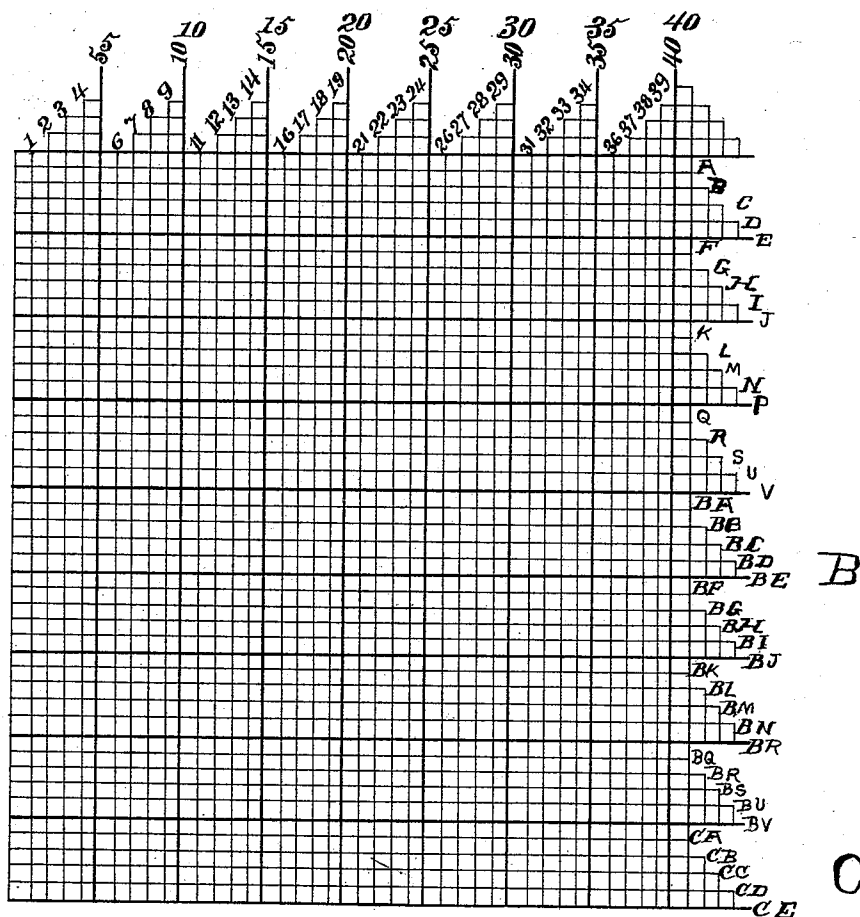


(No Model.)

C. WILLOUGHBY.
PHOTO-TELEGRAPH.

No. 540,772.

Patented June 11, 1895.



Witnesses.

Claude Lumsford.

B. F. Fink

Inventor.

Charles Willoughby

By Edwin S. Clarkson

his Attorney.

UNITED STATES PATENT OFFICE.

CHARLES WILLOUGHBY, OF SAN FRANCISCO, CALIFORNIA.

PHOTO-TELEGRAPH.

SPECIFICATION forming part of Letters Patent No. 540,772, dated June 11, 1895.

Application filed November 3, 1894. Serial No. 527,806. (No specimens.)

To all whom it may concern:

Be it known that I, CHARLES WILLOUGHBY, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Photo-Telegraphs; 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.

My invention relates to a system for reproducing maps, diagrams, pictures, &c., at a distance by the employment of a system or code of signals.

The object of my invention is to transmit by telegraph, telephone, cable, messenger or mail, the two latter being to use in case a picture or diagram was to be transmitted so that if it fell in the hands of any one who did not have one of the charts and instructions they could not decipher it.

My invention consists of a sheet of paper, ruled with perpendicular and horizontal lines intersecting, so as to form squares. Every fifth line on chart, both ways, is twice as heavy as the other four, to assist the eye in calculating the distances without always referring to the margin. The perpendicular lines are designated by consecutive numbers to distinguish them, and the horizontals are distinguished by letters of the alphabet.

The figure of the drawing represents the checked diagram that I use in connection with my code of signals.

