

No. 804,167.

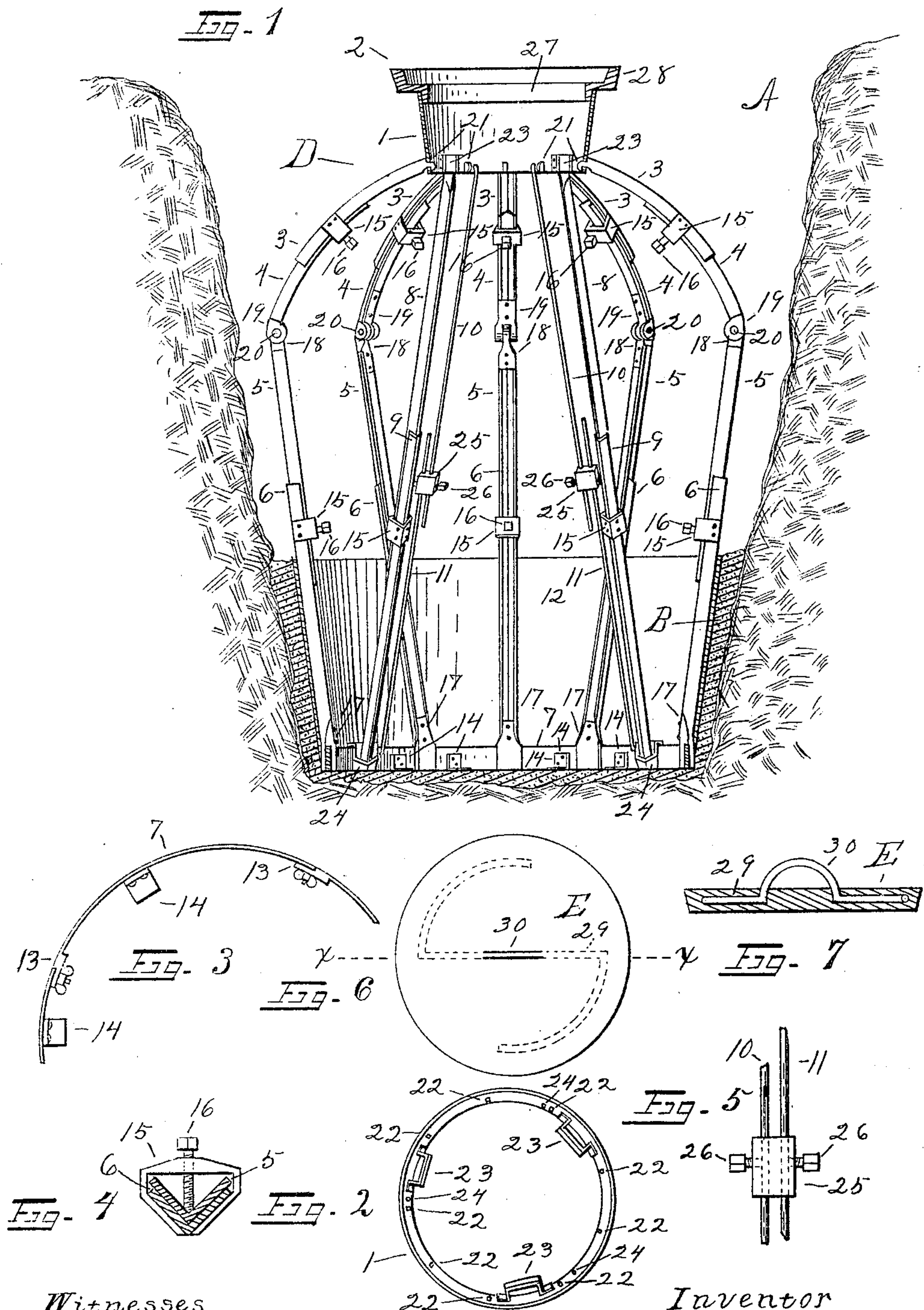
PATENTED NOV. 7, 1905.

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## FORM FOR MAKING CISTERNS AND CESSPOOLS.

APPLIOATION FILED JULY 11, 1904.

