No. 732,509. PATENTED JUNE 30, 1903.

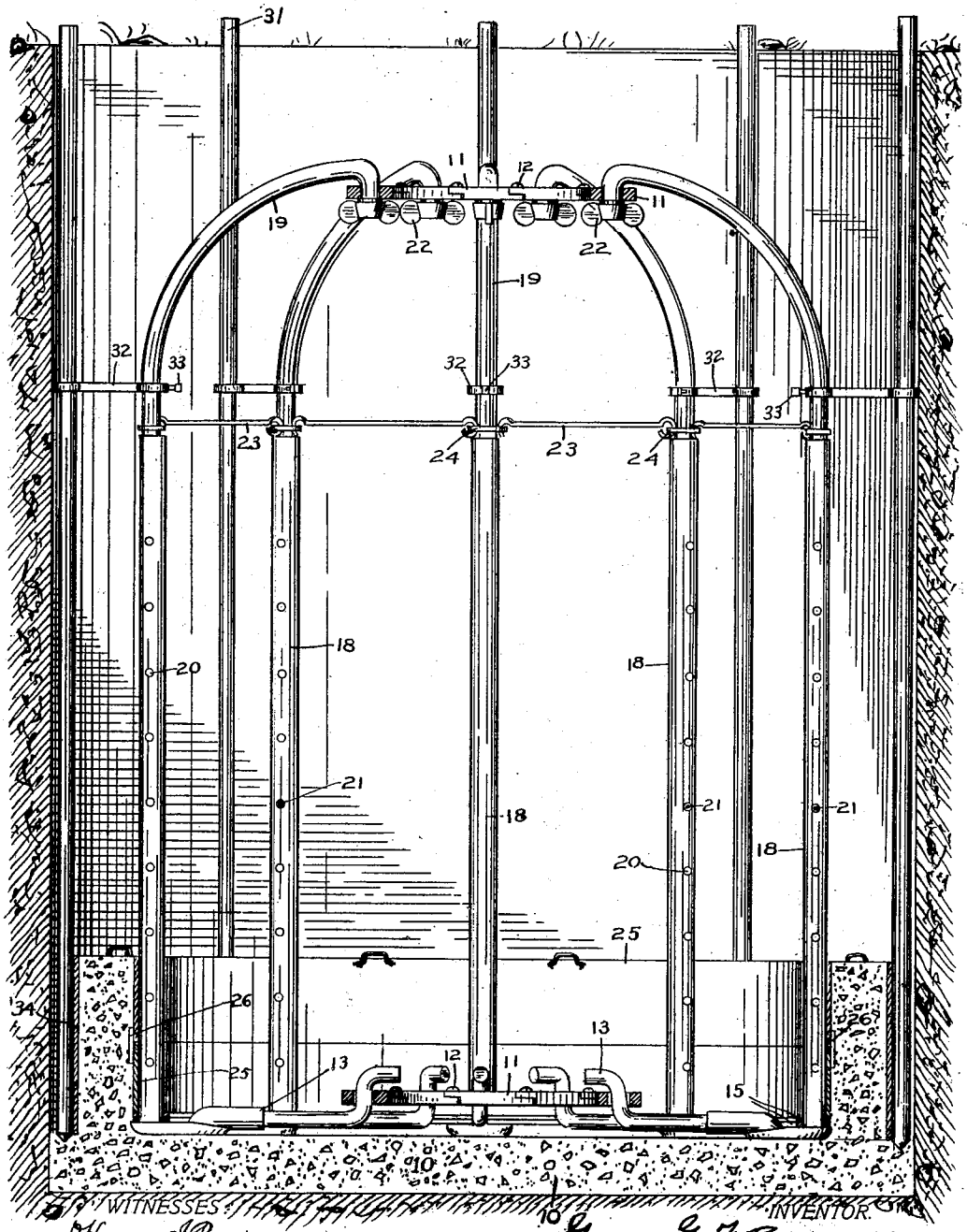
G. G. F. BOSWELL.

FORM FOR CISTERNS, &c.

APPLICATION FILED MAR. 11, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig 1.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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NO MODEL. 2 SHEETS—SHEET 2.

Fig 2.

