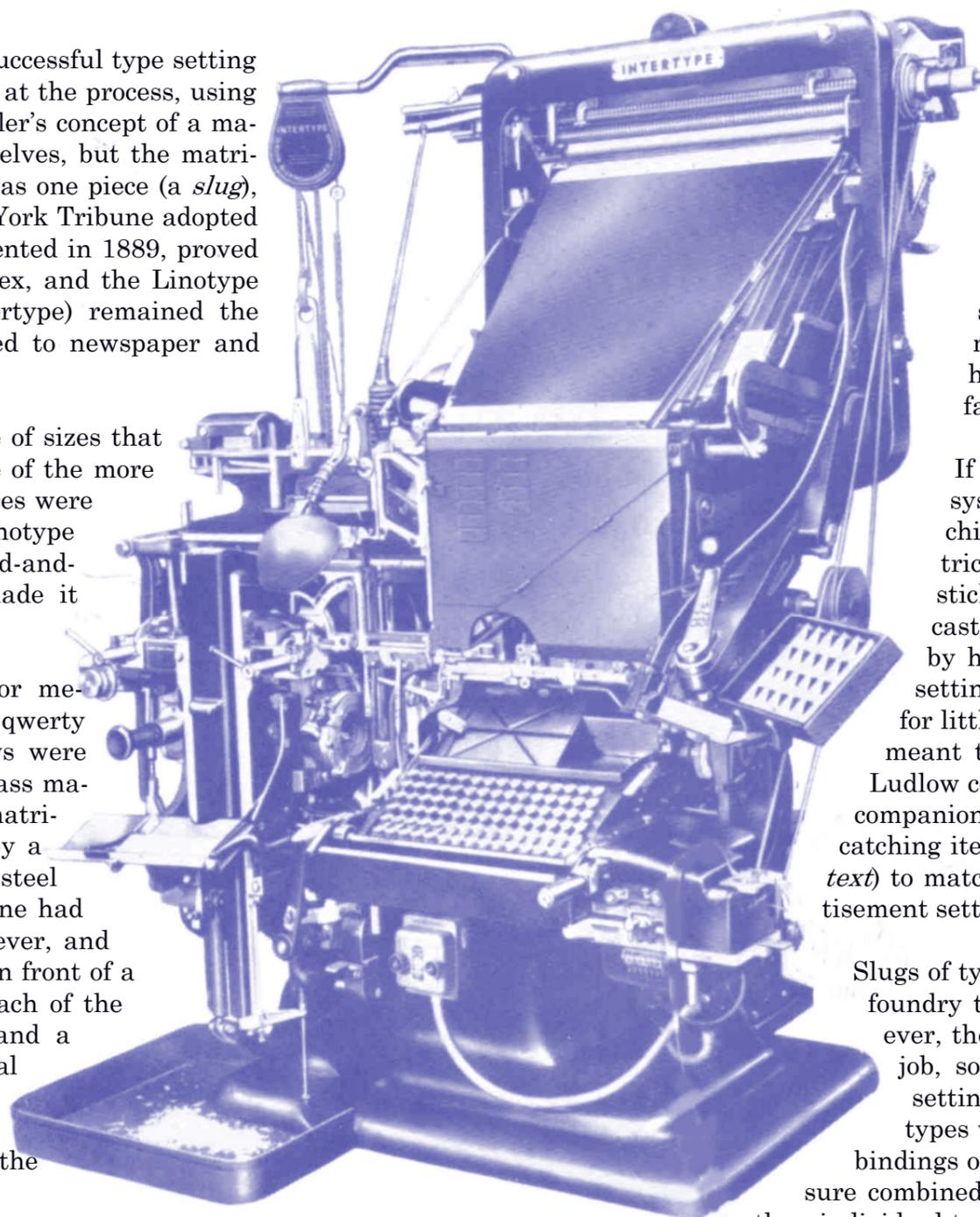# Slugs & Snails

The Linotype was the first commercially successful type setting machine. There had been earlier attempts at the process, using various principles, but Ottmar Mergenthaler's concept of a machine that collected not the letters themselves, but the matrices, and then cast a complete line of type as one piece (a *slug*), proved successful in 1886, when the New York Tribune adopted it. The Monotype machine which was invented in 1889, proved technically superior, but was more complex, and the Linotype (and the almost identical rival the Intertype) remained the more popular machine, particularly suited to newspaper and small printer offices.

The Linotype could not produce the range of sizes that the Monotype could achieve, nor set some of the more complicated arrangements, and its typefaces were mostly considered inferior to the best Monotype designs, but for straightforward bread-and-butter work, its speed and simplicity made it highly popular.

The operator used a keyboard which, for mechanical reasons, was not in the normal qwerty arrangement; the commonest letters' keys were on the left. Pressing a key released the brass matrix for that letter from a chute, and the matrices fell into a trough where they hung by a pair of lugs in a line. Spaces were thin steel pairs of opposing wedges, and then the line had been completed, the operator pressed a lever, and the line of matrices & spaces was moved in front of a slot, a bar came up and pushed one of each of the spaces' wedges up to tighten the line, and a pump injected the molten typemetal through the slot to cast the line. Next, a knife cut the bottom of the line, and it was ejected to join the previous lines in the galley.

Meanwhile, an arm lifts the line of matrices up to a rail along the top of the machine, where the matrices are slotted onto the rail by a set of teeth. They are pushed along the rail, and because each character has different teeth, and the rail is cut to match, each matrix falls off back into the chute from which it started, thus keeping the keyboard supplied with matrices.

The machine usually has a several sets of chutes (or *magazines*) each with a different typeface. Each style and size has to have its own magazine, so a machine would have a set suited to the work in hand: perhaps the Roman, Italic & Bold of a typeface, or perhaps several sizes of one face.

If the Linotype was the fastest popular typesetting system, the Ludlow was the snail. The Ludlow machine worked on the same principle of assembling matrices, but they were collected by hand into a special stick, and then clamped over the mould, and a line cast, before being distributed back into the matrix-case by hand. This process was slightly slower than hand-setting of type, but one line could be cast several times for little extra effort, and using matrices rather than type meant that running out of characters was unlikely. The Ludlow could cast from 6pt to 48pt, and was often used as a companion to the Linotype for *display setting* (the more eye-catching items such as headlines in contrast to the main *body text*) to match the Linotypes' text work: for example for advertisement setting in newspapers.

Slugs of type had to be cast in softer metal than Monotype or foundry type, so they wore in printing more quickly. However, they were only used once, and re-melted for the next job, so this was not normally a serious problem. Slug-setting was also used for work where the more expensive types would be prone to excessive wear—in gold-blocking bindings or in stereotyping (in both of which the heat & pressure combined to cause wear). Slugs were also easier to handle than individual type, which of course could 'pie', and although corrections had to be made by re-setting the whole line, the correction was easier to insert than corrections in hand or Monotype work.