ENCYCLOPÉDIE,

OU

DICTIONNAIRE RAISONNÉ DES SCIENCES,

DES ARTS ET DES MÉTIERS,

PAR UNE SOCIETÉ DE GENS DE LETTRES.

1751

About Diderot's Encyclopedie

In 1745 the Paris publisher André-François Le Breton was approached for publishing a French translation of Ephraim Chamber's Cyclopedia. Le Breton went into partnership with the publishers Claude Briasson, Michel-Antoine David and Laurent Durand. Those three partners introduced Denis Diderot (1713-1784) to Le Breton. This brilliant young man, unknown to the public and in very straitened circumstances, at once gained for the project the warm support of his already famous friend Jean d'Alembert, who not only wrote the Discours préliminaire , the general introduction to the Encyclopédie , and contributed the articles on mathematics, but used his assured position in society and the world of letters to obtain the moral and financial support of the leading salons and the cooperation of the best scholars and philosophes.

Each volume as it appeared caused a sensation throughout Europe. The court, the church, the judiciary were outraged; the number of subscribers, originally one thousand, rose to four thousand. In 1759, the seven volumes so far published were banned by the French Attorney-General and condemned by the Pope. Frederic II of Prussia and Chatherine II of Russia offered to have the work published in Berlin and St. Petersburg. Le Breton, however, carried on clandestinely and in 1765 completed the tenth volume, the last according to the prospectus. But a rising young publisher, Charles-Joseph Panckoucke (1736-98), continued the work until 1780. By that time, at least seven pirated editions of the Encyclopédie had been published in Geneva, Berne, Lausanne, Yverdun, Lucca and Leghorn.
-from Wikipedia

Introduction

Browsing through the library of the NSW Guild of Craft Bookbinders recently I came across '*Bookbinding in Diderot's Encyclopedie*, a facsimile reproduction of articles and plates'. Intrigued by the plates I was curious to read the text and was therefore forced to make a translation for myself. This was done with the help of an 1881 Cassell's French-English Dictionary and the very formal French I was taught at High School in the 1940's. I had to overcome the problem of seemingly interchangeable s and f characters; deciding whether fort meant 'strong' or 'sort' had to be done from context. Many of the words used were archaic even in 1881, such as describing a tool as 'enhandled', which took a while to sort out.

Measurements in 18th century France were highly unsystematic, based on body parts- thumbs, fingers, feet and something called lines. I assumed a thumb to be roughly one inch (2.54 cm) and converted accordingly. The modern inch may well be larger than their inch as we are bigger and better fed these days.

I have tried to retain the French feeling of the text, including the punctuation, using English binders' terms where they seemed equivalent and gave more clarity. All errors are my own.

Adrienne Allen
21st November, 2005

RELIER, RELIEUR, RELIURE

Entries

from Diderot's Encyclopedia

Translated into English

By
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November, 2005

RELIER, v.act. (*a bookbinding term*.) to sew together the sections of a book and put a cover on them. *Brocher* is used when the sections are sewn only, without the use of cords to make the bands; *relier à la corde* is when twine or string is set on the spine at certain distances to hold the sections together before the cover is added. Simply use *relier* to indicate a finished binding with cords, headbands, boards and a suitable cover. Also use *relier* in parchment, vellum, calf, morocco, sheep (basil), pigskin; that is, cover a book in one of these skins. *Savary, D.J.*

RELIEUR, n.m. (*Bookseller's shop*) A person who binds books. The principal tools and instruments which are used by the masters of binding and gilding on books are the folding tool, the beating hammer and stone, the sewing frame, with its keys, the binder's needle, the punch or bodkin, many kinds of scissors, an ordinary pair of compasses and gilders compasses, the lying press, with its plough, knife, and screws, and supported by a strong wooden box called a tub (*asne*); the large press (standing press?), the board cutting knife (*pointe*), the leather paring knife, backing, cutting and pressing boards, the cutting gauntlet, the back scraping knife, assorted brushes for marbling and pasting, the scraper for gilding the edges, the polishing iron, and finally many different engraved tools used to apply gold to the covers or for blind tooling and all the equipment for edge gilding.

RELIURE, n.f, or art of binding books, (*Art méchan.*) When the leaves come out of the press and they are dry, they go from the print shop to the bookbinder's workshop. The first work done on the sheets to be bound is to fold them into their formats, in two for *in-folio*, in four for *in-quarto* and in eight for *in-octavo* and so on, in proportion down to the smallest which is more curious than useful, called *in-six twenty*.

The sheets are taken one by one to fold them, making sure the edges are truly equal, that the numbers on the head are aligned exactly. The tool used for folding is called the folder, (*plioir*); its use is to determine the position of the fold which the leaf must have in passing on all its sides, but more particularly on those which serve as separation. The folder is a type of wooden or ivory ruler, very thin, about 3 cm wide and about twenty to 25 cm high, with rounded ends and thinner towards the end than in the middle. Besides each page being numbered at the head, the numbers run successively to the end of the volume, and there are also catch-words at the end of each page immediately under the end of the last line. These are the words which begin the following page and so on until the end of the book. They are found commonly enough or there would be no point to having catch-words.

