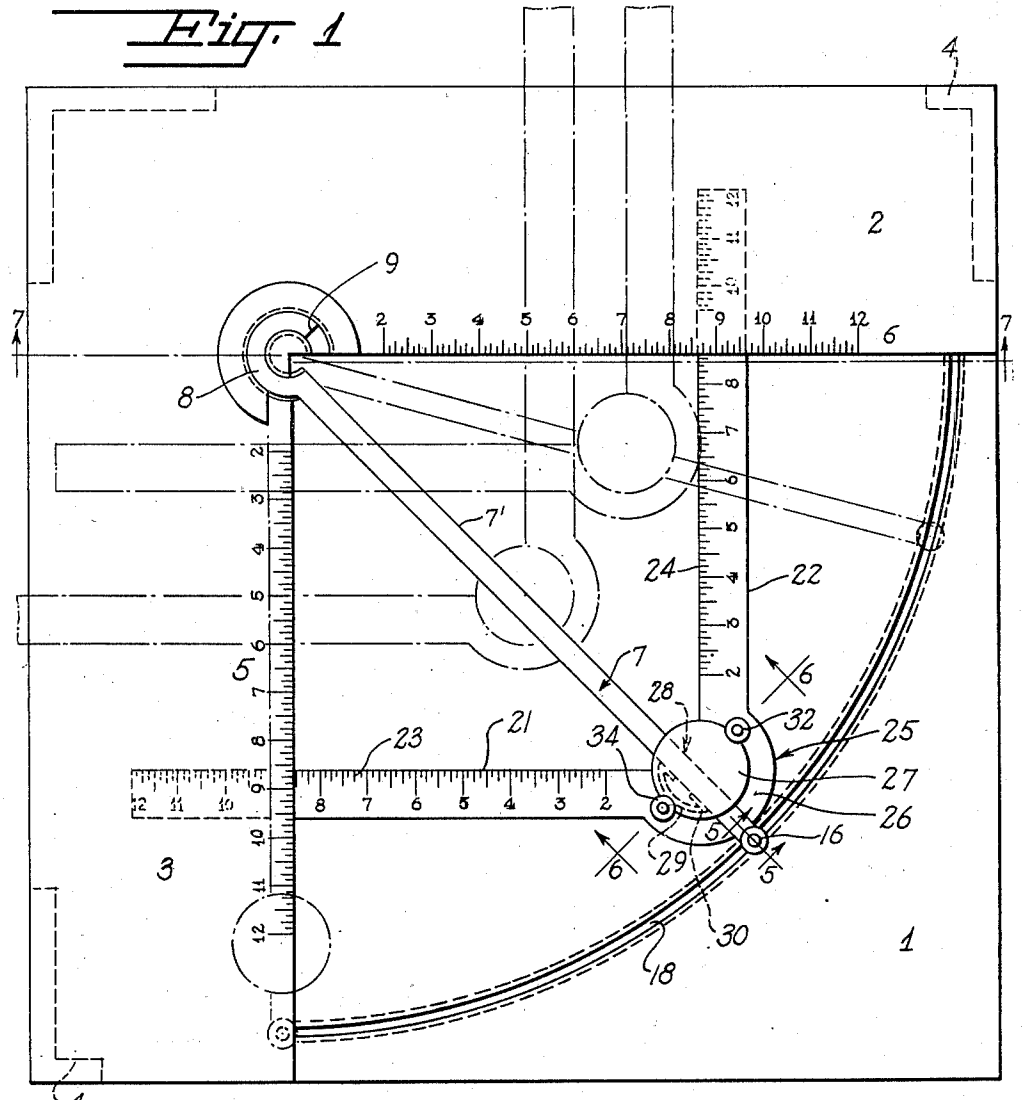
May 8, 1951 F. W. RODMAN 2,552,460

GRAPHIC PROPORTIONATOR

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Fig. 1



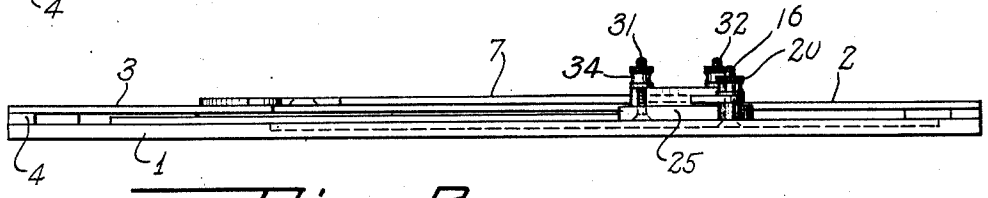


Fig. 2

INVENTOR.
Frederick W. Rodman

BY Victor J. Evans & Co.

