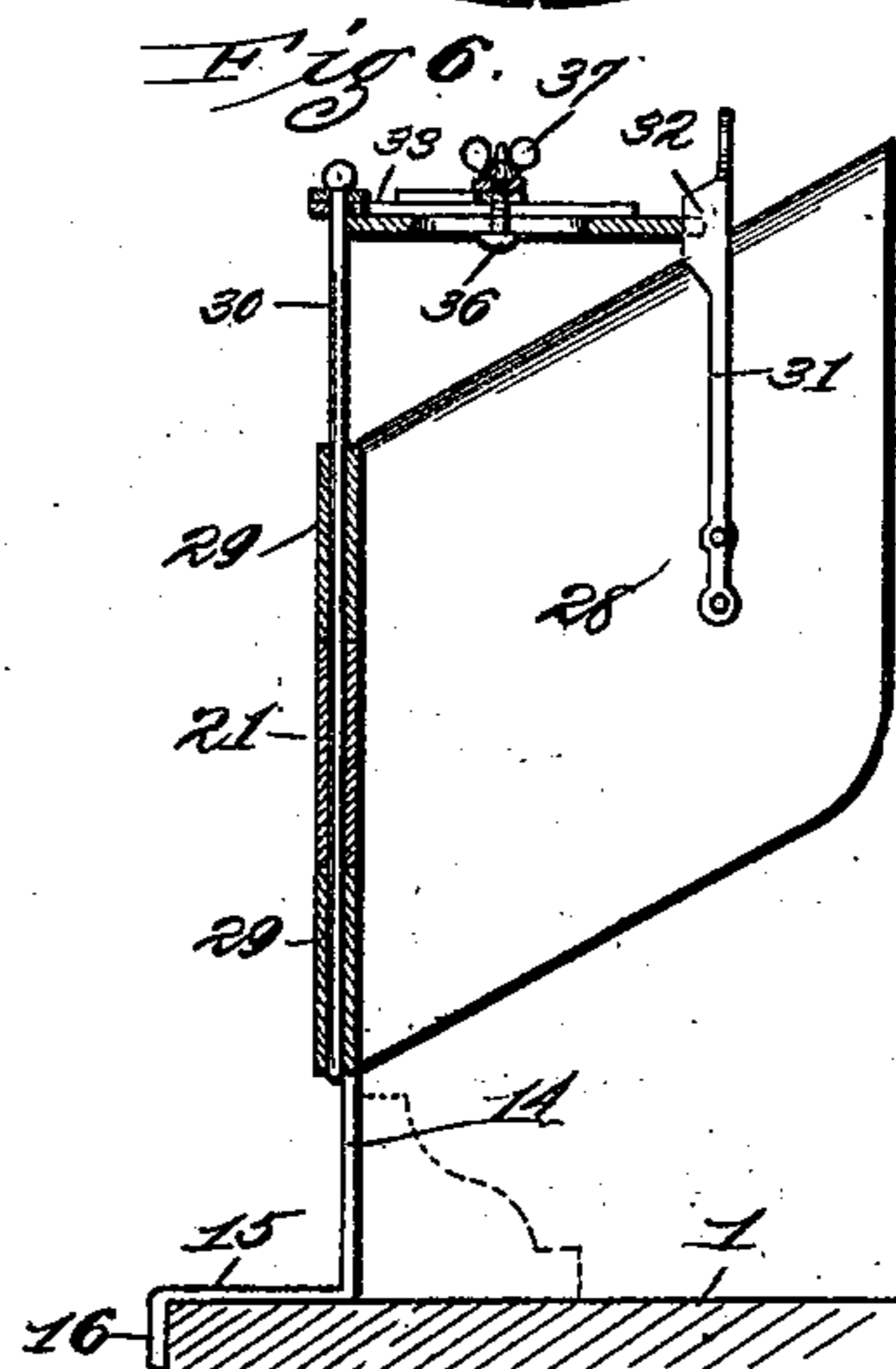
