

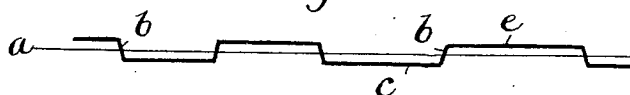
(No Model.)

S. V. ESSICK.  
TELEGRAPH ALPHABET.

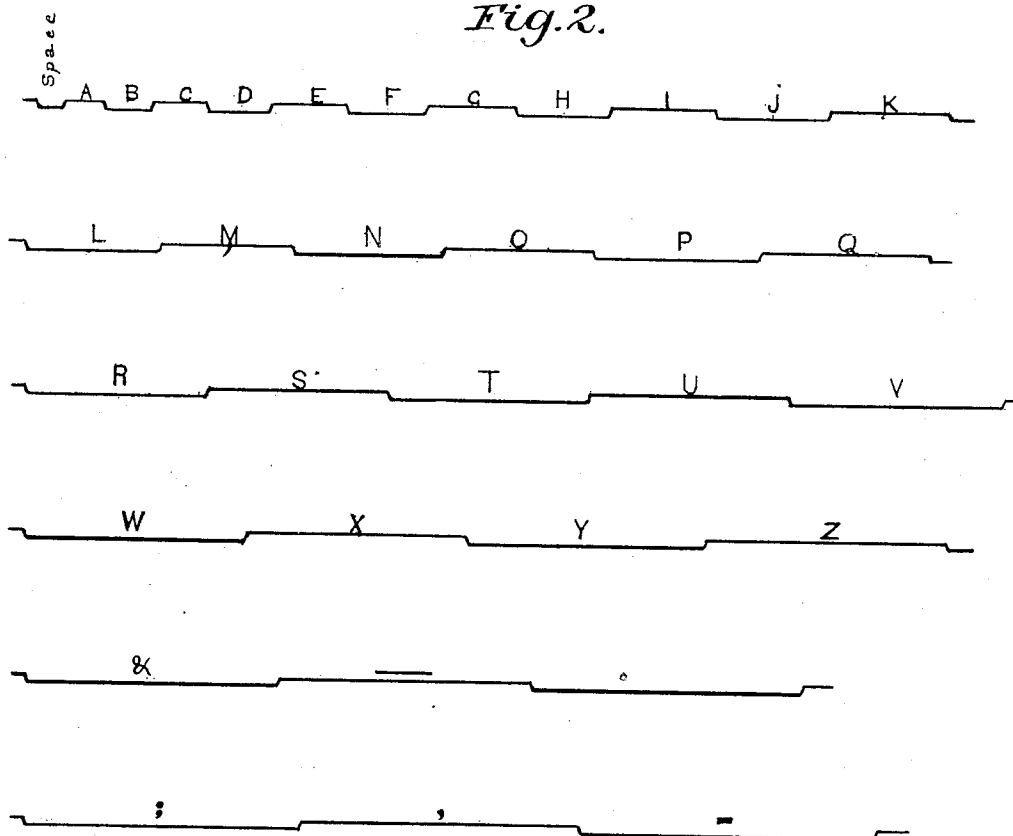
No. 563,148.

Patented June 30, 1896.

*Fig. 1.*



*Fig. 2.*



WITNESSES:

*E. P. Essick.*

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INVENTOR

# UNITED STATES PATENT OFFICE.

SAMUEL V. ESSICK, OF YONKERS, NEW YORK.

## TELEGRAPH-ALPHABET.

SPECIFICATION forming part of Letters Patent No. 563,148, dated June 30, 1896.

Application filed September 16, 1895. Serial No. 562,631. (No specimens.)

*To all whom it may concern:*

Be it known that I, SAMUEL V. ESSICK, a citizen of the United States, and a resident of Yonkers, in the State of New York, have  
5 invented a new and useful Improvement in Telegraph-Alphabets, of which the following is a specification.

My invention relates to telegraph-alphabets, and it has for its object to simplify such  
10 alphabets, and more especially to provide a complete telegraph-alphabet in which each and every letter or character may be transmitted by the use of a single impulse; and to these ends my invention consists in a tele-  
15 graphic alphabet having the characteristics hereinafter more particularly set forth.

In the accompanying drawings I have illustrated my invention sufficiently to enable those skilled in the art to understand the  
20 same, in which—

Figure 1 is an enlarged detail view illustrating the principles on which my invention is based; and Fig. 2 shows a continuous line, including the entire alphabet and certain  
25 punctuation marks, characters, and signs made in accordance with my invention.

Heretofore many attempts have been made to improve and simplify the ordinary code of signals comprising the alphabet or characters  
30 necessary to be transmitted in telegraphic operations, and without attempting to recite them and state their distinguishing features in detail, it may be said that they differ from my improved alphabet, as will more clearly  
35 appear hereinafter.

One of the special features of my alphabet is its adaptation to the transmission of cable-messages, where the impulses which can be transmitted in a given time are limited to a  
40 comparatively small number, owing to the static capacity and other qualities of the cable, and in the use of which it has been demonstrated that it is most advantageous to send into the line successive currents of  
45 alternating polarity, and, as will appear hereinafter, as each and every one of the letters or characters of the alphabet can be produced by a single electrical impulse or reversal of polarity, the advantages of the use of my al-  
50 phabet in this connection will be apparent.

I will now proceed to describe the characteristics of my alphabet, and it will be un-

derstood that it may be used in connection with various forms of electrical devices or machinery, but it is intended more particu- 55  
larly for use in connection with a transmitter such as is shown in my application, Serial No. 563,875.

