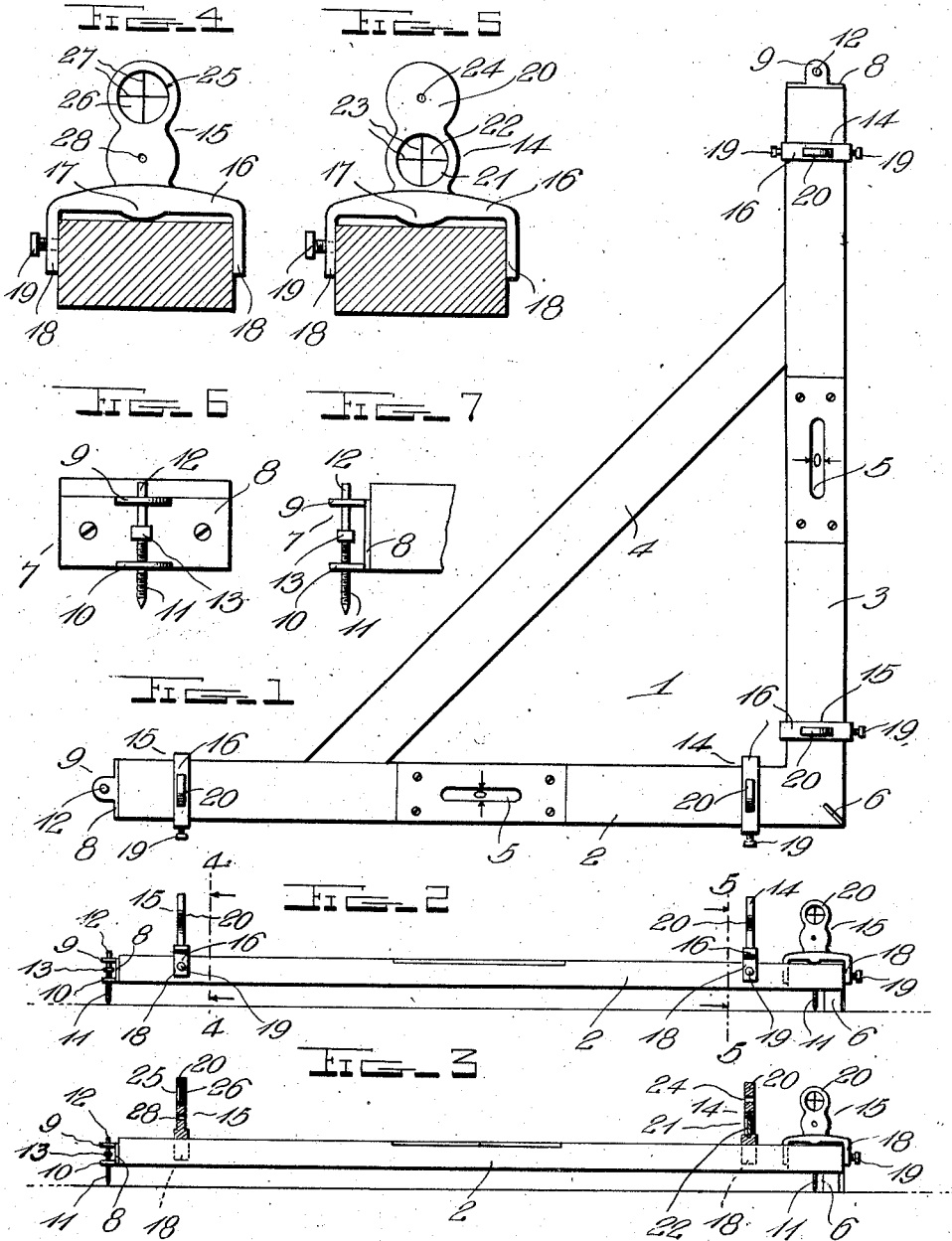


J. F. LEWIS.
 COMBINED SQUARE AND LEVELING DEVICE.
 APPLICATION FILED SEPT. 15, 1911.

1,019,668.

Patented Mar. 5, 1912.



Witnesses

E. E. E. E.
 C. E. Hunt.

Inventor

James F. Lewis

by A. B. Wilson & Co.

Attorneys

UNITED STATES PATENT OFFICE.

JAMES F. LEWIS, OF UNIONTOWN, PENNSYLVANIA.

COMBINED SQUARE AND LEVELING DEVICE.

1,019,668.

Specification of Letters Patent.

Patented Mar. 5, 1912.

Application filed September 15, 1911. Serial No. 649,517.

To all whom it may concern:

Be it known that I, JAMES F. LEWIS, a citizen of the United States, residing at Uniontown, in the county of Fayette and State of Pennsylvania, have invented certain new and useful Improvements in Combined Squares and Leveling Devices; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in combined squares and leveling devices.

One object of the invention is to provide a device of this character having arranged thereon an improved construction and arrangement of sighting device whereby the sighting operation may be performed in both directions without turning the instrument.

