

(No Model.)

R. J. CHIPMAN.
ARTESIAN WELL.

No. 503,651.

Patented Aug. 22, 1893.

Fig 1

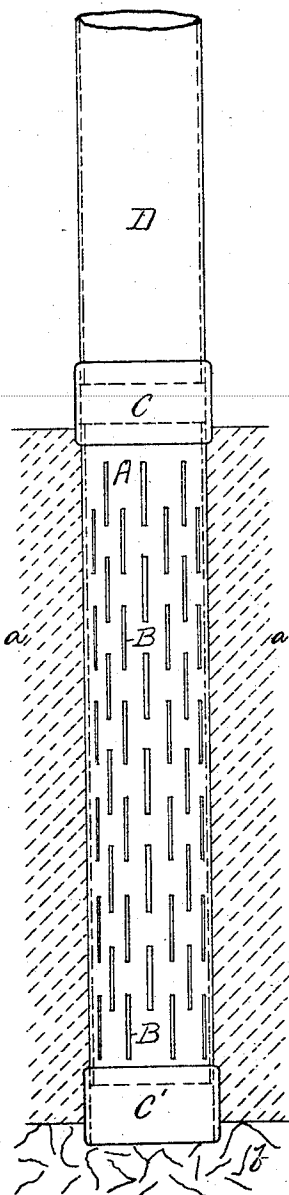


Fig 2

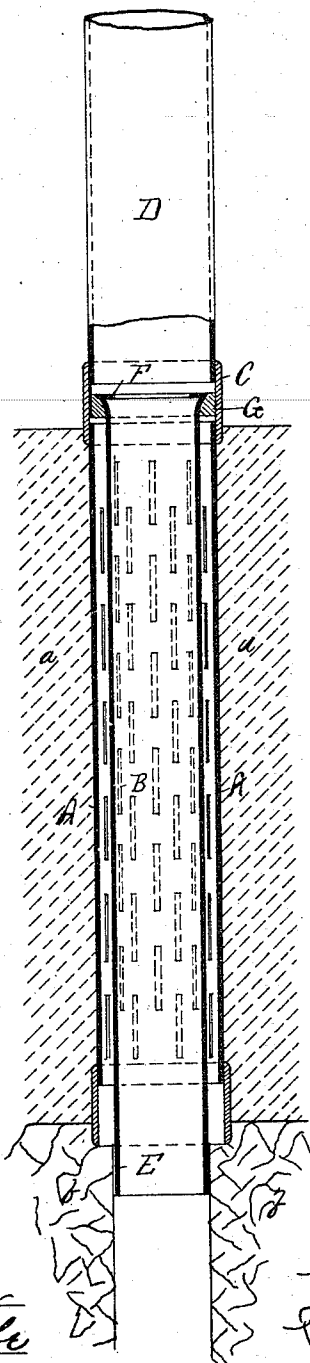
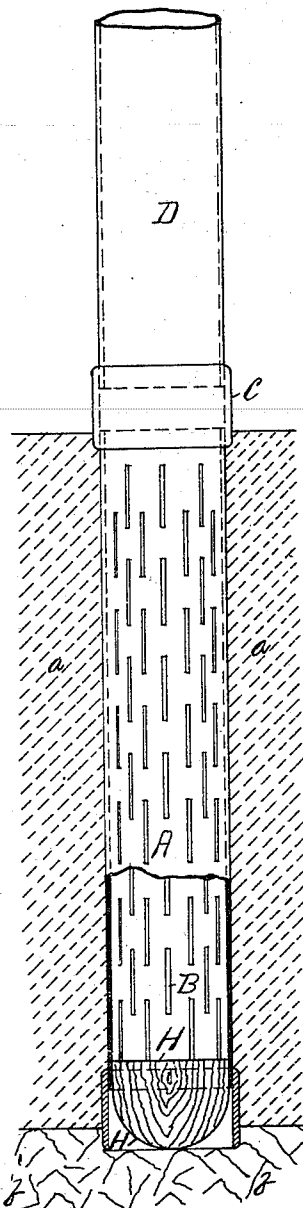


Fig 3



Witnesses
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John Hinchliffe

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UNITED STATES PATENT OFFICE.

ROBERT J. CHIPMAN, OF PATERSON, NEW JERSEY, ASSIGNOR OF ONE-HALF
TO CYRUS P. CRAMER, OF SAME PLACE.

ARTESIAN WELL.

SPECIFICATION forming part of Letters Patent No. 503,651, dated August 22, 1893.

Application filed March 23, 1893. Serial No. 467,257. (No model.)

To all whom it may concern:

Be it known that I, ROBERT J. CHIPMAN, of the city of Paterson, county of Passaic, and State of New Jersey, have invented a new and useful Improvement in Artesian Wells, of which the following is a specification.

In sinking Artesian wells water is sometimes obtained in a sufficient quantity from a gravel bed, or from a stratum of rock, and the object of my invention is to provide a means for obtaining and utilizing either or both of these water supplies when desired. I accomplish this by means of the tubing and plug hereinafter described. I am aware that in the sinking of Artesian wells that perforated pipes having openings or slots of various dimensions have been used and that numerous contrivances have been invented to prevent these openings from being stopped up or clogged by sand or small gravel. In the ordinary Artesian well sunk into a gravel bed, the bottom of the pipe is either drawn to a point or a conical metal plug is secured to the bottom thereof which makes it difficult to drill deeper if desired. This difficulty I overcome by the use of a wooden plug. Frequently in sinking Artesian wells an outside pipe is first driven and then a perforated pipe inserted and the first pipe withdrawn. The clogging or stopping of these perforations is sometimes prevented by means of a screen of some description. I do away with all screens by having my pipe slotted as hereinafter described and shown in the drawings and do away with the necessity of sinking an outside pipe. To obtain a supply of gravel bed water, when that is the only supply required, I drive my perforated pipe having the elongated slots arranged as hereinafter shown and described without the use of any outside pipe and then drive in the wooden plug hereinafter described and shown in the drawings. If a supply of rock water is wanted or a supply of both rock bed and gravel bed water either object is accomplished by drilling into the rock and lowering an inner pipe, not perforated, and of the construction hereinafter described and shown in the drawings.