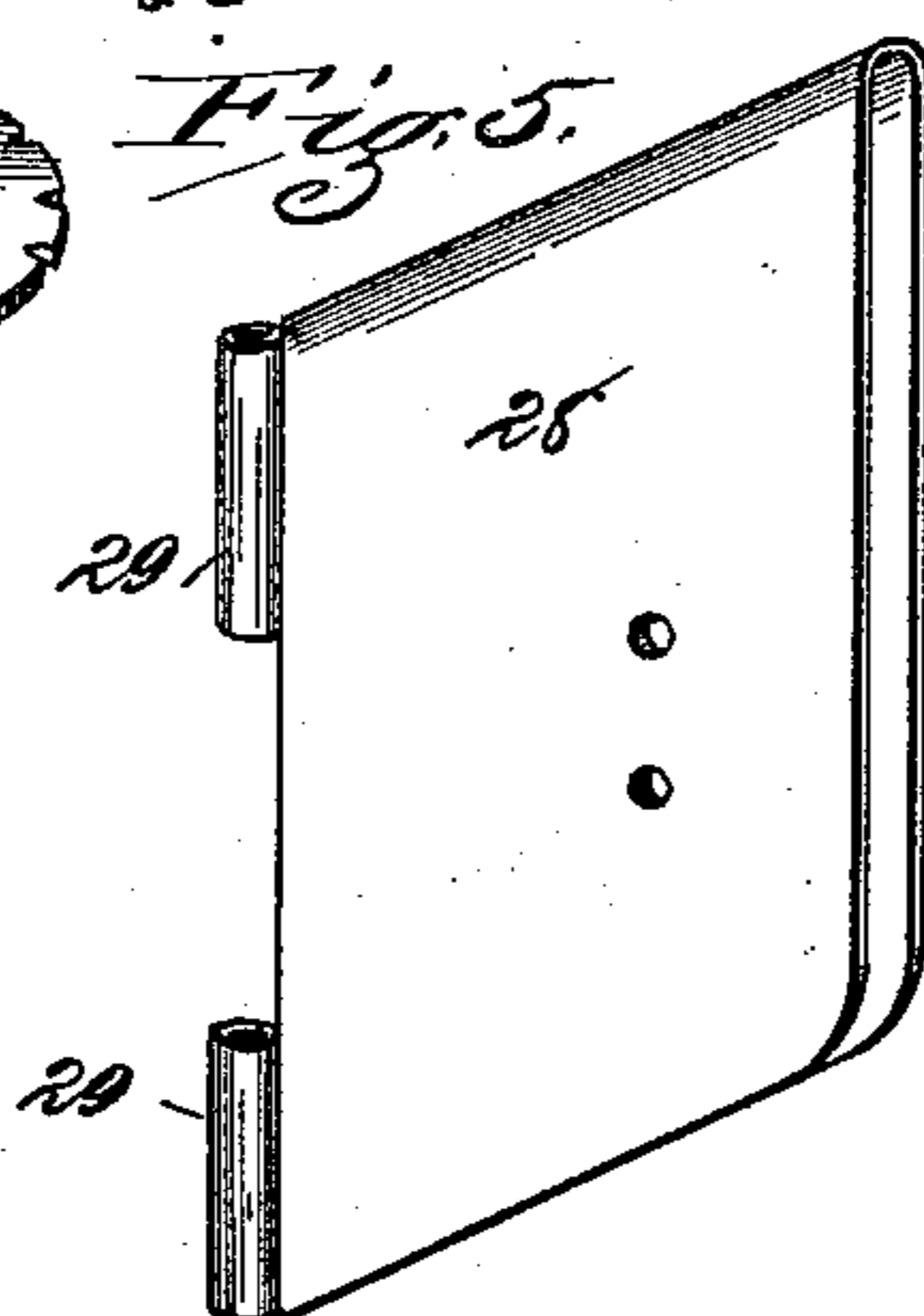
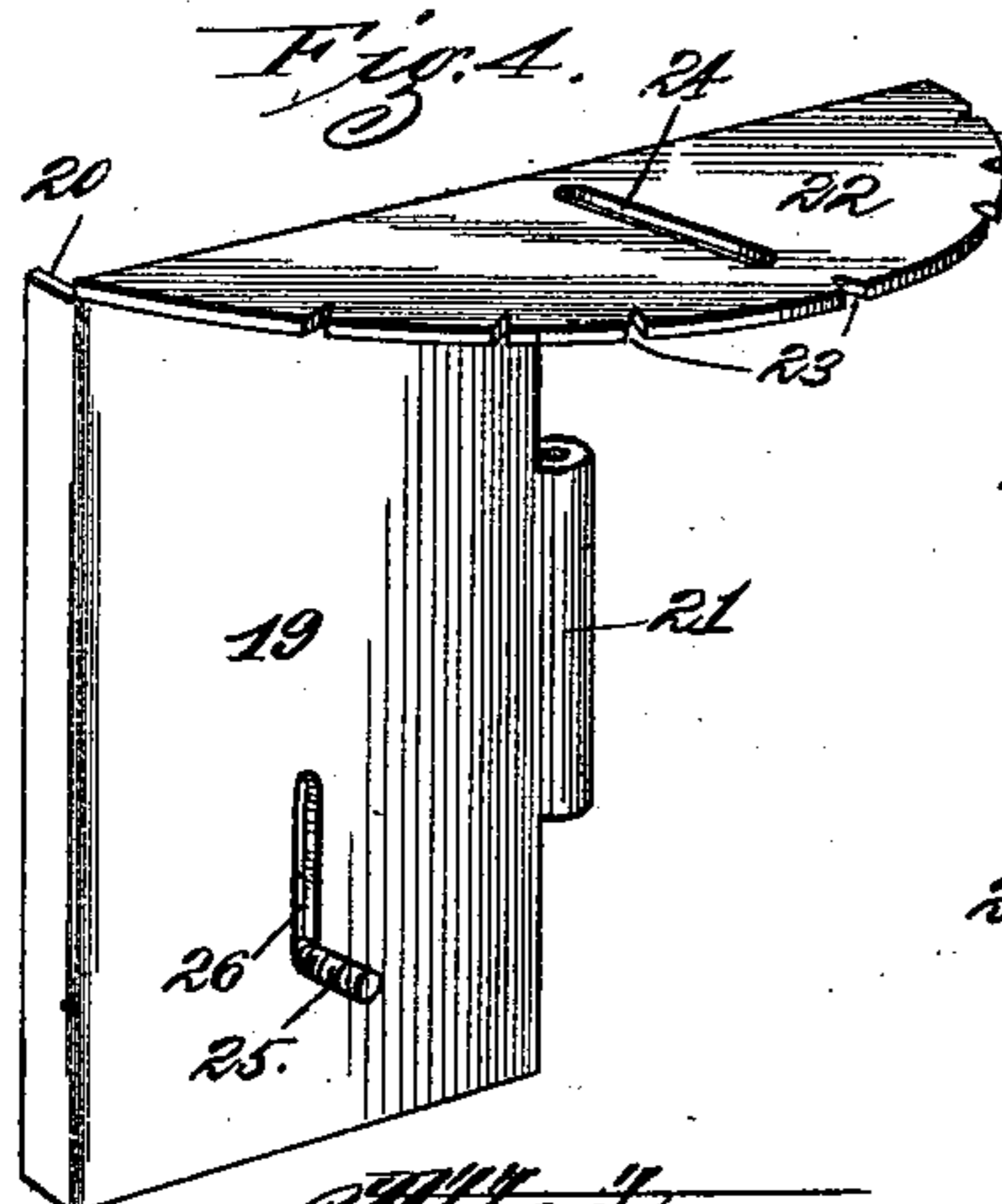