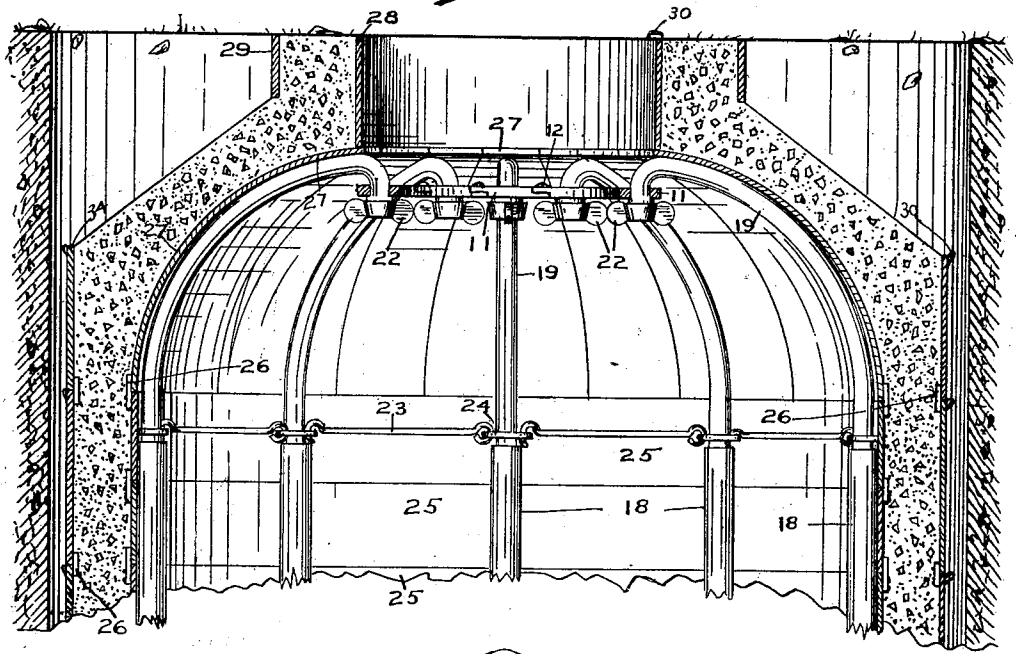


Fig 3.

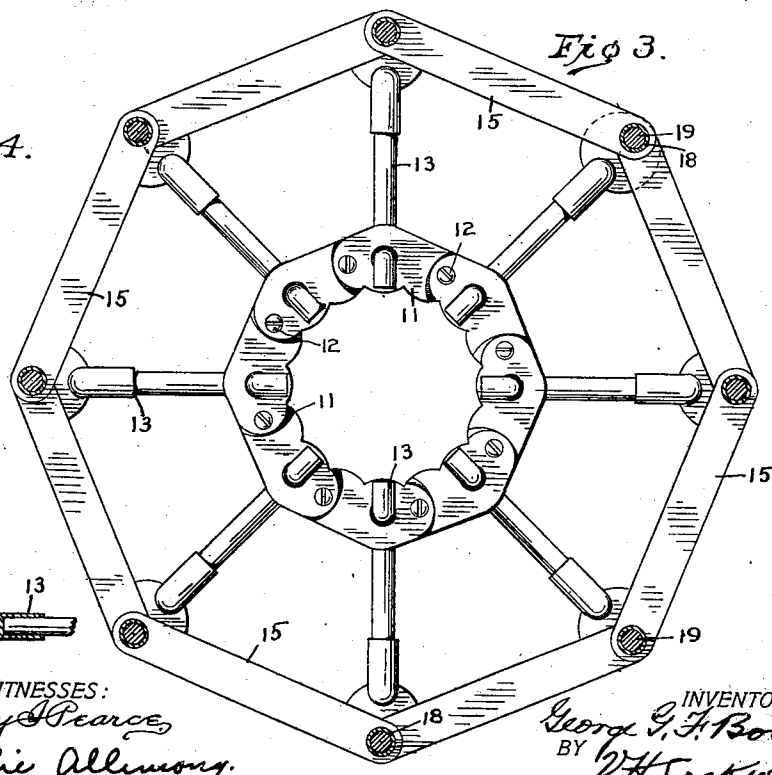
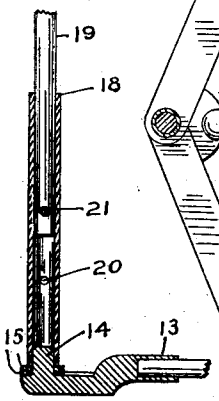


Fig 4.



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UNITED STATES PATENT OFFICE.

GEORGE G. F. BOSWELL, OF INDIANAPOLIS, INDIANA.

FORM FOR CISTERNS, &c.

SPECIFICATION forming part of Letters Patent No. 732,509, dated June 30, 1903.

Application filed March 11, 1903. Serial No. 147,277. (No model.)

