

May 19, 1964

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3,133,595

PRESANDED WELLPOINTS

Filed April 20, 1961

2 Sheets-Sheet 1

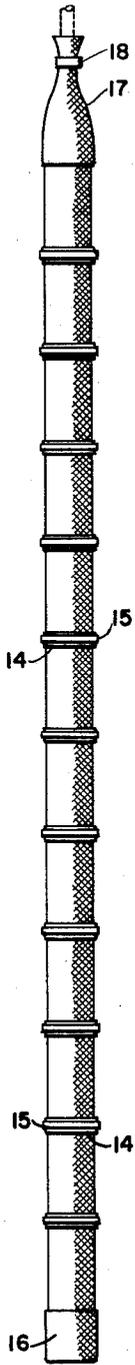


FIG. 1.

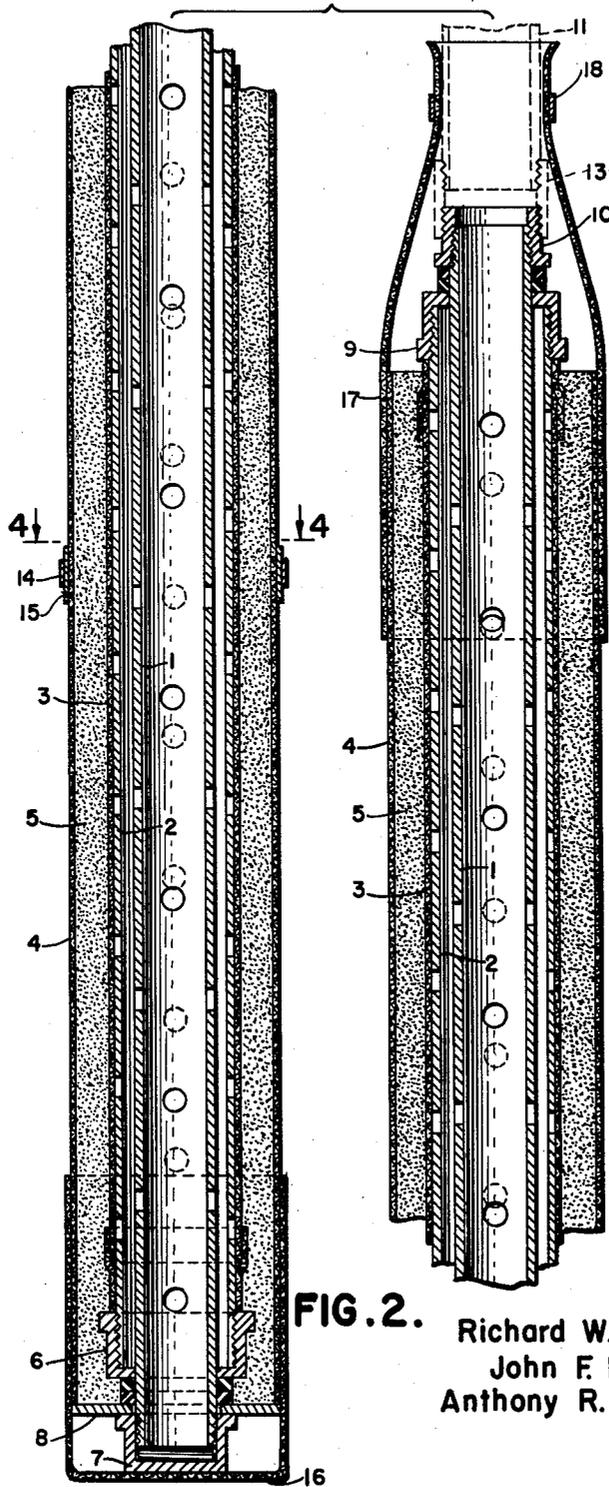


FIG. 2.

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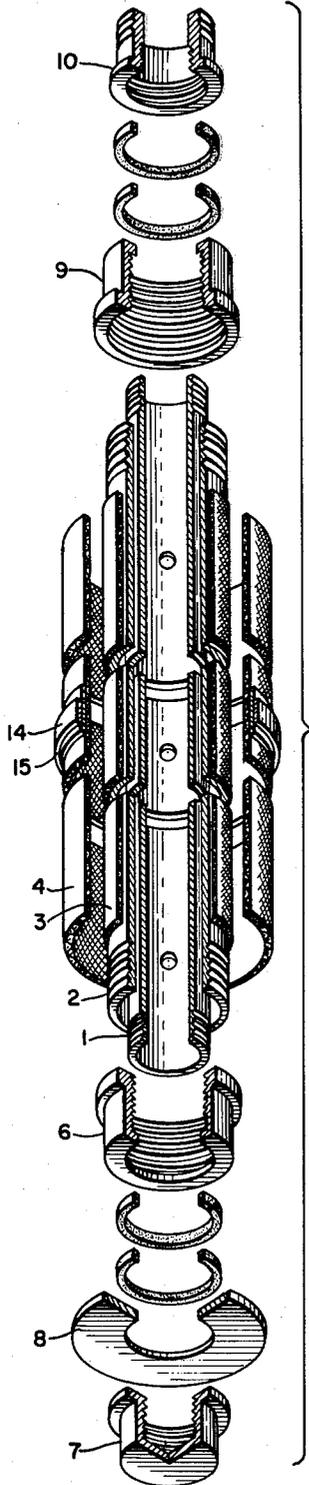


FIG. 3.

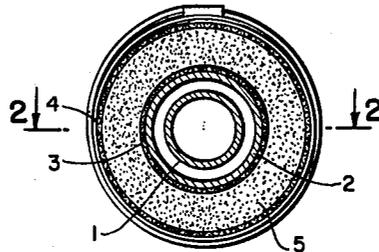


FIG. 4.

