Feb. 14, 1933. B. S. SOUDERS 1,897,682

FOUNDATION GAUGE

Filed Oct. 19, 1929 3 Sheets-Sheet 1

Fig. 1.

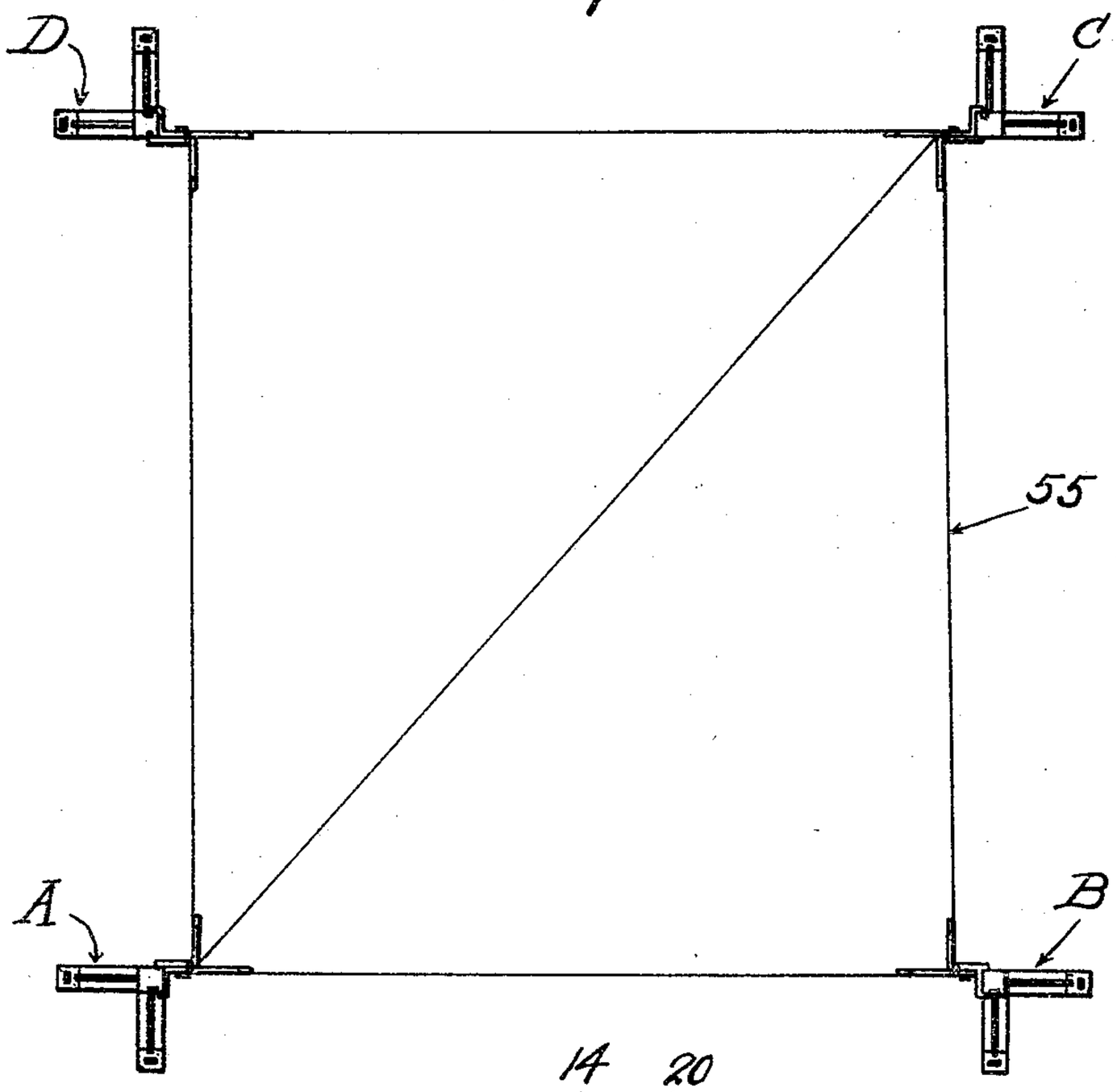


Fig. 5.