To all whom it may concern:

Be it known that I, GEORGE G. F. BOSWELL, of Indianapolis, county of Marion, and State of Indiana, have invented a certain new and useful Form for Cisterns and the Like; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like numerals refer to like parts.

The object of this invention is to make a form for building cisterns, catch-basins, and the like of cement which can be easily put in place and used and taken down.

The nature of this invention will be understood from the accompanying drawings and the following description and claims.

In the drawings, Figure 1 is a vertical central section through the form in place in an exacavation for building a cistern, a part of the cement work having been done. Fig. 2 is a central vertical section of the upper part after the cistern is built and before the form is removed, the lower part being broken away. Fig. 3 is a plan view of the bottom of the form. Fig. 4 is a central vertical section through one of the post constructions.

In detail an excavation is made in which the cistern can be constructed and a cement foundation 10 built. Then the bottom of the form is first put in place on the cement bottom of the cistern. This form is shown in Fig. 3, and consists of a central ring formed of a series of links 11, secured together by screws 12, that can be removed, so that links can be taken out or inserted to make the rings larger or smaller, according to the different sizes of cisterns to be built. Each link has a central hole through it for the passage of the upwardly-bent portion of the arms 13. These arms, as shown, consist of a rod portion extending into a tubular portion and secured there; but they can be made of one piece, as they are not longitudinally adjustable. At one end, as stated, the arm extends up loosely through the hole in the link 11 and has a horizontally-extending inner end, which prevents the link from escaping from the arm after the parts are put place. The outer end of the arm is flattened somewhat, as shown in Fig. 3, and has an upwardly-extending pin 14, over which the separating-bars 15 are placed. These bars have a hole in them near each end adapted to slip loosely over the pin 14. When the bars 15 are all in place, they hold the outer ends of the arms 13 at proper distances apart, as shown in Fig. 3.

After the base of the cistern-form has been laid on the cement bottom the inner series of posts of the form are mounted on it. These posts consist of two parts—a tubular portion 18, that rests at its lower end over the pin 14, and a rod portion 19, that fits telescopically in said tube 18. The tube 18 has a series of holes 20 in it adapted to receive a pin 21 for holding the rod portion 19 up in any desired position for the purpose of lengthening the cistern-form to suit cisterns of various depths. The upper ends of the rod portions 19 of the posts are curved to conform substantially to the curvature of the top of the cistern and at their extreme upper ends are turned downward to fit in the holes in the links 11, which form a ring at the top of the cistern exactly like the ring formed at the bottom by the links 11 and the screws 12. The downwardly-turned ends of the rods 19 are threaded and receive the nuts 22 for holding them in place. The posts formed of the parts 18 and 19 are held laterally in place by the hooks 23 and eyes 24. The eyes are on each side of the rods 19, and there is a hook 23 pivoted to an eye on one rod and hooked into an eye on the other rod. When the posts are placed as stated and the hooks 23 are in place, the main portion of the cistern-form is finished, and ordinarily where the soil is suitable to constitute the outer wall against which the cement may be formed sectionally-curved plates 25 are placed around the form heretofore described extending from one post to another and abutting until a complete circle is formed. The lower edges of said plates rest upon the ends of the separating-bars 15 or may rest upon the bottom of the cistern. These plates are put in place as the cement is filled in between them and the earthen wall surrounding the wall heretofore described, and as the cement is put in place it holds the plates 25 in place, and the plates 25 are put in place as the workman proceeds. After he has put in one series of plates 25 around the form with the cement against them he puts in the second series the same way, one plate at a time, placing the cement against them. The plates have on the

outside, near the upper edge, a pair of fingers 26, projecting upward to receive and hold the lower edge of the plate above it in place, as seen in Fig. 1. In that way these plates are built up, one series upon another, as fast as the cement is filled in until the top is reached. At the top there are plates 27 of the same character as the plates 25, but of different shape. They are curved longitudinally as well as laterally, so as to form the curved upper portion of the cistern, and they extend from one post to the next, and the cement is filled in upon them to the proper thickness. The mouth of the cistern is formed by an inner circular metal plate or mold 28, the lower edge of which rests upon the upper edges of the plates 27. An outer band or mold-plate 29 is placed upon the cement filled in on the plates 27 at a proper distance away from the plates 28, so as to form the top of the mouth portion of the cistern. After the cistern has been thus formed and the cement hardened the plate 29 is removed and dirt filled in against the cement. The plate 28 is then removed, there being a handle 30 on the top of the mold-plates for their removal. Then the nuts 22 are taken off, which permits the upper ring formed of the links 11 to drop down and the whole form collapses in the cistern and can be readily taken apart and removed.

