

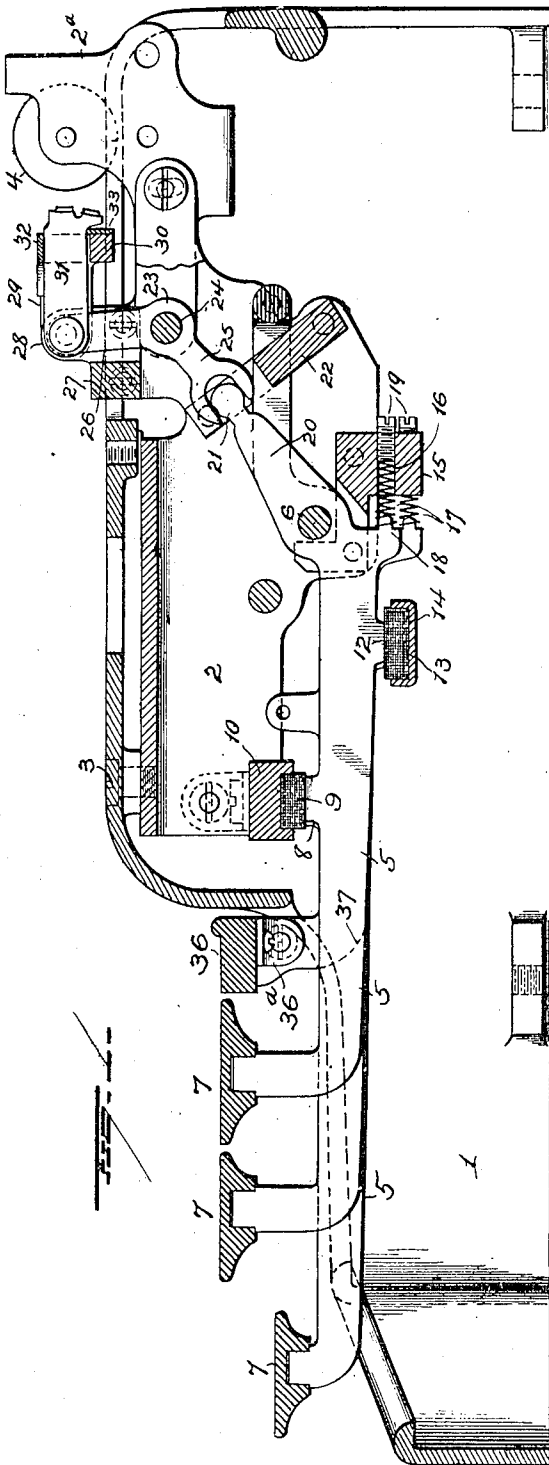
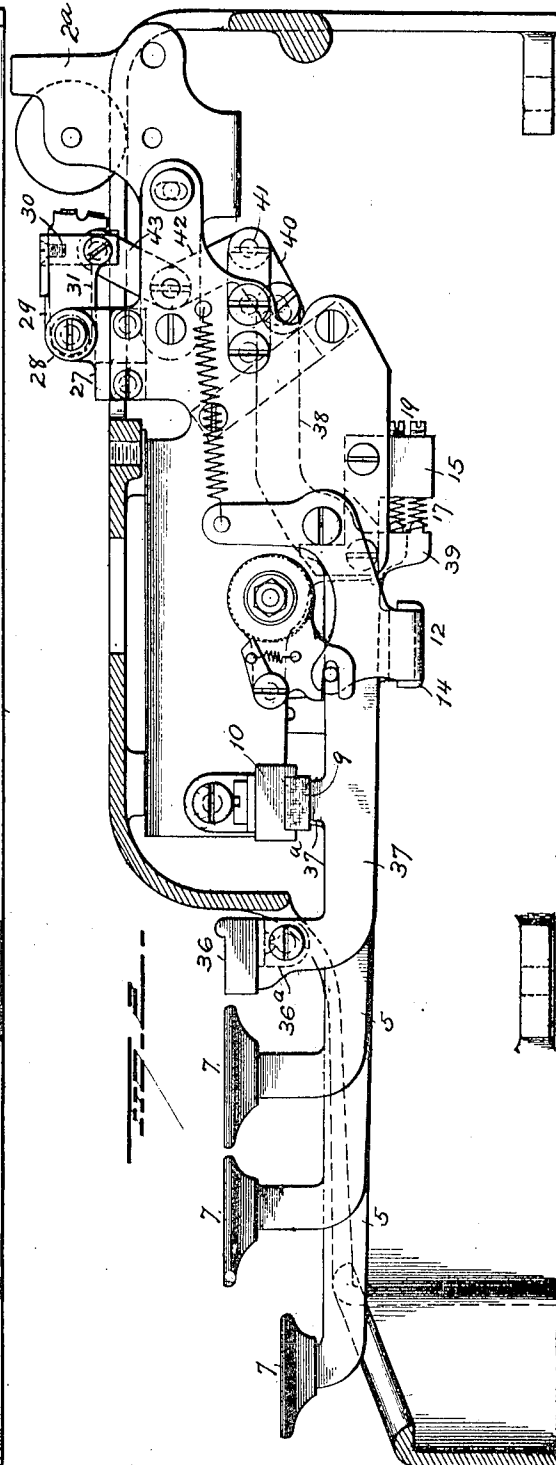
W. H. EBELHARE & C. G. ARVIDSON.
STENOGRAPHIC TYPE WRITING MACHINE.

