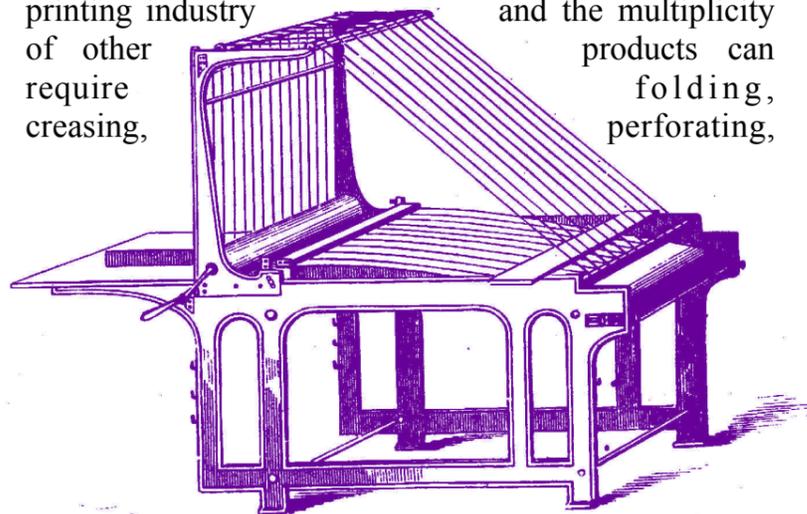


Print Finishing & Warehousing

Print finishing covers all the many processes that can be required after the actual printing process, while Warehousing is the area of storing & handling the paper before and after printing: the most significant activity in it (but by no means the only one) is guillotine operation.

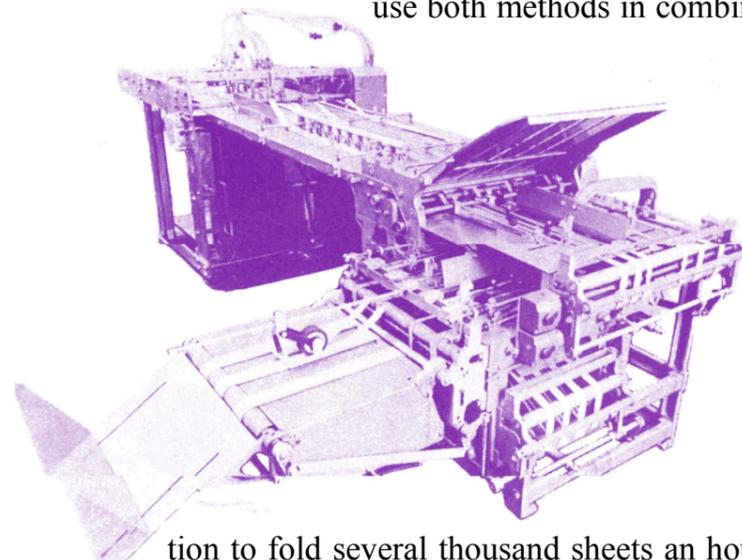
Printers' guillotines normally cut through a ream (500 sheets) of paper, rather than single sheets, need to be very accurate, and can be large enough to cut sheets over a metre wide. They are therefore very substantial machines. One major variation is the three-knife guillotine, designed specifically to trim all three sides of a pile of books or magazines.

Bookbinding is of course a major section of print finishing, but book production is only one part of the printing industry and the multiplicity of other products can require folding, creasing, perforating,



wire stitching, shaped cutting, varnishing, plastic laminating, ruling, numbering, gumming, waxing, and more. Of these, folding and wire stitching are probably the most common.

Folding machines work on two principles, plate and buckle. Plate folders (the more accurate) push the sheet of paper down between two rollers, so that it is pinched and thus folded as it is pulled through. Buckle folders are faster and simpler, and the paper is fed into a dead-end slot—when it hits the end, it buckles, and is caught by a pair of rollers to pinch and fold it in the same way as the plate system. Most industrial folders use both methods in combina-



tion to fold several thousand sheets an hour several times if required, and can be adjusted to suit different sheet sizes and different arrangements of folds.

Wire stitching is much the same process as done by the common office stapler, but the machine forms its own staples from a length of wire, and is commonly a *saddle-stitcher*, where a folded booklet is laid over a metal saddle, and the stitch put through the spine. Other systems of simple binding for booklets include spiral wire binding and plastic comb

binding. These both require the sheets to be perforated with a line of holes—another print finishing operation, also used to make postage stamps and similar items requiring to be torn out.

Packaging is a major product of the modern printing industry, and by nature uses more print finishing techniques than simpler products. In particular, box-making requires the cutting out of complex shapes from the printed card sheets. This is normally done on flatbed machines, which stamp the sheets of card with a cutting forme made up just like a letterpress one, using sharp-edged steel strips the same height as type, bent to shape, and held in place with shaped cut out plywood filling the spaces. The cutting process requires great pressure, so the machines are particularly substantial.

Warehousing is an important part of printing, since paper (being wood-based) is sensitive to temperature and humidity changes, and proper storage is essential to ensure trouble-free printing.

Top Right: A hand-operated guillotine (19th Century). Centre: An industrial folder using buckle (the dead-end slot projecting at the top), & plate (folder arm visible under) to make a second fold at right angles.

Bottom: A ruling machine which used pens held in a frame to draw parallel lines (eg. For notepads or accountancy books). This one is an early hand-fed version: the wires were to hold the paper as it fed through.