2 SHEETS—SHEET 1.



Witnesses

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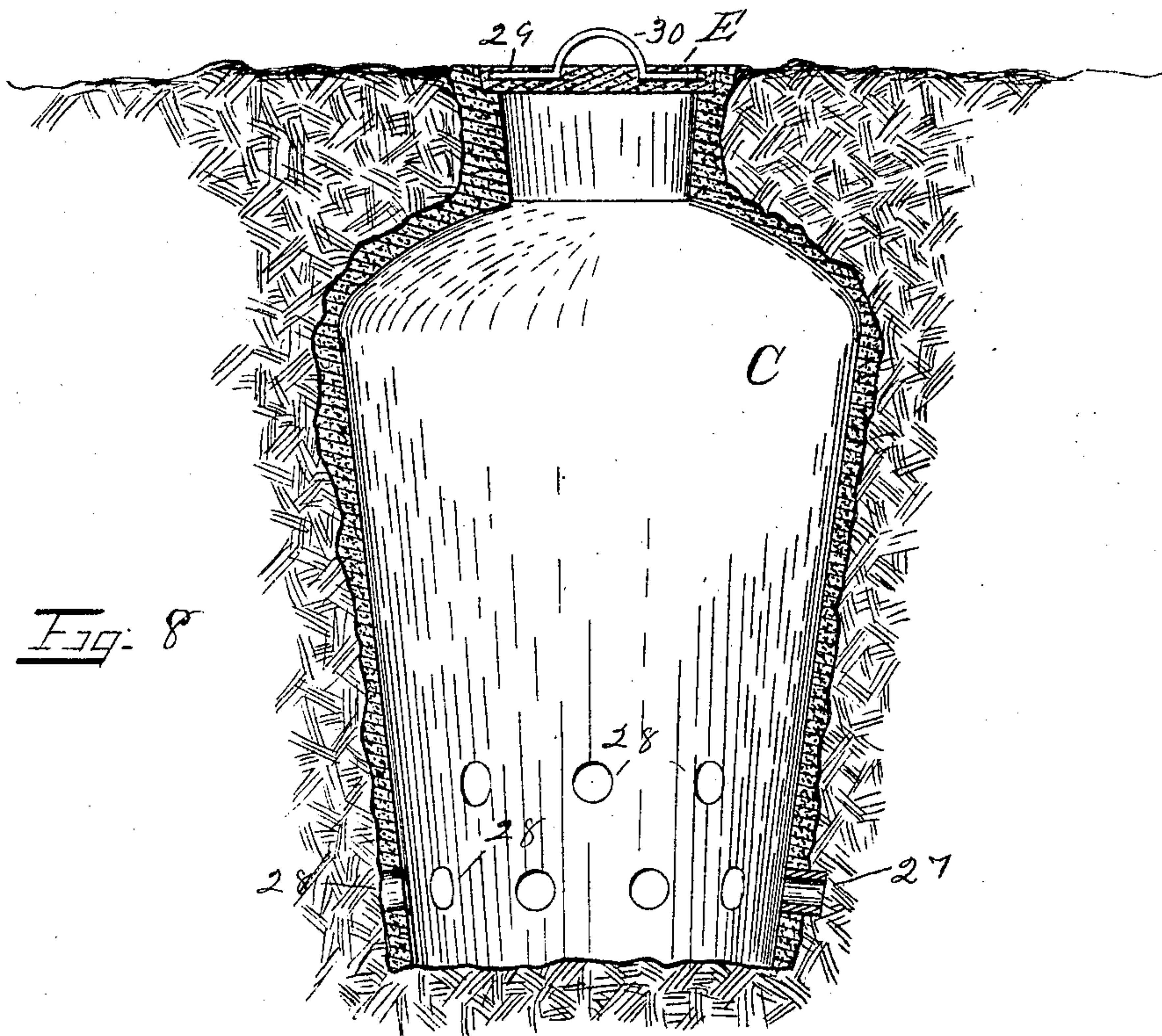