ATTORNEYS

May 8, 1951 F. W. RODMAN 2,552,460

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Fig. 3

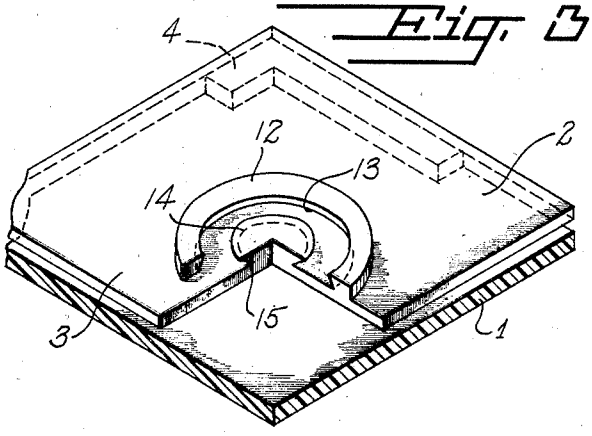


Fig. 5

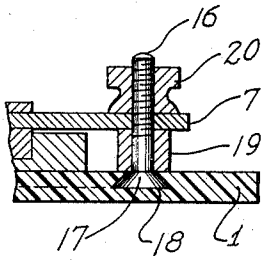


Fig. 4

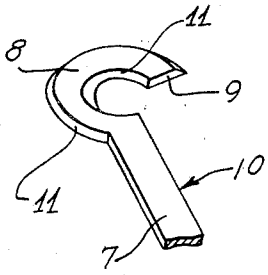


Fig. 6

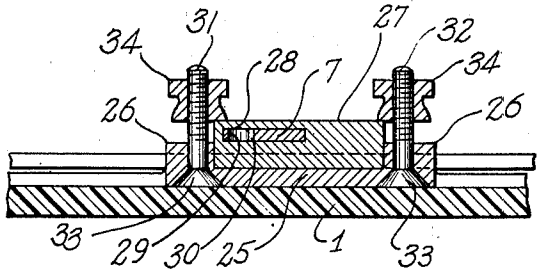
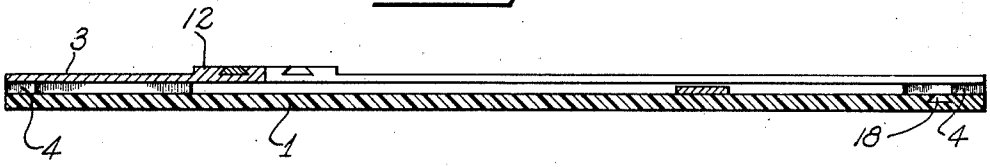


Fig. 7



INVENTOR.
Frederick W. Rodman

BY Victor J. Evans & Co.

ATTORNEYS

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2,552,460

UNITED STATES PATENT OFFICE

2,552,460

GRAPHIC PROPORTIONATOR

Frederick W. Rodman, Jefferson City, Mo.

Application December 1, 1948, Serial No. 62,937

2 Claims. (Cl. 33—80)

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The present invention relates to the general class of geometrical instruments of the square and diagonal straightedge type, and more specifically, to an improved graphic proportionator which while adapted for various purposes and uses by craftsmen and others, is especially designed for use by photographers in measuring and encompassing portions of photo prints, films, drawings, and other objects, in the formation and display of rectangles of various sizes and shapes for reproduction. By manual adjustments of the instrument over the desired area of an original, an object or a specific portion of the original may be measured and proportionately reduced, or increased, to desired size and shape, and the desired rectangle will thus be masked and displayed for further processing. The instrument, which may be fashioned in various sizes and of transparent, translucent, or opaque materials, preferably plastics, includes a minimum number of parts that may be manufactured with facility at low cost of production, and the parts may be assembled with convenience to assure a durable instrument of simple construction that may be adjusted with ease and accuracy for the performance of its required functions.

The invention consists in certain novel features of construction and combinations and arrangements of parts embodying a fixed angle square, a complementary and adjustable angle square, both of which are interior angles, and an adjustable guide blade having a diagonal straightedge for the adjustable square, as will hereinafter be described and more particularly pointed out in the appended claims.

In the accompanying drawings I have illustrated a complete example of a physical embodiment of my invention wherein the parts are combined and arranged in accord with one mode I have devised for the practical application of the principles of the invention. It will however be understood that changes and alterations are contemplated and may be made in these exemplifying drawings and structures, within the scope of my claims, without departing from the principles of the invention.

Figure 1 is a plan view of an instrument in which my invention is embodied; and Figure 2 is an edge view of the structure in Fig. 1.

Figure 3 is an enlarged fragmentary detail perspective view at one corner of the instrument. Figure 4 is a detail perspective view showing the swivel head of the adjustable and quick detachable diagonal straightedge blade. Figure 5

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is a sectional view at line 5—5 of Fig. 1; Figure 6 is a sectional view at line 6—6; and Figure 7 is a sectional view at line 7—7 of Fig. 1.