APPLICATION FILED OCT. 12, 1916.

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2 SHEETS—SHEET 1.

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UNITED STATES PATENT OFFICE.

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ASSIGNORS TO THE STENOGRAPHIC COMPANY, OF INDIANAPOLIS, INDIANA.

STENOGRAPHIC TYPE-WRITING MACHINE.

1,280,977.

Specification of Letters Patent.

Patented Oct. 8, 1918.

Application filed October 12, 1916. Serial No. 125,226.

To all whom it may concern:

Be it known that we, WILLIAM H. EBELHARE and CLARENCE G. ARVIDSON, citizens of the United States and residents of Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Stenographic Type-Writing Machines; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in stenographic typewriting machines, one object of the invention being to provide simple and efficient means for shifting the key bars when numerals are to be printed.

With this and other objects in view, the invention consists in certain novel features of construction and combinations of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawings, Figures 1 and 2 are sectional views of a stenographic typewriting machine embodying our improvements; Fig. 3 is a plan view of the mechanism for shifting the type bars when the printing of figures is desired; Fig. 4 is a view showing the combs 27 and 30 in elevation, and Fig. 5 is an enlarged transverse sectional view through the guiding combs of the printing means.

1 represents the frame of the machine, and 2 an inner frame, which latter carries the various mechanisms and is removably secured in the main or outer frame by means of screws 3. A cylindrical platen 4 is located at the rear end of the frame 2 and is mounted in a transverse bracket 2^a secured to said inner frame 2. Key levers 5 are pivotally mounted on a rod or shaft 6 in the lower portion of the frame 2 and their upturned front ends are provided with key buttons 7 whereby the keyboard of the machine is formed and exposed over the open front end of the main frame 1. The key levers 5 are provided on their upper edges with lugs 8 which normally bear against the cushion 9 of a stop bar 10, the latter being secured transversely in the front portion of the frame 2 and over said key levers. The key levers are also provided on their lower edges at points somewhat in front of their pivotal mountings,

with lugs 12 which rest upon the cushion 13 of a universal bar 14.

A guide comb 15 is secured transversely in the lower portion of the frame 2 and receives the key levers in proximity to their pivotal mountings. The body portion of this comb (which may depend somewhat below the bottom edges of the inner frame 2) is made with a plurality of sockets 16 for the accommodation of springs 17, the front ends of which bear against shoulders 18 depending from the key levers for retaining the latter in and returning them to their normal positions. The tension of these springs and hence the tension on the key levers, may be adjusted by means of screws 19 mounted in the body of the comb 15 and receive the rear ends of said springs.

The key levers 5 project upwardly and rearwardly from their pivotal mountings as indicated at 20 and are provided at their rear ends with rounded heads 21 which enter the slots of a comb 22 secured transversely in the inner frame 2. Bell crank levers 23 (corresponding in number to that of the key levers) are mounted on a transverse shaft 24 extending from side to side of the upper rear portion of the inner frame 2. The lower arms 25 of these project downwardly and somewhat forwardly and are provided with bifurcated free ends which enter the slots of the guide comb 22 and receive, within said slots, the headed rear ends of the key levers. The upper arms 26 of the bell-cranks 23 are approximately vertical in their normal positions and pass through the slots of an upper comb 27 secured transversely to the upper portion of the frame 2 and projecting somewhat above the same.

The comb 27 is provided at its respective ends with upwardly projecting ears 28, to which parallel arms 29 at respective ends of a horizontally disposed comb 30 are pivotally connected. Horizontally disposed type bars 31 are mounted to slide longitudinally through the comb 30 and are pivotally connected at their front ends with the upper ends of the arms 26 of the bell-cranks 23, so that when the key levers are operated, motion will be transmitted to the key bars to move the same longitudinally and cause their type faces to print on a paper strip passing between said type faces

and the cylindrical platen 4,—an inking ribbon being of course also employed to effect the impression of the type upon the paper.

