281, Books, Strips, and Leaves, subclasses 29+ for covers, per se, of a book.
- 20 And means simultaneously binding edge:**
This subclass is indented under subclass 19. Apparatus wherein the book(*) is composed of a plurality of loose sheets(*), and further wherein means are provided to fasten the sheets, etc., at one edge and to apply a paper, board, cloth, or leather covering member in a single step.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
33+, for apparatuses for performing an edge binding operation.
- 21 Means for casing-in:**
This subclass is indented under subclass 19. Apparatus for fastening a paper, board, cloth, or leather covering member made by machine to a book(*).
- 22 Presser or creaser:**
This subclass is indented under subclass 18. Apparatus for performing the step of placing a book(*) with its fastened paper, board, cloth, or leather covering means cover(*) in a press or putting a crease along the hinge line of a paper, board, cloth, or leather covering means.
- (1) Note. The presses of this subclass are designed to set the applied glue to remove air pockets, etc.
- SEE OR SEARCH CLASS:
100, Presses, appropriate subclasses for presses intended to be used in making books.
- 23 Press board:**
This subclass is indented under subclass 22. Apparatus provided with a rigid planar body having a first plane side and a second plane side, the first plane side being capable of physically engaging a flat area of a book(*), to transmit pressure applied to the second plane side through the planar body to the flat area of the book.
- (1) Note. The pressure being applied to the second plane side and being transmitted through the body is produced by a press apparatus and is intended to aid in properly forming the finished book(*) or to aid in the drying of a book after a casing-in operation.
- 24 Jacketing means:**
This subclass is indented under subclass 18. Apparatus specifically designed for applying a jacket(*).

- 25 Book working apparatus:**
This subclass is indented under subclass 9. Apparatus specifically adapted for operating upon a book(*) which has been secured together at one edge.
- (1) Note. This and intended subclasses are proper for apparatus for performing various operations on a book(*) prior to the application or assembly with a covering member.
- 26 Reinforcement applying means:**
This subclass is indented under subclass 25. Apparatus specifically adapted for assembling a member to the book(*) designed to give additional strength to the back(*) of the book.
- 27 Lining(*) or crash(*) applying means:**
This subclass is indented under subclass 26. Apparatus specifically adapted to apply lining(*) or crash(*) to the back(*) of the book(*).
- 28 End sheets(*) attaching means:**
This subclass is indented under subclass 25. Apparatus for fastening an end sheet(*) to a book(*).
- 29 Smashing or nipping means:**
This subclass is indented under subclass 25. Apparatus for expelling the air from between individual sheets of an edge bound book and for returning the book to a uniform size and thickness after an edge binding operation.
- (1) Note. The term nipping is used synonymously with smashing in the book making art.
- 30 Backing(*) means:**
This subclass is indented under subclass 25. Apparatus for performing a backing(*) operation.
- 31 Headbanding means:**
This subclass is indented under subclass 25. Apparatus for applying decorative strips to the head and foot of a back(*) of an edge bound book(*).
- (1) Note. The head and foot of a back(*), respectively, are the top edge and the bottom edge of the back. See in the glossary of terms, the definition of free edge(*), for a further description of head and foot relating to book making.
- 32 Free edge(*) finishing means, e.g., marbling, gliding, etc:**
This subclass is indented under subclass 25. Apparatus for working on the free edges(*) of a book(*).
- 33 Edge binding apparatus:**
This subclass is indented under subclass 9. Apparatus for fastening together along a common edge, a plurality of sheets(*), signatures(*), or quires(*).
- SEE OR SEARCH CLASS:
144, Woodworking, for a clamp to be used in making a book or for means for notching the edges of sheets preparatory to binding them.
227, Elongated-Member-Driving Apparatus, appropriate subclasses and particularly subclasses 19+ for apparatus for assembling book leaves or signatures combined with means to apply a staple, etc.; and subclasses 99+ for feeding preassembled book leaves or signatures combined with means to apply a staple, etc.
270, Sheet-Material Associating, for means for uniting leaves together into books by pasting, stapling, or stitching, provided there is included some means for folding the leaves or associating the leaves for signatures. This class (270) also provides for means for associating leaves or signatures and folding leaves in the making of books.
281, Books, Strips, and Leaves, subclasses 21+ for binding, per se, in books.
- 34 Deformable strip applier:**
This subclass is indented under subclass 33. Apparatus wherein the sheets(*), signatures(*), or quires(*) are fastened together by a bendable striplike-clamping member.
- 35 Sewing means:**
This subclass is indented under subclass 33. Apparatus wherein the sheets(*), etc., are fastened together using a needle and thread.