Signature letters are also placed at the bottom of the pages: these are the letters of the alphabet placed in order. The letter changes with each signature, and the same letter is repeated, not at the end of the page, but only on each leaf of the folio's recto, and beside the number, usually roman, the number of leaves. This also continues to the end of the signature, or only halfway; so that in the last case, the position where the signatures finish make only half the book and indicate the format of the leaves; after which the following signature is signed with the following letter. Although the numbers are at the head, the catchwords and signature letters at the bottom and are rather a means of informing the binder; we have not however finished with this

topic, seeing that it serves to direct the folding and discourages the placing of the signatures out of their proper order.

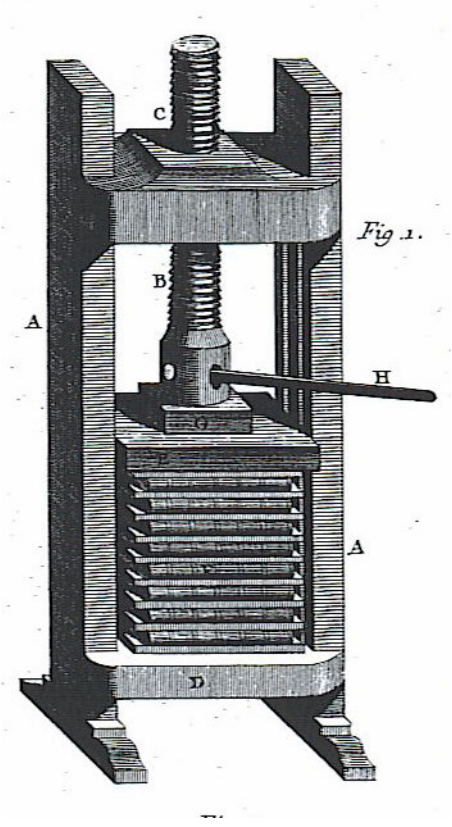
When all the sheets are folded in the manner described, the sheets are assembled in groups and collated, while looking at the letters at the bottom of each sheet, in order to avoid transpositions. The sheets are placed one on the other in the order of the signatures then beaten with the hammer on the stone to press and flatten them so that they take up less space in the binding. In dividing the pages for beating, there are commonly nine or ten sheets for the octavo and for other formats more or less in proportion. The sheets must be held evenly so that one does not protrude beyond the others in placing them on the beating stone, which is made of fine grained limestone, well polished and level. A piece of paper is placed under the sections to prevent marking of the parts touching the stone, then the worker holds the sheets with one hand and in the other holds the hammer weighing nine, ten or even eleven pounds according to the force which is needed, and strikes the pages while turning them on all sides and in all senses, until all parts have been hammered. It is the aid of this hammer which allows the attentive worker to beat the paper until his fingers sense that everything is even, and he finds no cavities.

This operation done, the beaten pages are placed between press boards and pressed down in the great press if the pages are large or simply in the backing press if they are smaller. These boards are made of walnut wood, well polished, about three or four lines (?2 cm) thick along their length; they should be chosen to be large enough to overlap the pages a little on all sides. The leaves are pressed down in the press, not swollen at all, keeping the condition given them by the hammer.

As we will need to refer to different presses used by bookbinders, before proceeding with other matters and seeing that our pages are in the press, we will give its description. As to other tools or instruments mentioned, we will describe their

form and use, following the order of the different operations of the work. There are four different types of press: the great (standing) press, the backing press, the trimming press (?plough and tub),the gilding press.

The great press is made up of six main pieces which are: Two side beams, the cross piece, the platen, the ram, the screw, the two keyholes, the nut and the bar for closing. The two side beams are two pieces of elm or other type of wood, provided that it is strong, roughly 1.4 metres high, 15-18 cm wide and 10-12 cm thick.



The great or standing press

The lower parts are wider and thicker to give a foot. They are placed upright and made fast against the wall and about 50 cm apart. This interval marks the interior of the press, where the other pieces mentioned are placed. The wooden cross piece is about 40 cm wide, 10-13 cm thick and as deep as the press, providing the spacing for the side beams. The cross piece has two hollows (?notches) for the side beams, which give ledges to support them. It is about 10-15 cm off the floor and serves as a table where the sections may be placed, or for the volumes that are to be pressed. The platen is a piece of wood about the same width and thickness as the cross piece; but it does not have edges like the cross piece. Its centre provides the location

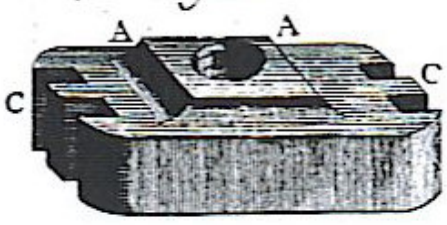
of the screw which is attached to it and supports the ram and its two keyholes. The action of the platen is to move towards the cross piece when the worker wishes to press and to rise up when the pressure is to be released. The ram is another piece of wood, a great deal smaller than the platen, which bears a flat side and is joined to the platen by nails or bolts.

The screw should be made of a very hard wood, its thread about 40-50cm high and 12 cm in circumference. The head is about 35 cm high and about 50 cm in circumference. It has four niches which are use to position the bar for raising or lowering the press. The foible is the narrow part of the screw head, and looks like a short roller which has a rounded end. of equal size in every direction if you more or less except a groove running round it, about as wide as a thumb and a finger's width deep; it is this part that is embedded in the ram to about half the thickness of the platen to which it is attached in the middle between two small wooden cleats about 4 cm wide and 2 cm thick. These traverse the ram along its length and rest in grooves in the side beams, on each side of the screw, to hold it centred when the action is rising, called *deferrer*, and which pushes oppositly when the platen descends, called *ferrer*. This keeps the screw right in the middle of the press, the head low and the thread high, passing into the nut, without which the screw would have no effect on the printed sheets.

