H. R. DECKER.

WELL SCREEN.

APPLICATION FILED JUNE 7, 1909.

975,333. **Patented Nov. 8, 1910.**

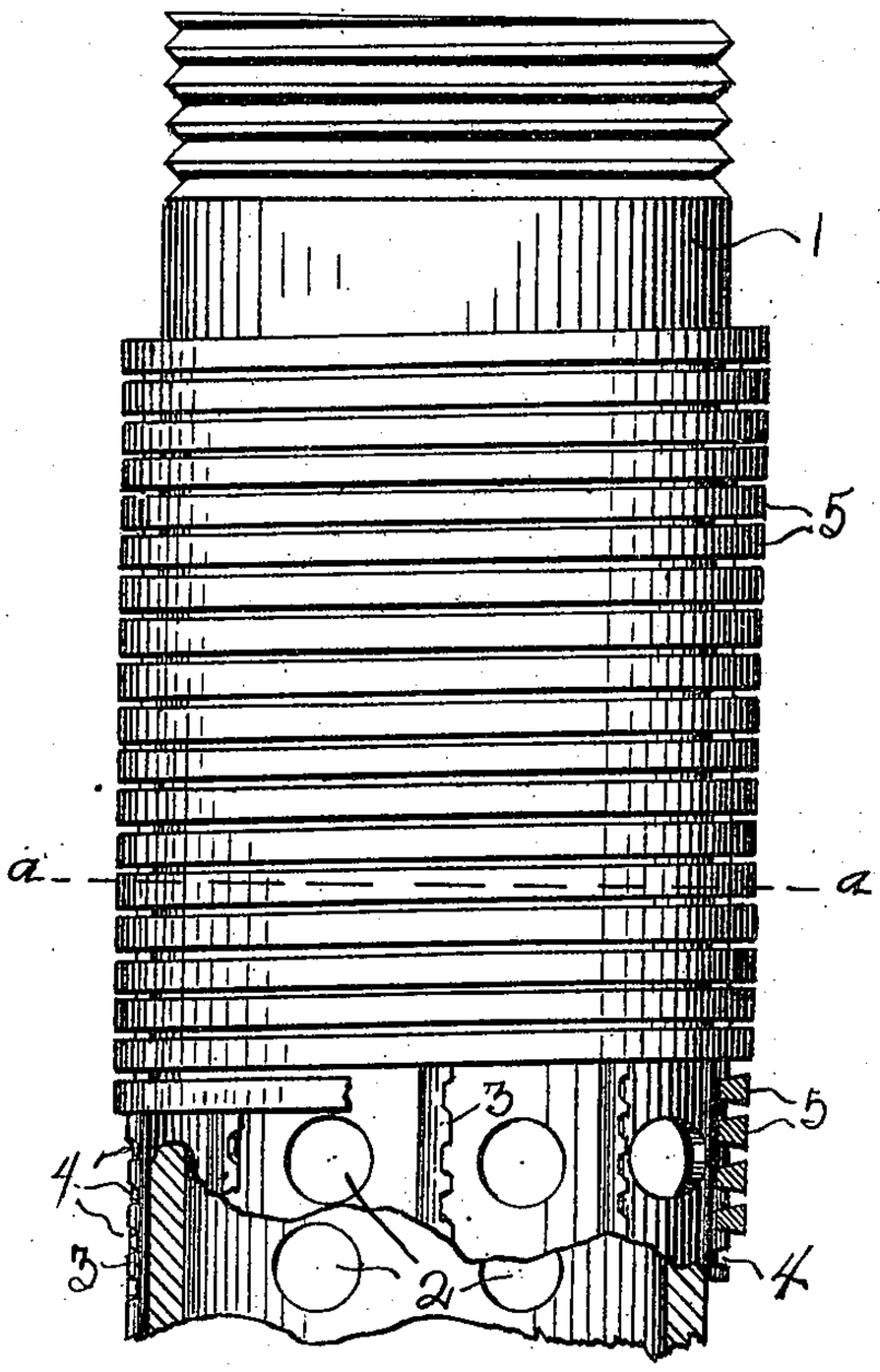

Fig. 1.

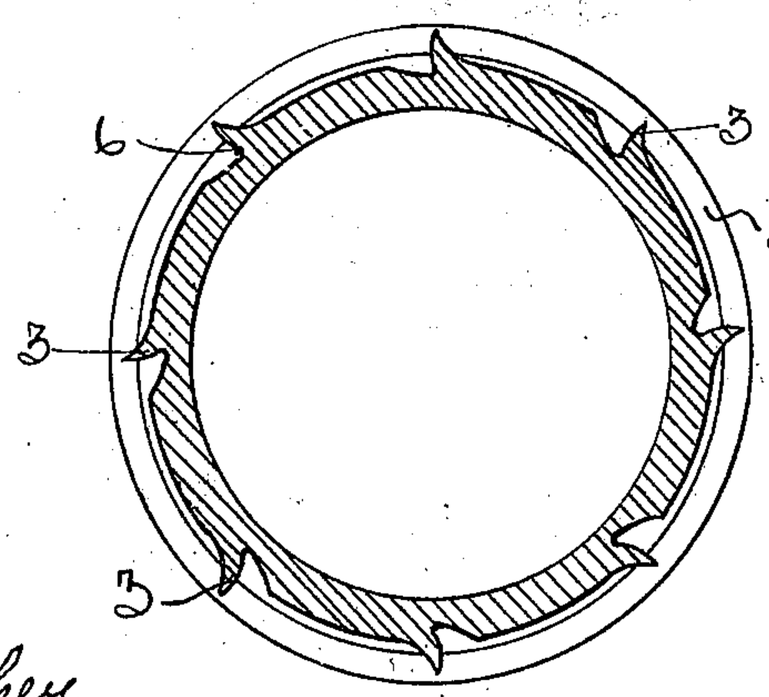

Fig. 2.

