W. S. IRELAND.

STENOGRAPHIC WRITING MEANS.

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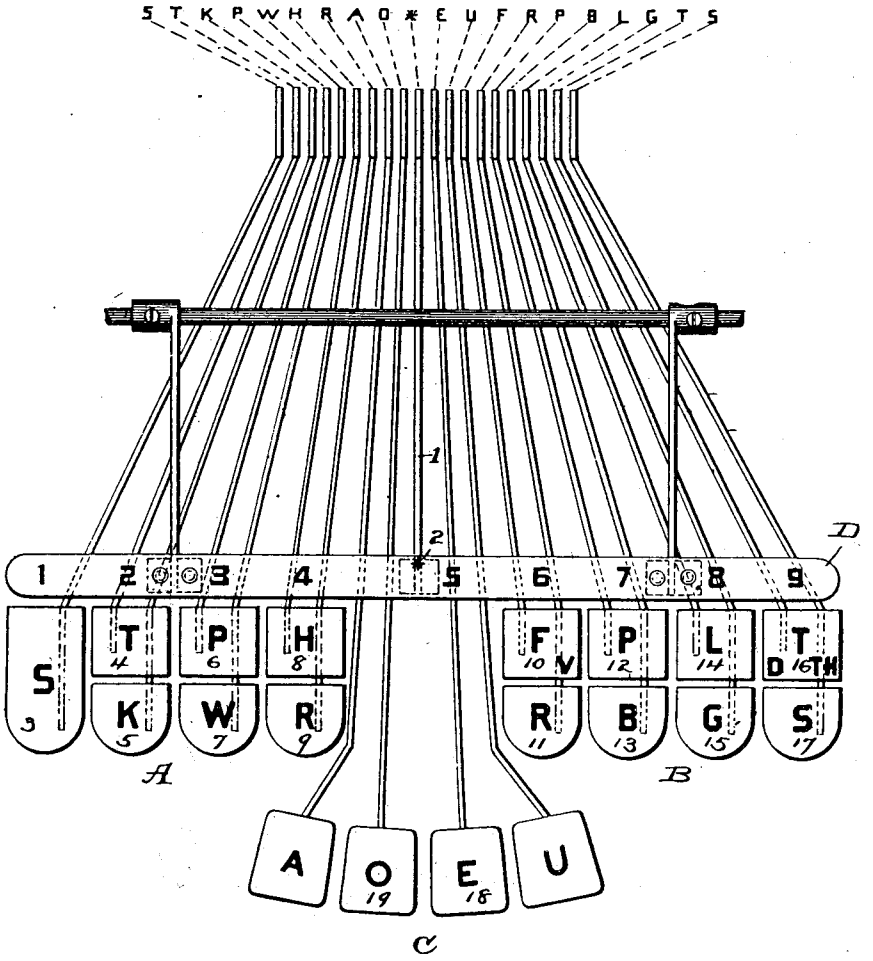
1,057,964. Patented Apr. 1, 1913.



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STENOGRAPHIC-WRITING MEANS.

1,057,964. Specification of Letters Patent. Patented Apr. 1, 1913.

Application filed April 9, 1910. Serial No. 554,488.

To all whom it may concern:

Be it known that I, WARD S. IRELAND, of Dallas, in the county of Dallas and State of Texas, have invented certain new and useful Improvements in Stenographic-Writing Means; and I 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 the art of stenographic writing, and more particularly to means for mechanically recording such writing—the object of the invention being to provide a keyboard comprising keys to coöperate with suitable printing means, and to so arrange said keys and provide them with such designations as to facilitate the speed at which the writing can be accomplished, and to produce a written or printed record which shall be readily understood by any one familiar with the code of character designations represented on the keys of the keyboard.

A further object is to provide a keyboard for a stenographic writing machine which shall comprise three groups of keys having such designations thereon that the keys of one group can be operated to print single and compound initial consonants and prefixes of words at a single operation of the fingers of one hand, and that the keys of another group can be operated to print single and compound final consonants and suffixes of words at a single operation of the fingers of the other hand, and that the keys of the third group can be operated to print single and compound vowels at a single operation of the thumbs of both hands and so constructed that all these groups of keys or any combination of letters in said groups may be struck at a single operation of the hands.

