

No. 698,020.

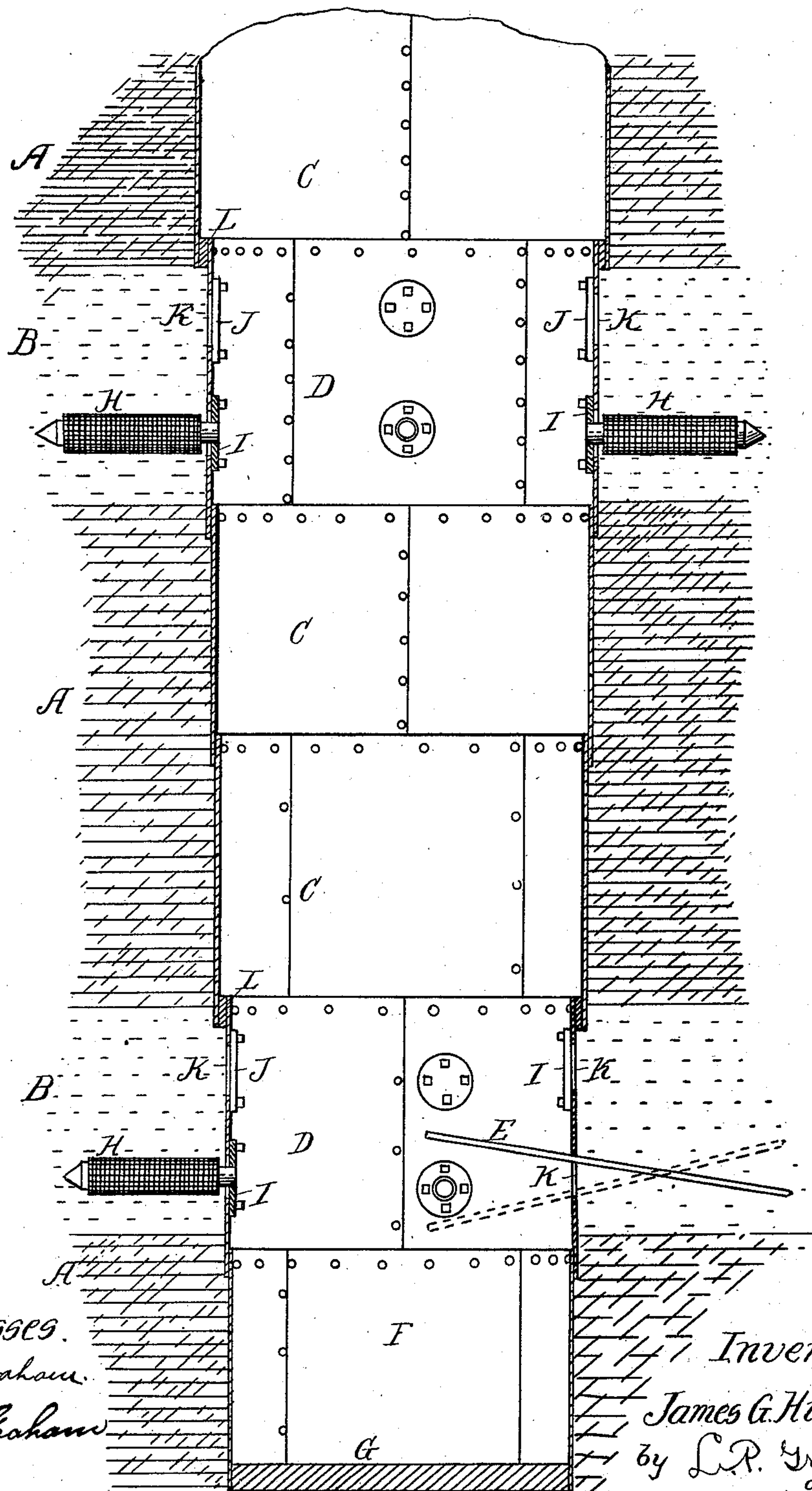
Patented Apr. 22, 1902.

J. G. HUFFMAN.

METHOD OF MAKING WELLS.

(Application filed Sept. 3, 1901.)

(No Model.)



UNITED STATES PATENT OFFICE.

JAMES G. HUFFMAN, OF PANA, ILLINOIS.

METHOD OF MAKING WELLS.

SPECIFICATION forming part of Letters Patent No. 698,020, dated April 22, 1902.

Application filed September 3, 1901. Serial No. 74,242. (No model.)

To all whom it may concern:

Be it known that I, JAMES G. HUFFMAN, of Pana, in the county of Christian and State of Illinois, have invented a certain new and useful Method of Making Wells, of which the following is a specification.

My improved method is as follows, reference being made to the drawing forming part of this specification and showing essential features of the invention in central vertical section.