Every tenth perpendicular line has its number set out from the chart to assist the eye in more readily locating a particular point. The horizontal lines, as stated, are designated by some letter of the alphabet, commencing at the top. After the letters of the alphabet have all been used except those hereinafter designated, the balance of the horizontal lines are designated by doubling the letters up, as BA BC and so on. The section of the chart designated by BA is indicated by the letter B printed on the margin. This plan is followed to designate the balance of the chart, as clearly illustrated in the drawing. The letters O and T are not employed in this code owing to their similarity when transmitted by telegraph.

The letters of the alphabet after V are used as follows:

W denotes a slur or a line larger in the middle.

W W denote a waved line.

X denotes a circle; the size of one of the squares on the chart. If a larger one is desired it is represented by placing a figure after it; if twice as large figure 2 and so on.

X X denote a square the size of one of the squares on the chart. If a larger square is desired, the rule in regard to circles applies.

Y denotes a very heavy line; Z, an upper or right hand curve; &, a lower or left hand curve, the depth of the curve being designated by the figure between the two positions.

Example: A—B—24—Z2—CB—29 denotes an upper curve from AB 24 upward two squares to CB 29.

Again, it is desired to draw a certain curve and have it reproduced in a distant city. The receiving as well as the sending operator is supposed to have one of the ruled sheets with the lines lettered and numbered. The curve starts at the point of intersection of the line lettered C and the line numbered 15 and ends at R 15 making a curve raising two squares and as Z is used to denote an upward curve the message would read C15—Z2—R15. If it is desired that the curve be a very heavy one the message would read C15—Z2—Y—R15.

In telegraphing a portrait, the exact outline is transmitted with the exception of the hair and beard. This is given by description, to save a mass of lines, &c. For instance the word "habit" denotes that the subject of the sketch has straight, long, thin hair. The word "haggard" denotes curly long thin hair. The word "billet" denotes long straight thin beard, &c. These are only a few of the list of words used which will be made more complete from time to time as use demonstrates the need for further additions.

The different degrees of shading in a photograph or illustration will be represented by cipher words. For instance, light shading, heavy shading, and waved shading will be designated, respectively, by the words, "abstract," "abstruse," and "abnormal." When it is desired to raise the pencil and start at another place the word "break" is inserted.

As different classes of work might require larger charts or finer ruling, it will be understood that the addition of lines or different grades will be within the scope of my invention.

In pictures very small lines and curves often appear which it is easier to designate by having them represented by a particular word than by the method explained heretofore.

The following lines, &c., are represented by the word opposite, the position of each character on the chart being given when the word is given. For instance AB 24 "mandate" signifies that the character  which is represented by the word "mandate" is to be placed on the chart at AB 24. There are eight different positions of these curves. Each is supposed to be no larger than one of the squares on the chart. There are also four different positions of short straight lines: "mandate," ; "random," ; "chapter," ; "sheriff," ; "nabob," ; "Felix," ; "thistle," ; "lecture," ; "kinder," ; "tender," ; "pastor," ; "checker," . A round corner is represented by a word. If a right hand hook  it is represented by the word "neutral." If a left hand hook  it is represented by the word "fatal." The word "dot" designates a small dot, thus .

The saving of telegraph tolls will be accomplished by having a cipher word for each po-

sition on the chart. For instance instead of reading AB 24 for that particular position on the chart a certain word would be used for that particular position. This would necessitate a book of a number of words, indexed alphabetically, so as to be easily referred to, but the saving would be great. Below is a sample of index of the indexed code.

Position.	Word used.	
A 1	Adverb.	40
B 1	Abandon.	
C 1	Abase.	
AB 23.....	Abbreviate.	45
AB 24.....	Abolish.	

What I claim, and desire to secure by Letters Patent, is—

In a system or code for sending messages, the combination with a checked diagram or chart, of numerals to indicate the vertical columns and letters to indicate the horizontal columns and additional characters and words to be used in combination with the column characters, to indicate the character of line to be drawn, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES WILLOUGHBY.

Witnesses:

CHAS. MCCLAIN,
A. RICHARDS.