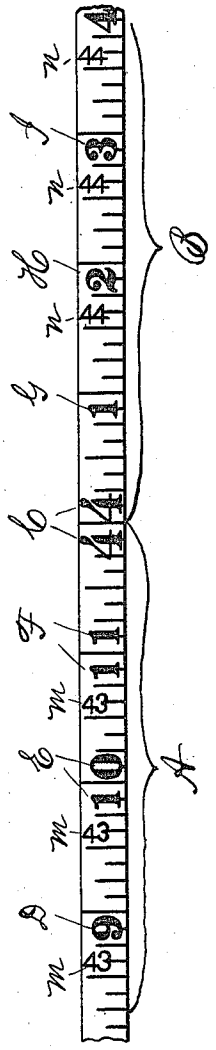
W. L. E. KEUFFEL.

TAPE.

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1,081,673.

Patented Dec. 16, 1913.



Attest:
Mary R. Lewis
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by William R. Baird
his Atty

UNITED STATES PATENT OFFICE.

WILLIE L. E. KEUFFEL, OF HOBOKEN, NEW JERSEY, ASSIGNOR TO THE KEUFFEL & ESSER COMPANY, OF HOBOKEN, NEW JERSEY, A CORPORATION OF NEW JERSEY.

TAPE.

1,081,673. Specification of Letters Patent. Patented Dec. 16, 1913.

Application filed January 2, 1913. Serial No. 739,614.

To all whom it may concern:

Be it known that I, WILLIE L. E. KEUFFEL, a citizen of the United States, residing at Hoboken, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Tapes, of which the following is a specification.

This invention relates to tape measures and its novelty consists in the manner of designating the graduations thereon whereby they may be read quickly and without confusion.

Tape measures are graduated in terms of linear measurement; in feet and inches usually where the English system is employed and in meters and centimeters where the French system is employed, each of course with appropriate subdivisions. Assuming such a tape to be graduated in terms of feet and inches the usual subdivision of the inch is into eighths, the half inch being indicated by a line somewhat shorter than that indicating a full inch, the quarter inch being indicated by a yet shorter line and the eighth inch by a still shorter line. When the tape is unrolled and the designation of the nearest foot numeral is not readily visible mistakes frequently occur in reading the actual distance measured. Attempts have been made to avoid this difficulty. The French repeat with each subdivision designation the designation of the preceding main division writing the whole distance as though it were a number followed by a decimal. This, however, is just as confusing or worse than the original; for instance, numbers like 10.01 or 33.03 are continually being misread. Another attempt has been to repeat the number of the main division before each subdivision. With such a tape for example, the one shown in the figure of the drawing, it is evident that the user might as readily read the graduation intended to indicate "43 feet 10 and one-half inches" as "10 feet 43 inches" or read "44 inches" as "11 feet 44 inches" or "44 feet 1 inch" as "4444 feet 1 inch." Much complaint has been made of the disadvantage of these systems and this has led to the invention which forms the subject matter of this application and in which, while the numerals designating the main divisions are repeated before the subdivisions, they are arranged so as to read in a different direction whereby they simply cannot be confused with the regular and usual numerals designating the graduations. Moreover, as the first subdivision is always in close proximity to the main division the repeating designation for that first subdivision is omitted and this materially helps in the easy reading of the tape.

In the drawing the figure represents a tape provided with my improved system.

In the drawing A designates a portion, say the last four inches, of the 43rd foot of a tape graduated to English lineal measurement and B designates a portion of the 44th foot of the same tape. The number indicated at C, in this case "44," is the designation of the foot, or main division, of the tape. The numbers indicated at D, E, F, G, H, and I, are the designations of the inches, or subdivisions, of the tape. This is the usual graduation into feet and inches, and the divisions of the inch are indicated by lines of varying length in the usual manner as stated. Before and comparatively close to the inch designations are the repeating designations of the preceding main foot designation which repeating designations are in the drawing indicated at *m*, *m*, *m*, etc., for the inches of the 43rd foot and at *n*, *n*, *n*, etc., for the inches of the 44th foot, the repeating number for the first inch of the 44th foot being omitted. It will be noticed that all of these repeating designations *m* and *n* are arranged to be read in a direction distinctly different from that in which the other designating numerals are read; in fact in the illustration, they are arranged to be read in a line at a right angle to such direction. As above stated this makes confusion impossible.

What I claim as new is:

A tape measure suitably graduated and provided with numbers in consecutive order indicating the main divisions and sets of intermediate numbers, those of each set being in consecutive order and respectively indicating the subdivisions between the adjacent main divisions, the numbers indicating

each main division being repeated in connection with numbers indicating the subdivisions of the next succeeding main division and said repeated numbers being placed to read in a different direction from the numbers indicating either the main or subdivisions.

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

WILLIE L. E. KEUFFEL.

Witnesses:
OTTO FREUND, JR.,
BOWDEWINE B. VAN SICKLE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."