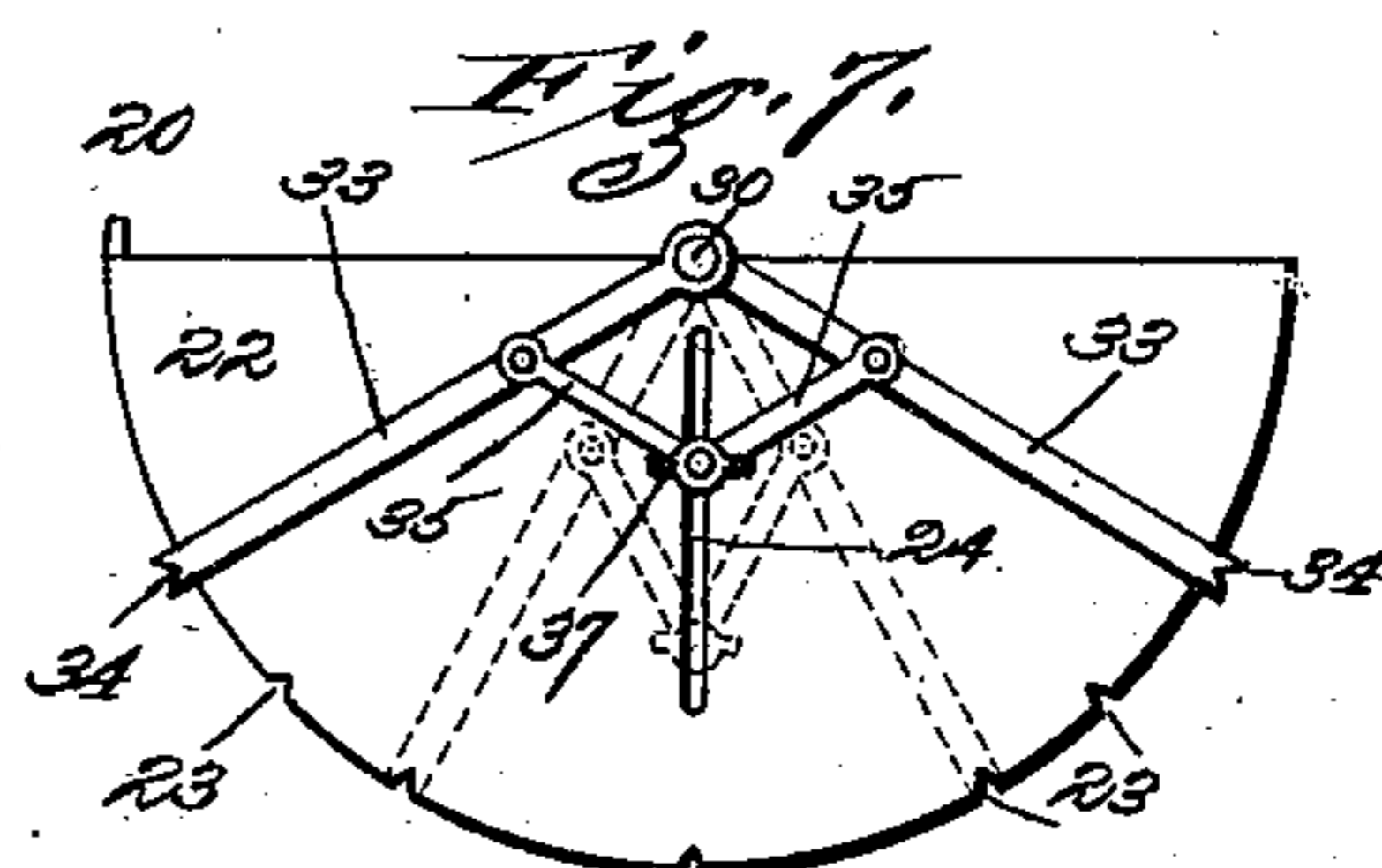
