

The Later Platen Presses

With the industrial revolution, the drive towards mechanisation, & the introduction of new materials such as cast iron and steel, most manufacturing saw increasing numbers of machines redesigned or invented to increase production, & printing was no different. The iron press & the cylinder press were soon followed by radical alterations to the platen press to take advantage of new materials, & make power operation possible.

The main change was to redesign the platen (the surface the paper lies on) & bed (the surface the type or printing surface is laid on) to hinge, like a book. Using simple engineering, this could then be powered, & by turning the system on its end (making the 'book' opening point up), it could be hand-fed with paper very rapidly.

Presses of this type (*clam-shell* platens) varied from small table-top ones worked by hand lever & used for letterheads, small cards & similar work), to free-standing models operated by treadle or belt drive, and culminated in the Heidelberg 'windmill' machine (shown below right) of the latter half of the 20th century, which used air suction to pick up and feed in the sheets. At the end of the letterpress era, these machines were the workhorses of thousands of small printing firms.

One noteworthy variation on the platen was the *parallel-approach* (or 'Art') platen, where the bed and platen approached each other remaining parallel, as they had in the original platens (see the Common Press), and not hinged together. This overcame the technical snag that the clamshell is tricky to 'pack'; putting extra paper in to increase pressure, causes more pressure

near the hinge, & thus uneven printing, & ways round the problem cause complications in use.

The platen design was simple and lent itself to machines for small-scale, usually short-run, work. It could be adapted to foil-blocking, creasing, and cutting (for example cutting out elaborate shapes in card for box-making). The printing surface was flat, and could be traditional type, requiring no elaborate equipment and suiting small low-capital operation. The limitation was the maximum area that could be worked: by the laws of physics, sheets above A3 (this size), required enormous forces to print the area of contact, and thus very massive machines, losing the general advantages of low cost & small-scale operation that were platens greatest strength.

