

D. LAUGHLIN.
 COLLAPSIBLE CISTERN MOLD.
 APPLICATION FILED MAY 18, 1908.

927,806.

Patented July 13, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

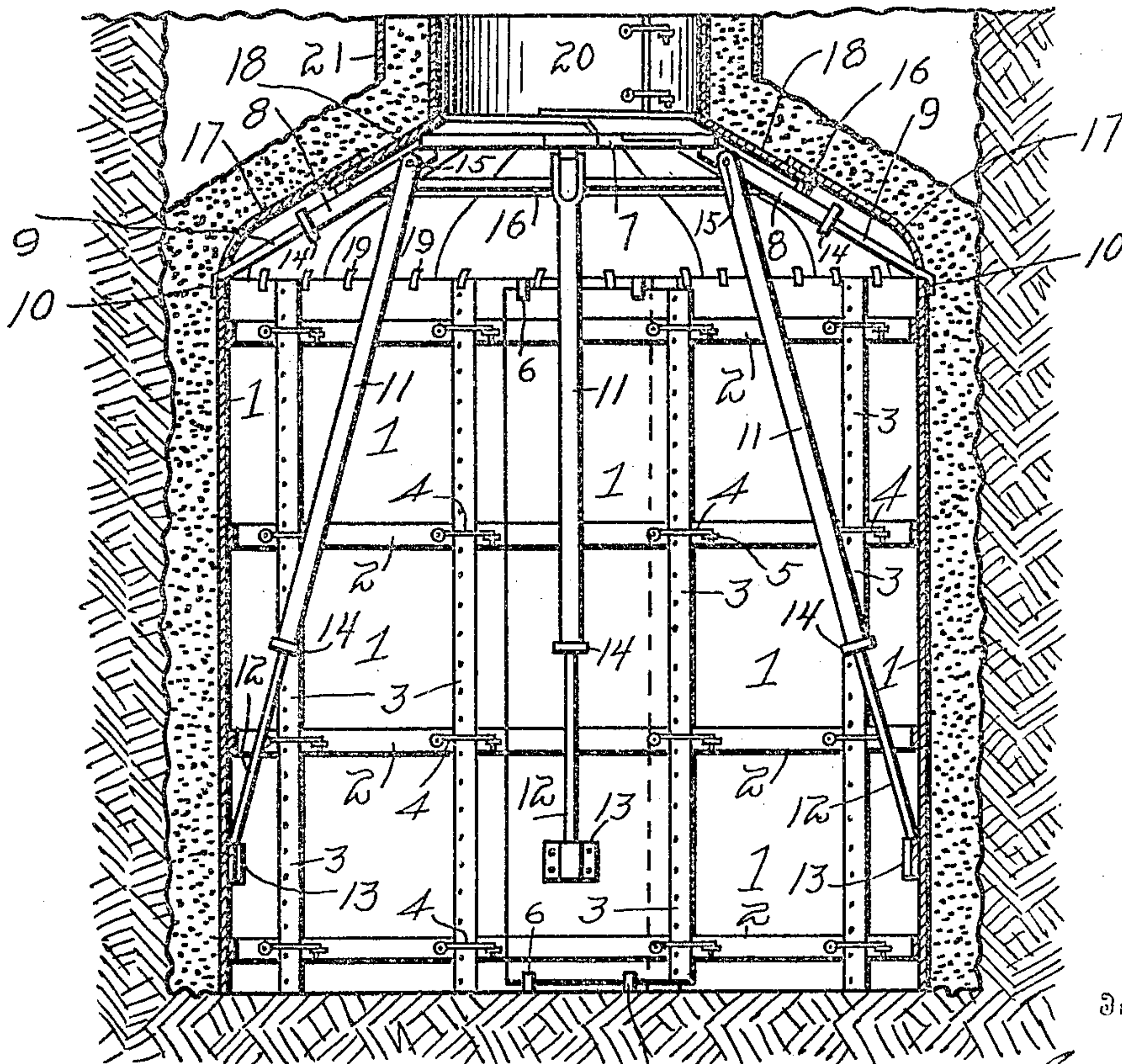
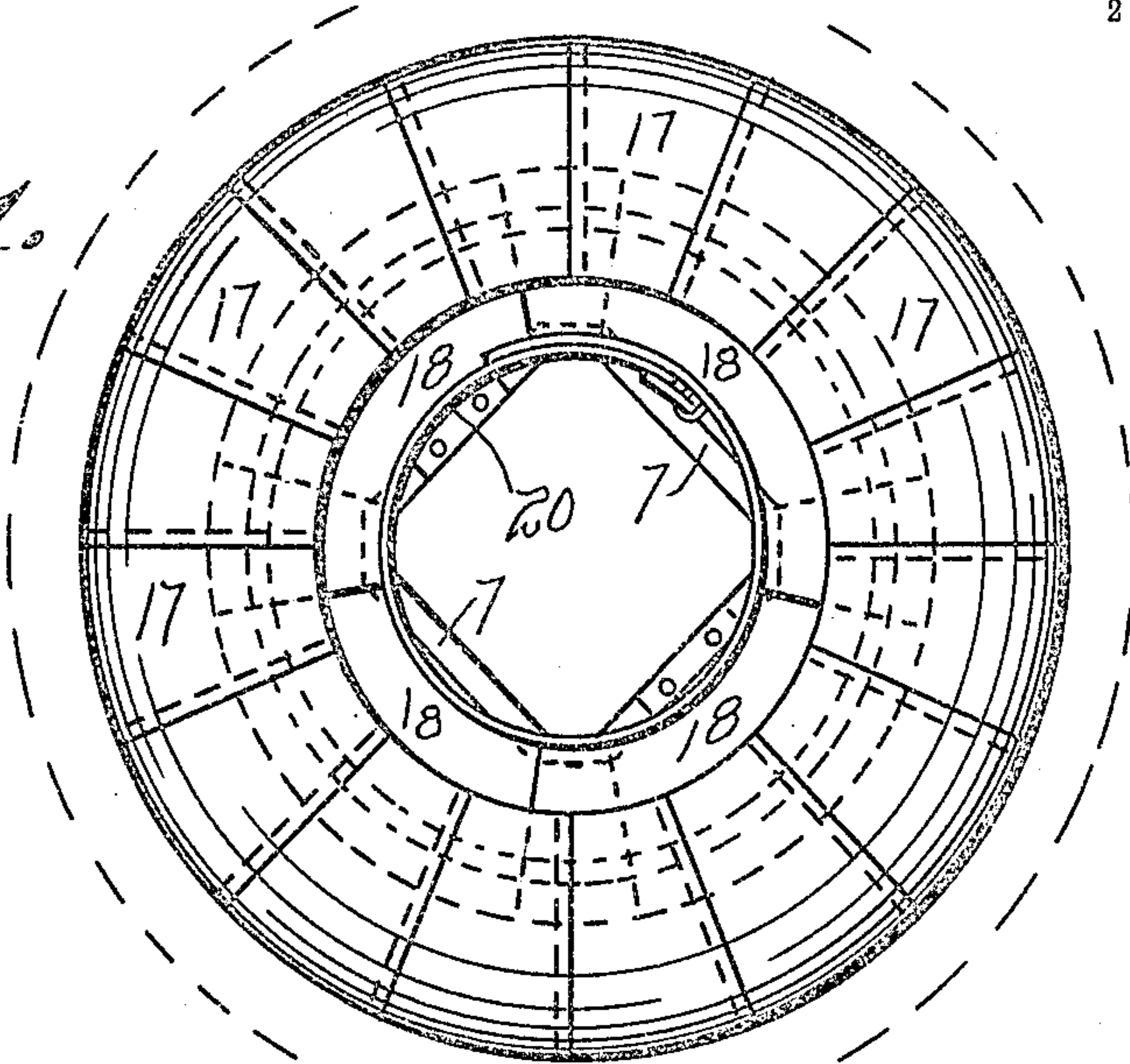


