

(No Model.)

W. L. E. KEUFFEL.
FOLDING STEEL MEASURE.

No. 496,123.

Patented Apr. 25, 1893.

Fig:1.

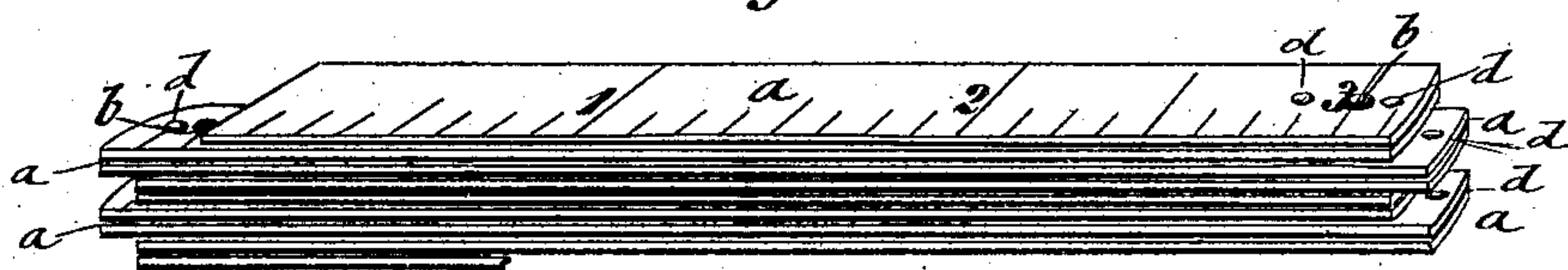


Fig:2.