A further object is to provide a keyboard for stenographic writing machines which shall comprise three groups of keys having designations thereon representing letters, words and parts of words, and a single key, having a character thereon which, when written simultaneously with selected keys of said groups of keys, will represent a numeral.

With these objects in view, the invention consists in certain novel features in the arrangement of a keyboard and the character designations and the keys of said keyboard as hereinafter set forth and pointed out in the claims.

The accompanying drawing is a view showing, diagrammatically, an embodiment of my invention.

My improved keyboard comprises three groups of keys, A, B and C, and a single elongated key D, preferably arranged behind the groups A and B and adapted to operate a single type-bar 1,—while the keys of the three groups each coöperates with its type-bar. The elongated key or key-bar has designated thereon, numerals from 1 to 9 inclusive, reading from left to right, and said key or key-bar D has also thereon an arbitrary or cipher designation, which may conveniently be a "star" 2, or other fanciful designation may be employed if desired, and this cipher designation 2 is intended to be read with certain selected characters of the groups of keys, as hereinafter explained, to designate numerals when it appears in the printed record associated with such selected characters. The groups A and B of keys are arranged in horizontal alinement with each other at respective sides of the key-bars of the group C of keys, and the latter group is disposed in front of (preferably in a curved line) the groups A and B. The keys of the group C have indicated thereon the characters A O E U reading from left to right of the group. The group A comprises seven keys 3, 4, 5, 6, 7, 8 and 9, while the group B comprises eight keys 10, 11, 12, 13, 14, 15, 16 and 17. The keys of the group B are all preferably about the same size, while the key 3 of group A is preferably equal in size to the two adjacent keys 4 and 5 because this key is very frequently employed in combination with some other one or more keys of group A. The keys of the group A have designations thereon which represent the initial consonants of words or parts of words, whether said consonants are used singly or in combination with each other, and the said designations on the keys of group A also represent prefixes. The designations on the

keys of group B represent terminal consonants, used singly or combined, and the said designations on the keys of group B are also employed to represent suffixes. The character designations on the keys of the group A are roman letters as follows: The key 3 has thereon the letter "S"; the key 4 the letter "T"; the key 5 the letter "K"; key 6 the letter "P"; key 7 the letter "W"; key 8 the letter "H," and the key 9 the letter "R." The designations on the keys of the group B are also roman letters as follows: Key 10 is provided with the letter "F" and the letter "V"; key 11 with the letter "R"; key 12 with the letter "P"; key 13 with the letter "B"; key 14 with the letter "L"; key 15 with the letter "G"; key 16 with the letters "T," "D" and "TH"; and the key 17 with the letter "S." With the group of keys marked A are written initial consonants of words, whether single or compound, prefixes of words or prefixes and initial consonants of words at a single stroke. Letters required as single or compound initial consonants of words or as prefixes of words not appearing on the face of the keyboard and therefore not being printed at the printing point are obtained by combining letters that already appear on the keyboard. When the letters appearing in group A are struck all at a single operation they print in a straight row across the left hand half of the paper the following letters:

S T K P W H R.

The letters not appearing in this group but which are required to be obtained by combining letters already on the keyboard are as follows:

B C D F G J L M N Q V X Y Z

These missing letters are obtained by the following combinations of the letters appearing on the keyboard in group A:

	B	is represented by	PW
Hard sound of	C	"	K
Soft " "	C	"	S
	D	"	TK
	F	"	TP
	G	"	TKPW
	J	"	SKWR
	L	"	HR
	M	"	PH
	N	"	TPH
	Q	"	KW
	V	"	SR
	X	"	S before consonants
	X	"	KP before vowels
	Y	"	KWR
	Z	"	S

The object of the structure of this keyboard in so far as the arrangement of the letters thereon is concerned is to be able at a single stroke to obtain in their correct sequence any and all consonants that might begin any word and at a single stroke. To show that this is possible with this arrangement of keys it will be necessary to list the various compound consonants used in the English language in the beginning of words and give their equivalents when written on the stenotype. They are as follows:

