

IX  
typewriters were nearly identical, and the trend toward uniformity had begun during the 1890s. Two or three generations of humanity have been witness to typewriters that all followed a nearly identical pattern, the real variety in the field being relegated to the time of our grandparents and great-grandparents. But before the age of standardization, a sweeping statement could be made about typewriters: you name it, somebody tried it.

Consider the *typebar*, the component that strikes the paper to get the printing done. In modern typewriters, the typebars are grouped in a crescent-shaped basket that lies somewhat below the front of the platen; they travel through a 90-degree arc to print on the face of the platen that is in line with the typist's eye. This ubiquitous system is called the *frontstrike*, and, universal as it is now, it is but one of a multitude of typebar variations invented, manufactured, advertised, and used routinely in uncountable millions of typewriters over a period of more than half a century.

During the 19th century a different typebar system called the *upstrike* was the standard. Here the typebars hung vertically (instead of lying horizontally when at rest) and were arranged in a full circle *underneath* the carriage, instead of in front. Buried somewhere in the center of the typewriter, the typebars had nowhere to go for printing but up. They did their printing on the *bottom* of the platen. If you wanted to know what you had written, you had to raise the carriage up on its hinges to take a peek.

Improbable though this "blind writing" principle may seem today, it was by far the predominant 19th-century form; it is easy to enumerate two dozen brands of upstrike typewriters, nearly all of them producing several different models. The biggest sellers were upstrike, and the upstrike typebar was present in the machine that is generally considered the "first typewriter," the Sholes & Glidden manufactured in 1873. Three manufacturers—Remington, Yost, and Smith Premier—still had upstrike machines in production as late as 1908. For 35 years, then, the greatest single assemblage of manufacturers produced perhaps a million typewriters on the premise that a good typist should not *have* to see the writing.

Notwithstanding the almost moral tone with which upstrike manufacturers defended their case, many typewriter designers thought their customers might like to see what they were doing. So they repositioned the typebars of their products to every alternative imaginable, affording the machines' users some degree of visible writing.

Typebars swung, slid, and hopped to their printing positions. They traveled forward, backward, downward, and sideways. When at rest they lay horizontally, leaned diagonally, or stood vertically. They could be found at the top of the typewriter, near the center, or down toward the bottom. Some traveled in a straight line, some swung, and some moved in two or three different directions to print a single character, in a display of mechanical gymnastics that made sense even though it *seemed* comical.

Nearly all of these different methods for visible writing showed up in several different designs. Curiously, the earliest was remarkably prophetic of the eventual frontstrike form, but its acceptance was marginal. It was called the *oblique-frontstrike*, whose typebars were in front of the carriage, standing higher and inclined back toward the operator at approximately a 45-degree angle. It first showed up in 1883 in a short-lived Canadian typewriter called the Horton. The Horton came and went, and the oblique-frontstrike typebar did not appear again until 1900 when the German-made Ideal typewriter made its bow (and by this time at least two different designs had appeared with full frontstrike typebaskets, with the deluge to follow in the next four to eight years). The next oblique-frontstrike typewriter appears to be the short-lived Norica made in Germany in 1905, followed by the Triumph Perfect Visible (also sold under the name Imperial) which is reported to have been made from March until October, 1907. In 1908 the same machine was reintroduced as the Burnett, with about the same success.

Why the oblique-frontstrike school of design got

so little play is an enigma, as is the brevity of lifespan of all the early oblique-frontstrike machines except the Ideal. A less efficient design concept, from the standpoint of visibility, was much more successful. This was the *anterior-topstrike*, where the typebars stood bolt upright in front of the carriage, and swung downward to print on the top of the platen. Instead of having to raise the carriage as in upstrike machines, the typist now had only to peer over the high-standing typebar shield to inspect the print. Perhaps the fact that the typebars themselves were usually concealed contributed to the success of anterior-topstrike designs (the sight of typebars constantly "bobbing up and down" in early visibles was, according to critics, a source of eyestrain) but the anterior-topstrike nevertheless obstructed vision more than the oblique-frontstrike layout did.

The first anterior-topstrike machine is usually said to be the Bar-Lock of c. 1888 (although the Cash may have been a year earlier), and, along with the Franklin of c. 1891, it carried the anterior-topstrike concept well into the 20th century in some very popular typewriters. At least five additional makes of typewriters utilized this form of design, including a British-made line called Imperial (no relation to the oblique-frontstrike American Imperial) whose final anterior-topstrike model first came out in 1921.

If standing the typebars erect in front of the carriage partially solved the visibility issue, then standing them erect behind the carriage could only be an improvement; for striking forward to a platen positioned between them and the keyboard, they would not obscure vision. The *posterior-topstrike* concept was present in at least four different makes, the American-made Brooks and Fitch machines of the late 1880s and early '90s, and their contemporary British-made North's and Waverly machines.