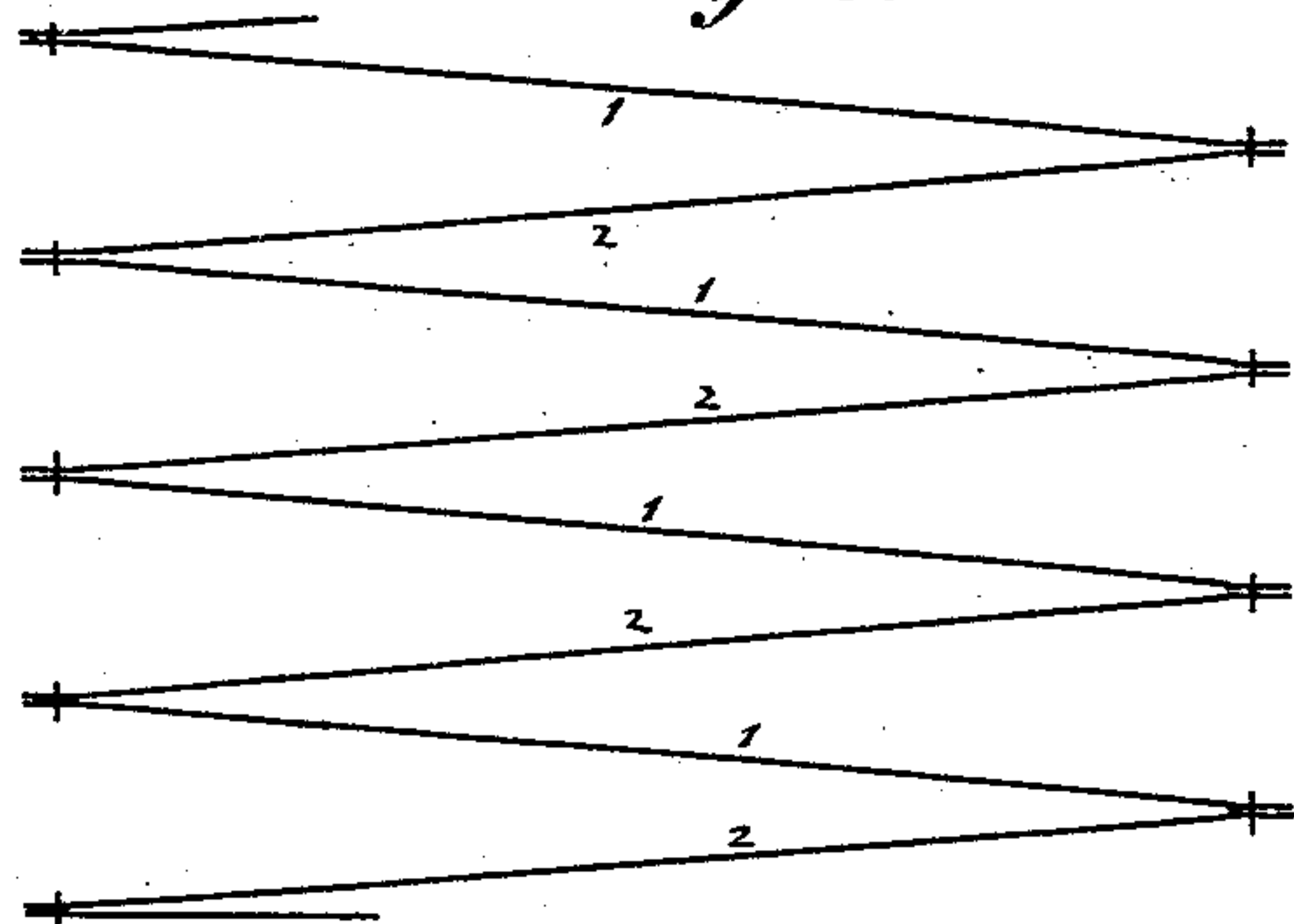


Fig:3.

