No. 637,693. Patented Nov. 21, 1899.

A. BACA.

APPARATUS FOR CEMENTING WELLS.

(Application filed Apr. 8, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

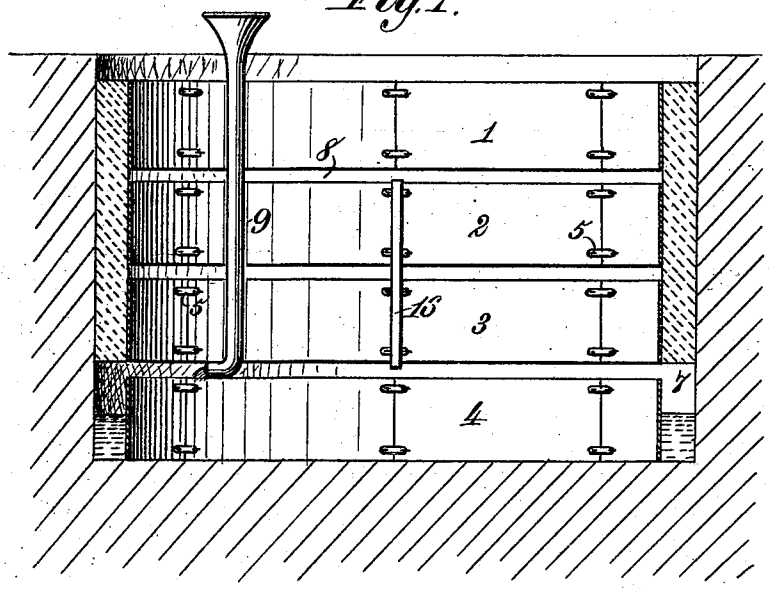
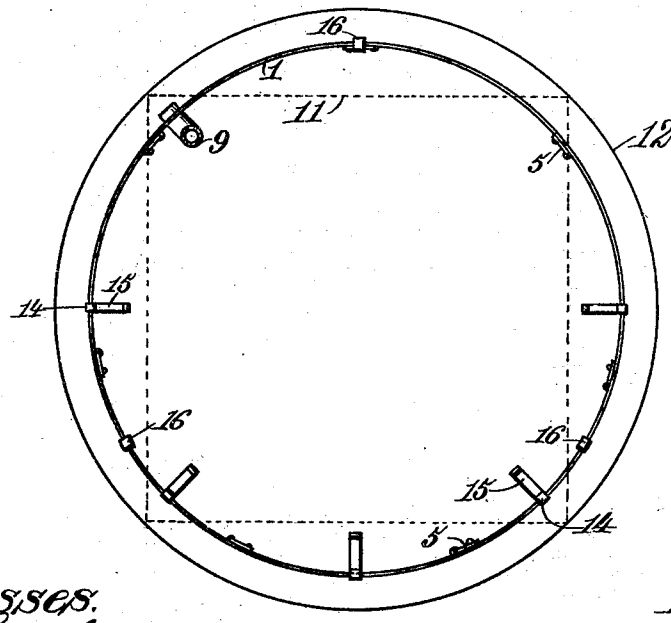


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

Fig. 3.

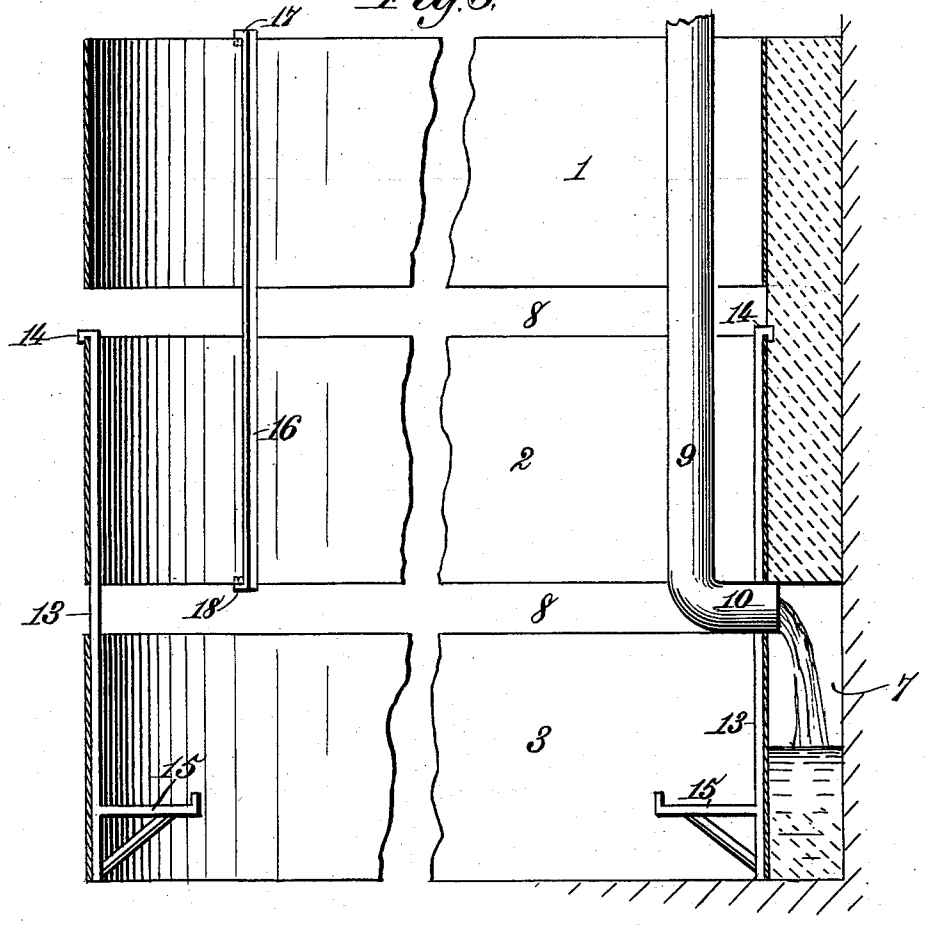
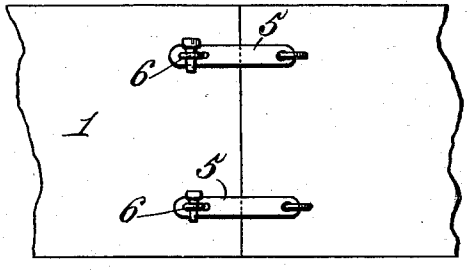