Fig. 6.

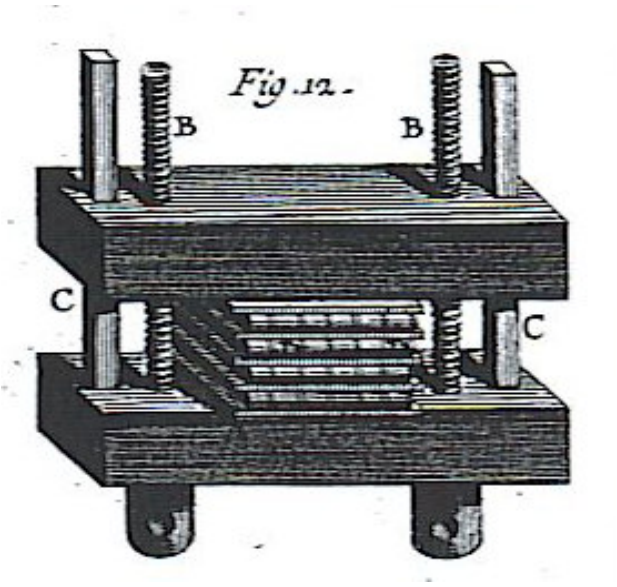
The nut is the piece of wood grooved like the platen and the cross piece and attached to the two side beams by means of two strong bolts. It caps the press. The thread of the screw runs through the middle of it. As it is this piece which could weaken easily, it has a

Fig. 10.



a steel band on each side to resist the stress from the screw.

The bar is a piece of iron bar 10-15 cm in circumference and about 60 cm long; it is placed in turn in each hole in the head of the screw: it is arm power that puts the press into action, After each turn the bar is moved to the next hole and the platen is moved again.

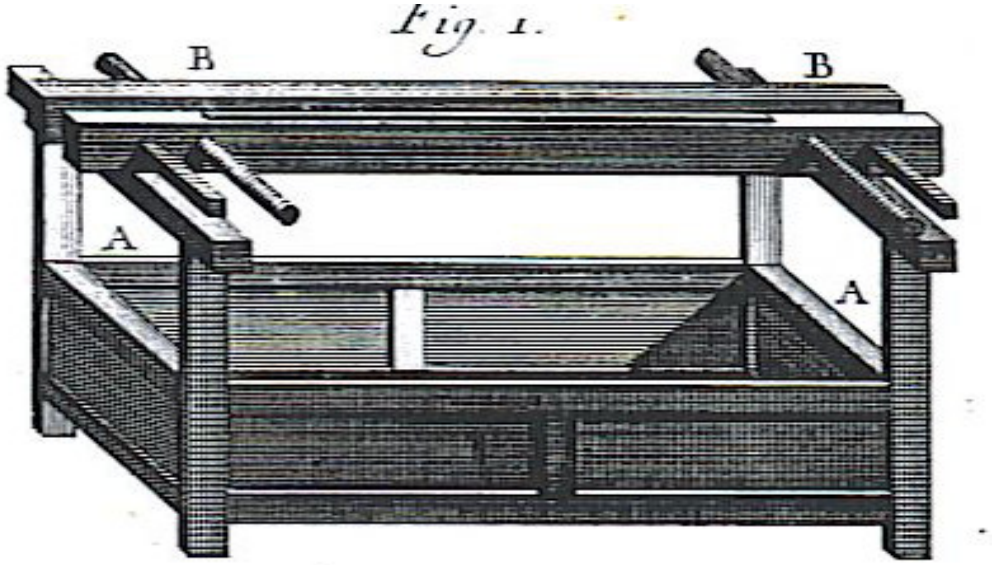


The backing press is composed of nine main pieces: two side pieces, two strips (*bandes*), two screws, two handles (Heads) and a steel pin. The two jaws are made of hardwood such as oak, elm, maple or pear: they are about 60 cm long and 15 cm square in cross section.

(*The diagram above is of a hand press, of similar construction*.)

Sections or books are held between the jaws of the side pieces; they are pierced with two holes on each side: the holes at the ends are about 5 cm square. The *bandes,* about 50 cm long, are proportional in size to the holes through which they must pass. They are joined to one of the jaws by small screws so that they are immobile, while the other jaw is free to move over them. This keeps the jaws in position in relation to the screw; the screw is made of extremely hard wood as mentioned above; the screws are about 60 cm long, between 23 and 25 cm in circumference, the head or handle is about 20 cm long. The screws are set parallel beside the bandes. They move freely through the stationary jaw up to the head which is much larger than the thread, about 60- 80 cm in diameter, and run through the other jaw held in position by the two

