

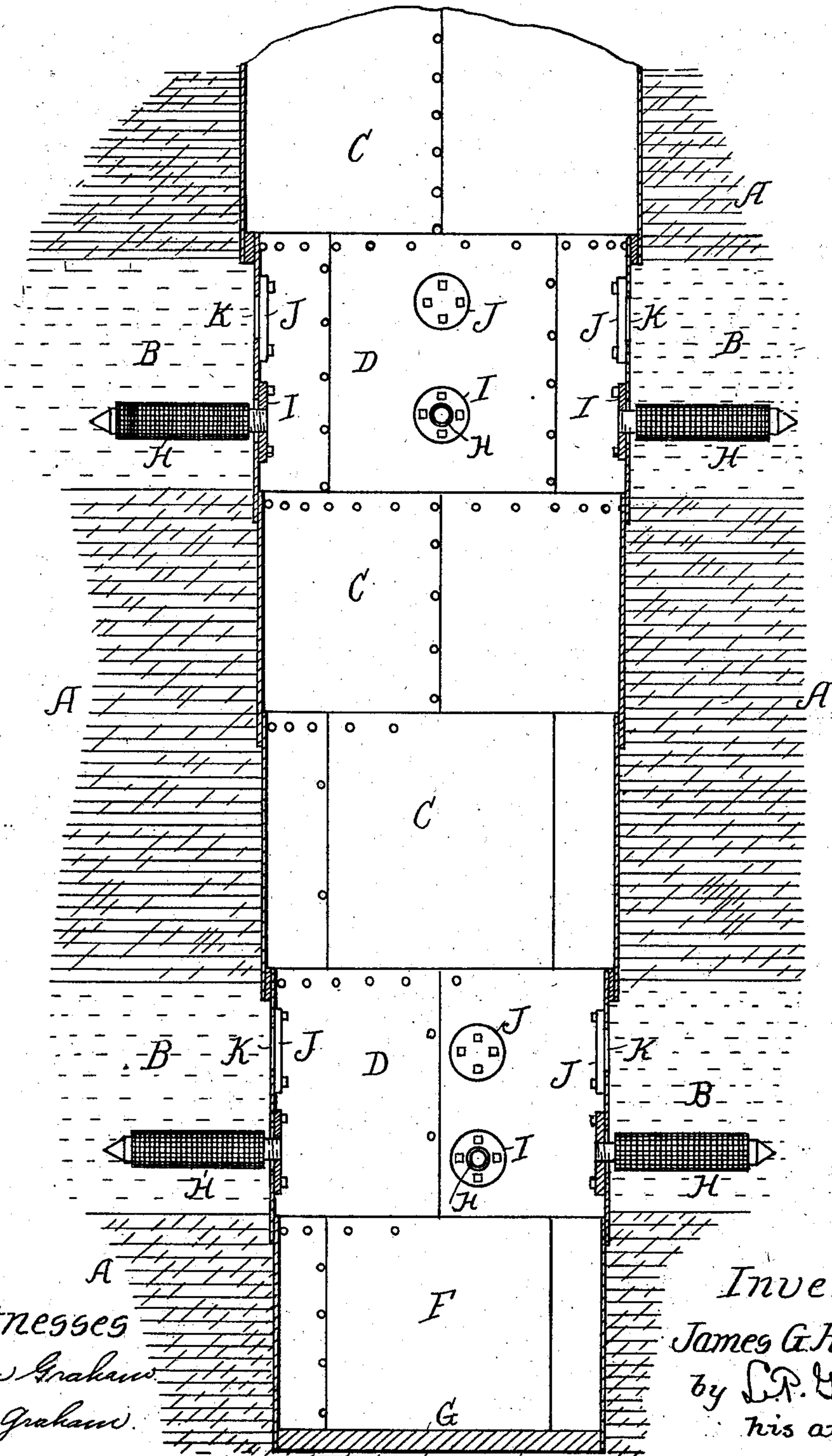
No. 702,006.

Patented June 10, 1902.

J. G. HUFFMAN.
WELL CASING AND STRAINER.

(Application filed Aug. 9, 1900.)

(No Model.)



Witnesses
Nora Graham
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UNITED STATES PATENT OFFICE.

JAMES G. HUFFMAN, OF PANA, ILLINOIS.

WELL-CASING AND STRAINER.

SPECIFICATION forming part of Letters Patent No. 702,006, dated June 10, 1902.

Application filed August 9, 1900. Serial No. 28,365. (No model.)

To all whom it may concern:

Be it known that I, JAMES G. HUFFMAN, of the city of Pana, county of Christian, and State of Illinois, have invented certain new and useful Improvements in Well-Casings and Strainers Therefor, of which the following is a specification.

This invention enables water to be drawn in large quantities from different veins and to be held in reserve below the veins or water-bearing strata. It is exemplified in the structure hereinafter described, and it is defined in the appended claims.

In the drawing forming part of this specification the lower end of a well is shown 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 immediately 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 E, 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 E, 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 necessitates 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 watertight, 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 I are screwed onto the inner ends of the strainers and secured to the casing-wall in place of plates J. In the drawings 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
5 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.
10 The strainer 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
15 sand and gravel to take its place and improve the flow of water to the strainer.

I claim—

1. A tubular well-casing having strainer-holes communicating horizontally with water-
20 bearing strata, closures for the holes, and strainers adapted to the holes when the closures therefor are removed, substantially as described.

2. A tubular well-casing having strainer-
25 holes communicating horizontally with water-bearing strata, closure-plates for the holes inside the casing, bolts to hold the closure-plates in place and strainers having securing-

rings, bolt-holes of which coincide with the bolt-holes of the closure-plates, substantially 30 as described.

3. In a tubular well-casing a diametrically-diminished section secured in place by an intervening ring, and horizontal strainer-tubes insertible through normally closed holes in 35 the diminished section, substantially as described.

4. The combination of a tubular well-casing having holes in its side walls and strainers of smaller diameter than the holes of the casing 40 inserted through such holes from the inside outward and rigidly secured therein.

5. The combination of a tubular well-casing having holes in its side walls, strainers smaller in diameter than the holes of the casing ex- 45 tended through such holes from the inside of the casing outward and flanges on the inner ends of the strainers secured to the inner surface of the casing.

In testimony whereof I sign my name in the 50 presence of two subscribing witnesses.

JAMES G. HUFFMAN.

Witnesses:

ROSA VOELCKER,

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