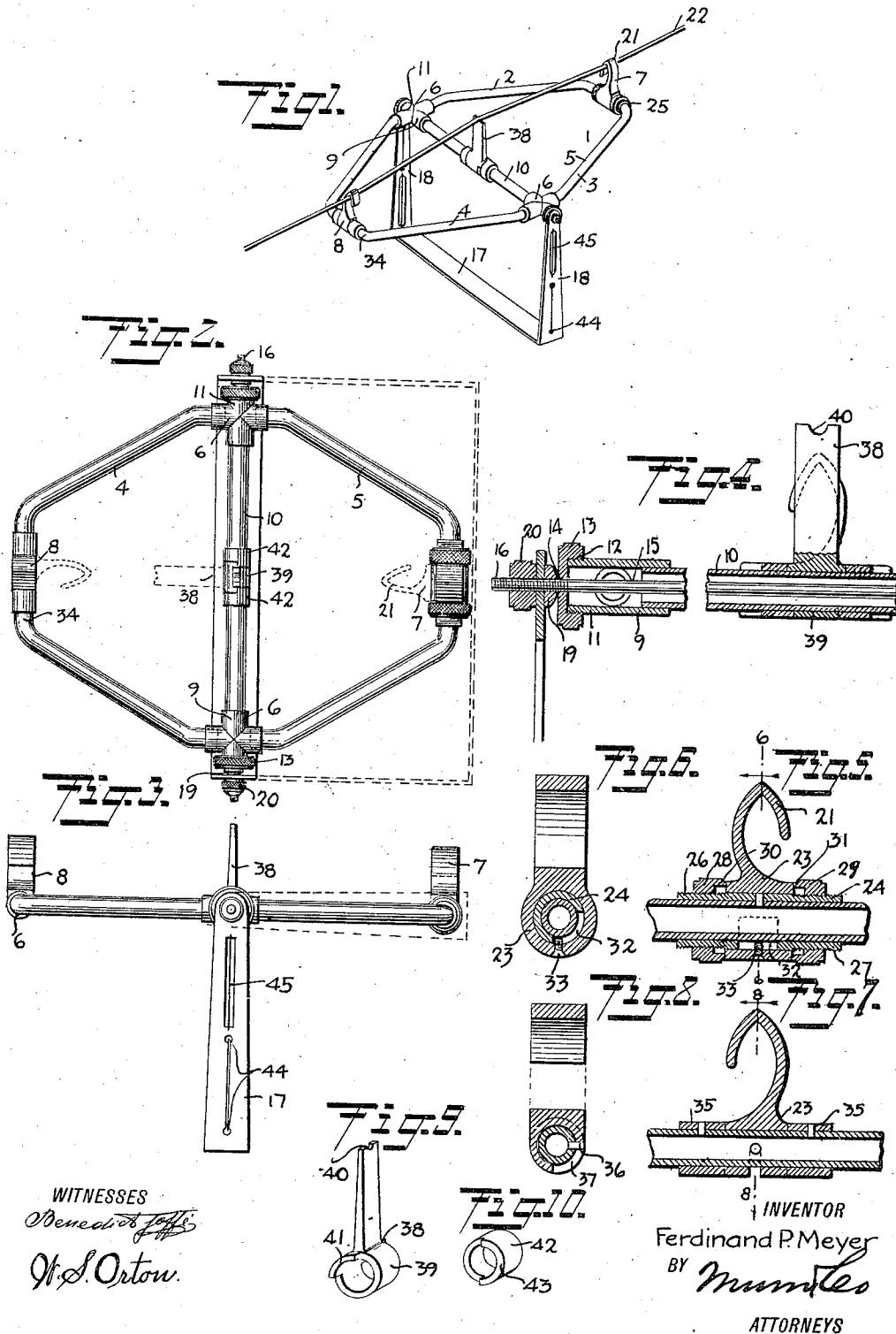


F. P. MEYER.
SIGHT SQUARE.
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SIGHT-SQUARE.

1,013,799.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FERDINAND P. MEYER, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Sight-Square, of which the following is a full, clear, and exact description.

My invention relates to a new and improved sight square for use in survey work.