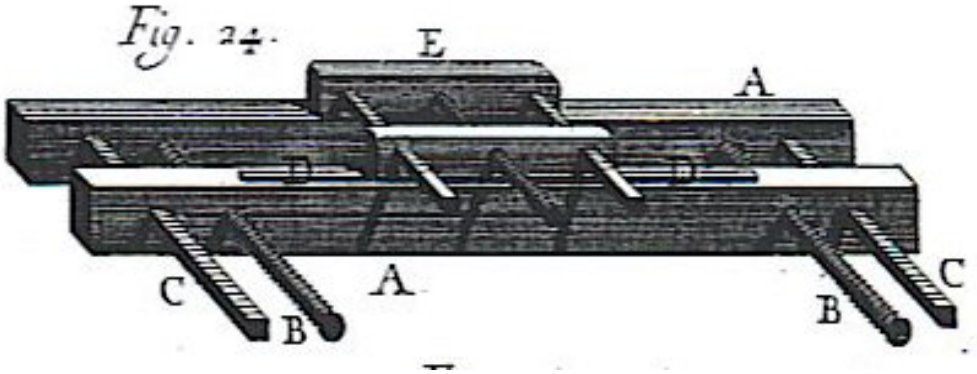
bandes. The holes on the moving jaw are threaded to form nuts, and there is a groove in each screw so that they are not susceptible to circular movement when the worker moves them by inserting the steel pin into the socket on the handle; it is the action of the screw on the moving jaw which makes it move towards the stationary jaw when work is to be put in the press or opens the press when turned in the other direction. The screws are about 50-60 cm apart and it is this measurement which determines the size of the press. As to the width, this is determined by the size of the pages or books to be worked on. When there is nothing in the closed press, the two jaws touch along their entire length and seem glued together; and when they are to be used they are opened to more or less the required



distance when the moving jaw moves away from the fixed one. Although we called the jaw on the side of the screw heads fixed, we did not mean to absolutely exclude forward or backward movement, but used the name because it is easier than any other for the best result. This press is used to press pages less than quarto when they are beaten but also for greeking (cutting slots for cords), for backing, for burnishing and also for pressing books that have been glued, as long as the work size does not exceed the distance between the jaws otherwise the great press must be used. The press is placed on a stand, like a table,

about 1 metre long and 65 cm wide. The four-sided frame is made of oak, the side panels are made of pine planks. It is about 1 metre high. The cross pieces should be twice the width of the mounts and serve to support the press; the panels can cover the sides but it is better to leave a void about 25 cm high along the frame to allow the worker freedom to move his hands under the press when the job requires it. This frame is called the donkey or press bearer because it serves to support both the backing press and the trimming press.

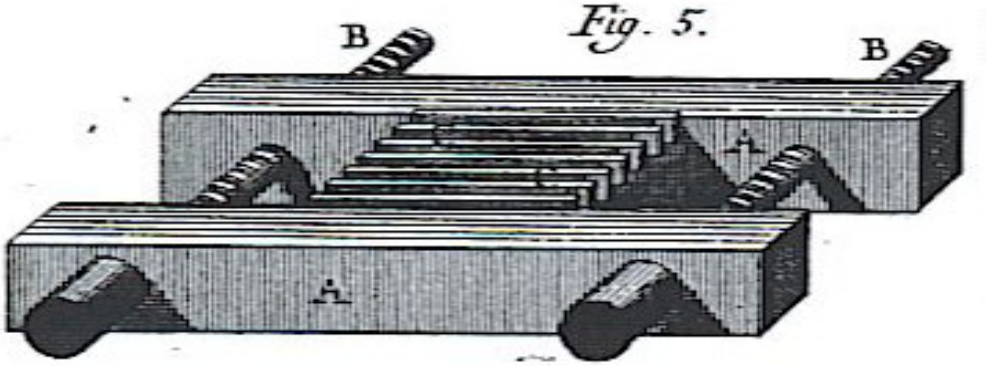
The trimming press is very similar to the backing press, that is to say that it is made up of two jaws, two *bandes*, two screws, two handles and an iron pin. The pieces have the same proportions and action as the backing press, so it would be superfluous to enter into great detail in that regard; it differs only in that there is a sliding-groove (*tringle*) on the top of the fixed jaw. The jaw is slightly narrower just at the end of the width to make a kind of slope; it is this slope which ensures that the book to be held between the jaws is held more firmly at the top than the bottom and is adjusted so firmly that it makes a solid body on which the cutter moves easily, which makes the cut neat and polished.



On the side where the worker stands there is a small groove in a straight line along the length of the jaw that helps to hold the book without damaging it, and conserves the rounding it should have. As well as the tringle on the

fixed jaw, which is actually a small plank, there are two others about a finger's width apart attached to the moving jaw with small nails in two exactly parallel lines from one screw to the other: they serve to direct and assist the movement of the cutter (plough).

The gilding press is a small press made of five pieces, namely two jaws, two screws and a small iron bar about 20 cm long. The two jaws are made of wood about thirty cm long, 10 cm wide and about 4 cm thick; the screws are about 23 cm long, a third of which is the head (handle). The thread is about 9-10 cm in circumference and the handle about 20 cm in circumference. The screws pass through holes in the jaws about 10 cm from the ends, moving freely through the first jaw and through threaded holes (nuts) in the second jaw. The press is used in the same way as the others already described. Such is the construction of the different presses used by bookbinders.