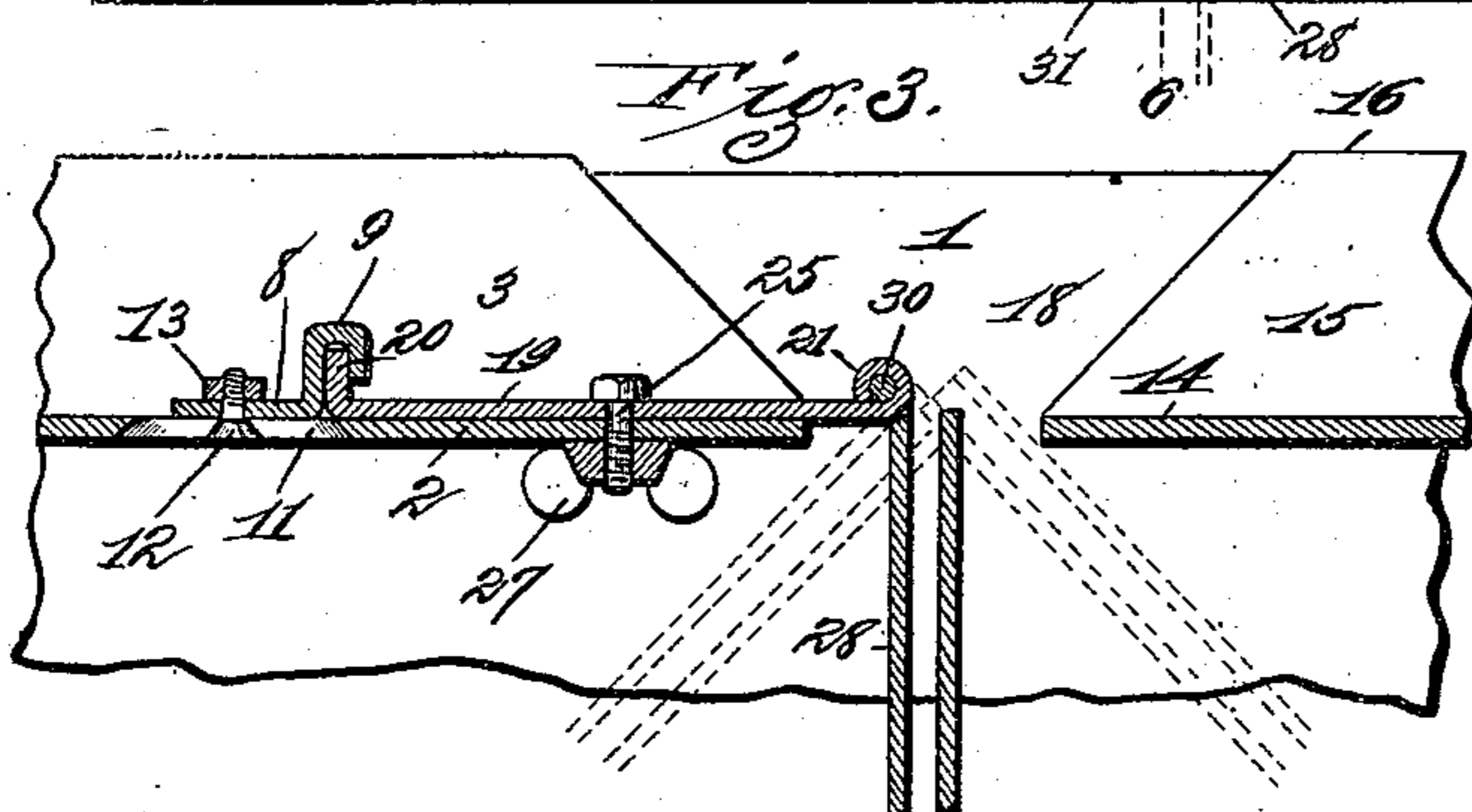
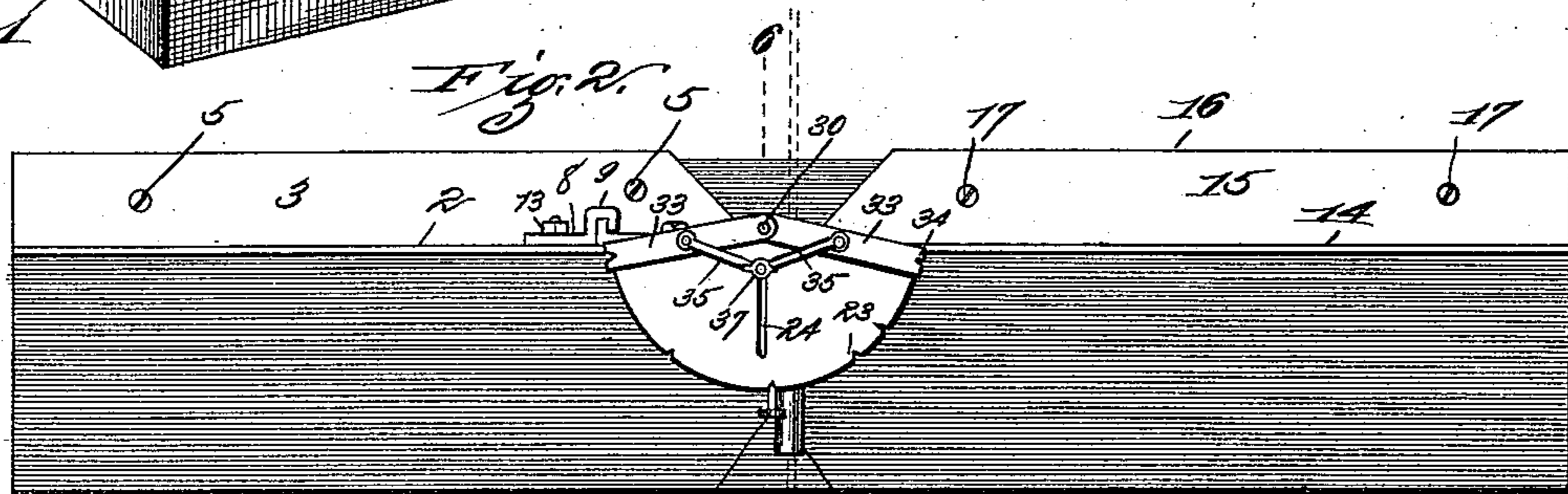