An object of my invention is to provide a new and novel device for use in survey work, especially in surveying the interior of a building for the finishing thereof.

In surveying the interior finish of a building, it is found necessary to locate different points about the building and to take measurements in different directions from these points. I attain these objects by stretching a tight wire, preferably longitudinally through the building and make observations on and from this wire. By positioning on the line a sight square and by sighting through the peep holes on this square, I am enabled to locate and mark different points on the walls and to take measurements from these marked points, and in general to take a proper set of measurements from which plotting and figuring the future finishing work is made very simple.

With the above and other objects in view, as will more fully hereinafter appear, the present invention consists in certain novel details of construction and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures, and in which—

Figure 1 is a perspective view showing my sight square in position on the base wire; Fig. 2 is a plan view looking down upon the same; Fig. 3 is a side elevation thereof; Fig. 4 is a longitudinal sectional view taken through half of the main axis of the device, parts being broken away; Fig. 5 is a longitudinal sectional view taken through the framework at the point where one of the hangers is attached; Fig. 6 is a transverse sectional view of the same taken on the line 6—6 of Fig. 5; Fig. 7 is a view similar to Fig. 5, but showing the opposite hanger;

Fig. 8 is a transverse sectional view taken on the line 8—8 of Fig. 7; Fig. 9 is a detailed perspective view of my fastening clamp; and Fig. 10 is a perspective view of the holding sleeves for the same.

The preferred embodiment of my sight square here disclosed, comprises an octagonal framework 1, composed of two halves 2 and 3, each half consisting of two arms 4 and 5 of equal length, arranged one at a slight angle to the other and passing through the alined opening in T-heads 6, the outer ends of which halves are bent toward each other and fastened together by hangers 7 and 8, hereinafter described. Extending between the alined nipples 9 of each of the T-heads 6, is a tube 10, and in alinement with the nipples 9 and on the outside of the T-heads 6, there is a slightly-projecting portion 11, externally screw-threaded as shown at 12 in Fig. 4. Engaged by threaded connection with this projecting portion, are milled head nuts 13, through the axially-disposed apertures 14 of which passes an axle 15 having threaded ends 16 extending some considerable distance beyond the nuts 13. Loosely mounted upon the threaded end 16 is a substantially rectangular U-shaped sighting vane 17 of any suitable flat metal, preferably aluminum, the arms 18 of which vane are loosely mounted upon the axle 15 and spaced from the ends 13 by means of washers 19 and held in this position by a milled jam-nut 20 placed on the outer end of the axle 15. It will be seen from this disposition of the sighting vane that it is free to swing and will always maintain a vertical position, irrespective of the inclination of the framework or its supporting elements. The framework 1 may be in one piece or in two parts, the ends of which are fastened together within the T-heads 6, as shown in dotted lines in Fig. 2.

Mounted upon one end of the framework 1, is the hook member 7 having a hook portion 21 engaging the base wire or cord 22, and having a transverse tubular portion 23 encircling a sleeve 24 rigidly mounted upon the transverse end 25 of the framework 1. In order to move this hook member transversely of the framework to adjust its longitudinal position, the sleeve 24 is threaded at opposite ends with a right-hand thread 26 and a left-hand thread 27, engaging which are oppositely-disposed nuts 28 and 29, which nuts have projecting flanges 30 and

31 bearing on each side against the tubular portion 23 of the hanger. It will be seen that by this connection the device may be moved back and forth, thereby insuring the correct positioning of the framework on the base wire.

In order to prevent the rotation of this hanger member more than ninety degrees, the sleeve 24 has a centrally disposed transverse slot 32 extending therethrough and about the sleeve ninety degrees, as shown in Fig. 6. Projecting inwardly from the bottom portion of the sleeve 24, is a stud 33 moving in said slot and limiting the movement of the hanger about its axis. Upon the opposite end of the framework and substantially in longitudinal alinement with the hanger 7, is the hanger 8, substantially the same as the hanger 7 with the exception that this hanger does not admit of any transverse movement, but has the tubular portion 23 surrounding a transverse portion 34 of the framework, and is held in position by means of sleeves 35 positioned on each side of the tubular portion 23 and riveted to the transverse portion 34 of the framework 1. The movement of this hanger 8 is also limited to ninety degrees by means of a pin 36 projecting outwardly from the portion 34 and engaging the ninety-degree slot 37. It will be seen that by limiting the movement of the two hangers 7 and 8, it is not possible to reverse the device and use it upside down.