But to go back to our pages and go over the operations by which they finally will be bound and formed into a perfect volume which can hold its place in any library. The folded sheets are collated, pressed, beaten then pressed a second time. For fear that they may have been separated during the beating, which would have serious consequences they are collated a second time by checking the signatures. When the worker is certain that the pages are in order and that there has been no transposition, he reassembles them into groups for greeking (sawing in) if

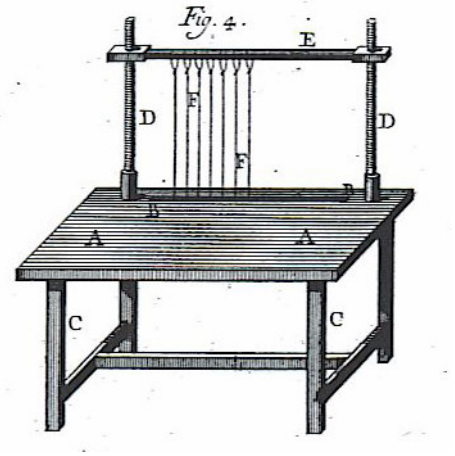
they are to made that way. To do this, all the leaves for one volume are placed between two small wooden boards. They should be well polished and a little wider in height, of a type gives a soft grip; making sure that the backs of the sections are about a finger's width above the edge of the boards to leave room for the cutting they are then placed in the backing press. When they are correctly arranged in the press the worker takes the greek, which is a tool shaped like a small saw made of tempered steel about 25cm long.

It is inserted into a wooden handle. The handle is about 6 cm wide and tapered at the end to about 2 cm. The blade is about 20 cm long and it has teeth all the way along like a real saw except that the points of the teeth are all in the same line and without a right or a left as in ordinary saws. The worker uses this tool to cut the slits on the backs of the sections. When he wishes to make a proper binding he makes five slits with the greek on small formats and six slits for the larger ones. These slits or notches serve to locate the cords around which the threads hold the sections together.

The cords are called *nerfs* (nerves cf the nerves in plant leaves); the threads pass through the notches made by the greek, thus giving no raising of the cords above the spine of the book which is level, making the difference between this style and binding on cords where the bands protrude above the spine like little ribs As well as the five notches made on smaller formats, or the six on the larger, equally spaced, there is also a slit at either end for the chainette (? Kettle stitch) always seen in small formats but not in the larger formats when they are sewn on cords, the chain stitch makes a ridge on the spine of the volume and changes in a way which will be discussed later. So the leaves which will make a volume bound in the greek style

or bound on cords are sewn on the sewing frame with a slightly curved long steel needle.

The sewing frame or press is made of four pieces of wood, namely the table which has a long groove along the front, pierced right through, two threaded rods attached upright at the ends of the table over the groove and a cross piece with threaded holes in the ends.



To use the frame, as many cords as are required are attached to the cross piece and after spreading them out according to the format of the book, they are passed through the groove and held firmly by little copper keys shaped like two tined forks with a hole in one end. The cord goes through the hole and then the key is twisted and passed through the groove and turned so it cannot go through the groove, being held against the two sides of the groove. If the cords are too slack they may be tightened as much as need by turning the screws to raise the cross piece or lower it if the cords are too tight. When the sewing frame is set up, a piece of marbled paper is folded in two, with the marbling inside, to the same size as the book pages to be sewn. It is then sewn from one end to the other onto the cords, using a hemp thread and then a leaf of blank paper is folded and attached in the same way after which the sections are sewn, taking a turn around each cord.

When all the sections of the book are sewn, it is finished with another fold of blank paper and a fold of marbled paper. It is observed here that the thickness of the threads used should relate to the size of the book. This operation done, the cords are cut to about 10 cm, making a fringe on each side of the book. The threads are untwisted and spread along the sides of

the book by rubbing with a knife, after which they are moistened with starch paste and the ends are re-rolled to make sharp points which will pass easily through the cover which is made in this way: a sheet of card is taken and measured with dividers, so as to get as many boards as one can and which has no waste if at all possible; for example, if it is to cover some in-12 books, card of size called *catholicon (?*universal*)* is used, measured into ten equal sized pieces which will cover five volumes in-12; the board is cut with the point which is a steel tool with a wooden handle between 45 and 50 cm long .

The end of the tool is cut with a champfer and very sharp. The rest of the tool is covered in leather and looks like an epée blade in its cover, with the end left uncovered; this cover protects the hand of the worker who grasps the tool in the middle and rests the handle in front of his shoulder; in this position he moves the point over the board along a steel ruler cutting an upright line: he must watch the tool to make it cut a little bias on the edge where the cords will go, this is done by sloping the tool. The sloping side goes against the book spine and the side above is covered by the edge of the first leaves, starting to form what is called the mords (?shoulder) and giving the cover the action of a hinge. When the card is cut it is beaten strongly on the stone on the inner side which will be next to the leaves; after this, to make a proper book, paper and even sometimes parchment is glued onto the hammered side.

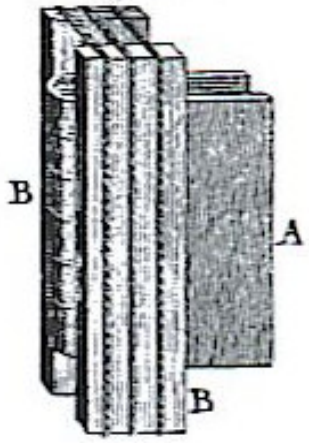
When the glued side is dry it is beaten a second time and the book is covered by attaching the cords as explained previously: the card is placed on the book and opposite each cord and about 1 cm from the edge of the board a hole is pierced from outside to inside. One centimetre below the first hole, a second is made; a third hole is made so that the holes make an equilateral triangle; then the worker takes the end of the cord opposite the holes, passes it through the first hole from above to below, them from below to above and finally passes it through the third hole; the operation is repeated for each cord in turn and the second board is attached in the same way and with the same

precision. The two cords at the end of each cover cross under the part which has passed through the first holes to stop them from moving away, as to the middle cords they are cut about 2-3 cm from the board and beaten with an ordinary little hammer to flatten them and go into the board so that there is no elevation; when the cords are beaten properly, the boards are raised to close the book to check the smooth result of all these operations, and if it has a free action and closes as it should.

