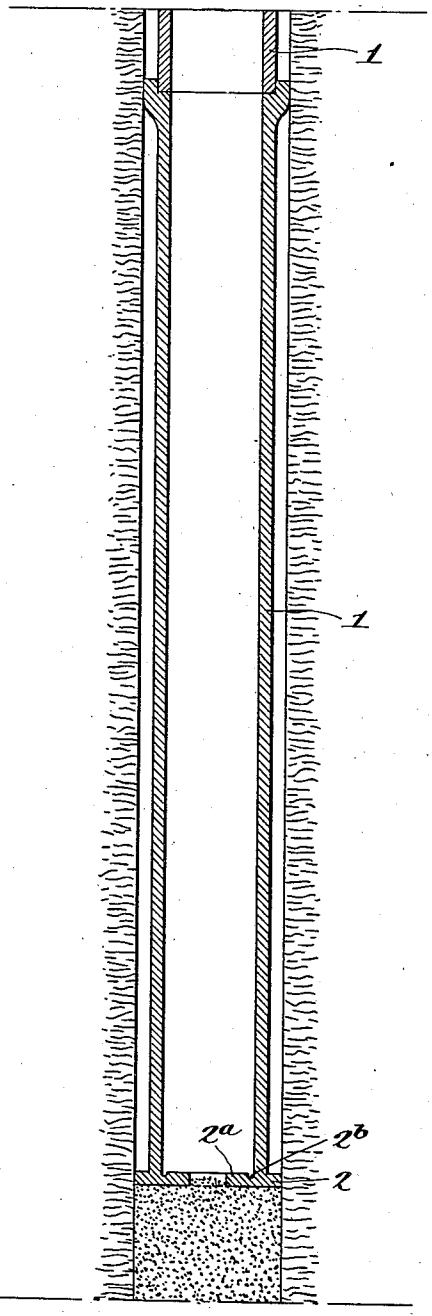
C. W. WHITNEY.

PROCESS OF PLACING CASING IN WELLS.

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1,189,516.

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Witness:

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PROCESS OF PLACING CASING IN WELLS.

1,189,516. Specification of Letters Patent. Patented July 4, 1916.

Application filed December 6, 1915. Serial No. 65,163.

To all whom it may concern:

Be it known that I, CHARLES W. WHITNEY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a Process of Placing Casing in Wells, of which the following is a specification.

It usually is necessary to provide deep wells with a casing in order to prevent the entrance of water, sand, gravel, shale, or other material at points between the top and bottom of the well. The most durable kind of well casing consists of sections of cast-iron pipe of suitable length.

It is often desirable to make deep wells of relatively large diameter, but the enormous weight of a long line of large cast-iron pipe, or heavy steel or wrought iron pipe, the danger to life and property in the event of breakage in lowering the pipe, and the necessity of securing the sections of pipe together by means of joints or couplings capable of resisting great tension, has made it necessary to case large-diameter deep wells with very thin wrought-iron or steel tubing. Such tubing is destroyed by corrosion in a comparatively few years, necessitating either the abandonment of the well or the replacement of the tubing. The latter, however, is often impossible and in every case expensive.

The object of this invention is to provide a safe method of lowering pipe or tubing into a well which will permit of the use of cast-iron pipe and will obviate the necessity of securing the sections together by means of joints capable of resisting tension.

The accompanying drawing is a sectional view illustrating the operation of placing a line of heavy pipe in a well.

At any stage in the construction of the well at which it is desired to introduce all or part of the casing into the well, I fill the well with sand, crushed-limestone screenings or other heavy granular material. A section of pipe 1 is then set upon the upper end of the column of sand or other filling material in the well, and sufficient filling material bailed or otherwise removed from within the pipe to cause the latter to sink until the upper end of the section is in a convenient position for the placing of another section of pipe thereon. After another section of pipe has been suitably connected to the upper end of the first section, more filling material is withdrawn from the well to permit the pipe sections to settle. Other sections are thus added and filling material withdrawn from the well until the lower end of the line of pipe has reached its final position.

It will be seen that the filling material is utilized to support the casing as the latter is being introduced into the well, and that it is not necessary to suspend the line of pipe by its upper end. Thus the joints in the casing are not under tension and may, if desired, be of such character that the sections may be readily pulled apart and lifted from the well if at any time it should be desirable to remove the casing.

If it be desirable to increase the area of the supporting surface at the lower end of the line of pipe, the lower end of the bottom section of pipe may be provided with a footing of any suitable form and size, as, for example, the footing 2 shown in the drawing. That portion, if any, of the footing which extends inwardly from the pipe may be removed after the casing has been lowered to final position and the sand removed, as by breaking off such annular inwardly projecting portion 2^a by means of the drill. If desired, the footing may be weakened as by forming a groove 2^b therein to facilitate the breaking off of the projecting portion.

Preferably, the footing 2 is made of such area that the line of pipe shall not at any stage settle by reason of its weight except when the filling material is removed.

The invention is not limited to use with cast-iron pipe, as wrought-iron, steel, cement, tile, wood or other pipe may be employed.

I claim as my invention:

1. The process of introducing a casing into a well consisting in drilling the well filling the well with filling material, placing the casing on the filling material, and removing the filling material through the casing.

2. The process of introducing a casing into a well consisting in drilling the well, filling the well with filling material, placing a section of casing on the column of filling material in the well, removing filling material until the section has settled to a desired extent, placing another section on the first mentioned section, removing filling material until the second section has settled to a desired extent, and thus contin-

uing until the first section has reached its final position.

3. The process of constructing a well, consisting in drilling the well, filling the well with filling material, placing on the filling material a casing having a footing which extends into the casing, removing the filling material through the casing to permit the casing to settle to its final position, and then removing that portion of the footing which extends into the casing.

In testimony whereof, I hereunto set my hand.

CHARLES W. WHITNEY.