In the accompanying drawings, which form a part of this specification, and in which simi-

lar letters of reference indicate like parts, Figure 1 is a side elevation showing two sections of pipe coupled together, one section of the pipe being provided with longitudinal slots. Fig. 2 is a side elevation of the same, part sectional, showing an inside pipe not perforated and an inside bevel shaped collar inside of the coupling which connects the longitudinally slotted section of pipe with the adjoining section of pipe. Fig. 3 is a part sectional side elevation showing the longitudinally slotted pipe provided at its lower end with a wooden plug.

In the drawings—A—is the longitudinally slotted pipe.

—B— represents the longitudinal slots.

—C— and —C'— are the couplings.

—D— is a section of pipe adjoining the slotted pipe.

—E— is the inside pipe.

—G— is a collar inside of the coupling —C—, in Fig. 2, and —H— is the wooden plug in the bottom of the longitudinally slotted pipe —A—.

In all the views the letter —a— represents a stratum or bed of gravel and the letter —b— a layer of rocks. The inner pipe —E— is formed bell mouthed at its upper end and rests upon the bevel shaped collar —G—, and is provided with an inwardly projecting flange —F—, all around its upper edge. The part —C'— may be a steel shoe or an ordinary coupling of any suitable material.

My method of sinking an Artesian well to obtain a supply of gravel bed water is to drive the longitudinally slotted pipe —A— into the earth, then connect another section of pipe —D— by a coupling —C—, drive that in and so on, keeping the earth out of said pipe, until the stratum of gravel is reached, when a sufficient supply of water can be obtained. I thus obtain a good supply of gravel-bed water without the expense and labor of first driving in an outside pipe, inserting the perforated pipe and then withdrawing the outside pipe. Provided I do not wish to go to rock, having obtained a sufficient supply of water in the gravel-bed, I insert and drive down to the bottom of the longitudinally slotted section of pipe, the wooden plug —H—, which plug will

swell by reason of the moisture and be held in position therein as shown in Fig. 3. In the ordinary Artesian well where a perforated pipe is now in use, it is next to impossible to drill in the rock if it is desired to obtain a supply of rock water, because of the sand which is admitted through the perforated pipe. In case I wish to go deeper and enter the rock to get rock water, I overcome the obstacle which is offered by the sand, as follows: With my tools I pierce the wooden plug, insert the inner pipe E which shuts out the water or sand which may possibly have entered through the elongated slots—B—into the slotted pipe—A—, and then drill down inside of the inner pipe—E—through the rock, as shown in Fig. 2. If I wish to obtain only a supply of rock water the inner pipe E is allowed to remain inside of the longitudinally slotted pipe—A—, the upper bell mouthed portion of said inner pipe E resting on and being supported by the bevel shaped collar—G—, shutting off the supply of gravel bed water as shown in Fig. 2. If however I wish to obtain a supply of both gravel-bed and rock water I drop inside of my pipe a tool provided for that purpose which entering the inner pipe E engages the inwardly projecting flange—F—on the upper end of said inner pipe E and I lift said inner pipe E clear out of the well altogether. Then I will have a supply of water from the hole drilled in the rock as well as a supply from the gravel-bed through my longitudinally slotted pipe—A—. It is obvious therefore that I can insert a wooden plug into my slotted pipe at any stage of the work in order to test or ascertain the amount of water I can obtain; and if the supply is not sufficient I can pierce and shiver my wooden plug and go on sinking my pipe until I reach a stratum of rock as shown in the drawings. When my pipe is all driven any ordinary pipe may be attached. With the elongated slot arranged

as shown it is next to impossible for the water to be shut off by means of sand or gravel. 45

With this description of my invention, what I desire to secure by Letters Patent is—

1. The combination of a longitudinally slotted pipe, no two elongated slots adjoining each other throughout their whole length, and a wooden plug at the bottom of said longitudinally slotted section of pipe, constructed substantially as shown and set forth and for the purpose specified. 50

2. The combination of a metal pipe provided with longitudinal slots, no two slots adjoining each other throughout their entire length, an adjoining section of pipe, a coupling for connecting said slotted pipe with said adjoining section of pipe, a collar inside of said coupling and between the adjoining sections of pipe, said collar being bevel shaped and an inside metal pipe made bell mouthed at its upper end and provided with an inwardly projecting flange, constructed substantially as and for the purposes specified. 65

3. The combination of a metal pipe provided with longitudinal slots, no two slots adjoining throughout their entire length, an adjoining section of pipe, a coupling for connecting said slotted pipe with said adjoining section of pipe, a collar inside of said coupling and between the said adjoining sections of pipe, said collar being bevel shaped, and an inside metal pipe made bell mouthed at its upper end, adapted to rest upon and be supported by said bevel shaped collar, and provided with an inwardly projecting flange, and a wooden plug at bottom of slotted pipe, all constructed substantially as shown and set forth and for the purpose specified. 75 80

ROBERT J. CHIPMAN.

Witnesses:

EUGENE A. MINET,
WM. M. DREW.