After this it is covered in parchment; two strips of parchment are also taken; they should be twice as wide as the spine of the book. Half is to be glued to the spine of the book and the other parts to the boards. When the book is bound in the greek style, the part of the parchment to cover the spine is entire, without any separation or hollowing, but an incision is made opposite each cord in the part which should be attached to the board; the parchment strip is passed from outside to inside and placed between the cords which all lodge in little holes made with scissors below each incision; similar bands go on each side of the book, of a similar type to the parchment on the spine.

When the book is not bound in the greek style, and consequently the cords are raised, the part of the bands which is to be applied to the board is unseparated; but one makes hollows for the cords proportional to their width. The parchment bands are passed through from the outside between the cords, repeating on the other side. When the book is covered with parchment the board is raised; two polished press boards, longer than the book, are taken and placed on each side of the book making sure the cords are placed evenly on the *mords* (shoulder) without including the spine: then the book and boards are placed in the backing press but not too tightly and the whole lot is held about 4 cm above the jaws; a punch is taken, not too large and not too pointed, and introduced between the first section on each side of the book, enlarging the hole a little in the middle and curving slightly towards the shoulder by striking with a small hammer, the hole should be about 1 cm from the edge and

Fig. 13.



should be round. This operation is done on both ends of the book or as binders say, at head and tail and that is what is called backing a book. After the book between the boards is removed from the press, spine up and fore edge below, it is replaced with about 2 cm protruding and is pressed as hard as possible. The book is tied with thick cord taking several turns around the part outside the jaws; when that part is done the book is removed from the press and several even turns of the cord are made around the first tying up. The book is replaced in the press and the spine is pasted with flour paste using a large brush; when it has soaked up the paste it is scraped.

The scraper is a tool about 23 cm long, round in the middle to act as a handle; it is flat at the ends which are of different widths to use on different formats; one of the ends is about 5 cm wide for quarto and folio books; the other is only about 2 cm wide for the smaller formats, such as octavo. The ends are armed with teeth. The tool is used to grate the spine of the book to help the paste to penetrate; then glue is used and the spine is scraped again , avoiding the cords. The parchment bands must also be inverted so that the tool does no damage to them. Finally another coat of paste is applied, to the parchment bands as well.

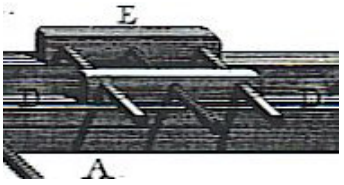
Fig. 27.

When the spine of the book and the bands have imbibed the paste properly, the bands are lain on the spine without pasting them exactly and are left for about two hours, after which the *frottoir* is applied, which is an iron tool 21-23 cm long, resembling the *grattoir* except that it has no teeth and has a concave blunt edge of a size that will match the spine of the book over which it passes. The parchment bands left lying on the spine are lifted in order to use the tool, which is used to remove the layer of paste which has not penetrated the spine and

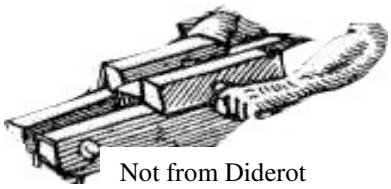
to refill the little cavities made by the *grattoir*.it also realigns the cords if they have been displaced: finally, the concave shape of the end retains the shape of the spine, giving it the rounding it should have. When the tool has finished its work on the spine paste is applied again, using the brush very lightly and the parchment bands are given a light coat and placed on the spine while holding them in position with the fingers, stretching them well, one after the other so there are no wrinkles. The parchment must be pasted on the underside, not the hairside, otherwise it will come off as it dries.

This treatment finished the book is removed to the press area where it is set near the fire to dry between boards, being careful however not to put it too near, for fear that too much heat will make the parchment pull away. When it is sufficiently dry it is replaced in the press and the *frottoir* is used lightly, to reposition the cords, to round the spine and smooth out any little irregularities which may be found; next the parchment which covers the spine is coated with glue and set to dry as before, when it is dry it is loosened, and the second sheet of marbled paper is pasted to the first sheet of white paper; after this the book is pressed between two boards being careful always not to catch the spine between the boards and that the shoulders are well marked, After about half an hour in the press the book is taken to the trimming press to prepare the edges: this involves trimming the edges on three sides with the aid of the cutter mounted in the plough; but having described earlier how this operation is done, it is proposed to describe here the construction of the instrument.

It is made up of nine principal pieces: two base pieces, of wood, about 12 cm high and 2-3 cm wide, two *bandes*, a wooden screw, a blade, an iron screw, a nut and a hand grip. The base pieces are pierced with three openings placed one at each end and the other in the middle. The two bands are about 40 cm long and about 3 cm wide and



passed through the holes at the ends of the base pieces. They are pinned to the front section and pass easily through the holes in the other one, running like the moving jaw of the other presses. The wooden screw is slightly longer than the *bandes* with a wooden hand grip about 15 cm long. It is between 10 and 12 cm in circumference, the hand grip a little larger. It holds the point of the blade against the work on the right side. This screw passes freely through the middle hole and engages the threaded hole in the right piece, so it can be moved forward or back as required. The blade is piece of steel about 15 cm long, flat, thin and very sharp, finishing in an angled (about 60°) point, flat on one side, four-sided at the end by which it is attached. It is called the *talon* (claw); it is in the middle and low on the right base piece, the blade is attached by sitting in a horizontal channel cut to hold it snugly; the steel screw has a branched flattened top and it passes through a hole made from the top of the base piece into a small iron nut then into the channel where it contacts the blade and holds it firmly.