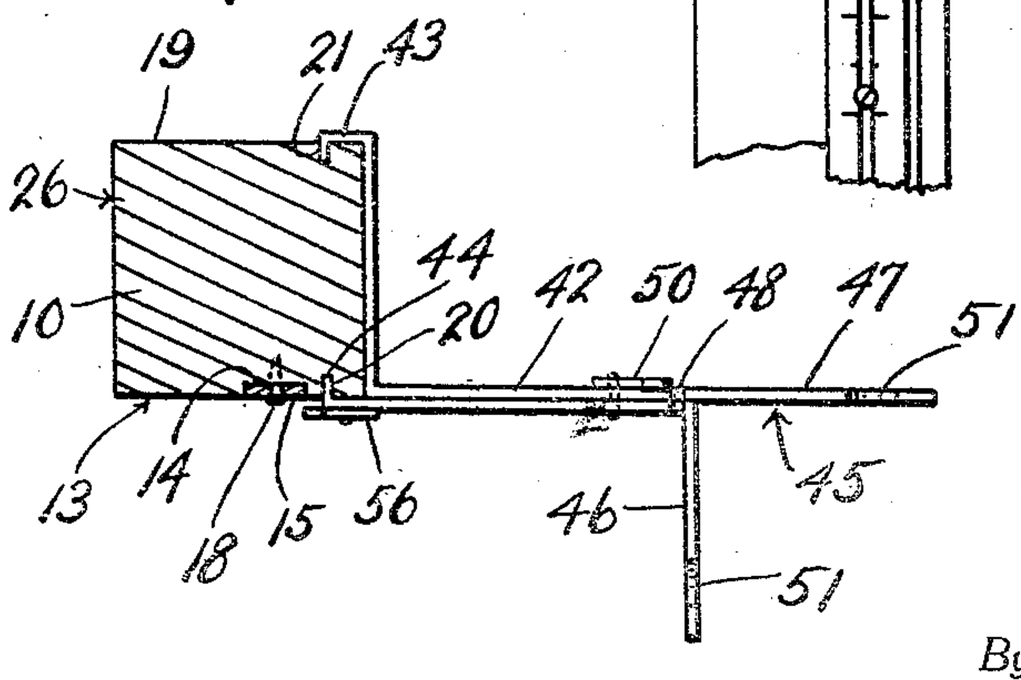


Fig. 6.

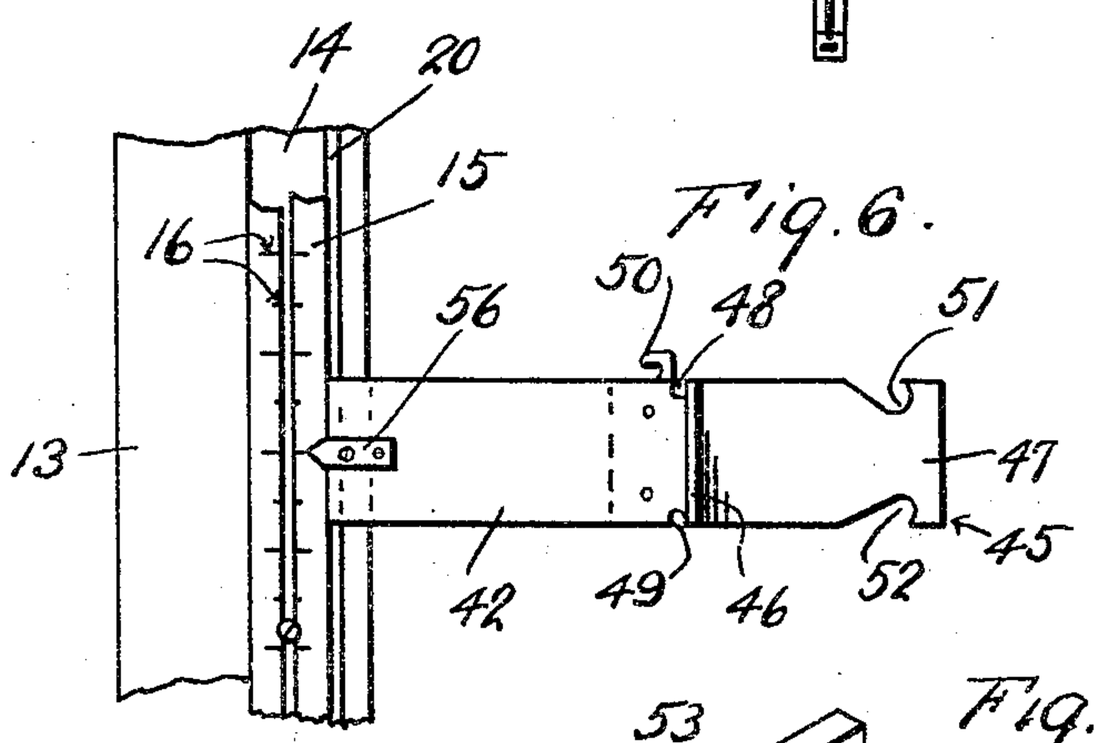
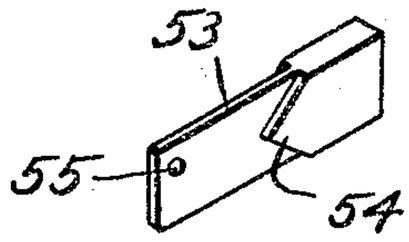