Fig. 2.

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M. Liebler
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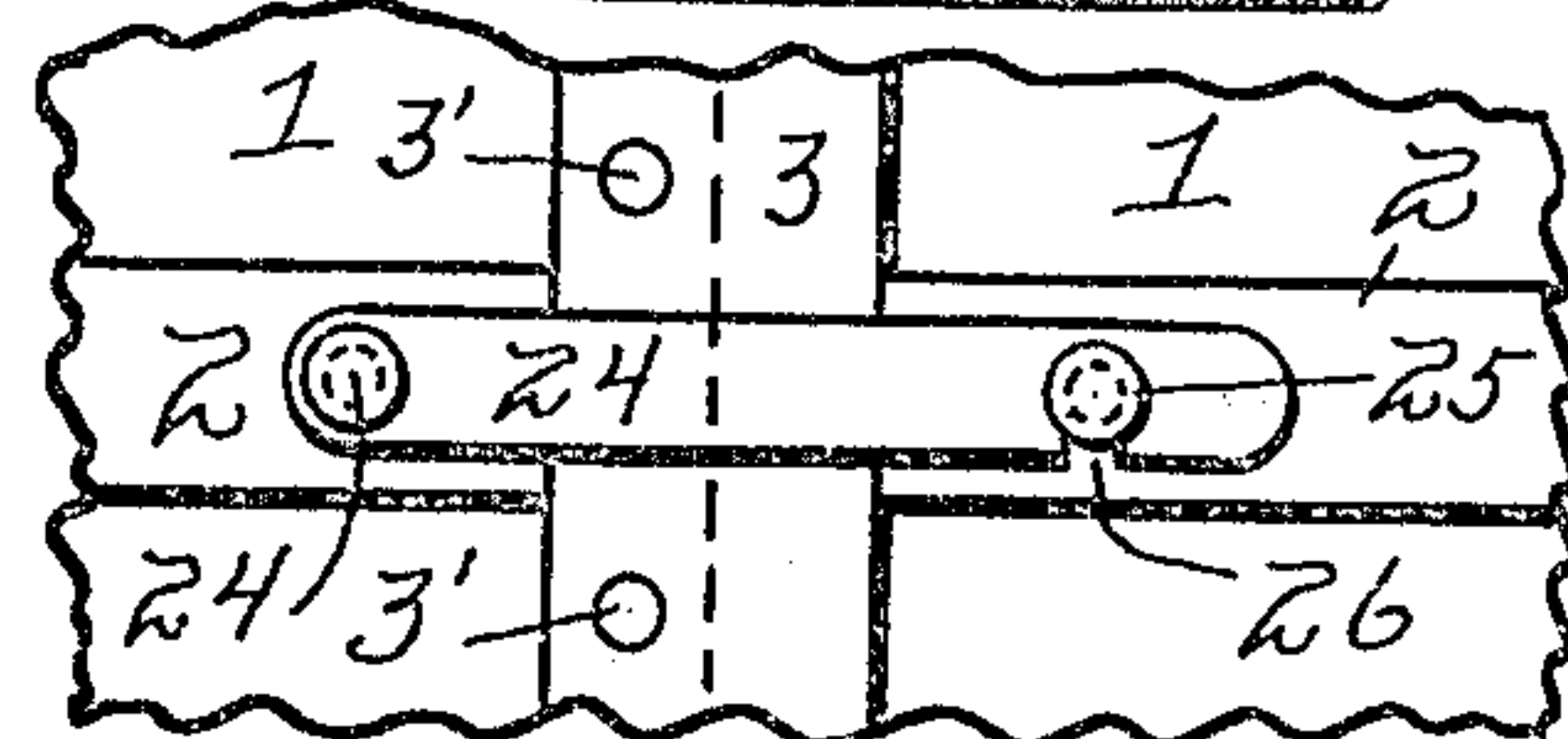
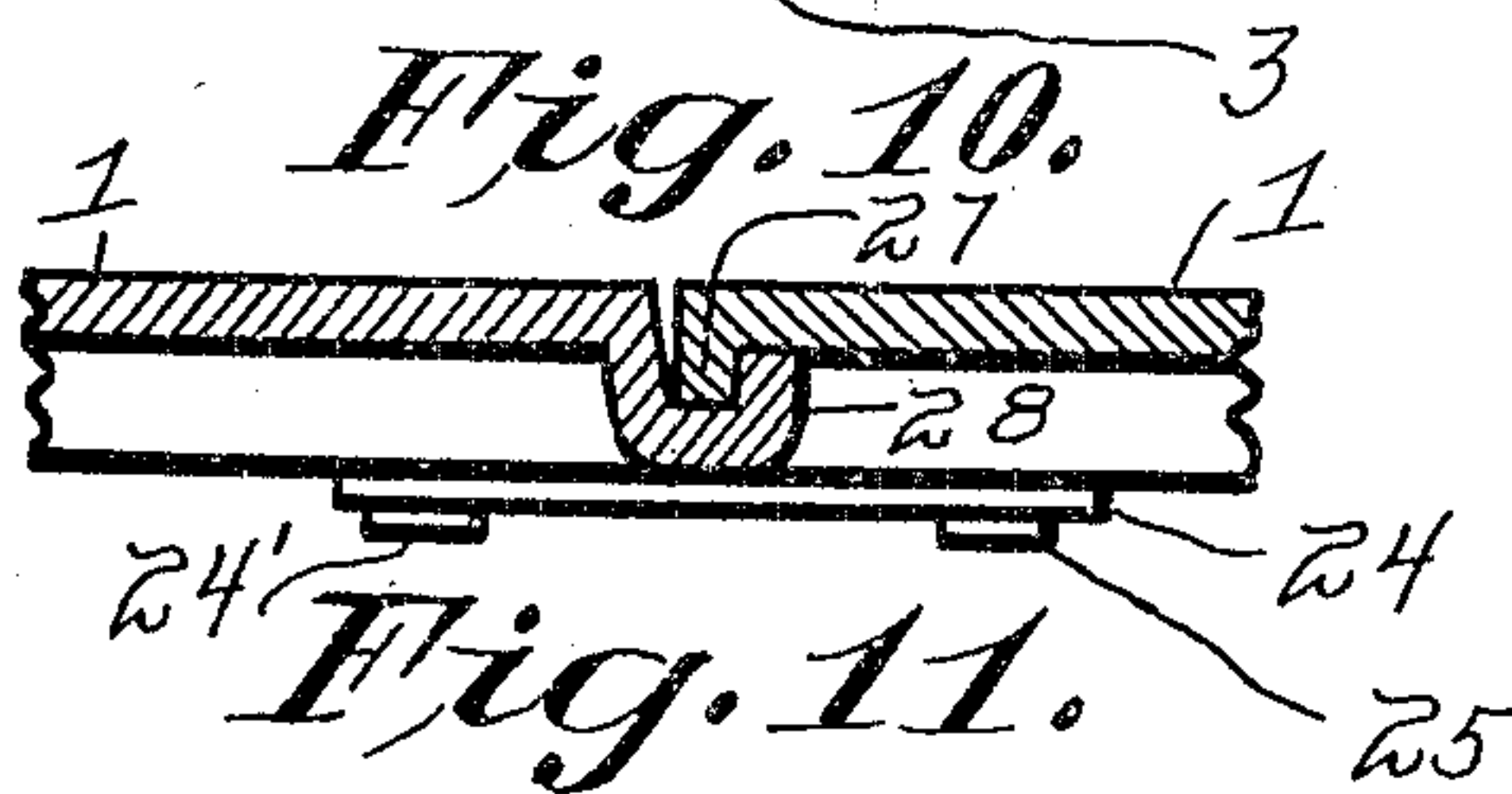
