## Part II

# The Unknown Writing Machine

by Don Sutherland

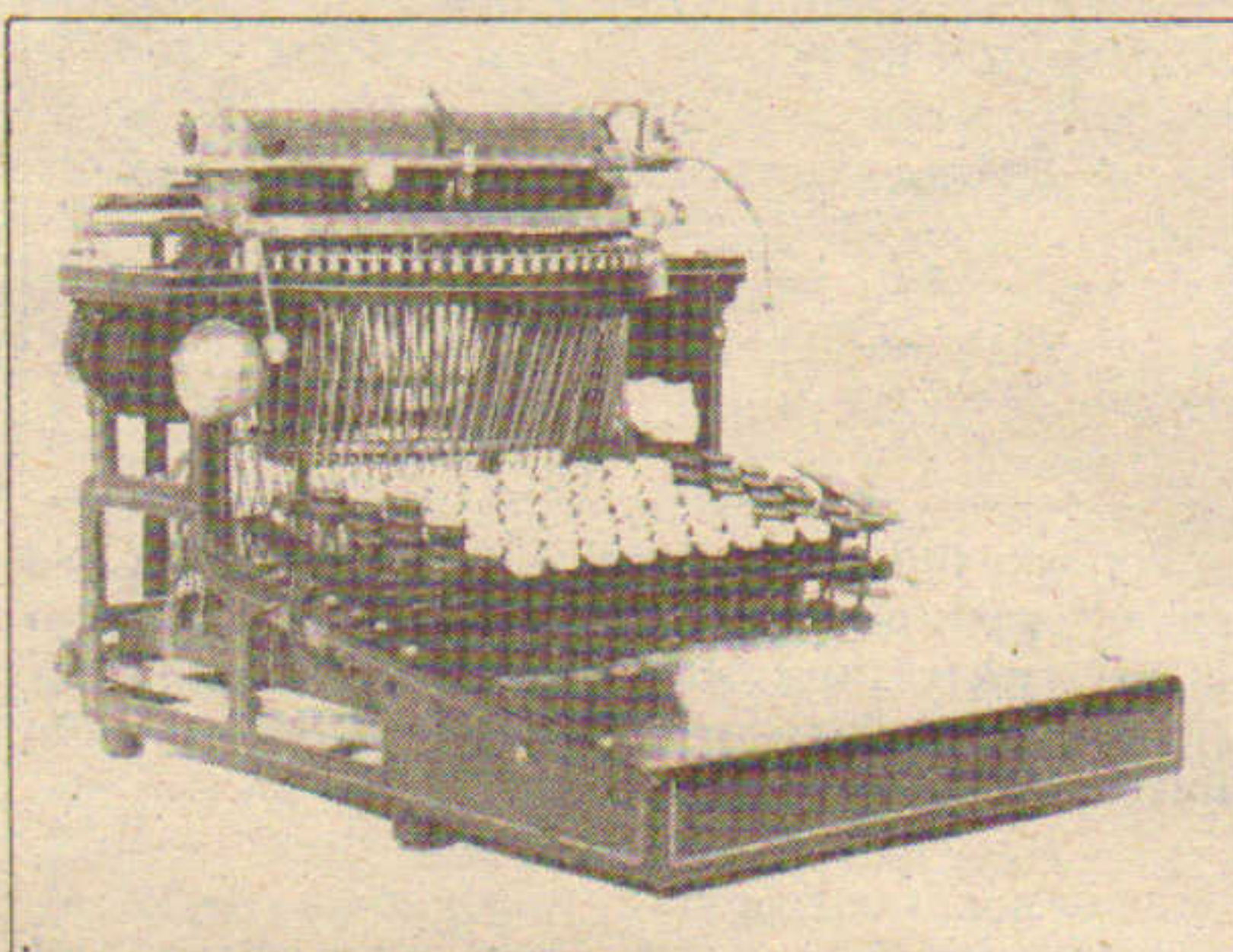*Part I of this three part series appeared in the October 25, 1978 issue.*