WITNESSES:

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WELL-SCREEN.

975,333. Specification of Letters Patent. Patented Nov. 8, 1910.

Application filed June 7, 1909. Serial No. 500,481.

To all whom it may concern:

Be it known that I, HARRY R. DECKER, a citizen of the United States, residing at Houston, in the county of Harris and State of Texas, have invented certain new and useful Improvements in Well-Screens, of which the following is a specification.

My invention relates to new and useful improvements in well screens.

The object of the invention is to provide a screen that will, in a feasible and practical manner, prevent the entrance of sand, gravel or other foreign matter into the casing, that will give the greatest possible screen surface relative to the size of the casing and the number of holes therein, and one that will insure long continued usage without the danger of breakage or disarrangement of the strainer wire.

With the above and other objects in view, my invention has particular relation to certain novel features of construction and arrangement of parts, an example of which is given in this specification, and illustrated in the accompanying drawings, wherein:—

Figure 1 is a side elevation of a portion of the screen, a part of the wire covering being omitted to show the perforated pipe beneath. Fig. 2 is a transverse section on the line *a*—*a* of Fig. 1 showing, in detail, the burs or ribs which are elevated from the body portion of the strainer pipe, for the purpose of supporting the strainer wires.

Referring, now, more particularly to the drawings wherein like numerals of reference designate similar parts in each of the figures, the numeral 1 refers to a piece of pipe of the ordinary form, which is provided with a plurality of perforations 2 through which the fluid can pass. In practice, the pipe is placed in the ground after the manner of the tube of the ordinary oil or water well, and fluid percolates or flows in through the perforations 2 from the surrounding fluid reservoir.

In order to prevent the inflowing fluid from carrying in dirt and sand, it is necessary to provide a suitable filtering or straining device which will arrest the movement of the sand and other foreign matter, before it enters the pipe, and still will not interfere, to any serious extent, with the passage of fluids, such as water, oil, or gas.

In order to provide a strainer which will accomplish this purpose, I have raised longitudinal burs or ribs 3, from the body of pipe 1. Any desired number of said ribs may be raised, to any desired elevation, but it will usually be found desirable to provide a number of them about one inch apart around the pipe. These ribs are integral with, and a portion of, the body of pipe 1, and are raised therefrom by means of a cutting tool, or any other suitable instrument. These ribs are, substantially, triangular, in cross section although the invention is not to be limited to this precise contour. The object sought being to present a thin edge to the strainer, thus to interfere, as little as possible, with the passage of liquid into the pipe. By raising these ribs from the pipe body a plurality of under cut grooves 6, are provided, which extend longitudinally of the pipe under said ribs along which the liquid may freely flow and this more readily, and constantly reach the perforations 2 through which it must enter the pipe. And further in consequence of the undercut grooves it will be found permissible to wind the strainer extremely close to the surface of the pipe without affecting its efficiency and thereby affording a rigidity of the strainer surface as is possessed by no other ribbed strainer.

The outer or sharp edge of the ribs 3, is provided with notches 4 and the notches of the successive burs or ribs are so disposed, relative to each other, as to form a spiral groove which is engaged by the strainer 5, hereinafter described. The strainer 5, to which reference has been made, is constructed from a length of wire which is seated in the notches 4 and the whirls of which are a suitable distance apart, and so disposed, as while permitting free passage of the liquid to portion 2 of pipe 1, excludes the entrance of sand, gravel, etc. As shown in Fig. 1, the strainer wire is triangular in cross section, but any shaped wire may be used as is desired. The terminals of the wire are secured in any preferred manner to the pipe as by being soldered.

The structure of this invention, while simple and efficient, will be found to be very strong and durable, as well as rigid, by reason of the fact that no portion of the pipe body is removed and thus the raising of the burs does not weaken the same to any perceptible degree, and yet facilitates the intake of the strainer to the greatest possible extent without detracting from the two prime

virtues of the screen, to wit:—strength of structure and rigidity of strainer surface. The fact that the burs, or ribs, are integral with the pipe body, also insures effectually against the disarrangement of the strainer wires.

What I claim is:—

1. A well screen comprising a perforated body, a plurality of ribs or spacers raised therefrom and integral therewith, said body being provided with longitudinal under-cut grooves adjacent to said ribs, and a strainer held in place by said ribs.

2. A well screen comprising a perforated pipe body, a plurality of edged ribs disposed exteriorly thereof, and integral therewith, and having their outer edges notched a strainer held in place by the said notches, said ribs being so raised from said pipe body by displacement as to provide longitudinal grooves along said body by the side of said ribs.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HARRY R. DECKER.

In the presence of—
WM. A. CATHEY,
C. DODSON.