Fig. 9.



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Feb. 14, 1933. B. S. SOUDERS 1,897,682

FOUNDATION GAUGE

Filed Oct. 19, 1929 3 Sheets-Sheet 2

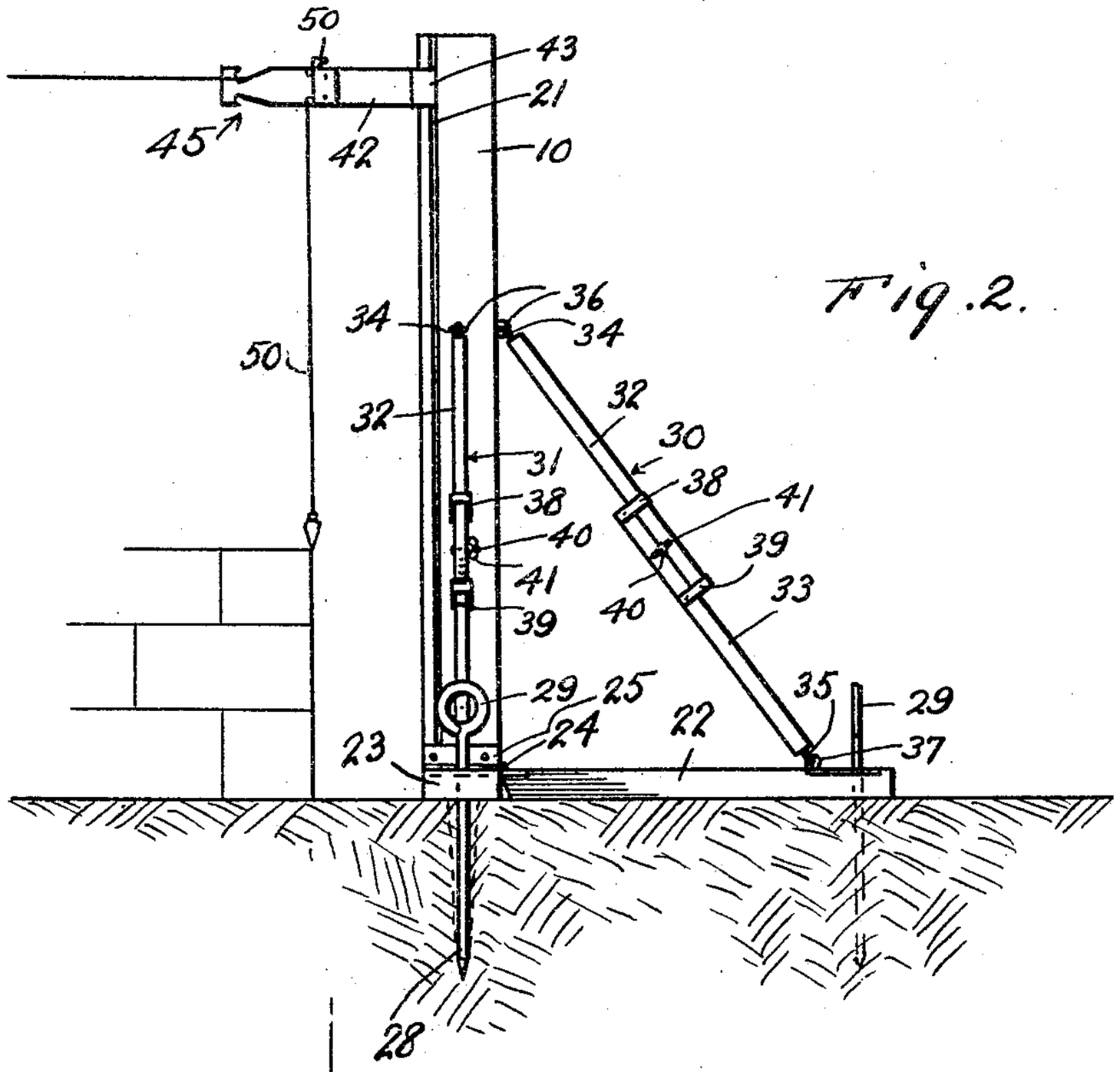

Fig. 2.

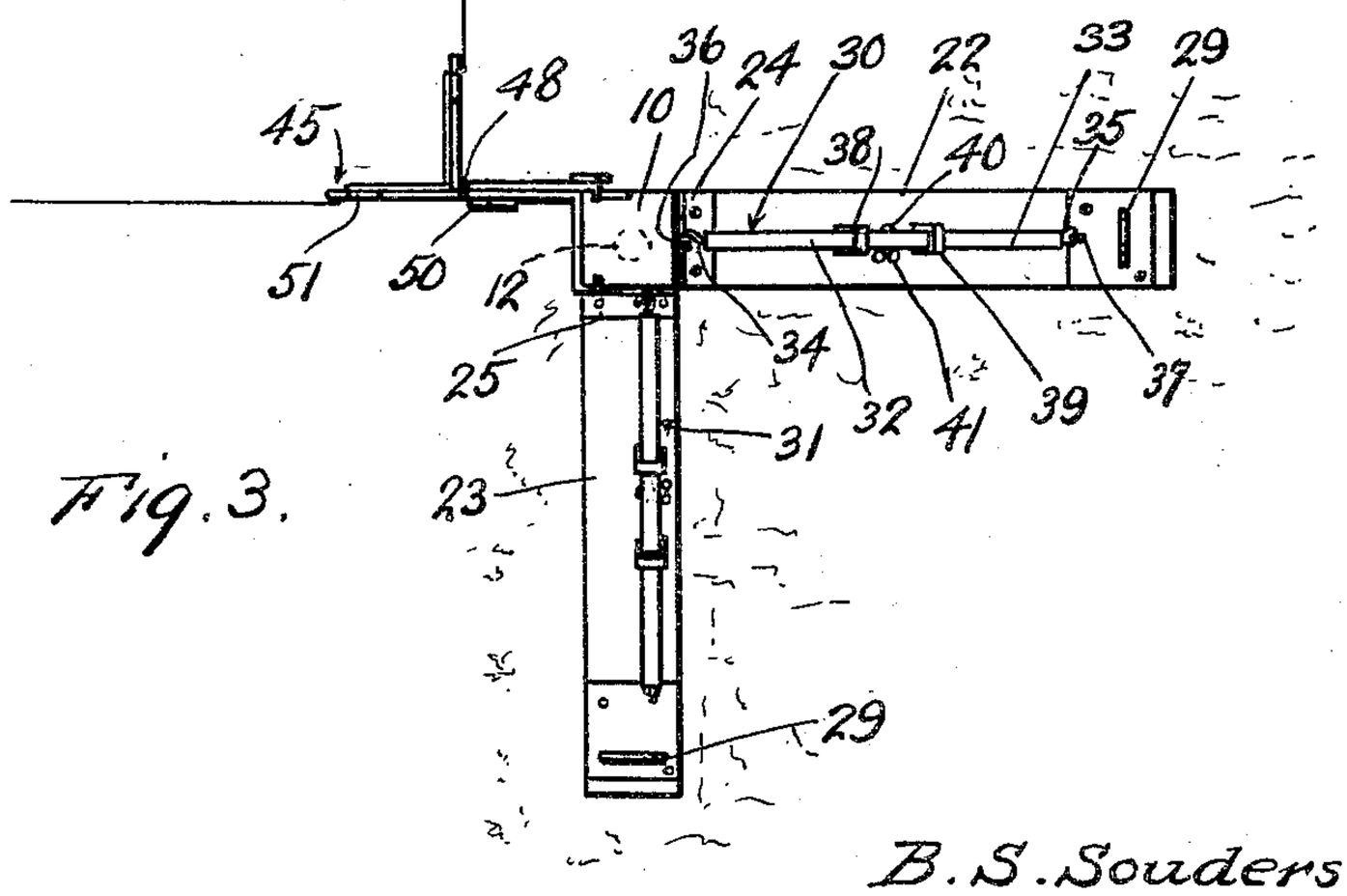

Fig. 3.

