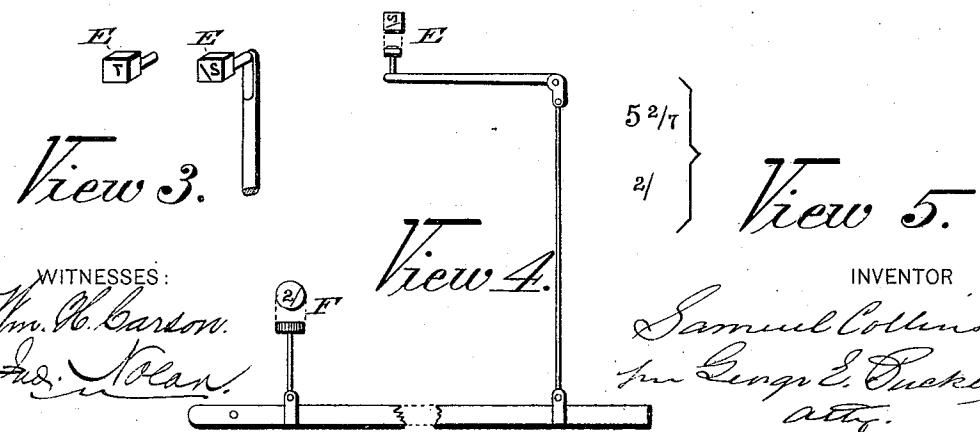
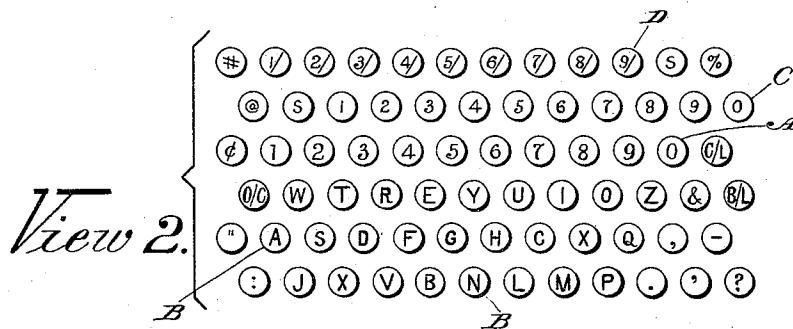
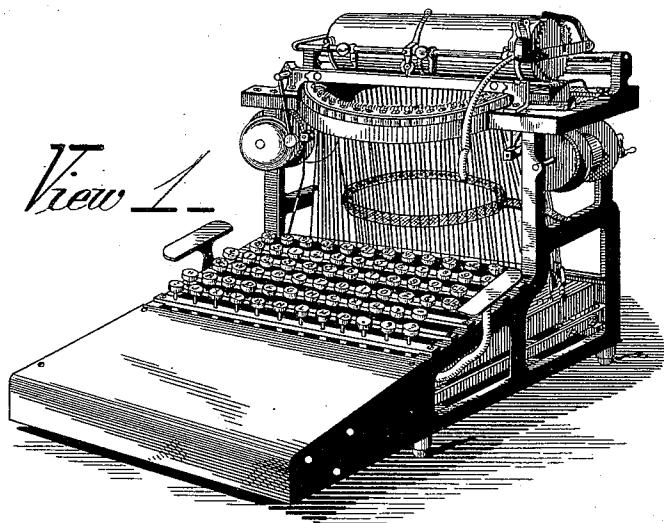


(No Model.)

S. COLLINS.
TYPE WRITING MACHINE.

No. 433,765.

Patented Aug. 5, 1890.



UNITED STATES PATENT OFFICE.

SAMUEL COLLINS, OF PHILADELPHIA, PENNSYLVANIA.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 433,765, dated August 5, 1890.

Application filed July 7, 1888. Serial No. 279,262. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL COLLINS, a subject of the Queen of Great Britain, and a resident of Philadelphia, Pennsylvania, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, making part hereof.

10 My invention relates particularly to the figures on the key-board and on the printing-types of these machines, and is designed to facilitate and expedite the work thereof.