Another object is to provide adjustable leveling devices whereby the arms or blades of the device may be quickly leveled.

A further object is to provide a square and leveling instrument which will be simple, strong, durable and inexpensive in construction, efficient and reliable in operation and well adapted to the purpose for which it is designed.

With these and other objects in view the invention consists of certain novel features of construction, and the combination and arrangement of parts as will be more fully described and claimed.

In the accompanying drawings: Figure 1 is a plan view of my improved combined square and leveling device; Fig. 2 is a side view thereof; Fig. 3 is a similar view showing the sighting devices in section; Fig. 4 is a vertical cross sectional view on the line 4-4 of Fig. 2; Fig. 5 is a similar view on the line 5-5 of Fig. 2; Fig. 6 is an end view of one of the arms or blades of the square showing the construction and arrangement of the leveling device thereon; Fig. 7 is a side view of the outer end of one of the arms of the square and the leveling device thereon.

Referring more particularly to the drawings, 1 denotes a square, the arms 2 and 3 of which may be formed of any suitable material and are securely braced by a diagonally arranged brace bar 4 which is connected with the inner sides thereof at a suitable distance from their ends as shown.

In the upper sides of the arms or members 2 and 3 of the square midway between the ends of said arms are arranged spirit level glasses 5.

Arranged in the outer corner of the meeting ends of the arms or members 2 and 3 of the square is a supporting plate or lug 6 which projects a suitable distance below or beyond one side of the square as shown and forms a support for the right angular corner of the square. Secured to the outer ends of the arms or bars 2 are screw supporting brackets 7, said brackets comprising attaching plates 8 adapted to be screwed or otherwise secured to the ends of the arms or members 2 and 3 and having formed on their upper and lower edges right angular outwardly projecting lugs 9 and 10. The lugs 9 and 10 are provided with screw receiving apertures, the aperture in the lug 10 being threaded. With the threaded apertures in the plates 10 are operatively engaged adjustable supporting screws 11 having on their upper ends smooth extensions 12 which slidably engage the apertures in the lugs 9 and form guides for the screws. On the upper ends of the threaded portion of the screws are formed integral heads or squared surfaces 13 to receive a wrench or to provide a firm grip for the fingers for adjusting the screws. By constructing and arranging the adjusting screws 11 as herein shown and described the arms of the square may be readily brought to a level position which will be indicated by the spirit level glasses 5 thereon.

Removably and adjustably secured to the arms or members 2 and 3 of the square are sighting devices 14 and 15. The sighting devices 14 and 15 are secured to the arms or members of the square by means of clips 16 consisting of plates having on their inner sides centrally disposed segmental lugs 17 which engage the upper sides of the members 2 and 3 as clearly shown in Figs. 4 and 5 of the drawing. On the ends of the plates of the clips are formed flanges 18 which engage the opposite edges of the arms or members 2 and 3 and are securely fastened in engagement therewith by set screws 19 arranged in threaded apertures formed in one or both of the flanges 18 as shown. The flanges on both ends of the clip on the outer end of the arm 3 of the square are provided with set screws as shown. The sighting devices 14 and 15 comprise upwardly project-

ing plates 20 and in the lower portion of the plates 20 of the sighting devices 14 are formed circular openings 21 in which are arranged cross-wires 23, which indicate the center of the opening. In the upper portion of the plates 20 of the devices 14 are formed centrally disposed peep holes 24. In the upper portion of the plate 20 of the sighting devices 15 is formed a circular opening 25 in which are arranged cross-wires 23 which indicate the center of this opening. In the lower portion of the plate 20 of the device 15 is formed a centrally disposed peep hole 28.

By constructing and arranging the plates 20 of each of the sighting devices with both a sight-opening and a peep hole arranged as herein shown and described it will be seen that the sighting operations may be performed from either end of the arms 2 and 3 of the square without turning the latter around. In arranging the sighting devices on the arms of the square it will be understood that the devices 14 are disposed at or near one end of the arms, while the sighting devices 15 are disposed at or near the opposite ends of the arms and that the peep holes in the plates of one of the devices when thus arranged will be opposite to or in line with the centers of the sight-openings of the opposite devices. By providing the plates of the clips 16 with the centrally disposed lugs 17, the clips may be tilted slightly on said lugs before securing them with the set screws 19, in order to ad-

just the sighting openings, or peep holes, laterally to properly aline it, or them, when necessary.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention as claimed.

Having thus described my invention what I claim is:

A square comprising right angular arms, a sighting device secured to each arm near the angle and also near the outer end, each sighting device adapted for use from either end of its arm, and each comprising a clip consisting of a main body, a central lug on the under side of the main body to rest on the arm, a flange at each end of the main body to embrace the sides of the arm, and a set screw through one of the flanges to engage the edge of the arm, whereby the sighting devices may be adjusted laterally on the lug as a pivot.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JAMES F. LEWIS.

Witnesses:

FRANK P. COTTON,
W. R. JOHNSON.