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3,133,595

PRESANDED WELLPOINTS

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Filed Apr. 20, 1961, Ser. No. 104,267

2 Claims. (Cl. 166-223)

The invention relates to wellpoints for use in apparatus for draining water containing soil by suction through a riser pipe connected to the upper end of the wellpoint and extending to the surface of the ground.

The object is to provide a wellpoint having inner and outer tubular concentric perforated pipes, and exteriorly thereof inner and outer fine mesh and coarse mesh tubular screens spaced apart from each other by a vacant space, said screens being concentric with each other and with said pipes, and a filling of granular filtering material in the vacant space between said screens.

Another object is to provide such a wellpoint in which the inner pipe is longer than and has its upper and lower ends extending beyond those of the outer pipe, said inner pipe having means connected thereto and carried thereby for holding the wellpoint assembly together.

Other objects and advantages will appear hereinafter or will be obvious.

The invention consists in the novel construction and combinations of parts hereinafter set forth in the claims.

In the accompanying drawings:

FIG. 1 is a side view;

FIG. 2 is a vertical sectional view taken along line 2-2 of FIG. 4 showing the top and bottom portions;

FIG. 3 is an exploded view partially in section;

FIG. 4 is taken along line 4-4 of FIG. 2.

In the drawings 1 and 2 designate inner and outer perforated tubular concentric pipes spaced apart by a narrow space, and 3 and 4 tubular fine mesh and coarse mesh screens located exteriorly of said pipes and concentric with each other and with said pipes spaced apart by a wide space, and 5 is a filling of granular filtering material such as sand located in the vacant wide space between said screens, said inner screen surrounding and contacting said outer pipe.

Said inner pipe 1 is longer than and has its upper and lower ends extending beyond those of said outer pipe, means comprising upper and lower caps 6 and 7 threaded upon said inner and outer pipes being provided for closing the lower ends thereof, a washer 8 being located between said caps for closing the lower end of the annular space between said screens. A cap 9 is threaded upon the upper end of said outer pipe for closing the upper end of the annular space between said pipes, a bushing or collar 10 threaded upon the upper end of said inner pipe being adapted for connection with the lower end of a riser pipe 11 extending upwardly to the surface of the ground through the medium of a threaded nipple 13.

14 designates annular reinforcing bands surrounding said outer screen and spaced apart from each other longitudinally thereof to provide strength against rupture in case the outer screen is made of flexible material and 15 designates elastic restraining bands surrounding the bands 14 to provide automatic clamping means should rupture of the flexible outer screen take place.

16 designates a reinforcing boot or shoe for the lower end of the wellpoint for protection in handling and shipping. 17 designates an upper tubular reinforcing hood fitting over the upper end of the outer screen 4, converging upwardly, adapted for engagement over the lower end of the riser pipe and closing the upper end of said wide space.

In installation, a hole is punched in the ground with

the holepuncher disclosed in application Serial No. 834,435 filed August 18, 1959, now Patent No. 3,015,365, the upper end of the holepuncher shank is opened and the wellpoint dropped therethrough to the bottom thereof, after which the holepuncher is withdrawn, leaving the wellpoint in place at the bottom of the hole.

The said filter permits ground water to move there-through while preventing soil from moving into the inner pipe of the wellpoint and thence upwardly into the pumping mechanism.

This wellpoint is adapted for use in any soil. It is particularly adapted for use in stratified soils wherein a filler of coarse clean sand is necessary to tap the water above impervious layers along which layers the ground water tends to seep or flow horizontally until the wellpoint is reached.

The right is reserved to modifications coming within the scope of the claims.

We claim:

1. A wellpoint, comprising inner and outer concentric perforated pipes spaced apart by a narrow space, inner and outer concentric tubular screens surrounding said pipes spaced apart by a wide space, the inner of said screens being in contact with the outer of said pipes, a filling of granular filtering material in said wide space, adjacent annular reinforcing and elastic restraining bands surrounding said outer screen to strengthen it against rupture and correct any such rupture, said inner pipe being longer than and having its upper and lower ends extending beyond those of said outer pipe, lower caps threaded upon the lower ends of said inner and outer pipes for closing the lower ends thereof, an upper cap threaded upon the upper end of said outer pipe for closing the upper end of said narrow space, an upper collar threaded upon the upper end of said inner pipe adapted for connection with a riser pipe extending to the surface of the ground, an annular washer located between said lower caps for closing the lower end of said wide space, and an upper tubular reinforcing hood fitting over the upper end of said outer screen, converging upwardly, adapted for engagement over said riser pipe, and closing the upper end of said wide space.

2. A wellpoint, comprising inner and outer concentric perforated pipes, spaced apart by a narrow space, inner and outer concentric tubular screens surrounding said pipes, spaced apart by a wide space, the inner of said screens being in contact with the outer of said pipes, a filling of granular filtering material in said wide space, said inner pipe being longer than and having its upper and lower ends extending beyond those of said outer pipe, lower caps threaded upon the lower ends of said inner and outer pipes for closing the lower ends thereof, an upper cap threaded upon the upper end of said outer pipe for closing the upper end of said narrow space, an annular washer located between said lower caps for closing the lower end of said wide space, an upper collar threaded upon the upper end of said inner pipe adapted for connection with a riser pipe extending to the surface of the ground, and a tubular hood fitting over the upper end of said outer screen, converging upwardly, adapted for engagement over the lower end of said riser pipe and closing the upper end of said wide space.

References Cited in the file of this patent

UNITED STATES PATENTS

Table with 2 columns: Reference Number and Date. Includes entries for Dean (June 5, 1877), Brown (Apr. 21, 1868), Rodrigo (Nov. 13, 1923), Records (Feb. 26, 1935), and Moehrl (Nov. 15, 1949).