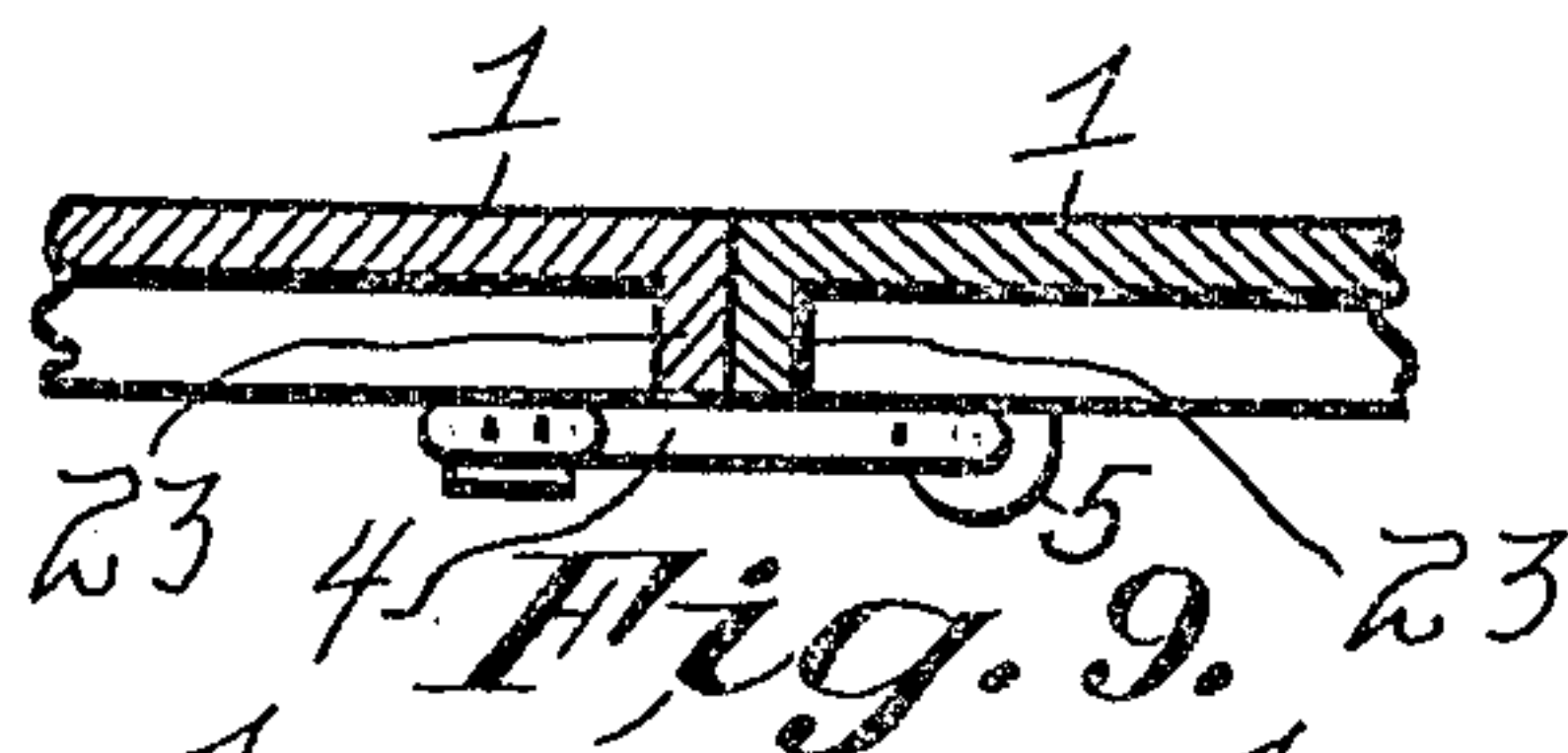
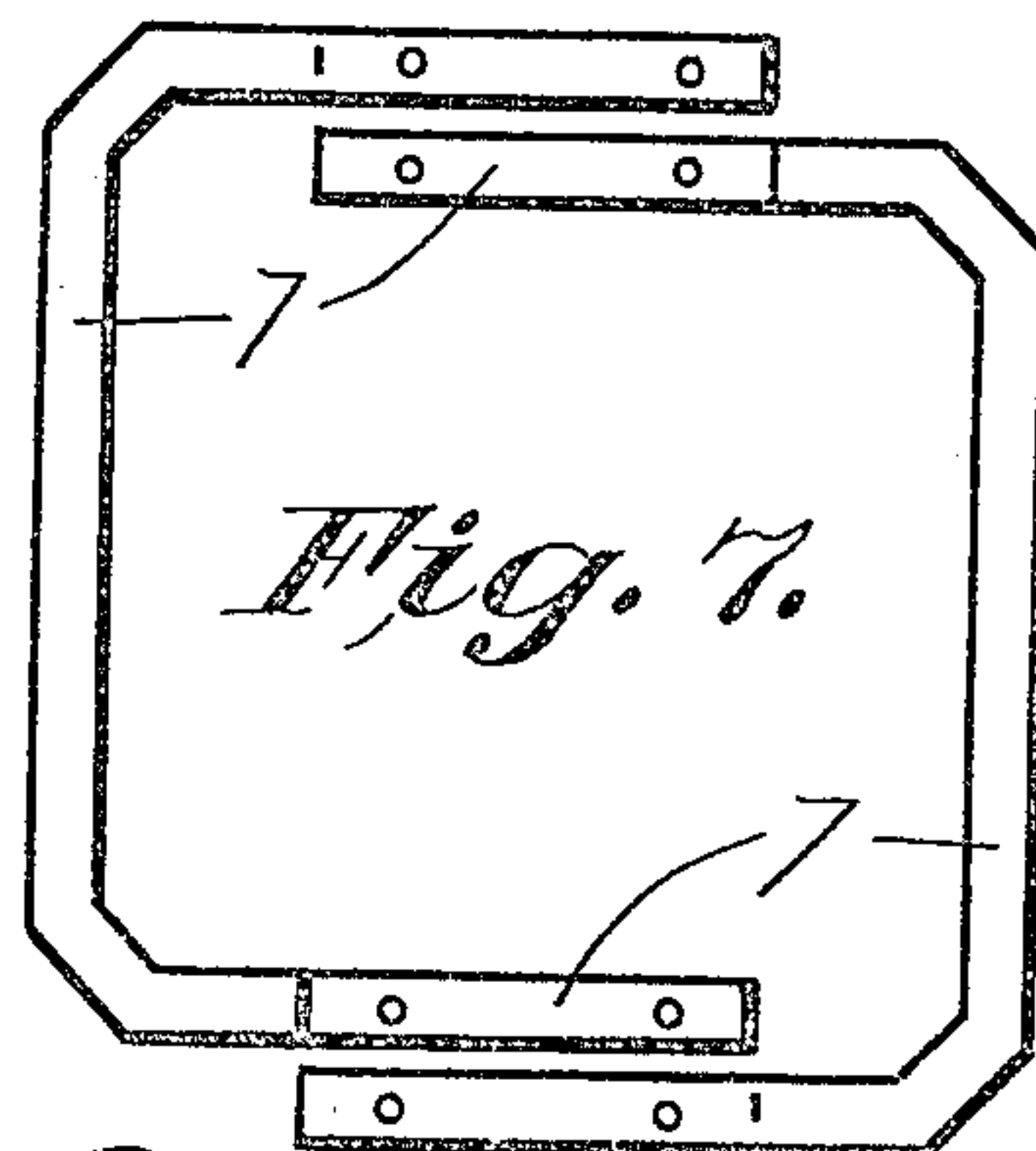
