

No. 850,667.

PATENTED APR. 16, 1907.

C. A. MITCHELL.
CISTERN FORMER.
APPLICATION FILED MAR. 13, 1906.

2 SHEETS—SHEET 1.

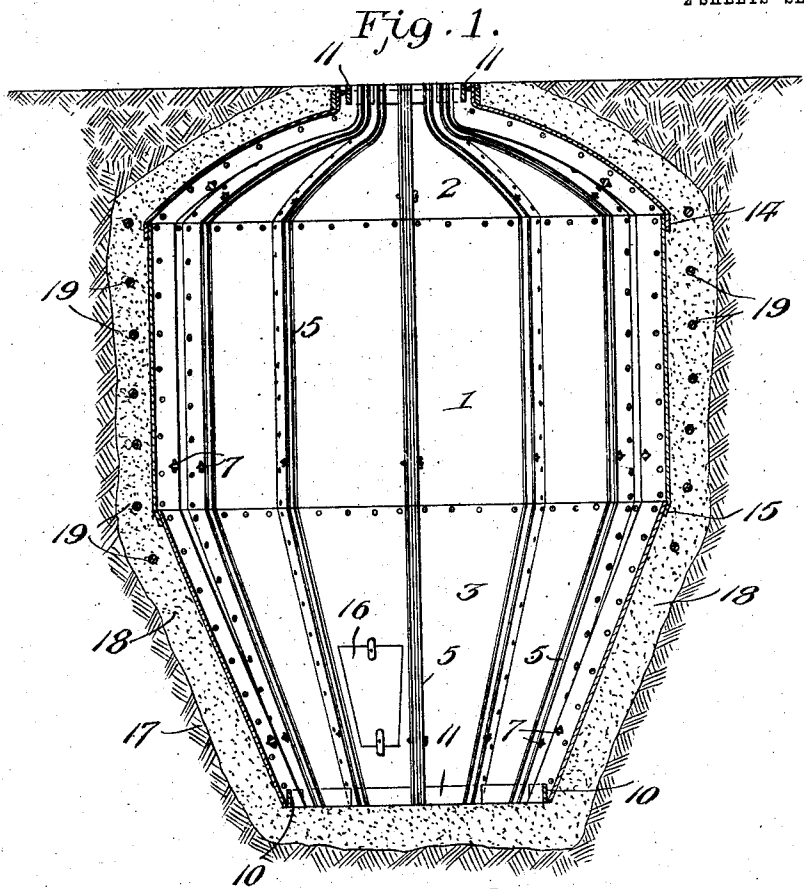
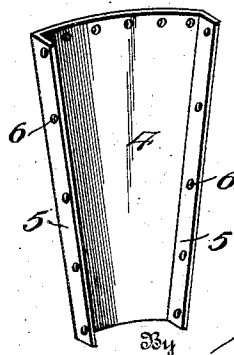


Fig. 5.



Fig. 6.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 2.

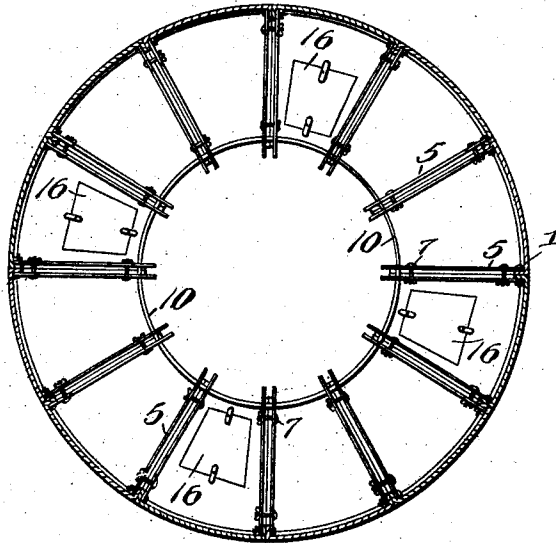


Fig. 3.