Initial consonants.	*Representation.*
ST	ST
SP	SP
SH	SH
SK	SK
SW	SW
SPH	STP
SN	STPH
SM	SPH
SQ	SKW
SL	SHR
STR	STR
SPR	SPR
SPL	SPHR
SKR	SKR
TH	TH
TR	TR
TW	TW
THR	THR
PH (F by sound)	TP
PR	PR
PL	PHR
KR	KR
KL	KHR
CL (KL by sound)	KHR
CR (KR by sound)	KR
CH	KH
DW	TKW
DR	TKR
BR	PWR
BL	PWHR
GR	TKPWR
GL	TKPWHR
FR	TPR
FL	TPHR

It will be seen from the above that any initial consonant or initial consonants in their correct sequence may be obtained by this group of letters arranged in any required sequence at a single stroke. These letters, in this particular sequence, form the only letters and the only arrangement of letters controllable by the four fingers of the left hand with which it would be possible to secure all these initial consonants in their correct sequence and in such a manner as to make them unmistakably legible, without having more than one letter on each key and a type representation for each letter appearing on the key. To test this, interchange any two or more of the letters, substitute others therefor, or build up other cipher designations and then try to write in their correct sequence so that they will be unmistakably legible all the initial consonants listed above. Furthermore by using certain cipher designations to represent prefixes of words I am able to write, by having this particular arrangement of letters on the keyboard, at the same stroke in which I write the initial consonant or consonants of the word, the prefix of the word. To avoid being voluminous I shall give only a few examples as follows:

Prefixes.	*Representation.*
Circum	S
Com	K
In	N

In the same manner do the cipher designations used in connection with the arrangement of the letters of group B enable me to write any of the single and compound final consonants used at the termination of words or the suffixes of words or the final consonants and suffixes of words at a single stroke. In like manner does the arrange-

ment of the vowels in group C make it possible to secure any combination of vowels necessary to write any of the vowel-diphthongs or vowel-diagraphs required. I shall save space by not embodying the tabulated matter necessary to illustrate the cipher arrangement of groups B and C. I will, however, give a few illustrations showing the use of the three groups of keys in forming words at a single stroke.

ST P H A F GT

S=Prefix *circum*
TPH=N
F=as final consonant. F is read as "f" or "v" and distinguished by context.
T=Suffix *ate*
Thus:
Circum n a v g ate
Circumnavigate.

KP HR EU P L TS

K=Prefix *Com*
HR=L
EU=I
PLT=Suffix *ment*
Thus:
Com p l i ment s
Compliments.

T P H A BL T

TPH=Prefix *in*
BLT=Suffix *bility*
Thus:
In a bility
Inability.

T P H E R T

TPH=Prefix *in*
Thus:
In e r t
Inert.

KP E LG

K=Prefix *Com*
G=Suffix *ing*
Thus:
Com p e l ing
Compelling.

The keys of the group A are so arranged that they can be readily operated by the four fingers of the left hand, and any combination of these keys can be struck simultaneously. Similarly the keys of the group B can be operated singly or in groups by the four fingers of the right hand, while the keys of the group C can be readily operated singly or in combination by the thumbs, or all the groups may be operated at the same stroke by using the fingers and thumbs on both hands. When a numeral is to be written, the elongated key or bar D will be struck to print upon the paper a cipher designation corresponding to that indicated at 2. For the purpose of denoting a particular numeral, a certain key of the system of keys will be struck simultaneously with the depressing of the key or bar D. Thus when the numeral "1" is to be indicated, the operator will press the key-bar D and the key 3 simultaneously. The numeral "2" is represented by the keys D and 4; 3 by the keys D and 6; 4 by keys D and 8; 5 by the keys D and 18; 6 by the keys D and 10; 7 by the keys D and 12; 8 by the keys D and 14; 9 by the keys D and 16; and the cipher "0" by the key 19. Should all the keys of the keyboard be struck simultaneously, the character designations would appear in a straight line across the strip or sheet of paper as follows:

STKPWHRAO*EUFRPBLGTS

It is evident that what is known in the art as a "blind key-board" may be used, the keys of the groups representing the various character designations hereinbefore explained.

It will be observed that no shift keys are used in connection with the key-board, thus making it what is known as a "single case" key-board.

Having fully described my invention what I claim as new and desire to secure by Letters-Patent, is,—

1. In a type-writing machine, a keyboard comprising a plurality of keys having character designations thereon and arranged in such sequence that either the prefixes or suffixes of words, or both, may be written in the same stroke with the stem of the word.