The typewriter is among the oldest products of the mechanical age. Having come to the market some 105 years ago, its longevity among complex non-military mechanisms is surpassed only by the sewing machine. Incalculable millions of typewriters have been produced, but for all their ubiquity the instrument is unknown. Only scholars of the arcane are able to name the typewriter's inventor, or describe the incredible variations in which typewriters were once produced, or guess at the impact the typewriter had upon society as a whole. Typewriters may possess thousands of parts, they may solve the mechanical paradox of durability and operational lightness, and their designs may be ingenious and their assembly elegant; but typewriters nonetheless somehow have been greeted with a perennial attitude of benign dispassion. Why? Suffice that it is so.

Eli Whitney produced a machine that revolutionized labor in the field, but the revolution produced by the typewriter in the office — and, ultimately, in the relationship between men and women — gets lost in the shuffle of historic developments. The typewriter's story has been committed to books, but these have usually been small books dealing with a broad subject. Their compilers and authors could not get every detail right, not when facing a field of 300 manufacturers. They did what they could, which was often remarkably well, but still their collective errors are so massive that the typewriter's tale can be outlined fully through the errors alone. That is how the tale is told here: with a headline that states a misconception published in one of the standard references on the subject, followed by the debate that aims to illuminate the issues.

Authorities usually concur that typewriters are best categorized according to the means by which they brought type and paper into contact: upstrike, topstrike, single-element, and so on. This forms a satisfactory basis for cataloging mechanical principles along family lines, and for tracing the evolution of mechanical ideas. But there is another basis for categorizing early typewriters, the one that considers the things the typist did to make the gizmos go. The study of typewriter keyboards opens additional areas of how people thought writing machines should be used, and of the awesome variety that existed in the field. Perhaps the place to begin this exploration is with a common misstatement about an early machine called Caligraph.

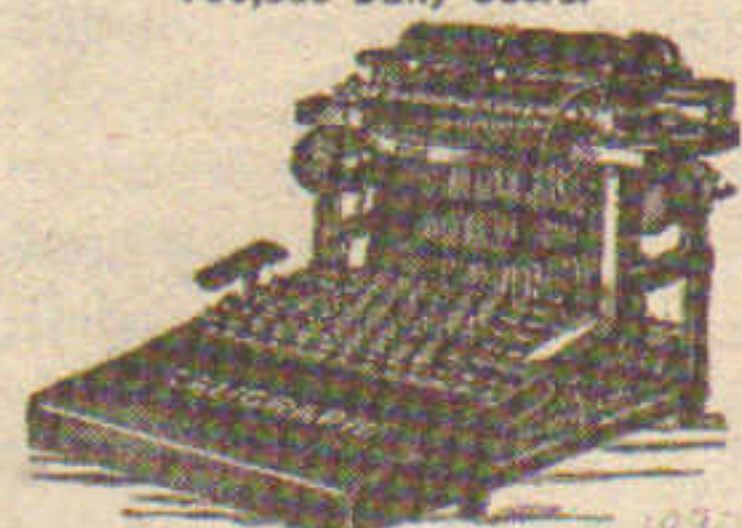### THE CALIGRAPH WAS THE FIRST TYPEWRITER THAT HAD A KEY FOR EVERY CHARACTER.

The Condensed History of the Writing Machine (1923) informs us that "The Caligraph was the first commercial type-bar machine that was sold with a key for each character that it printed." Demonstrating how ideas get transmitted from one



Caligraph with Double-Keyboard.

An 1890 ad for the Caligraph No. 3.

reference to another, the catalog of the Milwaukee Public Museum, published 42 years later, parrots the inspiration that the Caligraph was "The first commercial type-bar machine equipped with a key for each character printed." Both sources are perfectly comprehensible to other typewriter historians, for everyone knows what they *mean*. One must wink, therefore, at the mildly disconcerting reality that both sources are incorrect in what they *say*.