As shown in Fig. 1 I employ a preferably square base 1 over a corner and two sides of which is mounted an interior angle square consisting of the right angle arms 2 and 3 that are spaced from or elevated over the base by fixed inserts or spacing blocks 4 of suitable material, to provide for the reception of a card, or other work, bearing the object or objects to be measured, leaving the desired site or area of the card free from the square and resting on the base.

The inner angle of the fixed square is provided with duplicate scales as 5 and 6 with graduations in feet or in inches as desired in adapting the instrument to different purposes and uses.

In combination with the apex corner of the inner angle of the fixed square, a quick detachable guide or blade 7 having a diagonal straight edge 7' is mounted, by means of a segmental swivel ring 8 terminating in a diametrical edge or end 9 perpendicular to the plane of the blade, and the diagonal straightedge 10 of the blade intersects the center of the swivel ring. The inner and outer peripheries of the swivel ring are fashioned with beveled edges 11, 11, and the ring is swiveled between an outer fixed circular guide ring 12 having an inner beveled periphery 13, and a central swivel head 14 having a circular beveled edge 15. The ring of the blade may readily be slipped into the groove between the fixed guide ring and the central head, and the blade may be adjusted to desired position with the straight edge 10 of the blade constantly centered on the center of the swivel head 14.

The swiveled straightedge blade may be adjusted within a range of approximately ninety degrees, and for setting or fixing the blade in desired position a set screw 16 is mounted in the outer end of the blade and provided with a tapered head 17 that is guided and retained in a circular groove 18 in the upper face of the base 1, the groove as best seen in Fig. 5 having dovetail walls or beveled edges for coaction with the head of the screw. A spacing bushing 19 is mounted on the screw between the base and the blade, and the upper threaded end of the screw is threaded to receive a clamp nut 20 by means of which these parts are rigidly clamped together, to hold the blade in adjusted position.

For joint use with the fixed square and the adjustable diagonal straightedge blade, an adjustable inner angle square is employed, which swings with the swiveled blade and is relatively

adjustable longitudinally of the blade, and the apex of the adjustable square is constantly centered with the straightedge and the center of the swivel head on the fixed inner angle square.

The adjustable inner angle square includes right angle legs 21 and 22 opposed to the complementary arms 5 and 6 of the fixed square, and the legs are also equipped with scales 23 and 24 duplicating the scales of the fixed square and extending outwardly from the apex of the inner angle square which is fashioned with a half round convex head 25. The head 25 is provided with an integral open center flange 26 that forms a semicircular socket for a swiveled disk 27 forming a slide head on the diagonal blade, and the blade passes through a slot of the disk which slot is provided with a diametrical or central wall 28 that coincides with the straightedge 10.

For holding the straightedge of the blade constantly in contact with the diametrical wall 28 of the disk, a bow spring 29 is mounted within the disk slot with its friction ends 30, 30 bearing against the back edge of the blade and in this manner the guideblade and the swivel disk are resiliently retained in close contact at all times.

For fixing the movable square in adjusted position a pair of clamp bolts or screws 31, 32 are passed through complementary holes in the socket head of the square with their tapered heads 33 seated in recesses of the under face of the head, and these screws or bolts are each provided with a clamp nut 34 that engages the upper face of the disk as indicated in Fig. 6 to rigidly unite the disk and the swivel head of the square.

As indicated by dotted lines in Fig. 1 the adjustable square may be moved to form various sizes of rectangles outlined by the two squares, while the diagonal straightedge blade is being adjusted for guiding the movement of the movable square in the formation of the site on the work; then the straightedge blade may be released and swung to the left, leaving an unobstructed sight between the two squares to be photographed or otherwise processed.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In the instrument described, the combination with a base having an arcuate groove extending from side to side of the base, a first angle square immovably supported above said base, and a swiveled blade mounted at the apex of the square, of a set screw mounted in the free end of the blade having a head guided in said groove so that said head can be moved to either side connected by the groove and a clamp nut on the screw for securing the blade in adjusted position, a slotted swivel disk mounted for longitudinal adjustment on the blade, and a second inner angle square having a swivel joint on the disk.

2. In the instrument described, the combination with a base having an arcuate groove extending from side to side of the base, a first angle square immovably supported above said base, and a swivel blade mounted at the apex of the square, of a securing element mounted in the free end of the blade having a head guided in said groove so that said head can be moved to either side connected by the groove, a clamping member on the securing element for securing the blade in adjusted position, a slotted swivel disc mounted for longitudinal adjustment on the blade, and a second angle square having a swivel joint on the disc.

FREDERICK W. RODMAN.

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