

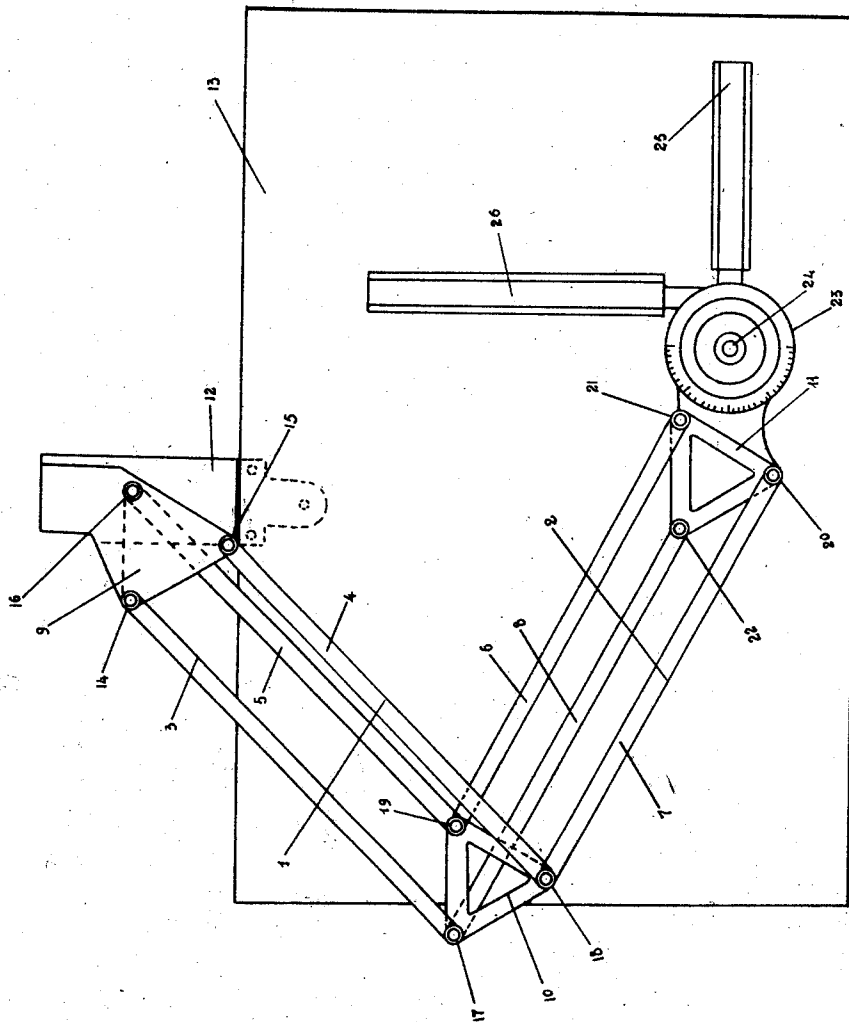
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M. MARZETTI

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UNIVERSAL PARALLEL DRAFTING DEVICE

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Inventor
Manlio Marzetti.
per *R. Marzetti* Attorney.

UNITED STATES PATENT OFFICE.

MANLIO MARZETTI, OF MILAN, ITALY.

UNIVERSAL PARALLEL DRAFTING DEVICE.

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The invention relates to an improved drawing instrument for use in drawing parallel lines in any desired direction. The improved instrument is illustrated, by way of example, in the accompanying drawing. The instrument comprises two systems of swivel parallelograms 1 and 2, each being constituted by three rods 3, 4, 5 and 6, 7, 8, respectively, the ends of which are pivotally connected to three equilateral triangles 9, 10 and 11.

The upper triangle 9 serves as a base for the movements of the parallelograms and comprises a U-shaped metal plate 12 which is rigidly attached by means of screws to the rear of the upper edge of the drawing board 13.

The rods 3 and 4 have their ends pivotally mounted at the corners 14 and 15, on the upper face of the triangle 9, while one of the ends of the rod 5 is pivoted at the third corner 16 of the triangle 9, but on the lower face of the triangle so that the said rod 5 lies in a different plane from that of the rods 3 and 4. The opposite ends of the rods 3, 4 and 5 are all pivoted on the upper face of the triangle 10, at the corners 17, 18 and 19 respectively. The pivoting point 19 lies at a lower level than that of the pivoting points 17 and 18, in order to maintain the rod 5 in a different plane from that of the rods 3 and 4. The upper ends of the rods 8, 7 and 6 of the second system of parallelograms are pivotally mounted at the corners 17, 18 and 19 respectively of the triangle 10, but on the lower face thereof; and the pivoting point 17 lies at a lower level than that of the pivoting points 18 and 19, in order to maintain the rod 8 in a different plane from that of the rods 6 and 7. The opposite ends of such rods 7, 6 and 8 are pivotally mounted at the corners 20, 21 and 22 respectively of the triangle 11; and the pivoting point 22 lies at a lower level than that of the pivoting points 20 and 21 in order to maintain the rod 8 in a different plane from that of the rods 6 and 7. The triangle 11 is provided with a protractor 23 which is pivotally mounted at 24, on an extension of the triangle 11; the protractor being capable of adjustment to any desired position and having extending therefrom two rulers 25 and 26 arranged at an angle of 90° to each other.

Through these systems of parallelograms, each of which is constituted by three rods, it is possible to rotate each system of parallelograms about 180° , while maintaining always the precision of the parallelism in the movement of the rulers, since the distance between the outer rods of the parallelograms may never be less than the height of the base triangle 9 and the angle of the parallelograms may never be less than 60° . This arrangement gives much greater precision than is obtainable by means of the usual two-rods-parallelograms and also enables the ruler movements to cover the whole surface of the drawing board even when rods having a very limited length are employed.

What I claim is:—

An instrument for use in drawing parallel lines comprising a fixed base triangle, a second triangle, three parallel rods pivotally connecting the corners of the base triangle with the corners of the second triangle, a third triangle, three parallel rods pivotally connecting the corners of the second triangle with the corners of the third triangle, two of the rods of at least one of the sets of parallel rods between the respective triangles being mounted in the same plane and the third rod being mounted in a different but parallel plane to permit the said rods to swing through an angle of substantially 180° , and line ruling means mounted on the third triangle.

In testimony whereof he affixes his signature.

MANLIO MARZETTI.