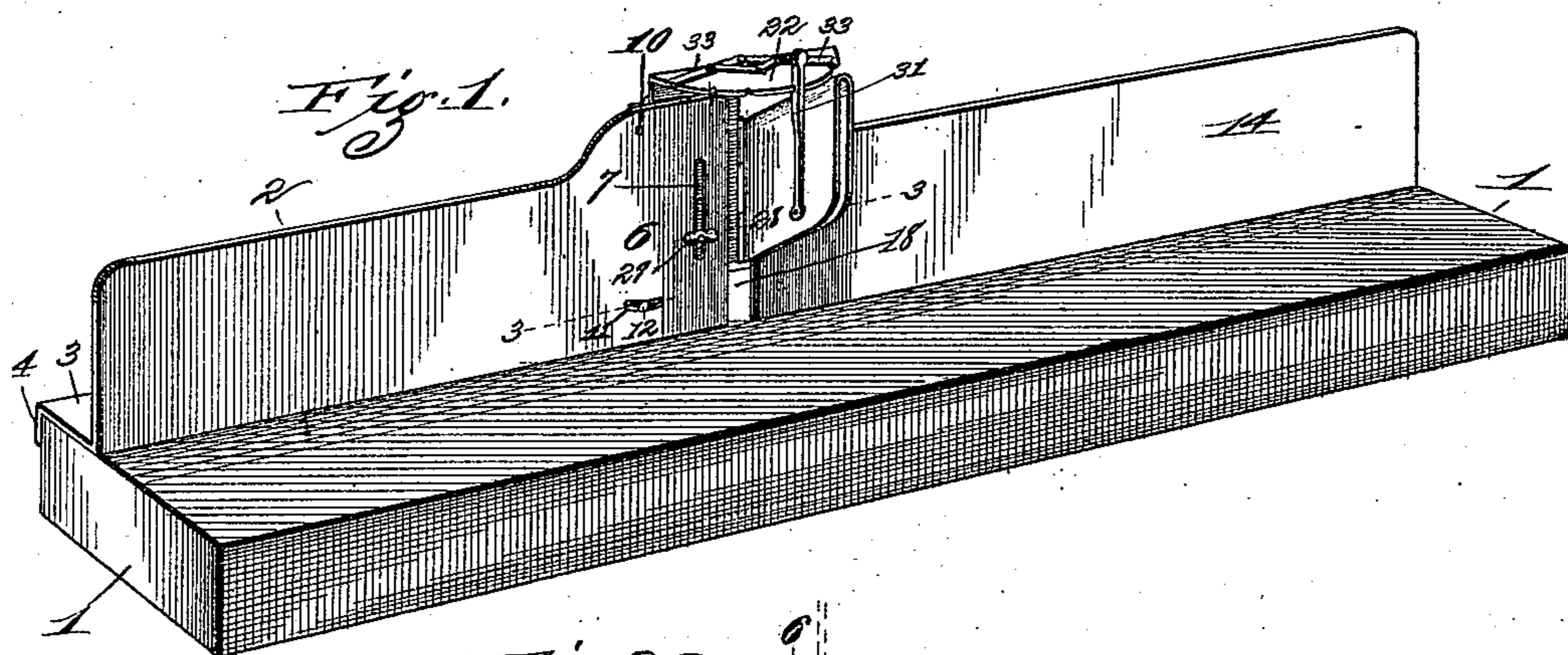