Where the soil in which the cistern or other cement structure is being made is sand or otherwise unfit to form an outer mold-wall against which a cement structure can be built, an outer artificial wall is provided by means of rods 31 extending down through holes in the bars 32, that are secured to the rods 19 by reason of said rods running through holes in said bars and are held in place by set-screws 33. These bars 32 are swung outward and the rods 31 put down through them at the right distances away from the main form that has heretofore been described and plates 34 put in against said rods to form an outer wall. These are put in as the plates 25 were put in—that is, as the work progresses—and after the cistern has been finished and the cement has hardened the rods 31 are pulled up out of the way, and by a long rod, with a hook on the end of it adapted to catch the handles of the top of the plates 34, they are easily pulled up and the sand or dirt tamped in against the outside surface of the cement wall. This makes a readily-constructed form for the inner surface of the cistern and also for the outer surface thereof, and the parts are so arranged that the diameter as well as the height can be altered to suit the size of the cistern.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A form for cisterns and hollow plastic structures formed of bottom and top portions the diameter of which can be altered, posts extending from the bottom to the top portions, and plates adapted to be placed about said posts to form a mold about which the plastic structure can be built.

2. A form for cisterns and hollow plastic structures formed of bottom and top portions, the top portion consisting of a ring formed of a series of links detachably connected with each other and each having a vertical hole through the same and the bottom portion formed of a similar ring and radially-extending arms detachably connected with said ring, posts extending from the outer ends of said arms and detachably secured to the upper ring, and plates about said posts to form a mold about which the plastic structure can be built.

3. A form for cisterns and hollow plastic structures formed of bottom and top portions, the top portion consisting of a ring formed of a series of links detachably connected with each other and the bottom portion formed of a similar ring, radially-extending arms with their inner ends turned upward through the holes in the links of the ring and the outer ends provided with an upwardly-extending lug, posts with the lower end hollow and fitting over said lugs and the upper end extending through the holes in the links of the upper ring, nuts for securing said posts to said upper ring, and plates about said posts to form a mold about which the plastic structure can be built.

4. A form for cisterns and hollow plastic structures formed of expansible bottom and top portions, posts extending from the bottom to the top portions, means between the top and bottom for holding each pair of posts at the proper distances apart, and removable plates adapted to be placed about said posts to form the mold.

5. A form for cisterns and hollow plastic structures formed of bottom and top portions, posts extending from the bottom to the top portions loosely and removably connected therewith, independent means between the top and bottom for holding each pair of said posts at the proper distances apart, and removable plates adapted to be placed about said posts to form a mold about which the plastic structure can be built.

6. A form for cisterns and hollow plastic structures formed of bottom and top portions, posts extending from the bottom to the top portions removably connected therewith, said posts having between their ends on each side thereof a hook pivoted to the eye of one post and adapted to catch in the eye of the adjacent post for holding said posts at proper distances apart and removable plates adapted to be placed about said posts to form a mold about which the plastic structure can be built.

7. A form for cisterns and hollow plastic structures formed of bottom and top portions, the top portion consisting of a ring formed of a series of links detachably connected with each other and the bottom portion formed of a similar ring and radially-extending arms

with their inner ends turned upward through the holes in the links of the ring and the outer ends provided with an upwardly-extending lug, plates with a hole near each end for fitting over the lugs of adjacent arms for holding their outer ends at proper distances apart, posts with the lower ends hollow and fitting over said lugs and the upper ends extending through the holes in the links of the upper ring, and plates adapted to be placed about said posts to form a mold about which the plastic structure can be built.

8. A form for cisterns and the like consisting of top and bottom portions, and posts formed of a tube with a series of holes in it and a rod telescoping with said tube and a pin for holding the rod and tube in any relative position.

9. A form for cisterns and the like consisting of a suitable collapsible frame having vertical posts and plates placed against the outside of said posts against which the cement may be formed, said plates having projecting fingers for engaging the adjacent plates so that the plates may be built up on each other.

10. A form for cisterns and the like including longitudinally-extending posts for forming the inner surface of the cistern, arms extending laterally from said posts, rods removably mounted in said arms extending parallel with said posts, and plates placed on the adjacent sides of said posts and rods between which the cement may be placed.

In witness whereof I have hereunto affixed my signature in the presence of the witnesses herein named.

GEORGE G. F. BOSWELL.

Witnesses:
V. H. LOCKWOOD,
NELLIE ALLEMONG.