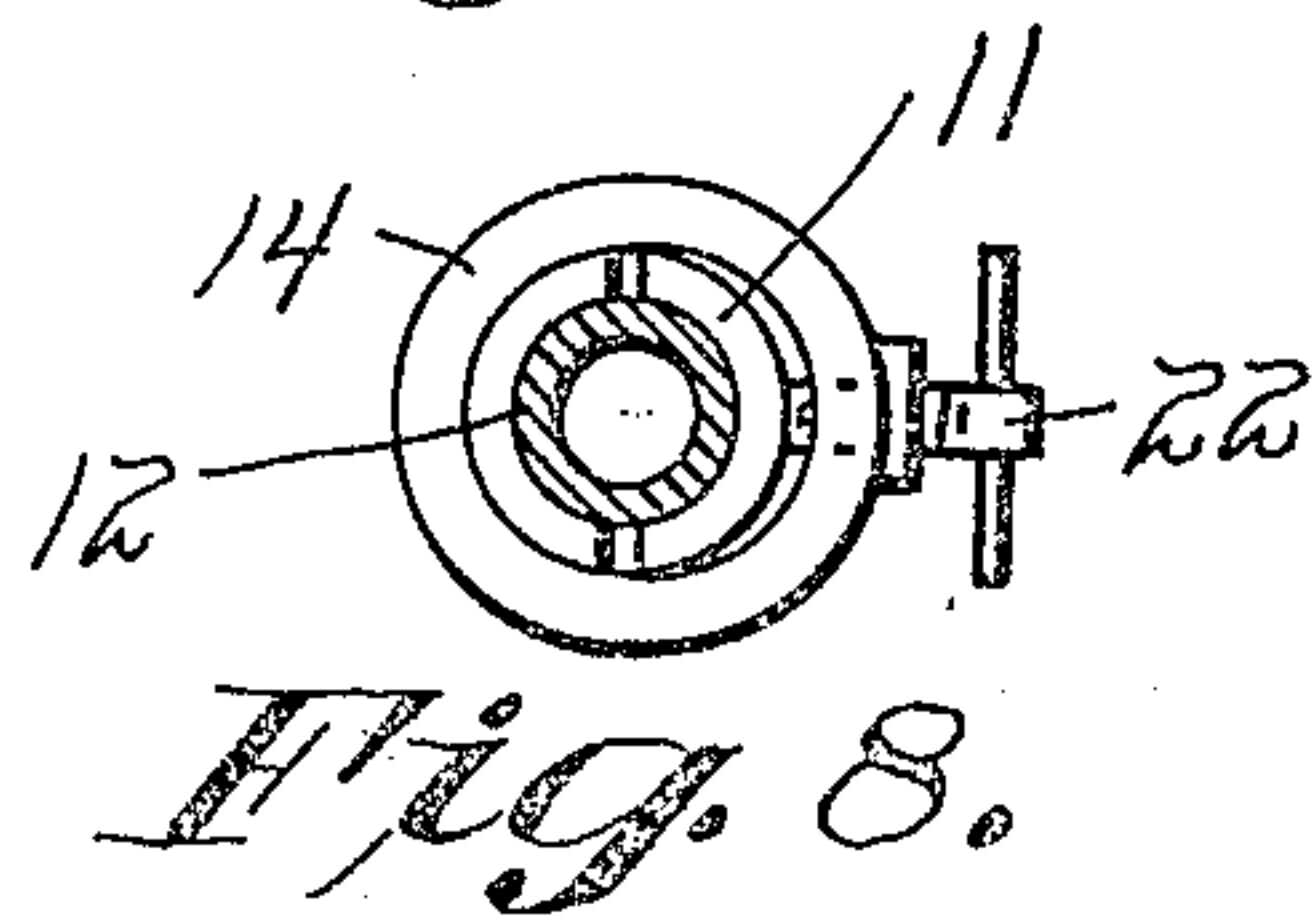
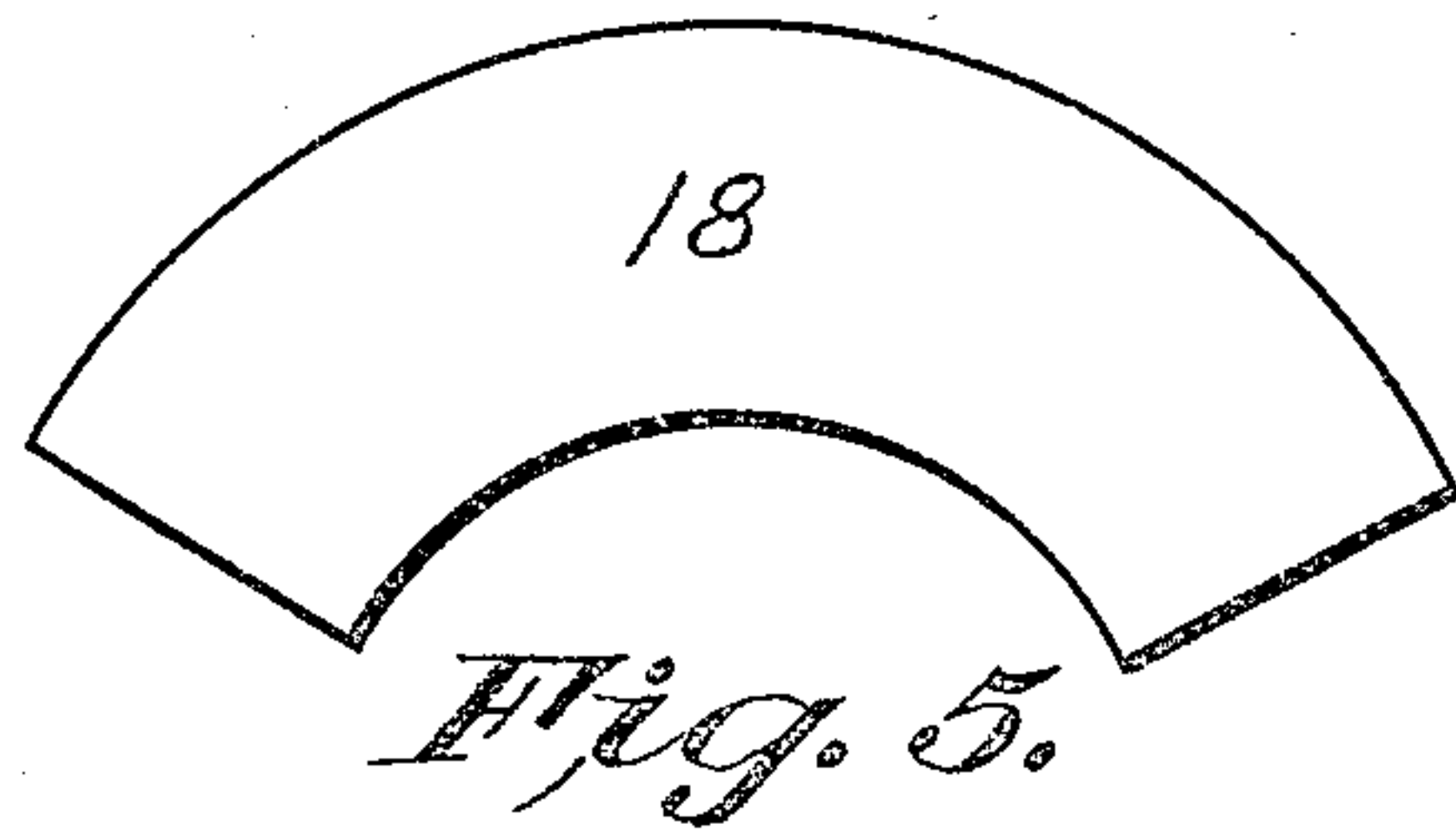