The type bars are guided in their movements through the comb 30 and prevented from vertical displacement by means of a guide plate 32 (preferably steel) secured upon the comb 30. The comb 30, (as well also as the comb 27) will preferably be made of aluminum and to the end of the comb 30, a wear plate (preferably of steel) 33 for the lower edges of the type bars is secured.

The various key buttons on the key levers are provided with certain letters of the alphabet and certain of said key buttons are intended also to represent numerals under certain conditions as hereinafter explained. The type bars with which the keys that may represent numerals are connected are provided each with two type faces 34, 35, one above the other,—the upper type faces representing certain letters of the alphabet and the lower type faces representing numerals. Each type face on each of said key bars, is curved so as to be concentric with the face of the cylindrical platen 4, and the two type faces are located equidistant from the pivoted end of the key bar. When it is desired to print numerals, it is necessary to move or shift the double-faced type bars upwardly on their pivotal supports in order to bring the lower or "numeral" type face to printing alinement with the platen and this operation is accomplished simultaneously with the manipulation of the key lever which moves a type bar toward the platen. The mechanism employed to accomplish this, will now be described.

Between the rear row of key buttons and the machine casing, a shift bar 36, is located and is preferably made of a length equal to the full width of the key board. Depending ears 36^a are provided at respective ends of the shift bar and to these ears, the rear ends of levers 37 are secured. These levers are pivotally mounted on the transverse rod or shaft 6 on which the key levers are mounted and provided with lugs 37^a to engage the cushion 9. Each lever 37 is provided with a rearwardly projecting arm 38 and with depending ears 39, the latter forming abutments for springs mounted in the body of the comb 15,—said springs and their adjustable mounting being identical with the springs 17 and their mountings in the comb 15. A rod 38^a connects the rear end portion of the lever arms 38 and the rear end of one of said lever arms 38 is pivotally connected with the lower arm of a bell-crank-lever 40. This bell-crank is pivotally mounted at 41 and its upper arm 42 is connected with one end of the type bar comb 30, through the medium of a pivoted link 43 pivotally con-

nected with said comb at a point approximately in line with the heads of the type bars.

From the construction and arrangements of parts above described, it will be apparent that when one of the keys intended to represent a numeral as well as a letter and the shift bar 36 are depressed simultaneously, the comb 30 will be raised to bring the lower "number" type faces into printing position and the type bar corresponding to the key which has been depressed will be moved longitudinally toward the platen to effect the printing of the numeral.

The pivoting of the comb 30 not only permits the shifting of the type bars to bring the "numeral" type faces in printing position, but said comb may be raised so that ready access may be had to all the type faces for cleaning them.

We do not claim herein broadly the structure of the operating means for the type bars nor the guiding devices for said operating means, these features being covered in our copending application Serial No. 125,225.

Various slight changes might be made in the details of construction of our invention without departing from the spirit thereof or limiting its scope and hence we do not wish to restrict ourselves to the precise details herein set forth.

Having fully described our invention what we claim as new and desire to secure by Letters-Patent, is:—

1. In a stenographic typewriting machine, the combination with a platen having a curved surface, of a plurality of type bars pivotally supported at one end and movable in parallel planes, said type bars having two type faces, one above the other, said type faces being equidistant from the pivotal support of the type bars and curved in arcs of different circles but concentric to the curved surface of the platen when in operative relation thereto, a pivoted comb having a plurality of notches through which said type bars pass, and means connected with said pivoted comb to shift the type bars.

2. In a stenographic typewriting machine, the combination with a platen, of a guide comb in front of the same, said guide comb having a plurality of parallel notches to receive type bars, type bars movable through the notches of the guide comb, a guide plate secured to said comb over the type bars, a wear plate secured to said comb under the type bars, and means for moving said type bars longitudinally through the notches of said comb.

3. In a stenographic typewriting machine, the combination with a platen, of a pivotally mounted guide comb in front of the same and having a plurality of parallel notches, longitudinally movable type bars passing

through the notches of said comb, a guide plate secured to the notched comb over the type bars, a wear plate secured to said notched comb under the type bars, key-operated means for moving the type bars longitudinally, and means for raising the pivoted comb to raise the type bars.

In testimony whereof, we have signed this

specification in the presence of two subscribing witnesses.

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Witnesses:

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