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Feb. 14, 1933. B. S. SOULERS 1,897,682

FOUNDATION GAUGE

Filed Oct. 19, 1929 3 Sheets-Sheet 3

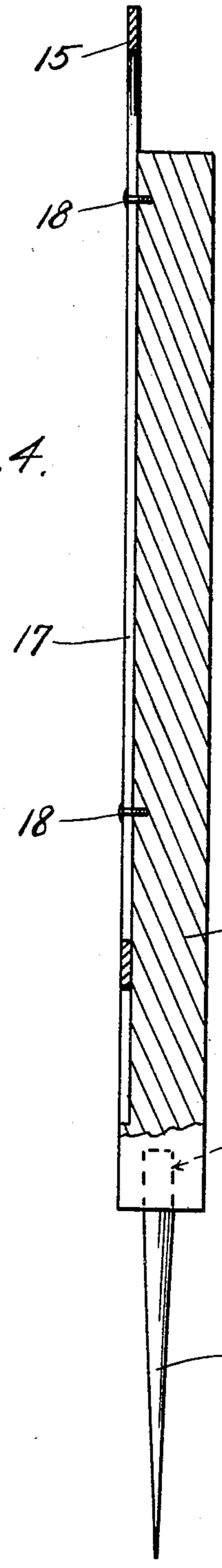

Fig. 4.

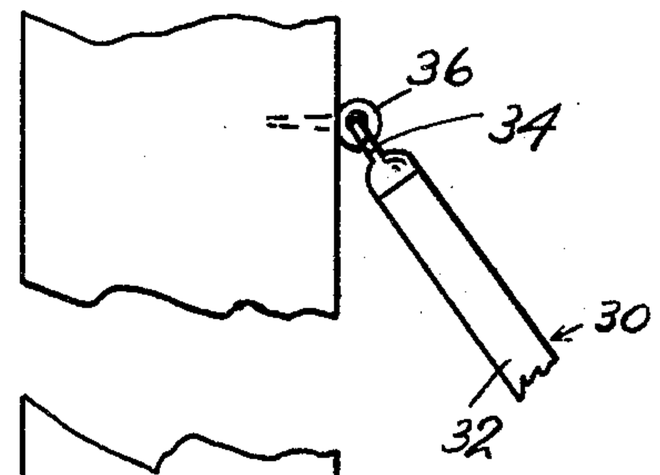

Fig. 7.

