

A. P. SCHNYDER.
SAND WELL CASING AND APPARATUS FOR SINKING THE SAME.
APPLICATION FILED MAR. 25, 1912.

1,038,973.

Patented Sept. 17, 1912.

Fig. 1.

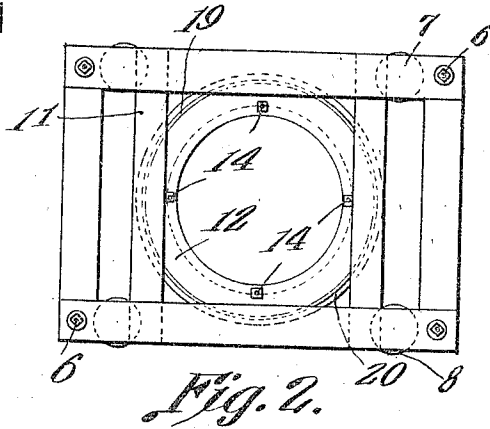
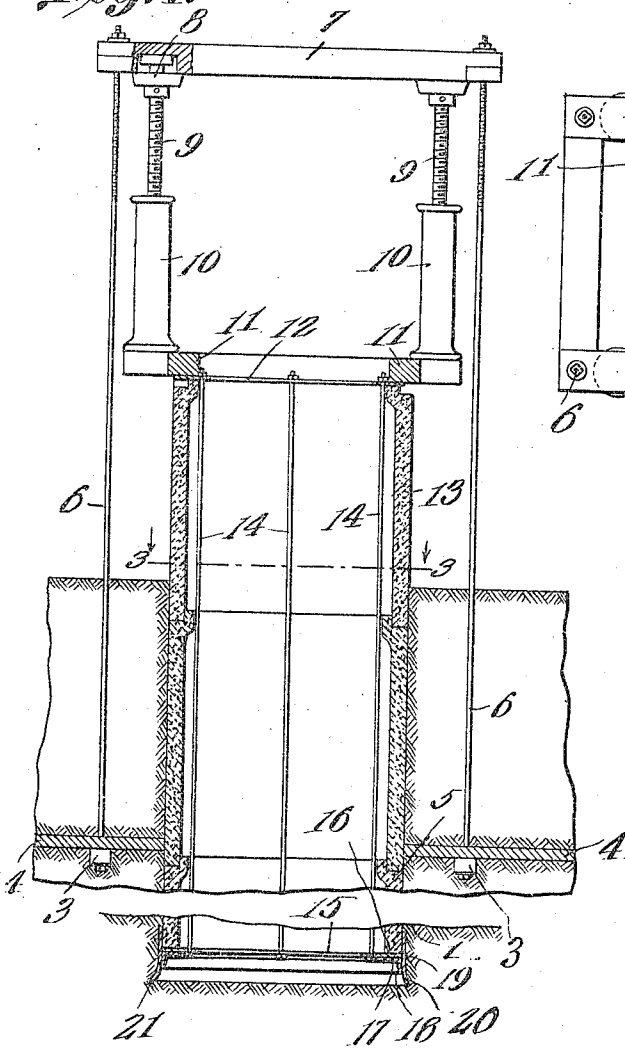


Fig. 4.

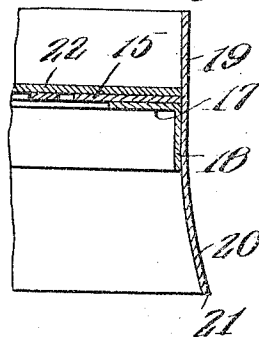
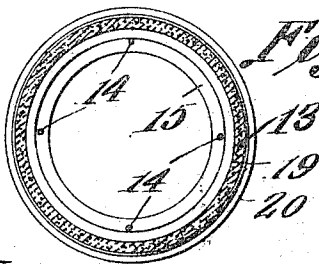


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

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SAND-WELL CASING AND APPARATUS FOR SINKING THE SAME.

1,038,973.

Specification of Letters Patent. Patented Sept. 17, 1912.

Application filed March 25, 1912. Serial No. 636,080.

To all whom it may concern:

Be it known that I, ADOLF P. SCHNYDER, a citizen of the United States, residing at Poag, in the county of Madison and State of Illinois, have invented a new and useful Sand-Well Casing and Apparatus for Sinking the Same, of which the following is a specification.

The present invention relates to improvements in a sand well casing and an apparatus for sinking or placing the same within the ground, the said casing being constructed of a plurality of porous sections, cylindrical in cross section, the lower section of which is provided with a cutting edge or annular cutter, while the sections are connected in stayed relation to provide a stiff column to be actuated by an apparatus, a portion of which is sunk within and held below the surface of the ground adjacent to the exterior of the casing to be sunk, and provided with means for forcing the column containing the cutter with the annular cutter downwardly within the ground, the cutter being left in the ground with the casing when the well casing has been sunk the desired depth.