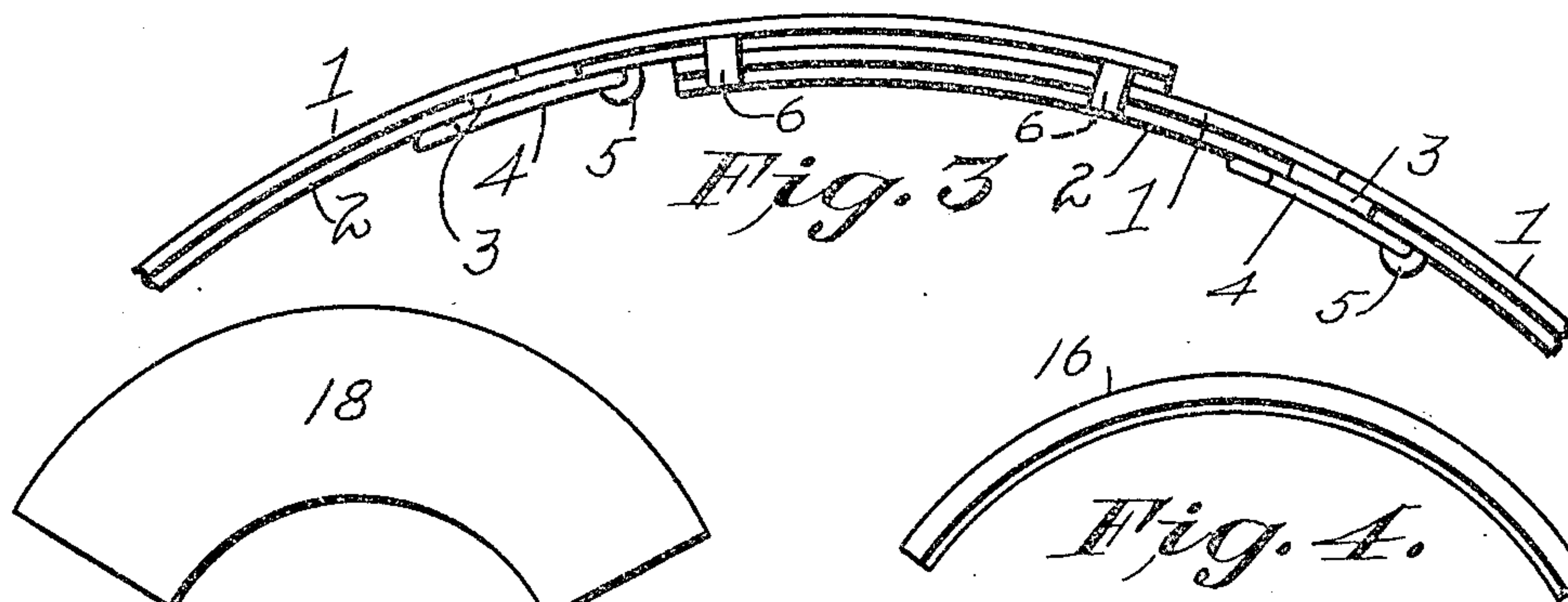
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2 SHEETS—SHEET 2.