2. In a type-writing machine, a key-board comprising a plurality of keys, said keys having character designations thereon and arranged in such sequence that, at a single stroke, prefixes, initial consonants, vowels or diphthongs, final consonants, and suffixes of words may be written either separately or grouped in any sequence in which they occur in words.

3. In a type-writing machine, a key-board comprising a group of keys having character designations thereon arranged in such sequence that initial consonants and prefixes of words may, at a single stroke, be represented either singly or in combination, said key-board comprising another group of keys having character designations thereon arranged in such sequence that final consonants and suffixes of words may, at a single stroke, be represented either singly, or in combination, or simultaneously with a stroke of keys of the first group, and said key-board comprising another group of keys designated to represent vowels arranged in such sequence that they may be struck simultaneously with the strokes of keys of either or both of the two first-mentioned groups of keys.

4. In a typewriting machine, a single case key-board, comprising three groups of keys, the keys of one of said groups containing character designations arranged in such a sequence that, singly or in combination, initial consonants and prefixes of words, either separately or in combination with each other, may be represented at a single stroke; the keys of another of said groups containing character designations arranged in such a sequence that, singly or in combination, final consonants of words may be represented; and the keys of the third of said groups containing character designations arranged in such a sequence that, singly or in combination, vowels and diphthongs of words may be represented.

5. In a typewriting machine, a single case key-board, comprisng three groups of keys, the keys of one of said groups containing character designations arranged in such a sequence that, singly or in combination, initial consonants of words may be represented; the keys of another of said groups containing character designations arranged in such a sequence that, singly or in combination, final consonants and suffixes of words, either separately or in combination

with each other, may be represented at a single stroke; and the keys of the third of said groups containing character designations arranged in such a sequence that, singly or in combination, vowels and diphthongs of words may be represented.

6. In a typewriting machine, a single case key-board, comprising three groups of keys, the keys of one of said groups containing character designations arranged in such a sequence that, singly or in combination, initial consonants and prefixes of words, either separately or in combination with each other, may be represented at a single stroke; the keys of another of said groups containing character designations arranged in such a sequence that, singly or in combination, final consonants and suffixes of words, either separately or in combination with each other, may be represented at a single stroke; and keys of the third of said groups containing character designations arranged in such a sequence that, singly or in combination, vowels and diphthongs of words may be represented.

7. In a typewriting machine, a key-board comprising three groups of keys, the keys of one of said groups having thereon, character designations representing at single strokes, initial consonants and prefixes of words, another of said groups of keys having character designations representing at single strokes final consonants and suffixes of words, and the third group of keys having character designations representing vowels.

8. In a typewriting machine, a key-board comprising a group of letters

T P H
S
K W R

at one side of the center of the key-board and representing singly and in combination initial consonants and prefixes of words; another group of letters

F P L T
R B G S

at the other side of the center of the key board and representing singly or in combination, final consonants and suffixes of words, and a central group of letters A O E U representing singly or in combination, vowels and diphthongs of words.

9. In a typewriting machine, a key-board comprising a group of letters

T P H
S
K W R

arranged at one side of the center of the key board, and representing singly and in combination, initial consonants and prefixes of words.

10. In a typewriting machine, a key-board comprising a group of letters

F P L T
R B G S

arranged at one side of the center of the key-board and representing singly and in combination, final consonants and suffixes of words.

11. In a machine for stenographically recording speech, a keyboard comprising three groups of keys, the keys of one group having cipher designations thereon indicative of single and compound initial consonants and the prefixes of words; another of said groups having cipher designations thereon indicative of single and compound terminal consonants and suffixes of words; and a third group having designations thereon indicating vowels or combinations of vowels, and a key having numerals from one to nine inclusive thereon, and also having a cipher designation thereon, said cipher designation being readable with selected keys of said groups of keys to indicate numerals.

12. In a machine for stenographically recording speech, a keyboard comprising a system of keys having cipher designations thereon representing letters, words and parts of words, and a single key having a cipher designation thereon readable in conjunction with selected keys of said system of keys for indicating numerals.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

WARD S. IRELAND.

Witnesses:
S. G. NOTTINGHAM,
GEO. F. DOWNING.