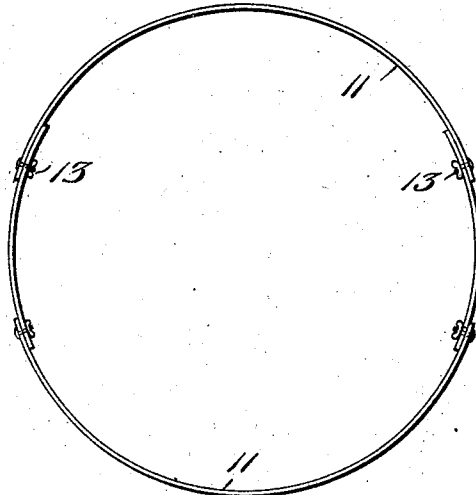


Fig. 4.

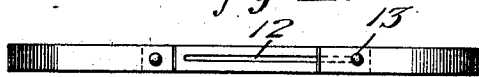
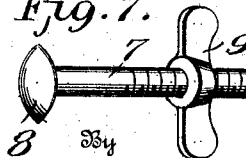


Fig. 7.



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UNITED STATES PATENT OFFICE.

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CISTERN-FORMER.

No. 850,667.

Specification of Letters Patent.

Patented April 16, 1907.

Application filed March 13, 1906. Serial No. 305,858.

To all whom it may concern:

Be it known that I, CHARLES A. MITCHELL, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented new and useful Improvements in Cistern-Formers, of which the following is a specification.

This invention relates to cistern-formers, the object of the invention being to provide a sectional or knockdown former around or about which the wall or walls of the cistern are adapted to be formed out of a suitable composition embodying cement, the construction of the former being such that it may be readily set up and knocked down or taken apart after the wall of the cistern has hardened sufficiently.

With the above and other objects in view, the nature of which will more fully appear as the description proceeds, the invention consists in the novel construction, combination, and arrangement of parts hereinafter more fully illustrated, described, and claimed.

In the accompanying drawings, Figure 1 is a diametrical longitudinal section through a cistern, showing the construction of the former and the arrangement and use of the same prior to its removal. Fig. 2 is a horizontal section through the former. Fig. 3 is a plan view of one of the adjustable rings or hoops used at the top and bottom of the former. Fig. 4 is a side elevation of the same. Fig. 5 is an enlarged sectional view of adjoining stave-sections, showing the means for coupling the same together. Fig. 6 is a sectional view of one of the stave-sections. Fig. 7 is a detail perspective view illustrative of the means for coupling the sections together.

The cistern-former contemplated in this invention may be described as composed of three main parts—a cylindrical central part 1, a dome-shaped top part 2, and an inverted frusto-conical lower part 3, all of said parts being joined together in a manner hereinafter described to form one continuous former around which the cement composition is introduced into the excavation for the cistern, as shown in Fig. 1.

Each of the parts 1, 2, and 3 is composed of a plurality of stave-sections, and in order to clearly understand the construction of the cistern-former as a whole I will proceed with the description of the lower frusto-conical portion 3. The said portion 3 is composed of the requisite number of stave-sections 4, each

of which is made tapering or wider at one end than the other and provided along its converging side edges with inwardly-projecting flanges 5, each of which is provided along its length and at suitable intervals with oblong holes 6. In setting up the section 3 of the cistern-former the flanges 5 are brought together, as shown in Fig. 5, and secured by means of bolts 7; one of the latter being illustrated in detail in Fig. 7 and comprising an oblong head 8 and a winged nut 9, the head 8 being adapted to be passed through the openings 6 in the flanges 5, after which the bolt is given a quarter-turn, which prevents said bolt from slipping out of the holes in the flanges. By then tightening the nut 9 the flanges are securely bound together.