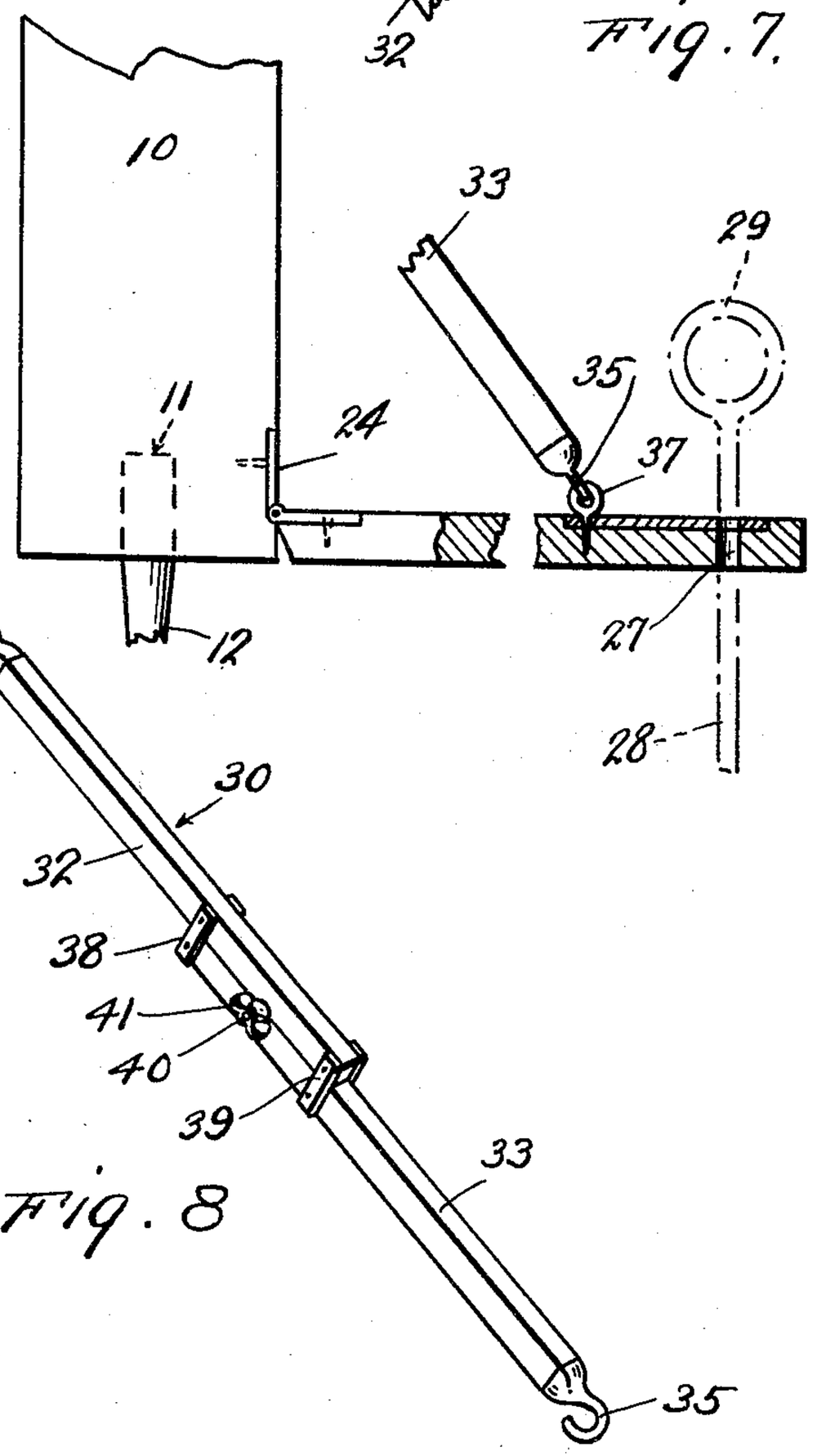

Fig. 8

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UNITED STATES PATENT OFFICE

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FOUNDATION GAUGE

Application filed October 19, 1929. Serial No. 400,935.

This invention relates to foundation gauges and is particularly adapted for supporting plumb lines and out lines in building foundation walls.

An object of the invention is to provide a guide that may be trued with precision instruments such as levels and after the one setting by the precision instrument may be used during the building of the entire foundation walls.

Another object of the invention is to provide an adjustable graduated bar on the standards so that the same level may be retained throughout the building operation.

Further objects of the invention are to provide, in a manner as hereinafter set forth, a gauge of the character referred to, which is strong, compact and durable, capable of being easily assembled and disassembled, requiring the minimum of storage space in the disassembled position, very simple in its method of assembly, very reliable for its intended purpose, and comparatively inexpensive to manufacture.

With the foregoing and other objects in view, the invention consists of the novel construction, combination and arrangement of parts as will be hereinafter more specifically described and illustrated in the accompanying drawings wherein is disclosed an embodiment of the invention, but it is to be understood that changes, variations and modifications may be resorted to without departing from the spirit of the claims hereto appended.

In the drawings:

Figure 1 is a plan view illustrating the use of four guides for laying out a foundation in accordance with the present invention.

Figure 2 is a side elevation of a portion of a foundation wall illustrating in side elevation an application of the present invention therewith.

Figure 3 is a top plan view of one of the gauges.

Figure 4 is a side elevation of one of the standards, partly broken away.

Figure 5 is a horizontal sectional view in detail through the standards.

Figure 6 is an enlarged fragmentary portion of the standard with the bracket arms attached thereto.