- SEE OR SEARCH CLASS:
112, Sewing, subclasses 21+ for apparatus for sewing books.
- 36 Lace, ribbon, or adhesive tape applier:**
This subclass is indented under subclass 33. Apparatus wherein the sheets(*), signatures(*), or quires(*) are fastened together either by (a) a lace or ribbon passed through notches or grooves cut across the thickness of the back(*) of the sheets, etc., or (b) by using a strip of adhesive tape applied to the back of the sheets.
- SEE OR SEARCH CLASS:
118, Coating Apparatus, appropriate subclasses for means to apply a coating, usually an adhesive, in the making of books.
156, Adhesive Bonding and Miscellaneous Chemical Manufacture, appropriate subclasses for laminating operations, per se, not specialized to bookmaking; and especially subclasses 461+ for apparatus for pasting fabric coverings to boards with the edges turned over the boards.
- 37 Adhesive applier:**
This subclass is indented under subclass 33. Apparatus wherein the sheets(*), signatures(*), or quires(*) are fastened together by an application of an adhesive material.
- SEE OR SEARCH CLASS:
118, Coating Apparatus, appropriate subclasses for means for applying a coating, usually an adhesive, for the making of books.
- 38 Perforated sheet(*) binder:**
This subclass is indented under subclass 33. Apparatus specially adapted for applying a fastener to sheets(*), signatures(*), or quires(*) having a fastener receiving hole punched through their thickness dimension in an area other than the bound edge of the sheets, signatures or quires.
- SEE OR SEARCH CLASS:
83, Cutting, appropriate subclasses for perforating sheets, preparatory to binding them, and saw means used in notching edges of sheets preparatory to binding.
- 408, Cutting by Use of Rotating Axially Moving Tool, subclasses 72+ for the combination of drilling means with a work support, used in the making of books.**
- 39 Wire comb applier:**
This subclass is indented under subclass 38. Apparatus specially adapted for applying a fastener in the form of a thin integral toothed strip made of metallic material designed to be temporarily deformed for insertion through the fastener receiving hole of the sheets(*), signatures(*), or quires(*).
- SEE OR SEARCH CLASS:
140, Wireworking, subclasses 92.3+ for apparatus for interlacing a rotated helix with marginal perforations of a plurality of sheets.
- 40 Plastic comb applier:**
This subclass is indented under subclass 38. Apparatus specially adapted for applying a fastener in the form of a thin integral toothed strip made of plastic material designed to be temporarily deformed for insertion through the fastener receiving hole of the sheets(*), signatures(*), or quires(*).
- 41 And heat sealer:**
This subclass is indented under subclass 40. Apparatus wherein the fastener is composed of thermoplastic material and further wherein the apparatus is provided with means capable of melting a portion of said thermoplastic material.
- 42 Singular ring or ringlike element applier:**
This subclass is indented under subclass 38. Apparatus specially adapted for applying a fastener in the form of a single annular element limited for insertion into a single fastener receiving hole of the sheets(*), signatures(*), or quires(*).
- (1) Note. The fasteners of this subclass are restricted such that only one fastener can bind only one hole per fastener so that a multiple hole set of sheets(*), signatures(*), or quires(*) will require multi-

ple fasteners to complete the binding operation.

- 43 Singular post or postlike element applier:**
This subclass is indented under subclass 38. Apparatus specially adapted for applying a fastener in the form of a single elongated rodlike element limited for insertion into a single fastener receiving hole of the sheets(*), signatures(*), or quires(*).
- (1) Note. The fasteners of this subclass are restricted such that only one fastener can bind only one hole per fastener so that a multiple hole set of sheets(*), signatures(*), or quires(*) will require multiple fasteners to complete the binding operation.

CROSS-REFERENCE ART COLLECTIONS

The following subclasses are collections of disclosures pertaining to various aspects of the book binding art which do not form appropriate bases for subclasses in the previous classification, i.e., subclasses higher in the schedule. Documents are placed in these subclasses based on their disclosure other than or independent from their claims or claimed disclosure and in no instance do they represent the entire extent of the prior art or disclosure for the specified aspect.

- 900 ACTIVATING PREVIOUSLY APPLIED ADHESIVE:**
Apparatus for performing a bookbinding operation which utilizes means which activate (through heat, wetting, or etc.) an adhesive which has been previously applied to one of the elements being joined together.
- 901 PRESSURE SENSITIVE ADHESIVE:**
Apparatus for performing a bookbinding operation involving the use of elements which have had a pressure sensitive adhesive applied to them prior to the operation.
- 902 HEATING AND PRESSING:**
Apparatus for performing a bookbinding operation which involves the application of heat and pressure to an element or completed book(*)

END