15 My invention consists in combining the number indicating the numerator and the diagonal stroke in one type and one key of the key-board in the same space occupied by one full-sized letter or figure. I employ a line of small-sized figures 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, 20 as well as a line of large-sized similar figures. This line of small figures is used to indicate the denominators. The fraction is thus clearly distinguishable from the ordinary line of figures.

25 In the drawings, View 1 is in perspective and shows a Caligraph type-writing machine, showing also my improved key-board; View 2, a detached plan of the keys, showing the letters, figures, and part-fractions on the keys.

30 View 3 shows a detached type with a small figure 7 on its face, also a type with small 2 and diagonal line beneath it, which, with the small 7, will represent two-sevenths. These being type-markings are in reverse.

35 View 4 shows simply the connection-rod between the type and the key. View 5 shows the impression made on the paper by a type, such as to form numerator and inclined stroke, as in View 3, and a large 5 and the results 40 of two strokes from types shown in View 3 combined, making five and two-sevenths.

The construction of these and other machines is well known in the arts, and I will confine my description, therefore, to the parts 45 wherein my improvements are made. These parts are the markings on the keys and those on the printing-types.

50 A is a line of keys with the large ordinary-sized figures 1 up to 9 and 0; B, lines of letters; C, a line of small figures adapted to form denominators to supplement my small-sized numerators and inclined strokes; D, a

line of numerators from 1 to 9 in small figures, with the inclined strokes beside and beneath them, each figure and stroke taking up 55 no more than the space occupied by one whole figure, and being on one type-face and on its one corresponding and connected key.

E E are types, F, a key. The keys containing the small separate figures in printing 60 can be struck to follow any figure or numerator with its inclined mark and followed by small-sized figures until the size of the denominator is indicated, thus enabling the operator to write a denominator of any required 65 size.

Heretofore separate types containing single inclined lines were used; but the figures indicating the numerators and denominators were on different and separate types. It thus 70 required two strokes to permit the numerator and the inclined mark. I am also aware that single types, each containing a whole fraction composed of numerator and denominator with horizontal line between have been 75 used; but to cover the whole number of fractions this system would require a larger number of types and keys. I therefore do not claim either of these devices.

I am aware of the use of "types" to be "set 80 up" in "forms" for printing, which had a numerator and a denominator, one directly above the other, separated by a horizontal line, and also that in some case the dividing-line was joined to the foot of the numerator and in 85 others to the top of the denominating figure; but in each case nothing was ever said or shown of separate types for numerator and denominator with a slanted dividing-line, and each set forth placing the numerator above 90 the denominator, excepting when a numerator and a denominator were placed on the same line divided by a horizontal dash. Luckome, in his "History of the Art of Printing," speaks of joining the dividing-line to the foot 95 of the numerator, but omits mention of a slanted line. These devices would not be convenient to use in a type-writer. I am also aware of the device for type-writing machines set forth in United States Letters Patent No. 100 366,577, dated July 12, 1887; but I do not claim any of these as my invention.

What I claim as new is—

1. In a type-writing machine, a key-board

containing keys the faces of which are marked with ordinary-sized figures and keys the face of each of which is marked with a combined small-sized figure and an inclined mark or stroke beside and beneath it, in combination with a set of impression-type correspondingly separately marked and connected with said keys, substantially as described.

2. In a type-writing machine, a key-board containing keys the faces of which are marked with ordinary-sized figures and keys the face of each of which is marked with a combined small-sized figure and inclined mark beside and beneath it, in combination with a line of keys the faces of each of which are marked with small-sized figures, also in combination with said keys a set of impression-types correspondingly separately marked and connected therewith, substantially as described.

3. In a type-writing machine, a key-board, in combination with a set of impression-types, each separately marked with a figure for a

numerator and an inclined stroke or mark, and connected with the keys by bars, substantially as described.

4. In a type-writing machine, a key-board, in combination with a set of impression-types, some of which are marked with ordinary-sized figures and others with a figure for a numerator and an inclined stroke, said type being connected with the keys or bars, the figures and strokes on the separate faces of said types so marked being restricted in size, so as to take up no more space when printed than that necessary for the separate impressions of the ordinary-sized figures, substantially as described.

In witness that the above is my invention I have hereunto set my hand.

SAMUEL COLLINS.

Witnesses:

SAMUEL B. COLLINS,
GEORGE E. BUCKLEY.