Where is it written that all typebars must be in a single cluster? In at least three different makes—the Williams, the Oliver, and the Emerson—the typebars were divided into two groups. In the Oliver they stood erect on either side of the printing point, swinging sideways down to the top of the platen. In the Emerson they were in front of the carriage, where, from either side of the printing point, they swung forward to the face of the platen. In the Williams, half were behind and half in front of the carriage, lying horizontally on the same level as the top of the platen. When a key was pressed the typebar lifted, shot forward, and slapped down atop the paper, the amusing "grasshopper" acrobatics being repeated as each typebar returned to rest.

While they did not share the Williams' grasshopper movement, at least six different makes had typebars that slid forward—instead of swinging—to the printing point. Known as the "thrust" action, this form of typebar first appeared in the Rapid typewriter of 1888, then was taken up by the Granville Automatic, the Wellington, the Ford, and the Noiseless made in the U.S., and in the German-made Kanzler. The original Adler typewriters worked this way, they, like the Canadian-made Empire and possibly the German Protos, being the same machine as the Wellington manufactured under license. The forward-thrust Noiseless first made its market splash in 1916, was acquired by Remington in 1923, and as the Remington Noiseless typewriter kept the thrust action in manufacture until the 1950s (and not the 1930s, as Adler asserts).

Of all the early attempts at visible writing, the thrust machines were the most successful because they permitted the entire page to be seen at once with nothing to obscure vision. In the anterior-topstrike machines, as already noted, the typebars themselves intruded upon the line of sight. In typewriters where typebars were behind the carriage—including the posterior-topstrike and the Williams machines—there was a problem of where the paper would come from and where it would go to; for with typebars behind and the keyboard in front of the carriage; simply wrapping the paper around the platen meant conflict in one direction or the other. The solution became to roll the page up in a frame at one side of the carriage and feed it over the platen into another frame at the other side.

Thus, what you were writing was plainly visible, but what you had written got swallowed in the frame and was anybody's guess. Of the various topstrike forms, only the Oliver permitted the entire page to be seen without some intervention. This helps explain why the design remained on the market until 1928—pushing 40 years on the American market—before a British firm acquired the design and manufactured it in England for a few years more.

As for the side-frontstrike Emerson, its writing was fully visible and thus it surmounted the primary objection of other early visibles. But coming to the market in 1907, it was a renegade in the face of the standard frontstrike standardization. Worse, it was a poorly made low-priced machine distributed by Sears Roebuck, replaced after a few years by the superior Woodstock.

In at least three designs—the Crary, the Elliott-Hatch, and the Elliott-Fisher—the typebars struck downward to where they could print *underneath* the body of the typewriter. The idea was that the machine could be set upon the object to receive the printing, which included, according to the catalog for the 1892 Crary, "...books of all sizes, postal cards, envelopes, tissue paper, maps of any size, packages, boxes, boards, ceilings of rooms, floors, heads of barrels, sides of leather..." with the understanding that the principal application of such machines was for typewriting in bound books such as ledgers. Regardless of whether the machine was making accounting entries or mechanizing the handwriting on the wall, it was the entirety of the typewriter itself that moved, letter by letter and line by line, with the typist galloping along in hot pursuit.

These were the principal schools of typebar design, but within them were sub-classifications that provided still further variation on the mechanical theme. In most upstrike machines, for example, the type basket was arranged in a complete circle beneath the carriage; yet in at least two upstrike designs, the National of 1889 and the American (A.K.A. Pullman, Armstrong, Herald, Europa, Eagle, Fleet, Favorit, Mercantile, Surety, etc.) of 1899, the upstrike typebars were laid-out in a semicircle, somewhat like an upside-down frontstrike machine.

While the typebar motion of most upstrike machines was a straightforward 90-degree swing, similar to the action of your leg when the doctor taps your knee, the Yost upstrike models (1887-1908) possessed a form of inverted grasshopper action wherein the typebar actually reversed its direction by 90 degrees, its travel including lateral, downward, and upward motions each time it was activated. "The ingenious construction of the typebars," states the 1923 Condensed History about the Yost, "by which they left their position of rest and traveled to the printing point under the platen, has never ceased to this day to provoke astonishment to the uninitiated."

Variations abounded in the thrust-action school too. In most, the typebar simply slid straight forward. But in the 1903 Kanzler, the typebar also raised or lowered during its forward journey to any of four different levels according to which key had been pressed. With eight characters on each typebar (four lower-case, four capitals activated by shiftkey) the machine's 88-character capacity was printed by a mere 11 typebars. Remington emulated the idea when they introduced the No. 6 model of the Remington Noiseless in the mid-1920s. Here each typebar was activated by either of only two keys (instead of the Kanzler's four) and sought either of only two levels. Given that the Underwood Noiseless was the same machine, with a different nameplate emplaced by the same factory, the multiple-decker thrust typebar got plenty of play over the years.

Still further sub-variations and sub-sub-variations could be enumerated from the typebar school, but space dwindles and meantime we have another major group of typewriters to cover: those that had no typebars at all. Perhaps the place to start is with a gorgeous piece of sculpture called the Crandall.