Newcomers to the typewriter field might be puzzled by what the two authorities say and mean both; for don't all typewriters have a key for every character? Modern typewriters do not. They have a key for each two characters: lower-case and capital, the latter accomplished by pressing the letter key and shiftkey in combination. This is one way to equip a typewriter with the 70 to 90-odd characters that most possess. But it is not the only way, and, as is demonstrated throughout the article, if there was another way to do something during the history of typewriters, somebody found a way to do it. One way to go from small letters to capitals is

through a shift-key. Another is to have separate keys for all.

The so-called double keyboard, where capitals and small letters all had their individual keys, was one of the most popular varients of typewriter design. Over one dozen different makes had double keyboards, including some of the most popular typewriters of all. It is probably conservative to estimate that, during nearly 40 years of double-keyboard manufacture, more than one million such typewriters were supplied.

Such a sea of keys, splayed out in six or seven or eight rows, might bewilder today's touch-typist. The touch-typist does not look at the keyboard. Instead, the eyes remain on the material being copied, while all fingers of both hands venture from their "home"' row to seek nearby keys in their memorized locations. This makes a compact keyboard — such as a shiftkey keyboard provides — the most efficient. Touch-typing was the professional standard by the second decade of this century, and it was in use at least as early as the 1880s. But during the 80s and 90s, some typewriting theorists contended that only the longest two fingers of each hand were strong enough for daylong operation. They also insisted that the typist should watch the keyboard to ensure accuracy, taking visual sips of the material being copied in quantities consistent with memory's ability to retain. To an outlook like this, a double keyboard made sense. The hands, no longer necessarily confined to a home row, could journey about the keyboard far and wide.
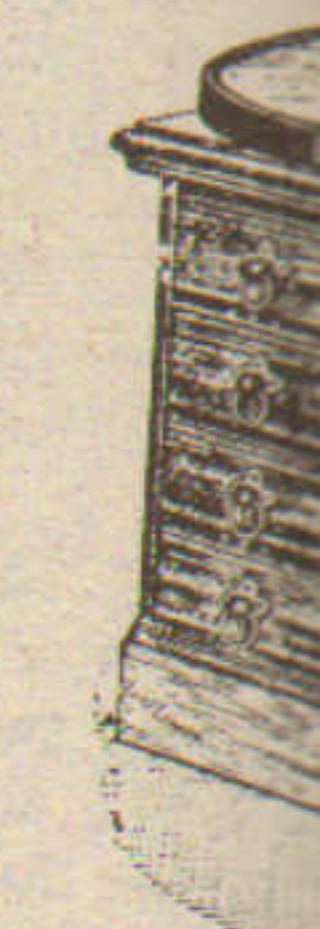
When this is the situation, the act of pressing two keys to print one capital might logically be construed, as it was by double-keyboard advocates, as pointless duplication of effort.

Proponents of the double keyboard were also fond of proclaiming superior durability of their typewriters. There was no movement between the carriage and the typebasket for change of case, for each key of the double-keyboard machines operated its separate typebar. In shiftkey typewriters the relationship between the typebar and the platen changes when the shiftkey is pressed, various components altering their positions, so that one or another typeface on a particular typebar gets into printing position. Double-keyboard fanciers insisted that these extra moving parts would wear out and malfunction eventually, and offer a typewriter that was structurally weaker to begin with.

The double-keyboard boosters were persuasive for a considerable period. For although the biggest-selling typewriter of the 19th century—the Remington—was a shiftkey machine, the second biggest-seller apparently was the Smith Premier, a double-keyboard machine. Introduced in 1889, the Premier line is easy to think of as generally the most excellent upstrike typewriter ever made, for it was solidly constructed from an extremely well thought-out design; and in fact the design did not substantially change until 1908, when the No. 10 Smith Premier appeared as the only frontstrike