Fig. 8

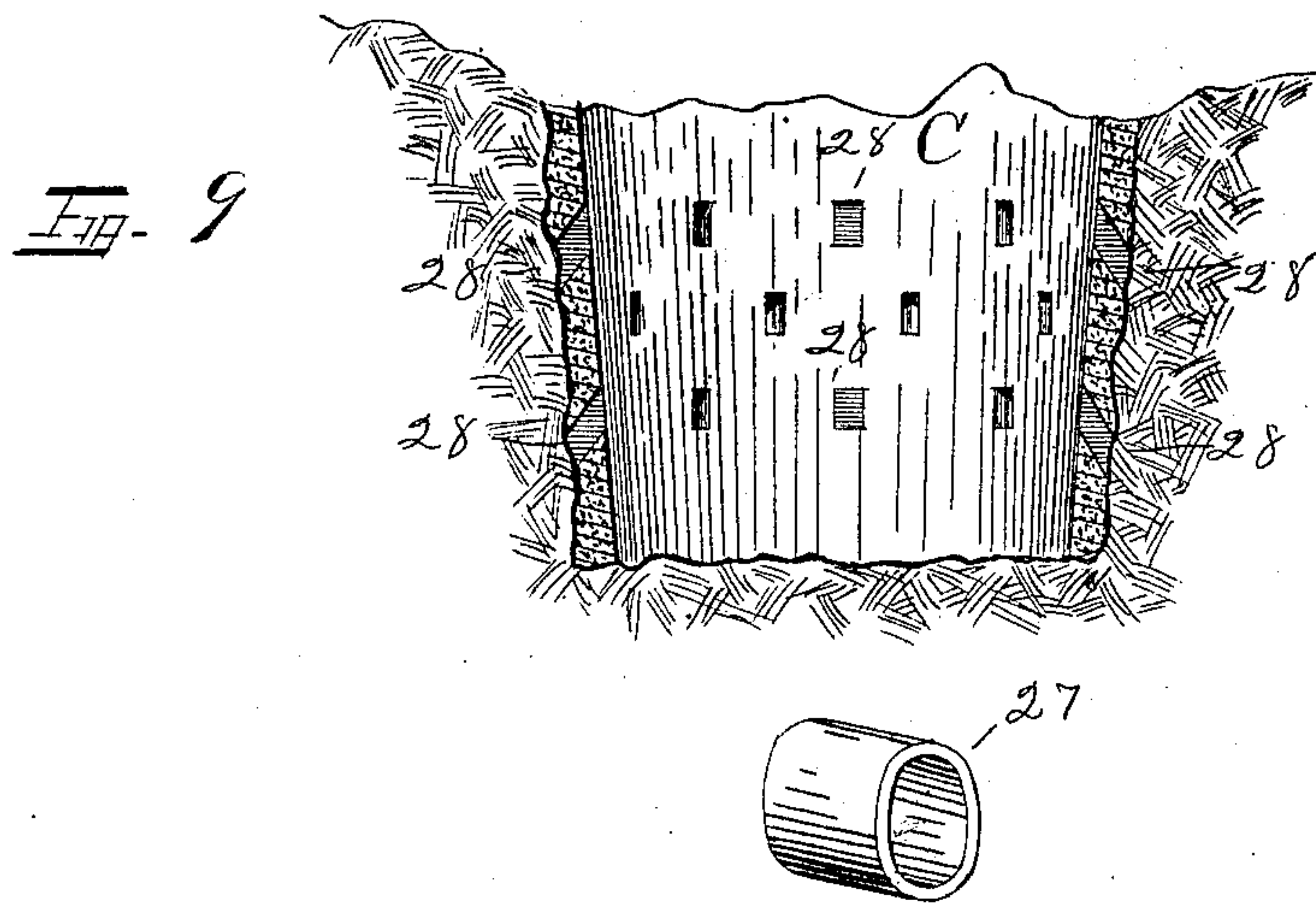


Fig. 9

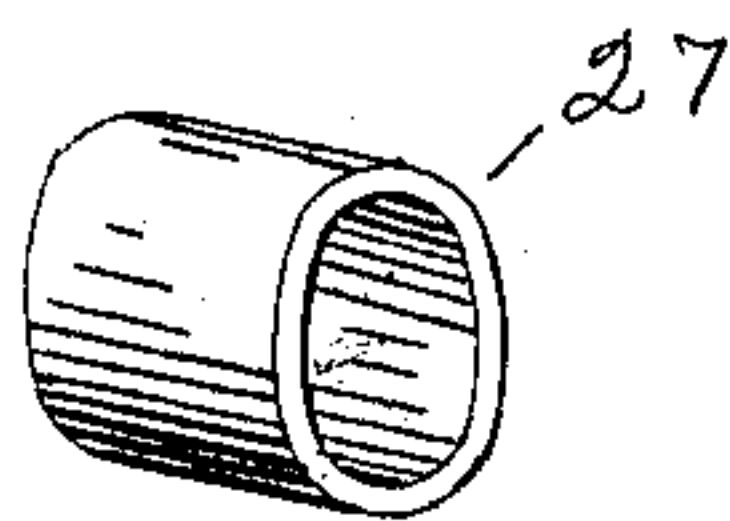


Fig. 10

Witnesses

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# UNITED STATES PATENT OFFICE.

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## FORM FOR MAKING CISTERNS AND CESSPOOLS.

No. 804,167.

Specification of Letters Patent.

Patented Nov. 7, 1905.

Application filed July 11, 1904. Serial No. 216,024.

*To all whom it may concern:*

Be it known that I, EDGAR H. OSBORN, a citizen of the United States, residing at Battlecreek, in the county of Calhoun and State of Michigan, have invented certain new and useful Improvements in Forms for Making Cisterns and Cesspools; and I hereby declare the following to be a full, clear, and exact description thereof, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to forms for making cisterns and cesspools, and has for its object to construct a device of its class that will be collapsible and capable of being folded within small space, whereby the operator can have easy access within its contour in the performance of building a cistern or cesspool; whereby the device can be quickly and easily mounted or dismantled; whereby a wall built about the device will be symmetrical and solid; whereby a cesspool built with its usage will have free and unrestricted drainage and not cave, and whereby work can be expediently done in soil of a wet and caving nature.