Not from Diderot

The plough is mounted and the book is trimmed in the following manner: the boards are dropped down about 1 cm and are held by the cords and adjusted to the desired position; the worker places his book upright in the press, spine below and the shoulder lodged in the grooves against and in front of the fixed jaw. A piece of card is placed on the other side between the book and the moving jaw; This piece of card projects by less than a finger's width. The card is used to hold the book against the force of the plough and protects the shoulder on this side. The worker mounts the plough on the press as previously described, putting the near side onto the *tringle* and the other side into the sliding groove which runs along the other side of the press, The two tracks as previously described, keep the plough in place. The blade is set in position and pushed forward, strongly when it meets the section, The handgrip on the screw should not be turned too much or when the blade is against the paper or it will try to cut too much and not move easily; the

result will not be neat and polished; it should be turned little by little just as the blade comes to the card which is used to hold the book. The worker should feel this by the resistance of the blade and judge how much to turn the screw so the blade runs freely.

When the head of the book is trimmed, it is removed from the press and a measurement is taken with dividers, starting at the trimmed edge just to the end of the margin which is to be kept at the tail, and which should always be a little larger than the margin at the head; the measurement taken, and it is marked down on the board of the closed book for about 2 cm, as in the first operation, next the book is replaced in the press and treated in the same manner. The book, trimmed at head and tail, is removed from the press and the card is lowered to the required position protruding by an amount called the *chasse*s. Then the worker takes his dividers and measures at the head, in the middle and at the tail of the spine and traces a line to show the side and ends of the fore edge, always however at the head. A similar line is traced at the tail making sure to keep the dividers at the same setting for the two ends. This line shows the worker where to trim the fore edge (gutter) so that it is even in the middle.

The gutter is the concavity seen on the fore edge; the boards are the replaced in position and while shaking the book makes it lose its rounded form, it will become flat and smooth and the leaves will, move further in front. It is then taken between the fingers and checked to see that the two sides exactly follow the traced lines at head and tail. When they are satisfactory, it is placed between two boards, slightly longer than the book but not as wide, taking care not to damage the leaves: these are called trimming boards, taking the place held by the strip of card, one higher than the other and serve to hold the boards of the book. The front one, at the right of the worker, is level and parallel to the jaw. These boards resemble those of the backing press and are polished; the wider part is set higher after which the book is

tightly pressed. When it is adjusted in the press the fore edge is made by moving the blade little by little along the edges of the pages by holding the handle of the screw. The fore edge completed, the book is removed from the press and colour made from paste and powdered brazil wood is applied with a brush. This is given up to three coats. It is necessary to be careful that the colour does not bleed between the pages. When this is done, the shoulders are made by using a small sharp knife on both sides to make a sloping cut on the inside edge of the boards; next the four inside corners are rebated to allow the covers to open more easily; then the boards are reduced. This means cutting the edges of the book to the required distance from the fore edge, using the *pointe* previously described. This is done by placing an iron ruler between the fore edge and the board. The boards must be checked to see that they are reduced evenly. Next the end of a ribbon about 2-3 cm longer than the book is attached. It is called the *finet*; it is attached at the top and the middle of the spine, immediately after the headband. The headband is an ornament made of silk thread of several colours, even sometimes of gold or silver, it is placed at the two ends of the spine edges of the book. It is a kind of woven work on a single piece of rolled paper if it is simple, or on two, one on top of the other if it is double; as well as being an ornament it serves to support the top and bottoms of the sections of the book; once the headband is made, the book is covered.

Although many leather workers prepare the covering skins in many styles, binders may give them to others who are specialists in their art; this will be explained, but only calf skins which are those which binders use are given, however, the others use a proportion of them. The calfskins are moistened and nearly saturated with water then scraped on the chevalet, a special ‘horse”, with a tool which is blunt and has handles at either end. The horse is quite simple, a long barrel stave , the top leant against the binder while he removes the loose material from the top of the skin; the scraped skin, while still wet is cut with large scissors into pieces suitable for the books to be covered, and in that condition it is pared on a marble stone with

a paring knife which resembles a tool used by ropemakers, but with a flatter and shorter blade; to pare a cover is to decrease the whole thickness of the leather but mainly on the edges of the side which is pasted to the boards; understand that this method of work is not suitable for morocco, sheep or the vellum often used to cover books; the skins will be damaged if moistened. To apply the cover it is soaked with starch paste, applied with a paste brush; next it is applied to the outside of the cover and to the turn-ins, watching the rebates at the inside corners and placing it between the cover and the spine at the end of the headband, next the skin is rubbed down on the boards with the bone folder then it is carefully attached to all parts of the cover, without wrinkles; then with a blunt pointed tool, little by little the edge of the cover over the headband is rounded and positioned evenly between head and tail; this operation done the book is tied up (*fouetté*) between two boards about the thickness of the book boards using a cord called *du fouet* .