(No Model.)

W. S. WESTFALL.
MITER BOX.

No. 548,104.

Patented Oct. 15, 1895.



W. S. Westfall
W. S. Smith,
Edw. L. Dillon

Inventor:
Wilson & Westfall
by Higdon & Higdon & Longan Attys.

UNITED STATES PATENT OFFICE.

WILSON S. WESTFALL, OF ST. LOUIS, MISSOURI.

MITER-BOX.

SPECIFICATION forming part of Letters Patent No. 548,104, dated October 15, 1895.

Application filed March 18, 1895. Serial No. 542,177. (No model.)

To all whom it may concern:

Be it known that I, WILSON S. WESTFALL, of the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in Miter-Boxes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to an improved miter-box; and it consists in the novel construction, combination, and arrangement of parts, hereinafter described and claimed.

In the drawings, Figure 1 is a view in perspective of my improved miter-box. Fig. 2 is a top plan view thereof. Fig. 3 is an enlarged horizontal sectional view taken approximately on the indicated line 3 3 of Fig. 1. Fig. 4 is a view in perspective of a vertically-adjustable plate of which I make use in carrying out my invention. Fig. 5 is a view in perspective of the laterally-moving saw-guide. Fig. 6 is an enlarged cross-sectional view taken approximately on the indicated line 6 6 of Fig. 2. Fig. 7 is a top plan view of the plate shown in Fig. 4.

Referring by numerals to the accompanying drawings, 1 indicates a base-timber of any suitable width and thickness, and 2 a vertical plate, that is constructed with an integral base portion 3, that rests directly upon the upper side and adjacent the rear edge of the base 1. Said base portion 3 is constructed with a downwardly-bent flange or edge 4, that rests against the rear face of the base 1. By means of screws 5, or in any suitable manner, this plate 2 is properly positioned upon the base 1. This plate 2 is approximately half the length of the base 1, and the right-hand end thereof or the end that is at the center of said base is somewhat wider than is the body of said plate, and in said widened portion, which is indicated by the numeral 6, is a vertical slot 7.