In the drawings forming a part of this specification, Figure 1 represents a vertical cross-section of my improved cistern and cesspool form as it appears in an excavation with a partially-built-up wall of a cistern. Fig. 2 is a plan view of the top or neck-forming collar. Fig. 3 is a detail of a section of the spliced bottom ring. Fig. 4 is an enlarged cross-section of the V-shaped angle-bar construction of the framework at a point where the adjustment is made. Fig. 5 is a detail of a bracing-rod joint. Fig. 6 is a plan view of a cover. Fig. 7 is a vertical cross-section of the cover on the line *x x* of Fig. 6. Fig. 8 is a vertical cross-section of a cesspool and shows the drainage-ducts and one of the drainage-rings still unremoved as formed about my improved device, the device having been removed. Fig. 9 is a detail section of the cesspool drainage according to a modified means for providing drainage-ducts, and Fig. 10 is a perspective view of one of the portable bands I employ to form drainage-ducts about.

In the drawings like marks of reference refer to corresponding parts throughout the different views.

A is an excavation.

B is a partially-built cistern-wall constructed from any of the usual plastic cement formations.

C is a cesspool-wall of plastic construction.

D is my improved collapsible form comprising the annular tapering neck-forming collar 1, gasket 2, top arches 3 and 4, side stays 5 and 6, bottom band 7, telescopic supports 8 and 9, adjustable bracing-rods 10 and 11, and encircling separable jacket or curbing 12.