Dora Laughlin.
 Inventor

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Witnesses

M. Siebler
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UNITED STATES PATENT OFFICE.

DORA LAUGHLIN, OF DAYTON, OHIO.

COLLAPSIBLE CISTERN-MOLD.

No. 927,806.

Specification of Letters Patent.

Patented July 13, 1909.

Application filed May 18, 1908. Serial No. 433,359.

To all whom it may concern:

Be it known that I, DORA LAUGHLIN, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Collapsible Cistern-Molds; 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in collapsible molds for concrete cistern construction.

The object of the invention is to provide a mold of the above type which is portable and light, and at the same time of sufficient strength to withstand the usages thereof; a mold which is easily assembled and taken apart in the operations of constructing cisterns of concrete.

Preceding a detail description of the invention, reference is made to the accompanying drawings, in which—

Figure 1, is a top plan view of the mold assembled. Fig. 2, is a vertical longitudinal section of the mold showing the top and sides of a completed concrete cistern. Fig. 3, is a detail view of the adjustable lap portion of the sides of the mold. Fig. 4, is a detail view of one of the circle bars which supports the top of the mold. Fig. 5, is a detail plan view of one of the segment sheets of the top of the mold. Fig. 6, is a side view of one of the smaller or outer segments of the top of the mold. Fig. 7, is a detail plan view of the key frame for supporting the top of the mold. Fig. 8, is a detail view of the clamp used on the adjustable braces. Figs. 9 10 and 11, are detail views of the various joints connecting the side plates. Fig. 12, is a view showing a modification of the hook for joining the side plates.

In a detail description of the invention, similar reference characters indicate corresponding parts.

The vertical side plates 1 of the mold are assembled and mounted in a circle to conform to the outline of the cistern to be formed of concrete therearound. These side plates 1 are substantially of the same height as the sides of the concrete cistern and they are

held in alinement at their edges by vertical strips 3; they are held together by suitable fastening devices such as hooks 4 and staples 5. The hooks and staples 4 and 5 are mounted on ribs 2 extending around the interior of the wall or side plates and imparting the necessary stiffness to said plates. Along one side of the mold the plates 1 are adapted to be lapped over each other so as to vary the size of cisterns, such overlapped portion being clearly shown in Fig. 3. When thus lapped over, the plates are held together by suitable cleats 6.