8 indicates a vertically-arranged metallic strip, one edge 9 of which is bent into an engaging hook or flange. The upper end of said vertical strip 8 is rigidly fixed to the rear face of the plate 2 by means of a rivet or pin 10. Directly beneath this rivet or pin 10 is a segmental slot 11, the curvature of which is in conformity with a circle the center of which is located at the pivot or pin 10. The edges

of this slot 11 are beveled, as may be plainly seen in Fig. 3, and an ordinary screw 12 is passed through said slot and through the lower end of the vertically-arranged strip 8. A nut 13 is located upon the rear end of this screw, and thus the lower end of said strip is very rigidly held in proper position.

The right-hand end of the base portion 3 is cut off at an angle relative its length for a purpose that will be presently shown.

14 indicates a vertical plate, identical in form and size with the plate 2 with the exception of the widened end 6, and said vertical plate 14 is constructed with the integral base 15, from which is bent downwardly the rear edge 16. Said base 15 is located upon the base 1 in direct alignment with the base 3, and securely held in this position by means of screws 17 or in any suitable manner. When the plate 14 and integral base 15 are properly positioned, said plate 14 will be in direct longitudinal and vertical alignment with the plate 2, and a very slight space, such as 18, will be left between the meeting inner edges of said plates 2 and 14. The inner end of the base 15 is cut off at an angle relative the length of the same, said angle being opposite or at right angles to the angled end of the base 3.

19 indicates a metallic plate, one of the vertical edges 20 of which is bent at right angles to the main body portion, and said outwardly-bent edge is adapted to be engaged by the hook or flange 9 of the strip 8. The opposite edge of this plate 19 is constructed with a loop or ear 21, that constitutes a portion of a hinge connection that will be presently described.

Formed integral with the upper edge of the plate 19 and extending forward therefrom and at right angles thereto is a semicircular plate 22, in the edge of which is constructed, at certain angles relative the center of the rear edge of said plate, a series of V-shaped notches 23. It may be here stated that the center of the rear edge of this plate 22 is in direct vertical alignment with the center of the ear or loop 21. Located in said plate 22 and extending directly forward from the center of the rear edge thereof is a slot 24. This plate 19 is normally located upon the rear side of the widened end 6 of the plate 2 in

such a manner as that the outwardly-turned end 20 is engaged by the hook or flange 9 of the strip 8, and when in this position a headed screw 25 passes through a slot 26 in the lower end of said plate 19 and through the vertical slot 7 in the widened end 6. A winged nut 27 is located upon the protruding end of this screw 26, and thus forms means for very rigidly holding at any desired position the plate 19 and its integral parts.

28 indicates a metallic saw-guide, comprising a plate of material bent double and a space left between the two wings of a sufficient width to admit an ordinary saw-blade. The top and bottom edges of this saw-guide 28 are inclined forwardly in order to accommodate the natural movement or thrust of the saw. Formed integral with one of the wings of this saw-guide 28 are ears or loops 29, identical in form and size with the ear or loop 21, and said loops 29 are positioned on top and below said ear 21. A pin 30 passes through these coinciding ears 29 and 21 and performs the function of a hinge-pin, and when said pin is properly positioned the saw-guide 28 is free to swing laterally beneath the semicircular plate 22. Fixed to one wing of the saw-guide 28 is a vertically-arranged spring 31, having a V-shaped or knife-edged projection 32 at its upper end that is adapted to engage in any one of the V-shaped notches 23 in the edge of the plate 22.

33 indicates a pair of arms or levers that operate upon the top face of the plate 22, and said arms or levers are pivoted to or swung upon the hinge-pin 30 as said hinge-pin 30 is passed through said arms or levers. The outer ends of these arms or levers extend slightly beyond the edge of the plate 22 and are provided with V-shaped notches 34.

35 indicates short arms or levers that are pivoted to and intermediate the ends of the arms 33, and the inner ends of said arms 35 meet at the slot 24 in the plate 22, and a headed screw-bolt passes through the slot 24 and through the meeting ends of said arms 35. A winged nut 37 is located upon the upper protruding end of this screw 36 and forms means whereby the arms 33 may be rigidly held after they have been properly positioned.