Centrally disposed on the tube 10, is a clamp 38 having a tubular portion 39 engaging said tube and adapted to be rotated about the same. The upper end of the clamp 38 is longer than the length of the hangers 7 and 8, and has, in its upper edge, a slight depression 40 adapted to engage under the base wire 22, thereby passing this wire under tension between the hangers 7 and 8, in order to positively hold the sight square in position on this base wire. The cylindrical portion 39 of the clamp has projecting from each edge, a flanged portion 41 extending ninety degrees about each edge. Positioned on opposite sides of the clamp, are sleeves 42, each sleeve having a flange 43 projecting toward and limiting the movement of the flange 41. It will thus be seen that it is only possible to rotate this clamp about ninety degrees from its vertical position into a position substantially in the horizontal plane of the framework.

In the practical operation of my device, I stretch the base wire 22 in whatever position is desired, raise the hangers 7 and 8 vertically and hang the device on the wire or line 22 and move it along the wire to the point opposite the place to which it is desired to sight. Then, by moving the clamp 38 up into engagement with the wire, the framework is firmly locked in position, and the sighting vane is free to swing to a vertical

position. Then, by sighting through the aligned slits 44 in the arms 18 and the oppositely-disposed hair line sights 45, I am enabled to sight points along the wall or other body on either side of the line of the base wire.

In order to test my device to determine whether or not the sighting vanes are at right angles to the base wire, I fore and back sight through the slits 44 and sights 45, make two marks on opposite walls, and then reverse the framework on the wire and sight toward the marked points. If the marks do not coincide, the device can be adjusted by moving the hanger 7 transversely by means of the nuts 28, thereby changing the angular disposition of the frame with reference to the base wire.

While a preferred embodiment of the invention has been described, it is to be understood that many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof. It is intended that all matters contained herein in the above description or shown in the accompanying drawings, shall be interpreted as illustrative and not in a limiting sense. It is also to be understood that the language used in the following claims is intended to cover the full scope of the invention and is not to be given any narrower construction than the prior art demands, and that materials, sizes and relativities of parts are non-essential, except as called for in the claims.

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

1. In a sight square, a frame adapted to be hung from a supporting member, a sighting vane hanging vertically from said frame, and means on said frame, whereby said frame may be adjusted transversely of said supporting member.

2. In a sight square, a frame having sighting means therein, hooks projecting from opposite ends of said frame, and means for varying the location of one of said hooks with reference to said frame.

3. In a sight square, a frame, supporting elements extending from said frame and adapted to grip a base wire, and means extending from said frame intermediate said supporting elements, whereby said frame is immovably retained in position upon said base wire.

4. In a sight square, an open framework, means extending diametrically across said framework to reinforce the same, and a sight vane free to swing on said means.

5. In a sight square, having sighting means therein and comprising a framework positioned below a suspending wire and supported from the same by hooks extending

therefrom, a transverse member connecting opposite sides of said framework, and a clamp positioned in said member and adapted to engage said supporting wire, whereby
5 the device is locked to said wire.

6. In a sight square, a frame, hook members disposed longitudinally on said frame and adapted to be rotated into the plane of said frame, and means limiting this rotation,
10 tion, thereby rendering it impossible to use the device upside down.

7. A sight square, comprising an open framework, a transverse member connecting opposite sides of said framework, and a substantially U-shaped sighting vane having its
15 legs pivoted to the said member, said vane having alined sights in the legs of the same.

8. In a sight square, a frame, supporting

and holding means extending at right angles upward from said frame, a sighting
20 vane pivoted to said frame and free to swing with reference to the same, and means whereby all of said elements may be moved into substantially the same plane.

9. In a sight square, an open framework
25 adapted to be supported in a horizontal position, and sighting members pivoted to and adapted to hang vertically from said framework.

In testimony whereof I have signed my
30 name to this specification in the presence of two subscribing witnesses.

FERDINAND P. MEYER.

Witnesses:

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