

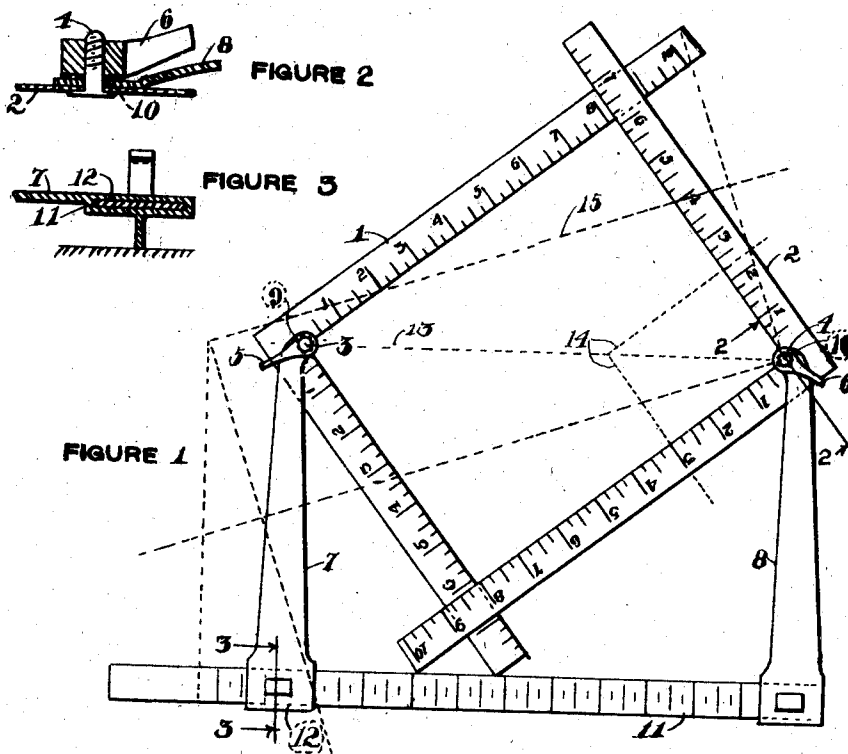
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MEASURING AND COMPUTING DEVICE

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MEASURING AND COMPUTING DEVICE.

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In many of the arts such as photography, photo-mechanical processes, and drafting, it is frequently desirable to determine the relations between the dimensions of a picture and those of enlarged or reduced copies of it. Means for solving such problems abstractly as well as by actual measurement are desirable, and an adjustable mask for deciding what parts of a picture may be best used, and for arranging and dimensioning the subject on the ground-glass of a camera will also be useful.

It is the object of my invention to provide a device of simple and economical construction which will quickly and accurately fulfill the above and other requirements.

In the drawing:—

Figure 1 is a plan view of one embodiment of my invention.

Figure 2 is an enlarged detail section on line 2—2 of Figure 1.

Figure 3 is an enlarged detail section on line 3—3 of Figure 1.

Referring now more particularly to the drawing, I show at 1 and 2 two squares provided with any useful gradations. In the present case I have marked the inner edges in inches subdivided into eighths, the numbering starting at the right-angled intersection of the two inner edges. At this intersection on each square is mounted an upstanding threaded pin as shown at 3 and 4 respectively, each pin being fitted with a lock nut as at 5 and 6.

At 7 and 8 are shown a pair of arms of equal length, provided with orifices at one end as at 9 and 10 to engage the pins 3 and 4. To the other end of one arm as 8 is fixedly mounted a bar 11 lying at right angles to said arm. The corresponding end of the arm 7 is provided with a slot 12 adapted to engage the bar 11 and permit a sliding movement of the arm 7 to and from arm 8 and in parallel relation thereto.

By means of this construction the squares 1 and 2 may be rotated about pins 3 and 4 or held in any desired fixed position relative to their supporting arms 7 and 8 by means of lock nuts 5 and 6. Likewise the two pins 3 and 4 may be moved toward or away from each other along a straight line 13 by sliding the arm 7 on bar 11. It is apparent that the above described pivotal and sliding movements will permit of the squares being

so placed as to form rectangles of any shape or size within the capacity of the instrument. It is also apparent that when the squares 1 and 2 are secured in position to form a desired rectangle and then the arm 7 slid along bar 11, a series of similar rectangles will be formed, the line 13 in every case occupying the position diagonal to the rectangle.

In the various applications of the device it is only necessary to so adjust the squares that their intersecting arms are at right angles to each other, then tighten the lock nuts and slide the one square relative to the other as desired.

If the squares are set as shown in solid lines to define the size of a given picture, any proportional enlargement or reduction thereof may be indicated by sliding the one square as described, the dotted lines at 14 indicating the position of the square 1 when positioned to define the outline of a proportionally smaller picture having a required length of three inches.

If it is desired that a picture be copied to a certain definite size and it is desired to know what portion of the original will be included, the squares are set to form a rectangle of the desired size, as indicated at 15, the nuts 5—6 are tightened, and the device placed upon the original where sliding the squares will give the desired information.

If it is desired to make a drawing one and one-half times the original in size, the squares are set to form a rectangle with the sides proportioned as one to one and one-half and locked in that position. The required dimensions are found by sliding the squares relative to each other, the short side of the rectangle in each case equalling a dimension on the original and the long side the corresponding size on the copy.

It will be readily apparent from the above that the sliding motion of the locked squares provides a multiplication or division table in which fractions may be used as easily as whole numbers. Where one and one-half is a multiplier, the short side of any rectangle formed by the sliding motion alone will be the multiplicand and the long side will be the product. When one and one-half is a divisor, the long side will be the dividend and the short side the quotient.

It is to be understood of course, that while I have herein shown and described but

two embodiments of my invention, changes in form, construction and method of operation of my invention may be made within the scope of the appended claims.

I claim:—

1. A device of the character described, comprising a bar, a pair of relatively movable parallel arms mounted thereon at right angles thereto and having orifices formed in their outer ends equally distant from said bar, a pair of squares, each square having an upstanding threaded pin mounted thereon at the intersection of its arms and engaging one

of said orifices, and a lock-nut threaded on to each pin to engage the square thereon. 15

2. A device of the character described, comprising a bar, a pair of relatively movable parallel arms mounted thereon at right angles thereto, and a pair of opposed and intersecting squares mounted on said arms 20 equally distant from said bar, each square being mounted for pivotal motion at the intersection of its arms, and means for inhibiting said pivotal motion.

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