Figure 7 is an enlarged fragmentary elevation of the standard having a portion of the supporting arm broken away.

Figure 8 is a perspective view of the telescoping supporting rod, and,

Figure 9 is a perspective view of the templet.

Any number of the gauges formed in accordance with the present invention may be utilized in laying out a foundation. Since most foundations are four sided figures, the invention is illustrated with a foundation having four sides. It is believed that a description of one of the gauges in accordance with the present invention will serve to provide a clear understanding of the other gauges.

The gauge consists of a standard upright 10 preferably of square configuration and may be either wood or metal. The lower end of the upright 10 is formed with a socket 11 in which is detachably seated the blunt end of a sharpened steel stake 12. One of the side faces 13 of the standard is recessed at 14 the major portion of its length to receive a graduated bar 15 that is slidably mounted therein. The graduations are indicated at 16 in Figure 6 of the drawings. The bar 15 is about the same length or a little longer than the standard 10 and is formed with a longitudinal slot 17 the major portion of its length.

A pair of screws 18 extend through the slot and have the heads thereof overlapping the slot in the bar 15. The screws 18 provide sufficient tension between the standard 10 and the bar 15 to permit adjustment of the bar 15 with respect to the standard 10.

The side faces 13 and 19 of each standard are provided with grooves 20 and 21 to receive the tongues of the bracket arms to be presently described. A pair of arms 22, 23 are hingedly connected as at 24, 25 at their inner ends to the lower ends of the sides 19 and 26 of the standard 10. The arms 22, 23 are substantially flat plates and may be formed of wood, metal, or other suitable material.

Openings 27 are formed adjacent the outer ends of the arms 22, 23, and are adapted to receive pegs 28 which are driven into the ground to support the arms. Rings 29 are formed on the upper end of the pegs 28 to prevent the pegs from slipping through the openings and at the same time to anchor the pegs to the arms. The arms 22, 23 are disposed at right angles to each other and the angle with respect to the standard 10 may be changed as will presently appear.

The angles of the arms 22, 23 with respect to the standard 10 are changed by means of a pair of members indicated generally at 30 and 31.

Each member is composed of two preferably square sections 32 and 33. The outer ends of the sections are formed with hooks 34, 35 adapted to detachably engage with staples 36, 37 anchored in the standard 10 and the arms respectively. A pair of U-shaped straps 38, 39 have the legs thereof secured to section 32 providing a space for receiving the inner end of the section 33 between the legs and the bight portion of the straps. The section 32 is formed with an aperture between the straps 38, 39 for receiving a bolt 40 upon which is threadably supported a wing nut 41.

When the wing nut 41 is tightened, it abuts the sides of both sections 32, 33 thereby locking them in any desired adjusted position. When the wing nut 41 is loose, section 33 is freely slidable in the straps 38, 39.

A bracket arm 42 is adapted to project laterally with one face flush with the guide face 13. The bracket arm is provided with tongues 43, 44 that overlap the inner corners and are slidably receivable in the grooves 20, 21. Adjacent its free end the bracket arm 42 is formed with a right angled guide indicated generally at 45 consisting of legs 46, 47. Adjacent the vertex of the guide 45 the arm 42 is formed with notches 48, 49 in its edges. Adjacent the upper notch 48, the arm has a hook 50 upstanding therefrom. Adjacent the ends, each leg 46, 47 is formed with recesses 51, 52, on the upper and lower edges thereof.

The tape holder 53 comprises an elongated plate upon opposite sides of which near one end are arrow head formations 54 whose edges are related to each other at right angles. The members 54 are undercut or otherwise spaced from the side of the plate whereby to receive the tape between the plate and itself. A hole 55 is provided in the plate whereby the tape holder may receive the hook 50 on the bracket 42. One end of the tape is tethered upon the hook 50 of one of the brackets 42, when it is desired to measure a diagonal, and the other end portion of the tape is then passed under one of the arrow heads 54 and the holder is mounted upon the hook 50 of the diagonally opposite bracket 42. One of the edges of the member 54 will then lie across the tape and define the reading thereof.

Pointer 56 is secured to arm 42 and registers with graduations 16 on the bar 15. After the bar 15 is set to the proper level, the pointer may be set to the same graduation on each gauge.