Water-bearing strata are shown at B and waterless strata are shown at A. At C are shown sections of casing extending through the waterless and impervious strata, and at D are shown sections of casing extending through the water-bearing strata. At F is shown a section of casing extending below the lowest water-bearing stratum, and G represents a bottom of cement or other impervious substance.

The plain casing is built downward as the well is excavated, the operation being carried on in the customary or any desirable manner. The mode of procedure that I advise is to build up section after section out of sheet metal bent to form and secured together by patch-bolts and secure the different sections together in the same manner. The sections of tubular casing should taper the thickness of the metal used, so that an end of one section may slip into the section next adjoining. When the excavation for the well nears a water-bearing stratum, the precise location and thickness of such stratum are determined, and the imperforate casing is made to terminate above the stratum. Then a section of tubular casing slightly smaller in diameter than the upper imperforate casing is constructed outside the well and provided with a ring, as L, which fills the space between the lower end of the imperforate casing and the upper end of the specially-constructed section. The specially-constructed section has a number of strainer-holes K formed through its wall before it is put in place, and such strainer-holes are closed by plates J, which are bolted to the inner surface of the section. When the section D is completed and provided with closure-caps for the strainer-holes, such section is set in place in the lower end of the imperforate

casing and made to extend through the water-bearing stratum. Then the parts, including ring L, are bolted together, and imperforate sections of casing are built on downward, as hereinbefore described. If it is desired to draw water from more than one stratum, the imperforate sections are extended on downward until a second water-bearing stratum is reached, and another strainer-section D is introduced. This may be repeated as many times as there are veins to be utilized, and below the last vein the imperforate casing is extended downward sufficiently far to form a tank or receptacle into which the water may flow from the lowest vein when the water in the well above such lower vein is exhausted. In the drawing the limits of the paper necessitate showing a short lower section F; but this may be made as long as is desired. The bottom G of the casing is closed against passage of water by cement or the like, and the various joints of the casing are made water-tight, or substantially so. After the casing is completed closure-plates J are removed, strainers H of any desired construction are protruded into the water-bearing strata through holes K, and rings L are screwed onto the inner ends of the strainers and secured to the casing-wall in place of plates J. In the drawing only enough strainers and strainer-holes are shown to illustrate the principle of my invention; but the number that may be used is limited by nothing but the extent of the casing-section extending through the water-bearing stratum, and the length of each strainer may be as great as desired. One closure-plate after another is removed, strainer after strainer is inserted until the supply of water is sufficient to meet immediate demands, and the openings K not required are left closed to meet some possible demand of the future. In passing through the water-bearing strata the strainer-section is forced below the gravel and into the clay to a depth sufficient to prevent the head of water from forcing water under the strainer-section. The strainers penetrate the water-bearing strata horizontally to any desired extent. Their number is almost illimitable, even in one water-bearing stratum, and they may be used in a plurality of strata. The receptacle below the lowest vein provides for drainage of the vein

when the water is exhausted from the upper part of the casing, and it also acts as a supply-tank in which a considerable quantity of water may be held in reserve. The strainer
5 may be placed in the lower part of the vein of water where the flow is most free, and before inserting a strainer the loam and fine sand may be stirred up and permitted to run into the well, leaving coarser sand and gravel
10 to take its place and improve the flow of water to the strainer. The rod E (shown in the lower right-hand part of the drawing) may be used to stir up the loam, fine sand, and the like, so as to improve the conditions sur-
15 rounding the strainer to be inserted, and whenever the flow into the well decreases on account of an impervious accumulation around any of the strainers the strainers may be removed and the stirring operation re-
20 peated. In this instance the stirrer is represented as a simple rod; but it may be tubular, with perforations of a size to receive loam and fine sand, while excluding gravel, and in that case the stirrer would be nearly
25 as large in diameter as the openings through the casing and would act as a conveyer for the loam and fine sand entering through the perforations, or the stirrer-rod may have

fingers that open outward after the rod is protruded through the openings of the casing, thus increasing the stirring capabilities of the rod. 30

I claim—

1. The method of making wells which consists in excavating the well, forming a tubular impervious casing for the well as the excavating progresses, opening up holes in that part of the casing that passes through water-bearing strata, protruding strainers through the holes in the casing and securing the strain- 35
ers to the casing. 40

2. The method of making wells which consists in excavating the well, forming a tubular impervious casing for the well as the excavating progresses, opening up holes in that part of the casing that passes through water-bearing strata, stirring the strata adjacent to the holes, protruding strainers through the holes in the casing and securing the strain- 45
ers to the casing. 50

In testimony whereof I sign my name in the presence of two subscribing witnesses.

JAMES G. HUFFMAN.

Witnesses:

ROSA VOELCKER,
SAML. DILLEHUNT.