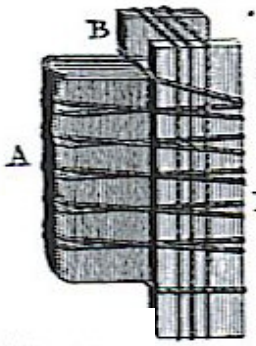


Fig. 14.

Fig. 23.

The wider side of the board is placed at the side of the spine; in this way the cover is more strongly applied to the sides and the spine, as well it is better to form the bands when the book is sewn on cords; a glove or piece of leather is placed around the right hand to enable the bands to be raised without damage and each band is encased between two cords: then the binder takes the band nippers which have flat ends and puts pressure on each side of the cords which wrap the bands; this work is called nipping the book; the sides covered by the thin boards are now allowed to dry and when they are sufficiently dry the sides of the book are lightly beaten with the hammer on the beating stone, after which the covers are sprinkled, that is a special brush is used, charged with black which falls in drops and makes little specks. This is done by

lightly tapping the brush with a little stick or the second finger of the right hand at a reasonable distance from the book; the sprinkling is left to dry and then the cover is coated with white of egg (*glaire*) and when this coat is dry, the book is tilted, head up, and aqua fortis (nitric acid)(it would need to be quite dilute or the leather would be eaten away) is poured on it so that it reduces the large speckles; (this passage seems to be instructions for preparing tree calf); then a piece of red morocco or other desired colour is pasted exactly on the spine between the first and second bands where the title is lettered in gold. Sometimes another piece is pasted below this where the volume number is placed; next the two parchment bands (*gardes*) are pasted onto the outside of the marbled leaf and then the leaves are pasted to the inside of the covers. The book is then allowed to dry in the great press then it is taken to the backing press to be burnished with a dog's tooth burnisher or a loop held in a copper ferrule and placed on a handle about 30 cm long and 8cm in circumference; after burnishing the edges, the books in the boards used for this operation are stacked with the widest part at the top and the book is pressed firmly from head to tail. When the edge is polished the book is removed from the backing press and the books are stacked in the great press using square press boards, and left for several hours. They are removed and given two coats of beaten egg white (*glaire*) but allowed to dry between coats. Then a piece of worsted coated with lard is rubbed all over the cover; next is used the polishing iron on a long handle and having a smooth side and a curved side. The worker makes this fairly warm and passes the curved side over the covers; when they are polished and lustrous, the worker gives several blows of the hammer on the four edges of the book to make them even and sharp, next one long side of the cover is taken and pushed gradually into the slope of the shoulder on each side, and then he has fully completed all that needs to be done to put the book into the hands of the most curious reader.

Although we set out to show the method of binding a solid and proper book, there are other methods used as well in binding according to the whims of those who use them; these fashions are to marble the edges of the books instead of reddening them, or even to gild the edges, and to place gold ornaments on the covers. We will give all the information we have been able to procure for these articles.

Marbling the edges is used instead of reddening and is usually done with red and blue inks, the colours arranged so that they touch without having exact measurements. When the edge is marbled it is left to dry and the other operations follow. If it is desired, the edge may be gilded over the marbling. The book is placed in the press using boards higher than wide, under strong pressure so that the *glaire* will not penetrate too far and the metal will hold well; when the book is adjusted the edge is scraped to remove any unevenness left after the trimming. The edge is then coated with a base of Armenian bole, red clay, mixed with a little lard or even better some soap and sugar-candy. The ingredients are ground separately, mixed and ground a second time and thinned with size made from boiled parchment, reasonably strong, and this is applied over the marbling. When this is sufficiently dry it is brushed over lightly with a mixture of rotten *glaire* and two parts of water beaten together. Then the gold leaf is broken into pieces and picked up using a compass whose arms are rubbed against the worker's cheek (acquiring an electrostatic charge) so that the gold is picked up by them. The compass looks like a pair of scissors without finger loops, joined by a rivet in the middle. When the edge is covered in gold it is left to dry and then burnished. The rest of the process is the same as for the other books.

When a book is gilded on the edge, it should also have gold on the cover or it is not fully bound; to apply the gold the leather is lightly coated with glaire on the side to be decorated and when it is half dry, gold leaf cut with a knife to the largest

possible size is placed on it, then the points rolls and cylinders are used, heated to a suitable temperature and pressed onto the gold. The ends of these tools are engraved with symbols and letters, others may have roses or stars; all these different tools have names depending on what is engraved on them; generally they are called ‘little irons’; they are applied warm and flat to the places where there is to be an imprint.

Cylinders are little wheels held between two arms of iron, and they carry ornaments in a strip around the middle, like the tyre on a wheel; these little wheels vary in size. Some carry for example, dentelles (little teeth like lacework), others have lines, single or double. To use them they are warmed and rolled along the edge of an iron ruler, leaving a gold imprint on the part of the book they move over: when the gold work is finished, a medium rough brush is used to remove excess gold leaf, leaving it only where the tools have made their impressions: thus the binder has used all the resources of his art and has joined the agreeable with the useful and may have the pleasure of admiring his work.

This booklet was made using Microsoft Word 2003, Adobe Photoshop Elements 3.0, and graphics downloaded from the internet. The font is 16 pt Times New Roman and the layout was done to take advantage of the booklet printing function of a Samsung CLP-510 laser printer which reduces the size of the output.

A.G.A.