An excavation having been made of the desired size and a suitable plastic bottom having been made therein, a thin metallic band 7, composed of segments having slip-joints 13, which when united will form a circle with a smooth circumference and at intervals upon its inner arch a series of feet 14 horizontally and axially protrude, is placed thereon. The ring is placed so that the horizontal feet thereon will rest squarely upon the bottom thus formed and prevent said band from sinking within the grout formation. Standing at intervals around this band a series of adjustable legs or side stays are placed. These stays comprise the two pieces 5 and 6, the one capable of telescoping with the other, and secured to one of said stays an eyelet 15, through which the telescoping member may slide, is riveted, and passing through said eyelet and adapted to engage the concavity of the angle-bar forming said stay and secure the same intact a set-screw 16 is placed. The lower end of the bottom section 6 is flattened and riveted to the side having the concavity the offset lip 17 is placed, the space formed therebetween allowing for the bottom-supporting band to be received. At the top of said stays a shank 18 is riveted, and engaging said shank a forked shank 19, attached to the curved top ribs 3 and 4, is secured by a bolt or spring-clip 20 passing therethrough. The curved top ribs telescope and are secured in like manner to the supporting side stays. At the upper ends of said curved ribs a top section 3 thereof is flattened by pressing the two ribs of the angle-bar together, and from this flattened portion a hook 21 is formed. In forming this hook the metal is cut to form a shoulder above the arch thereof, which is adapted to form a brace against the angular neck-forming band when locked thereto, the metal on the hook side being cut to form an arc radiating backward and downward therefrom and terminating back of a point intersecting the shoulder aforesaid, as shown in Fig. 1.

In making the neck-forming band 1 the top thereof by preference is somewhat larger than



is its bottom end and provides a ready means for removing the same after having formed a cement wall therearound. Near the lower edge of said band elongated slots 22, Fig. 2, are provided, and within these slots the hooked ends of the curved ribs aforesaid are adapted to interlock, as shown in Fig. 1. Secured within said band 1, near its lower edge, a series of eyelets 23 are provided, three of which at most are found entirely sufficient, and within these eyelets the upper flattened ends of bracing and supporting legs are introduced. These legs comprise two sections 8 and 9, the one telescoping within the other and both being secured together, as are the side stays and top ribs aforesaid. At a point where the bottom legs 9 rest pockets 24, having lips adapted to engage the top edge of the bottom band 7, are placed, and these pockets may be formed in any desirable shape requisite for the purpose. At points near the junction of the aforesaid legs in both the bottom band 7 and the top collar 1 holes, as 24, Fig. 2, are provided, and within these holes the curved ends of bracing stay-rods 10 and 11 are hooked. Securing these bracing-rods together a union 25 is provided having holes therethrough, within which said rods pass, and are secured by set-screws 26.

Mounting the band 1 a collar 2, having an internal flange 27, engages the orifice of said band and an outwardly-flaring rib 28 is formed. The object of this collar is to provide a mold to form a seat or gasket for the cover of the cistern or cesspool to rest, as will be shown in Fig. 8.

In constructing a cistern or cesspool the form D having been set up, as set forth, an encircling collapsible casing or curbing of thin sheet metal 12 is provided, and about this curbing the grout or plastic cement is placed, the soil being filled in to form a backing as the work progresses and as the occasion may require, the operator working within the curbing until the bilge is reached, when a top casing composed of sectional pieces is placed upon the curved ribs and cement or grouting is applied from the exterior. In the formation of the cesspool no grouting is supplied to the bottom thereof, as will be comprehended more fully in Fig. 8, this figure representing a cesspool having been constructed and the collapsible form D removed therefrom. Near the bottom of the cesspool as the grouting forming the wall thereof progresses tubes 27 are placed at intervals encircling this wall and as many thereof can be placed as may be deemed expedient. In lieu of tubes plugs of wood or other material could be used, the object of the tubes or plugs of wood being to form orifices 28 in the wall thereof when withdrawn for the exit or drainage to the cesspool.

In Fig. 9 the ducts or drainage-orifices are rectangular, their exit or exterior opening being lower than their ingress, a provision where-

by the soil will not cave and run through and have a tendency to fill the bottom of a cesspool.

I provide a cover E, made of light material, to the walls of the cistern or cesspool. To prevent the same from fracture, and also to lift the same, a stiffening-core 29, formed of iron, is provided. Central to the cross-girth of the cover the core is curved to form a handle 30, as shown, and opposite the curve at either side thereof the metal is again curved concentric to the center of said cover to the right and to the left, to form angles for and to stiffen said cover.