The operation is as follows: The work in which it is desired to cut a miter is located directly upon the face of the base 1 and against the vertical plates 2 and 14. This may be fully understood by referring to the dotted lines in Fig. 6. The knife-edge 32 of the spring 31 is now disengaged from the notch in which it has been normally engaged, and the saw-guide 28 is now swung laterally in either direction until it reaches the proper angle on which the miter is desired to be cut. The knife-edge 32 is now re-engaged in one of the notches 23 that corresponds with the angle, and the saw-blade is inserted through the saw-guide 28. By now manipulating said saw in the proper manner and against the work the proper miter is cut. As the meet-

ing ends of the bases 3 and 15 are cut off at an angle, the teeth of the saw will not come in contact with said bases, and as the lower end of the saw-guide 28 is inclined the "set" of the teeth of the saw will be in no wise affected, as they will not contact with the sides or wings of said saw-guide. By means of the set-screw 12 and nut 13 the strip 8 is arranged and held in an exactly vertical position. Should the work be of some height, the plate 19 and saw-guide carried thereby can be raised by merely unscrewing or loosening the winged nut 27 and raising said plate 19 and saw-guide 28. When the same have reached the proper position, the winged nut is again set to rigidly hold said parts in their elevated positions.

In some instances it may be found necessary to cut a miter at an angle other than the usual ones and for which the V-shaped notches 23 are properly located. To properly attain the desired result the winged nut 37 is loosened and one of the arms 33 is swung to whatever point or angle on which the miter desired is to be cut. The remaining arm 33, being connected by means of the arms 35, will swing into the same relative position on the opposite side of the plate 22. The winged nut 37 is now reset, and the knife-edge 32 of the spring 31 is located in either one of the notches 34 on the ends of the arms 33. Thus the proper angle for the miter to be cut is obtained.

A miter-box of my improved construction is very simple, inexpensive, compact, and may be very expeditiously operated, as the saw-guide 28 can be instantly swung to the position or angle required for the miter to be cut, and the plate 19 carrying the saw-guide can be at any time adjusted to fit or suit the work. The plates 2 and 14 can be located on any base, and said plates and the plate 19 and saw-guide 28 can be packed or folded into comparatively small space while said parts are being transported or packed in a tool-box. The adjusting parts are all easily and quickly accessible, and there being a minimum number of parts of the device will not easily get out of order. Thus, will be seen how I have constructed a miter-box that possesses superior advantages in point of simplicity, durability, and general efficiency.

What I claim is—

1. A miter-box, comprising a suitable base, a pair of metallic plates located in alignment upon one edge thereof, an adjustable clamping strip arranged upon one side of said plates, a vertically adjustable plate located upon the rear side of one end of one of the vertical plates, an integral outwardly turned end or flange on said adjustable plate that is engaged by the adjustable strip, a horizontally arranged semi-circular plate formed integral with the vertically adjustable plate, the same having a series of V-shaped notches in its edge, a saw-guide hinged to the vertically adjustable plate, and a spring fixed to said saw-

guide having a V-shaped projection adapted to engage in the V-shaped notches.

2. In a miter-box, a pair of plates located in longitudinal alignment upon a suitable base, an engaging strip adjustably located upon the rear side of one end of one of said plates, a plate located for vertical adjustment upon the rear side of one of said plates, one edge of which is engaged by the engaging strip, a semi-circular plate having a notched edge formed integral with said vertically adjustable plate, a saw-guide hinged to said vertically adjustable plate and operating beneath said semi-circular plate, a spring-catch fixed to the saw-guide and engaging in any one of the notches in the edges of the semi-circular plate, a pair of arms pivoted to the hinge-pin of the hinged connection between the saw-guide and vertically adjustable plate, the outer ends of said arms being notched, and a pair of arms fixed to said first mentioned arms and pivoted together at their meeting ends.

3. In a device of the class described, a suitable base, a pair of vertical plates having integral right-angle bases located upon said base, the meeting ends of said bases being cut at angles relative one another, a vertically adjustable plate located upon the rear side of one of said vertical plates, and a later-

ally swinging inverted U-shaped saw-guide hinged to one edge of the vertically adjustable plate.

4. In a device of the class described, a suitable base, a pair of plates located in longitudinal alignment upon said base, a vertically adjustable plate located upon the rear face of one end of one of said plates, a semi-circular horizontally arranged plate formed integral with said vertically adjustable plate, a saw-guide of inverted U-shape hinged to one end of said vertically adjustable plate and operating beneath said semi-circular plate, a spring-catch fixed to said saw-guide and adapted to engage in any one of a series of notches upon the edge of the semi-circular plate, and a pair of arms pivoted to the hinge-pin between the saw-guide and vertically adjustable plate, said arms operating upon the top surface of the semi-circular plate, and suitable connecting arms or levers for said first mentioned arms to cause the same to move relative one another.

In testimony whereof I affix my signature in presence of two witnesses.

WILSON S. WESTFALL.

Witnesses:

M. G. IRION,

JOHN C. HIGDON.