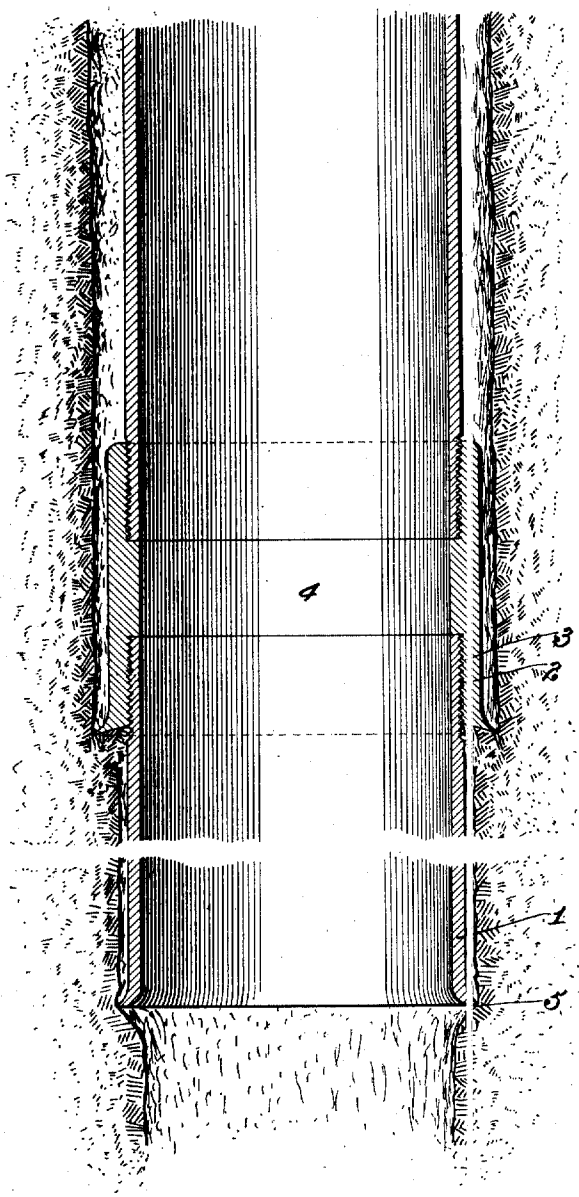
G. NYMANNING.

CASING SHOE.

APPLICATION FILED AUG. 17, 1916.

1,223,098.

Patented Apr. 17, 1917.



WITNESSES

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GEORGE NYMANNING, OF COALINGA, CALIFORNIA.

CASING-SHOE.

1,223,098. Specification of Letters Patent. Patented Apr. 17, 1917.

Application filed August 17, 1916. Serial No. 115,404.

To all whom it may concern:

Be it known that I, GEORGE NYMANNING, a citizen of the United States, and a resident of Coalinga, in the county of Fresno and State of California, have invented a new and Improved Casing-Shoe, of which the following is a full, clear, and exact description.

My invention relates to well-casing shoes and has reference more particularly to a shoe extension, an object of which extension is to prevent water from the strata above the shoe from filtering past the casing shoe and flooding the portion of the well below the casing.

A further object is to eliminate in many cases the necessity of cementing the portion of the well above the shoe to prevent water from the strata above the casing shoe from penetrating to the well below.

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 as herein fully described, illustrated and claimed.

In the accompanying drawing, forming part of the application, the figure illustrates a vertical section through a casing shoe embodying my invention.

In all oil wells it is necessary to shut off the water, and this is done by lowering a casing the shoe of which must be located below the strata carrying water. To prevent the water from passing or working its way below the shoe it is necessary to cement the well about the casing, an operation uncertain in its action, expensive, and delaying considerably the exploitation of the well.

To obviate the above defects, I provide a shoe extension secured to the shoe. The length of the extension will vary in accordance with the ground in which the same is to be used. The extension is in the shape of a tube 1 of the same diameter as the casing, the upper end of which preferably terminates with an exteriorly-threaded portion 2 which engages the interiorly-threaded portion 3 provided at the lower end of the shoe 4. The shoe 4 otherwise is a standard casing shoe. The lower end 5 of the extension 1 is formed into a cutting edge similar to the cutting edge of a standard shoe. The purpose of the edge is to facilitate the sinking of the extension into the well.

To facilitate the sinking of the extension, the well should be drilled with a drill of the size of the extension before the casing is sunk. The body of ground about the extension will form a seal below the edge of the shoe, and prevent the water from the strata above from filtering between the ground and the extension and entering the well. The portion of the ground below the edge of the shoe will not cave, being supported by the extension; and being protected by the edge of the shoe, it cannot be washed out.

An extension as described when sunk with the casing into the well will prevent water from entering the well below the extension and thus carrying therewith quantities of sand and earth that must be bailed out during the boring operation; consequently, such an extension will expedite the drilling of the well, thereby saving time and expense. In cases where cementation would otherwise be necessary it would be dispensed with by use of the extension, for the length of the extension may be made sufficient to form a seal thereabout below the shoe, which will prevent the water from filtering into the well below the extension. It will save the time necessary for cementing, the expense thereof and the delay caused by the necessity of waiting for the cement to set, which sometimes takes a month.

While I have described the principle of operation, together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative and that such changes may be made as are within the scope of the appended claims.

I claim:

1. A casing shoe having interior threads at both ends, and a tubular extension engaging the lower threaded end thereof, the inner diameter of said extension being substantially that of the casing, said extension having a cutting edge at the lower end, substantially as and for the purpose set forth.

2. A casing shoe, a tubular extension of a diameter equal to the casing threaded with one end thereof into the lower end of the shoe, said extension presenting at its lower end a cutting edge of a shape similar to the cutting edge of the shoe.

GEORGE NYMANNING.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."