It will be apparent that various modifications could be employed in carrying out my invention in the construction of the framework thereof without departing from the spirit and intent of my invention—as, for instance, the legs and stays and ribs could be formed from tubular or even flat material. Likewise the bracing-legs could be supplied with bolts at their extremity to engage the neck and bottom bands in lieu of the bracing-rods described.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a device of the kind, a framework, in combination, a collar, arched ribs hooked into said collar near its lower edge, side stays hinged to the extremities of said ribs, a bottom band, said stays adapted to stride said bands, legs adapted to engage said collar at their top ends, and at their bottom ends to be received within pockets on said bottom band, brace-rods adapted to engage both said bottom band and the top collar, and means for securing said brace-rods in place, and a metallic flexible sectional curbing adapted to envelop said framework, for the purpose set forth.

2. In a device of the kind, a framework, in combination, a collar, curved adjustable, telescopic ribs adapted to hook in the lower edge of said collar, telescopic adjustable, side stays hinged to the extremities of said ribs, a multiple bottom band, axially-arranged feet secured to the inner arc of said band, said stays adapted to stride said band, telescopic adjustable, legs adapted to engage said collar at their upper ends and at their lower ends to be received within portable pockets on said bottom band, adjustable brace-rods adapted to hook at their extremities into said collar and bottom band, and a flexible sectional, metallic curbing adapted to envelop said framework, substantially as, and for the purpose set forth.

3. The herein-described framework comprising a top collar and a bottom band, side stays mounted on said band, curved ribs hinged to said stays, said stays engaging at their opposite ends with said collar, supporting-legs engaging said collar and bottom band, and bracing-rods engaging said collar and bottom



band, said ribs, stays, and legs, comprising V-shaped angle-bars individually telescopically adjustable, and means for locking said telescopic adjustment, substantially as and 5 for the purpose set forth.

4. The herein-described ribs, side stays, and legs, comprising V-shaped angle-bars, individually telescopically adjustable, said adjustment comprising metallic clips spanning the 10 recess of one bar and riveted thereto, a bar telescopic sliding within and through said clip, and a set-screw passing through said clip and adapted to engage the bottom recess of said sliding bar and lock the said bars intact, 15 substantially as, and for the purpose set forth.

5. A bottom-supporting band comprising segments, horizontally-disposed feet extending from the inner curves of said segments, the end of one segment having an offset on its 20 inner surface, adapted to engage the plain end of another, and means for securing said segments intact, substantially as, and for the purpose set forth.

6. The combination with the top collar and 25 bottom band, of adjustable braces comprising oppositely-disposed hooked rods, adapted to hook within apertures in said collar and bottom band, a union engaging said rods, and set-screws for securing said rods thereto, substantially as and for the purpose set forth. 30

7. The combination with a neck-forming collar, of arc-shaped, adjustable telescopic ribs, hinged at their lower extremities to side-supporting stays, the upper ends having a portion 35 of their stock cut away to form hooks adapted to lock within apertures within the lower edge of said collar, substantially as, and for the purpose set forth.

8. A neck-forming collar, comprising an upwardly-flaring, metallic band, rectangular vertical apertures arranged at intervals about its 40 lower edge, brace-securing holes triangularly arranged near its lower and inner edge, leg-receiving brackets triangularly secured within its lower edge, said vertical apertures adapted to receive hooks on the upper ends of the 45 curved supporting-ribs, substantially as and for the purpose set forth.

9. In a device of the class, in combination with a collapsible framework, of a curbing encompassing said framework comprising thin 50 metallic plates adapted to slide over one another annularly and to lap over one another vertically when builded up, substantially as and for the purpose set forth. 55

10. In a device of the class, in combination with a collapsible framework and an encircling collapsible curbing, of means abutting on said curbing from the exterior to form 60 ducts within the walls of a cesspool when said curbing and said means are removed therefrom, all arranged to work substantially as, and for the purpose set forth and described.

11. In a device of the class, in combination with a collapsible framework and an encircling collapsible curbing, of annular collars 65 abutting on said curbing from the exterior to form ducts within the walls of the cesspool when said curbing and said collars are removed therefrom, substantially as, and for the 70 purpose set forth.

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Witnesses:

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