Fig. 4.



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UNITED STATES PATENT OFFICE.

AUGUST BACA, OF FAYETTEVILLE, TEXAS.

APPARATUS FOR CEMENTING WELLS.

SPECIFICATION forming part of Letters Patent No. 637,693, dated November 21, 1899.

Application filed April 8, 1899. Serial No. 712,287. (No model.)

To all whom it may concern:

Be it known that I, AUGUST BACA, a citizen of the United States, residing at Fayetteville, in the county of Fayette and State of Texas, have invented new and useful Improvements in Processes of and Apparatus for Cementing Wells, of which the following is a specification.

My invention relates to apparatus for cementing wells.

It is the object of my invention to provide means for cementing wells as the same are excavated or for cementing the walls of old wells in an efficacious, rapid, and economical manner.

I have illustrated my invention in the accompanying drawings, in which—

Figure 1 is a sectional view through a portion of a well, showing the method of procedure. Fig. 2 is a plan view of the invention as applied to cementing an old square well. Fig. 3 is a sectional view, enlarged, of the same; and Fig. 4 is a view in elevation of a portion of a mold, showing the fastening means.

The reference-numerals 1 2 3 4 indicate a series of circular molds, each of which is formed in six parts, detachably connected by means of hinge-hasps 5 and keepers 6, as shown in Fig. 4. These molds are about two and one-half feet high and may be made of any desired diameter. In proceeding according to my invention in making a new well a circular excavation is first made in the ground of the depth of the mold, but of considerably greater circumference, so as to leave an annular space 7 between the mold and the earth wall of the well. This space is then filled in with cement or preferably a compound formed of cement, sand, and crushed stone. After this filling has set or become sufficiently hard a further excavation is then made of the same circumference as the first, but about three feet in depth. A second mold (indicated by 2) is now inserted, resting on the bottom of the last excavation, owing to the depth of which excavation a space 8 is left between the two molds. Through this space the cement or filling compound is poured into the annular space surrounding the mold by means of a pipe 9, having a bent end 10 inserted in said space. The same process is continued in the further excavation and filling in around the molds, and as fast as the cement or compound has thoroughly hardened around a top mold it is removed and used at the bottom of the well. Before the molds are removed, however, the space 8 is first filled in by means of a trowel or the like. It will thus be seen that by means of my invention a cement well of any required size and depth can be readily made.

My invention is designed in its chief application, however, to re-forming and cementing wells which have already been dug, and as these wells are usually of rectangular shape I have illustrated this application of my invention to such form of well in Figs. 2 and 3. The reference-numeral 11 indicates the walls of an old square well, which are usually of wood, and which well it is desired to cement. In proceeding in this case I first make a circular excavation around the well with a radius equal to one-half the diagonal line of the original well or with a greater radius, if desired, said excavation being of the depth of one mold. The edge of this excavation is indicated by 12 in Fig. 2. The mold 1 is then inserted in place and the annular space surrounding it filled in, as previously described. A further excavation is then made and mold 2 placed in position and the annular space surrounding it filled in by means of the pipe 9. After the cement around the second mold has hardened I then employ a series of hangers 13, having hooked ends 14, which engage over the upper edge of the mold, and brackets 15 at their lower ends, by means of which a suitable platform (not shown) may be supported on said brackets for the workmen to stand on in the further excavation and cementing, the hangers 13 being of course lowered from one mold to another as the excavation proceeds. In order to brace the mold on which the hangers 13 may be supported, I provide a series of hangers 16 of a length to extend from the bottom of one mold to the top of the one next above it, and each hanger having a hooked end 17 to engage over the edge of a mold and an opposite end bent at right angles to the body of the hanger, as shown at 18, to engage beneath the bottom of the mold supporting the brackets and platform, as clearly shown in Fig. 3. The hangers 16 may also be used irrespective of the hangers 13 to support a lower mold from an

upper where the cement about the former has not sufficiently hardened to support it, as indicated in Fig. 1. The process above outlined is continued till the bottom of the well is reached, the hangers 13 and 16 being successively lowered as a new mold is secured in position.

It will thus be seen that according to my invention new cement wells may be made or old wells may be cemented in a simple, expeditious, and economical manner.

Having thus fully described my invention, what I claim as new is—

The herein-described apparatus for cementing wells comprising a series of molds supported one above the other, a series of hangers having opposite hooked ends engaging, respectively, over the top edge of one mold and the bottom edge of the mold next below it and brackets having hangers provided with hooked ends engaged over the top edge of said last-named mold, whereby said brackets are supported therefrom, substantially as described and for the purpose set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

his
AUGUST × BACA.
mark

Witnesses:
VACLAV PAZDRAL,
METHOD PAZDRAL.