In the application of the invention, the exact point to begin the ditch for the foundation is secured by surveyors' instruments or the like. The first gauge indicated generally at A is then set by driving the standard 10 and the peg 12 into the ground so that the vertex of the angular guide 45 is in approximate alinement with said point. The arms 30, 31 are then unfolded and the pegs 28 are driven into the ground so that the rings are in contact with the upper faces thereof.

By arranging a plumb bob in the vertex of the angular guides 45, the standard 10 may be adjusted to a true vertical relation by manipulation of the members 30, 31. The next corner of the foundation is properly located by measurements and the standard B is anchored similarly to the standard A. The same operation is repeated with gauge C and D so that the four corners of the foundation ditch are properly located.

A wire or other flexible tape 55 has one end connected with the hook 50 of the member A and is passed over the angle parts 45 and 46 of the members B, C and D and brought back to the member A as shown in Figure 1. Then in order to true the set up by the hypotenuse of the right triangle, the legs of the sides of the right angle triangle are ascertained from the blue print or plan and this is checked on the set up by attaching one end of a tape measure 55′ to the hook 50 of the member C or the tape holder 53 is attached to said member C and the other end part of the tape measure is attached to the member A by the templet 53, which is attached to hook 50 of said member A. The four standards are then adjusted to correct any inaccuracy of the first set up so that the foundation line will represent a true rectangle. The reading of the tape or line is made where the angular edge thereof crosses the line at right angles.

The bars 15 on each gauge A, B, C, and D may be all set to the same level by a spirit level or the like so that the line 65 may be used for aligning courses of brick above the surface of the ground. A plumb line 56 may be hung so as to be flush in the vertex of the angular guides 45 for plumbing the corners of the wall as is clearly illustrated in Figure 2 of the drawings.

From the foregoing explanation, it is obvious that the gauge in accordance with the present invention will at all times show the true level for the courses of brick used in the foundation, will always show the true level for the ditch to be dug to receive the side

walls, can be used to plumb the corners of walls and furthermore can be used to plumb the sides of the walls at any particular point.

Another advantage to be derived from the gauge in accordance with the present invention is the fact that once the gauges are set at the four corners of the foundation, no further adjustment is necessary in the construction of the wall since the bars 15 may be projected considerably above the standard 10 as shown in Figure 4, so that the wall can be built well above the standards without resetting the standards. The length of the standard 10 may be as desired considering the height of the foundation wall or the brick wall to which the gauge is being applied.

It is understood that by describing in detail herein any particular form, structure or arrangement, it is not intended to limit the invention beyond the terms of the several claims, or the requirements of the prior art.

Having thus described my invention, what I claim is:

1. A gauge of the class described comprising an upright standard, a pair of arms hingedly connected to the lower end of the standard, rods connecting the arms with the standard, means for adjusting the length of the rods, a bracket slidably arranged on the standard, hook means on the bracket for holding the bracket in adjusted position, the standard having slots to receive the hook means, a right angled guide on the bracket, a graduated bar connected for sliding on the standard means for clamping the bar in adjusted position, and a pointer on the bracket cooperating with said graduated bar.

2. A gauge of the class described comprising an upright standard, a pair of arms hingedly connected with the standard, rods connecting the arms with the standard, means for adjusting the length of the rods, said standard having grooves in opposite faces thereof, a bracket having prongs thereon engaging the grooves, an angle guide on the free end of the bracket, a graduated bar adjustably connected with the standard and a pointer on the bracket cooperating with said bar.

3. A gauge of the class described, comprising, a standard provided with vertical grooves in different sides thereof, a combined plumb-line and building cord support carried by the standard in vertically adjustable manner, a bracket engaging with sides of the standard and in said grooves so as to be vertically adjustable on the standard and carrying said combined support, a graduated slide carried by the standard, a pointer carried by the bracket for cooperation with the graduated slide, said combined support comprising a pair of right-angularly related arms, cord retaining means on each arm, a tape holding hook carried by the bracket close to the meeting point of the arms, and plumb-line retaining means on the bracket immediately adjacent the point of meeting of the arms with the bracket, whereby side building lines, a plumb-line and a diagonal line may be simultaneously carried in adjusted relationship, and means for adjusting and maintaining the angularity of the standard with the horizontal.

In testimony whereof I affix my signature.

BENJAMIN S. SOUDERS.