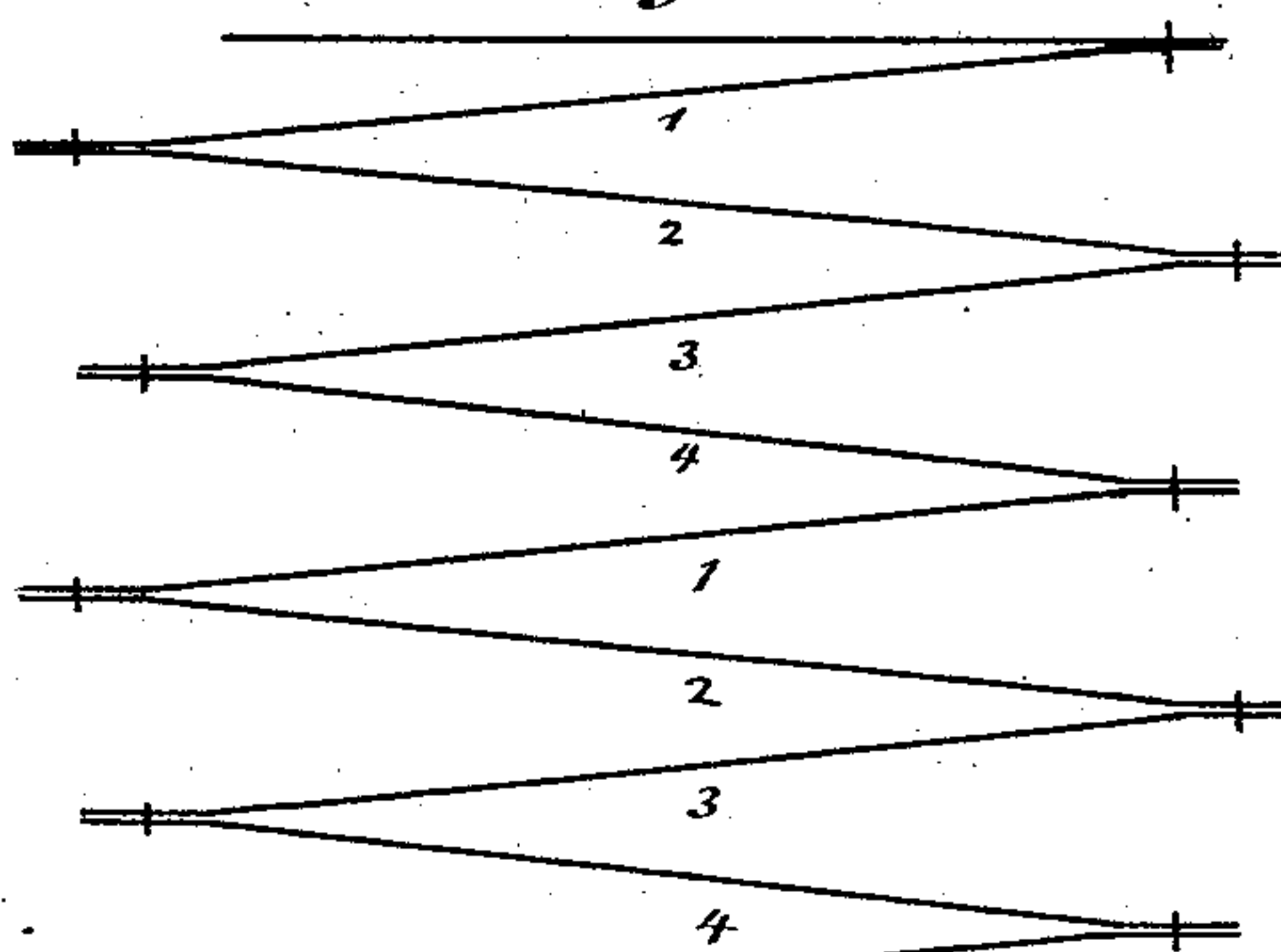
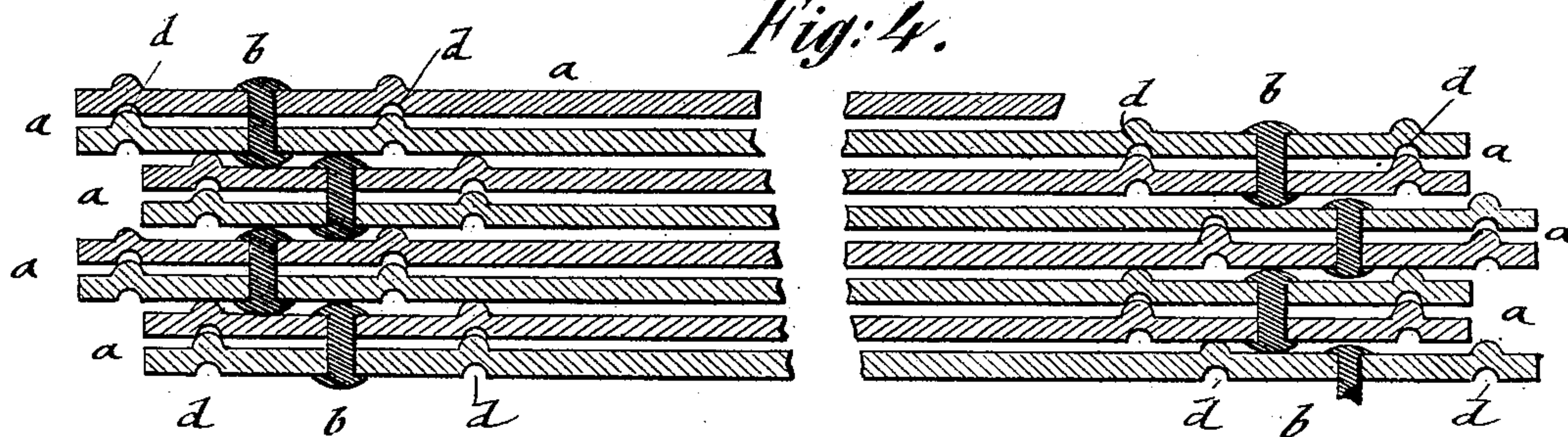


Fig:4.



WITNESSES:

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FOLDING STEEL MEASURE.

SPECIFICATION forming part of Letters Patent No. 496,123, dated April 25, 1893.

Application filed June 7, 1892. Serial No. 435,849. (No model.)

To all whom it may concern:

Be it known that I, WILLIE L. E. KEUFFEL, a citizen of the United States, and a resident of Hoboken, Hudson county, New Jersey, have
5 invented certain new and useful Improvements in Folding Steel Measures, of which the following is a specification.

This invention relates to improvements in folding-measures of that class which are made
10 of steel-links that are pivoted together and adapted to be folded so that they can be conveniently carried in the pocket or extended for use; and the invention consists of a folding-measure formed of graduated links and
15 pivoted in such a manner that the pivots of adjacent links when they are folded up, are not axially in line with each other, but located alternately sidewise of each other, one inside, the other outside, so as to permit of the more
20 convenient folding of the links, as will be fully described hereinafter and finally pointed out in the claims.