In a former application which resulted in Patent No. 1,001,085 granted August 22, 1911, an outer metal casing was provided for cutting the desired excavation in the ground, and a porous casing was interposed therewithin, after which the metal casing was withdrawn, while in the present invention it is intended that a porous casing in the first place shall be driven or sunken similar to the metal casing as in the aforementioned patent, and be left in the ground to constitute the walls of the well.

It has been found by experimenting that the sections when properly braced longitudinally and held relatively together may be driven or sunken by a jack actuated pressure device so that the cutting edge thereof will be projected through the ground or body of sand to the desired water strata, and in cases where sections have to be added thereto, it is simply necessary to remove the sinking apparatus and attach to the upper end of the column the desired number of sections.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in

the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings—Figure 1 is a vertical transverse sectional view through the porous well casing showing the apparatus for driving the same. Fig. 2 is a top plan view thereof. Fig. 3 is a section on line 3—3 of Fig. 1. Fig. 4 is an enlarged detail sectional view illustrating the annular cutter and longitudinal brace securing device carried upon the lower end of the porous well casing.

Referring to the drawings, the numeral 1 designates the ground into which the well is to be sunk in putting the invention into practice, a pit being dug to the depth of four or five feet and in the bottom thereof are laid beams 3 upon which a base 4 is disposed. The ditch is then refilled with earth, the lowermost section 5 of the porous well casing being disposed within the pit prior to the filling of the earth therein so that the material removed from the pit will surround the lower section 5 of the well casing and be packed tightly thereabout and upon the base 4. By this means the base 4 is properly anchored so that the longitudinal rods 6 which are connected to the said base 4 and its braces 3 may extend upwardly above the surface of the ground and have their upper ends connected to the frame 7 to the underside of which at the desired corners thereof are connected the movable members 8 of the jack screws 9, the pivotal pin 10, of the respective jacks, being connected to a frame 11 which rests upon the annular ring or plate 12 resting upon the upper edge of the upper porous section 13 of the well casing. The ring or plate 12 is of sufficient width to project slightly within the bore of the tubing as viewed in Fig. 1, and has connected thereto and extending longitudinally downwardly therefrom within the bore of the sections of the well casing, a series of binding, retaining or tie rods 14, the lower ends of which are connected to the metal plate or disk 15 disposed to fit closely upon the lower rim 16 of the lower section 5 of the well casing. By this means the sections are held relatively to each other and form a rigid column. Carried by the ring or disk 15 of the lower section is a flanged ring 17

whose depending flange 18 is connected intermediate of the ends of the cylindrical band 19, whose lower end 20 forms an annular outwardly flaring cutter 21, the same being so disposed that when the jacks are operated to exert a force against the upper frame 7 and downwardly upon the frame 11, the sections of the well casing are driven downwardly, the cutter cutting into the soft ground or sand and thereby providing an annular space for the reception of the wall of the casing as the same is sunken.

The rods 14 prevent the sections from being displaced relatively to each other, in case of a settling of the surrounding or base sand. During the insertion of the casing, the sand at the cutter end within the casing is removed as the casing is sunk, so that by the time the casing is completely placed, no sand will be within the same. The lower ring 15, projecting annularly within the bore of the porous casing provides a means to receive a disk 22, which may be of metal or a porous material, and thus form a bottom for the casing to exclude sand that might enter from below the casing.

From the foregoing description taken in connection with the drawings, it is evident that by constructing a well casing of a series of hollow porous sections held relatively thereto, as to form a rigid column during the sinking operation, that the same may be driven with the apparatus herein shown and described, to the desired depth and in a similar manner to the metal casing as shown

in the above mentioned patent. In the present case, however, a porous lining constitutes the earth holding means and is left therein to constitute the porous walls of the cylindrical shaped well. This present invention also permits the leaving of the casing within the ground and does not necessitate the pulling of the metal lining from around a porous casing as in the patent aforementioned.

What is claimed is:

1. A well casing of the class described, composed of a plurality of porous cylindrical sections, a band secured to the lower section thereof, an annular cutter carried by said band and projecting below the sections, a ring mounted upon the upper section, and means for holding the sections in locked relation during the insertion thereof within the ground.

2. A well casing adapted to be sunk, comprising a plurality of porous tubular sections and a retaining ring at the lower end thereof, another ring at the upper end thereof, a cutter carried by the lower retaining ring, and a plurality of longitudinal stay rods detachably connected to both rings for holding the sections rigidly together.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ADOLF P. SCHNYDER.

Witnesses:

BEN WEBER;

CHARLES BRENDLE.