At their lower ends the flanges are provided with slots 10, standing vertically and adapted to receive a bottom ring or hoop 11, which is shown in detail in Figs. 3 and 4, said hoop being composed of several sections which overlap each other, some of the sections being provided with longitudinal slots 12, while the other sections are provided with clamping-bolts 13, passing through the slots 12, thereby providing for adjusting the size of the hoop 11 to correspond with the size of the cistern at the top or bottom, as the case may be, and the number of stave-sections employed in connection therewith, according to the size of the completed cistern. By reference to Fig. 1 it will be seen that the hoop 11 enters the slots 12 of the flanges of all the stave-sections, and thus forms an additional brace for preventing the spreading of the former at the top and bottom, it being noted that a corresponding ring or hoop 11 is employed at the top or mouth of the cistern, where the flanges of the upper stave-sections forming the dome 2 are correspondingly slotted to receive said top ring or hoop, as shown in Fig. 1.

The intermediate cylindrical part 1 and the dome-shaped top part 2 are constructed in sections the same as the lower frusto-conical part 3 and bolted together in the same manner, as hereinabove described, the flanges of one part being adapted to overlap the flanges of the adjoining part, as shown in Fig. 5, and held together by means of coupling-bolts 7, the same as those previously described and illustrated in detail in Fig. 7.

The body portions of the stave-sections of the top part 2 extend downward outside of the corresponding body portions of the part

1, as shown at 14, and the body portions of the stave-sections of the part 2 extend downward outside of and overlap the upper edges of the stave-sections of the part 3, as shown at 15 in Fig. 1. Some of the stave-sections are provided with trap-doors 16 to enable the workmen to remove any earth or other matter which may accumulate upon the outside of the former after the same is set in place in the excavation formed therefor, the excavation being illustrated at 17 in Fig. 1.

It will be observed that the excavation 17 is made sufficiently larger than the external dimensions of the former to leave a surrounding space, which when the former has been put in place is filled with a composition embodying cement, which when hardened constitutes the wall 18 of the cistern. Bands or rings 19 may be embedded in the composition wall 18 to serve as braces or reinforcing elements therefor, if desired, and said bands or rings may be arranged at any suitable distance apart.

By means of the construction hereinabove described and by reason of the particular shape of the former as a whole excavating for the cistern is made easier, as the bulk of the excavating is accomplished before the formation of the narrowing or contracted portion of the hole, thereby saving considerable trouble and work and obviating the tendency of the walls of the excavation to cave in and also effecting a considerable saving in the amount of cement or composition used. Furthermore, on account of narrowing or reducing the lower portion of the cistern any substance or foreign matter getting into the cistern will be directed toward the center thereof, so that the cistern may be quickly cleaned out and all such matter removed. The particular shape of the cistern-walls renders the cistern self-bracing and less liable to break down and leak than the ordinary cylindrical cistern now in common use.

I claim—

1. A cistern-former embodying a cylindrical

body part, a dome-shaped top part, and a frusto-conical lower part, each of said parts being composed of a circular series of detachably-connected sections or staves, the sections of one part embracing and overlapping the sections of the adjoining next lower part or parts and all of the parts being provided with abutting flanges formed with oblong holes, bolts having oblong heads removably fitted to the holes in said flanges, and braces connecting said flanges.

2. A cistern-former embodying a cylindrical body part, a dome-shaped top part, and a frusto-conical bottom part, each of said parts being composed of a plurality of detachably-connected sections having abutting flanges extending from top to bottom and having slots, means for securing said flanges together, and annular braces or hoops fitted to the slots in all of said flanges of the stave-sections of the top and bottom parts of the former, substantially as described.

3. A cistern-former embodying a circular series of sections or staves having inwardly-projecting flanges extending from top to bottom thereof and provided at the top and bottom of the former with open slots, means for securing said flanges together, and hoops removably fitted in all of the slots at the top and bottom of the former, substantially as and for the purpose described.

4. A cistern-former embodying a circular series of sections or staves provided with inwardly-projecting flanges extending from top to bottom thereof and having slots in their upper and lower ends, means for securing said flanges together, and hoops removably fitted in all of said slots and made extensible in size, substantially as and for the purpose set forth.

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

CHARLES A. MITCHELL.

Witnesses:

SERAPH BAGE,

WM. B. SCHWARTZ.