In the accompanying drawings, Figure 1 represents a perspective view of my improved
25 folding steel-measure, shown folded up for being carried in the pocket. Figs. 2 and 3 are diagrams, showing respectively the construction of the folding-measure heretofore in use and the construction of my improved folding-
30 measure, and Fig. 4 is a vertical longitudinal section of the folding-measure, drawn on a larger scale and showing the relative positions of the connecting pivots of adjacent links relatively to each other.

35 Similar letters and figures of reference indicate corresponding parts.

Referring to the drawings, *a a* represent the links of my improved folding measure, which links are graduated on one or both sides and
40 connected at their ends by means of pivots *b* with the next adjacent links. Each link is pivoted at each end to an adjacent link, one above and the other below the same. Heretofore the links of the measure were made of
45 equal size and pivoted together at their ends, so that the links when folded up one above the other brought the pivots axially in line, as indicated in the diagram shown in Fig. 2. This produced the abutting of the heads of
50 the pivots against each other so that the measure when folded, took up a larger space than required, owing to the distance at which the

links were held by the abutting pivots. For the purpose of avoiding this objection, the links are pivoted in such a manner that the
55 pivots are not axially in line with each other, but are arranged so as to alternate with each other, as indicated in the diagram shown in Fig. 3, whereby a folding-measure is obtained
60 in which the ends of one pair of links project alternately over the intermediate pair of pivoted links, as shown in Fig. 1. This is accomplished by making the links, of which my improved measure is made, of three different
55 lengths, the first and third links being of equal length, while the second and fourth links are respectively somewhat longer and shorter than the medium-length links 1 and 3, as
70 shown in Fig. 3. By this arrangement the alternating positions of the pivots and the alternating projecting of the ends of one pair of links over the adjacent links are produced.
75 Every four links form a group by which two pairs of adjacent links are produced, of which the pair of links formed by the second and third links project over the pair of links formed
80 by the fourth link of one group and the first link of the next adjacent group. The longer link 2 of each group produces the projecting of the pair at the ends over the links of smaller size, so that the alternating positions of the pivots and the alternating extending of one
85 pair of links over the next adjacent pair are produced, as shown in Figs. 1, and 3. These two features are the characteristic features of my improved folding steel-measure and permit thereby the folding up of the same into a smaller compass.

Each link *a* is further provided at each side of its pivot connection with the next adjacent
90 link *a* with an indentation *d*, which indentations form correspondingly raised portions at the opposite side of the link, the raised portions interlocking with the indentations or depressions of the next adjacent links, when
95 the links are folded one above the other, whereby a locking action is exerted on the links when they are moved on their pivots in line with each other. When the links are extended, they are rigidly held in position, by
100 the interlocking of the indentations with the radial portions of the adjacent links, so that the steel measure can be used without causing any change in the relative positions of the

links. The interlocking of the links is also obtained when they are in folded position, one above the other, whereby the handling and use of this class of measures are rendered much more convenient as the application of the same can be greatly extended and these measures used for many purposes for which they were not used heretofore.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A folding measure, composed of a number of folding links of different lengths, said links being alternately pivoted together at their ends, the pivots of the respective pairs of links being arranged to avoid contact with the pivots of the adjacent pairs of links when the measure is folded, substantially as set forth.

2. A folding measure composed of a number of folding links alternately pivoted together at their ends, said links being arranged in groups of four, each group being formed of three different lengths, the first and third

links of the group being of the same length, the second link of the group being of greater length, while the fourth is of shorter length than the first and third links, said links being alternately pivoted together at their ends, the pivots of the respective pairs of links being arranged to avoid contact with the pivots of the adjacent pairs of links when the measure is folded, substantially as set forth.

3. A folding measure, composed of a number of folding links pivoted together at alternating ends, said links being provided near the pivots with depressions at one side and corresponding raised portions at the opposite side, whereby the links are adapted to interlock with each other when in folded and extended positions, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

WILLIE L. E. KEUFFEL.

Witnesses:

PAUL GOEPEL,

CHARLES SCHROEDER.