Referring more particularly to Fig. 1, which shows an enlarged view of a portion of my 60  
alphabet, it will be seen that there is what I have termed a "zero" line *a*, and while this is indicated in the drawings as a real line, in practice it will preferably be an imaginary line. Each and every letter or character of 65  
my alphabet comprises a lateral line *b*, which extends on each side of the zero line *a* and crosses the same, and a longitudinal line *c*, which extends parallel with the zero line and is connected to the lateral line *b*. In all 70  
of the letters or characters the lateral line is of the same length, while the longitudinal line varies in length for the different characters.

It will thus be seen that all the letters or 75  
characters can follow each and any one of the others, making a continuous line or record, well adapting the alphabet for use with the siphon ordinarily used in cable practice. It will further be seen that the longitudinal por- 80  
tion of each letter or character may be placed on either side of the imaginary or zero line *a*, while its lateral line crosses the same, extending preferably from the end of the next preceding letter or character. 85

In practice, as the receiving-strip is traveling constantly, the lateral line naturally assumes a slight inclination to the longitudinal line, and the degree of this inclination depends upon the speed at which the receiving-strip travels, but as this strip is supposed 90  
to travel at a uniform rate of speed, all the lateral lines will have the same angle with respect to each other and with respect to their longitudinal extensions. 95

From the above it will be seen that with my improved telegraphic alphabet each and every character is composed of a lateral line, which is uniform in length in all the characters, and a longitudinal line, which varies in 100  
length in each and every character, and it is immaterial on which side of the imaginary line these longitudinal lines may appear. It will be observed that the record is a contin-

uous record or line, and that each and every letter or character is made by a single impulse or reversal of current.

While I have shown the character representing a space as having the shortest longitudinal line, and the longitudinal lines increasing in regular order of the alphabet, it is evident that I can change the relations of the letters to the length of the longitudinal lines to suit any particular character of work. For instance, the shortest longitudinal line can represent "e," and the next "t," or any other letter or character, and the next one "a," and so on, according to the relative values or uses of the letters.

It will further be observed that it is immaterial from which side of the longitudinal line the lateral line extends, that is, whether it extends from the right or the left of the longitudinal line, but in all instances it extends across the imaginary zero line. This is a very important feature, as it provides for a continuous record, regardless of the relative order of the letters or characters used, and any letter or character may follow immediately after any other letter or character and be entirely distinct and definite, and the longitudinal line of each succeeding character will be parallel with and on the opposite side of the zero line from the longitudinal line of the character which immediately precedes it. So also the lateral line of each character extends from the terminal of the longitudinal line of the next preceding character.

While I have thus described and illustrated the preferred form or embodiment of my invention, it is evident that the essential features can be variously carried out and the results of my invention fully attained. Thus, for instance, while I have shown the alphabet used to make a continuous record, as is naturally done with the ordinary siphon recorder, it is evident that the so-called "lateral" lines need not absolutely appear in the record, as these practically serve only in determining the length of the longitudinal line, that is, its commencement and ending, or, in other words, they indicate the reversals of polarity or change from one impulse to another. It will be seen that my invention comprehends a telegraphic alphabet wherein the length of the line representing a letter is the characteristic by which the letter is determined. This characteristic is the same whether the impulse which transmits the letter is of positive or negative polarity. In other words, in my alphabet letters are transmitted by successive alternations of polarity, each impulse representing a letter and the letter being determined solely by a characteristic independent of the polarity of the impulse, that is to say, by the length of the impulse.

What I claim is—

1. A telegraphic alphabet for transmission of impulses successively alternating in polarity, in which each letter is represented by a single impulse and determined by a charac-

teristic independent of the polarity of the impulse, substantially as described.

2. A telegraphic alphabet for transmission of impulses successively alternating in polarity, in which each letter is represented by a single impulse and determined by the length of the impulse independent of its polarity, substantially as described.

3. The telegraphic alphabet herein described, in which each of the characters comprises a lateral line and a longitudinal line, the lateral line in each and all of the characters being of the same length, and the longitudinal line in each and all of the characters varying in length.

4. A telegraphic alphabet substantially as herein described, in which each of the characters comprises a lateral line and a longitudinal line, the lateral line extending across an intermediate zero line, and each succeeding longitudinal line being parallel with and on the opposite side of the zero line from the longitudinal line of the character which immediately precedes it.

5. A telegraphic alphabet substantially as herein described, in which each character comprises a lateral line and a longitudinal line, the lateral lines of all the characters being of the same length and the length of the longitudinal line of each character varying from all the others, and the lateral line of each character being connected to the terminal of the longitudinal line of the character next preceding it.

6. A telegraph-alphabet in which the characters are distinguished by the distance between two indicating-points.

7. A telegraph-alphabet in which two distinguishing-points and the length of a line connecting the same designate the character.

8. In a telegraphic alphabet, characters formed by the combination of a lateral and a longitudinal line, each lateral line crossing, and each alternate or succeeding longitudinal line of each succeeding character, being parallel with and on the opposite side of a zero line from the longitudinal line of the character which immediately preceded it.

9. A telegraph-alphabet in which the characters are formed by placing designating-points a distinguishing distance apart each alternate designating-point being to the right or left of a zero line.

10. A telegraph-alphabet in which characters may be formed in groups of two the said two characters being of equal length and distinguished each from the other by the position it occupies to the right or left of a zero line.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 14th day of September, 1895.

SAMUEL V. ESSICK.

Witnesses:

E. P. ESSICK,  
I. A. DUNDAS.