Mounted above the upper edges of the side plates and in the center of the mold, is a key plate 7, the same being at the inner end of the throat of the mold. This key plate 7 is supported from the side plates 1 by means of adjustable brackets comprising parts 8 and 9 shown in Fig. 2, the parts 8 and 9 telescoping one within the other, and the lower ends of the parts 9 being formed to hook over the upper edges of the side plates 1, as at 10.

Pivoted at 15 to the tubular members 8 is a series of individual braces 11 which are also of tubular form and coöperate with lower telescopic brace members 12, the lower ends of which are supported in cleats 13 on the lower inner sides of the side plates 1. The individual adjustable braces 11 and 12 as well as 8 and 9 are adjustable as it will be seen and the parts 8 and 9 constitute adjustable brackets for the key plate 7 shown in Figs. 2 and 7, said key plate being supported upon the inner ends of the members 8.

The bracket members 8 and 9 are held together firmly by means of clamping rings 14 shown in detail in Fig. 8. The upper members 8 are supported at their inner ends by the connection with the individual adjustable braces formed by the tubular members 11 and the rods 12 hereinbefore referred to. These brace members 11 and 12 are also held firmly together by means of the clamps 14 as shown in Fig. 8.

The ends of the tubular members 11 and 8 are slotted as shown in Fig. 8, and the ring 14 forming the clamp is provided with a hand-screw 22, the tightening of which will clamp the rods 12 and 9 to said tubular members. As before stated the braces thus united and supporting the key plate 7, are supported at their lower ends in the cleats 13. I do not wish to limit myself to this

particular manner of supporting the key plate braces, and it is obvious they might be supported on the bottom of the cistern.

Resting upon the upper bracket members 5 8 are circle bars 16 preferably formed each of one-fourth of a circle to allow of their easy removal from the interior of the cistern.

18 is a series of segment plates forming the top of the mold and resting upon the bars 6 10 and the key plate 7.

The outer segment plates 17 are suitably curved to rest upon the tops of the side plates 1 and to overlap the upper segment plates 18. The lower ends of the lower segment plates 17, which as before stated, engage the upper edges of the side plates 1, are held in alinement with said side plates by means of a series of lugs 19 which are fixed to the edges of the plates 17 and engage the 20 inner sides of the side plates 1—see Figs. 2 and 6. These inner and outer segment plates 17 and 18 form the floor for the top of the cistern and constitute the top of the mold from which extends a cylindrical member 20 that rests upon the segment plates 18 and said cylindrical member forms the mold for the concrete surrounding the opening to the cistern and constituting the neck of the cistern. A further cylindrical member 21 30 is provided for the outer sides of the neck of the cistern.

In Fig. 9 I have shown a somewhat different form of joint for the side plates 1; for example, in this form the side plates 1 have 35 abutting flanges 23 23 which are held together by hooks 4 and staples 5.

In Fig. 10, I have shown the same form of connection of the side plates 1 as that shown in Fig. 2, the vertical strips 3 being attached 40 to the side plates 1 by rivets 3'.

In Fig. 11, one of the side plates 1 is provided with a longitudinal hook edge 28 which engages a longitudinal flanged edge 27 of the adjacent side plates. The side plates 1 in 45 this construction may be held together by the latch 24 pivoted at 24' and engaging a pin 25 by means of a slot 26 in the latch, the

pin 25 projects from one of the ribs 2 and is provided with a head. This means as shown in Figs. 11 and 12, it will be noted is somewhat similar to the hook 4 shown in Fig. 9. 50

In using my collapsible form for concrete cistern construction, the necessary excavation is made and the concrete bottom is first laid and permitted to set the side plates 1 55 are then assembled therein and adjusted to the proper diameter by means of the overlap shown in Fig. 3, and the wall thus formed by said plates is maintained in its position by the hooks 4 or any of the fastening means 60 shown in the drawings. The dome or top of the mold is then placed in position and supported by the adjustable braces after which the concrete is delivered around the exterior sides of the mold and allowed to remain a 65 sufficient length of time before the form is collapsed and removed. The bottom of the cistern may be laid after the walls have been erected, but in practice it may be preferable to lay the bottom first and then erect the 70 surrounding walls, sealing the walls and the floor by an extra application of cement.

Having described my invention, I claim:

In a form for making concrete cisterns, a series of plates adapted to be assembled in 75 circular form, means for interlocking the longitudinal edges of said plates when so assembled, means for obtaining different diameters of the form when made up, a key plate, segment plates forming the top of the mold and 80 extending from the top of the side plates to the key plate, adjustable brackets engaging the key plate at their inner ends and the upper edges of the side plates at their outer ends, and adjustable braces pivoted to the 85 inner ends of said brackets and supporting the key plate and the top of the form, substantially as specified.

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

DORA LAUGHLIN

Witnesses:

C. M. THEOBALD,
MATTHEW SIEBLER.