

C. G. SMITH.
 STRAINER FOR DRIVEN WELLS.
 APPLICATION FILED JULY 20, 1908.

971,156.

Patented Sept. 27, 1910.

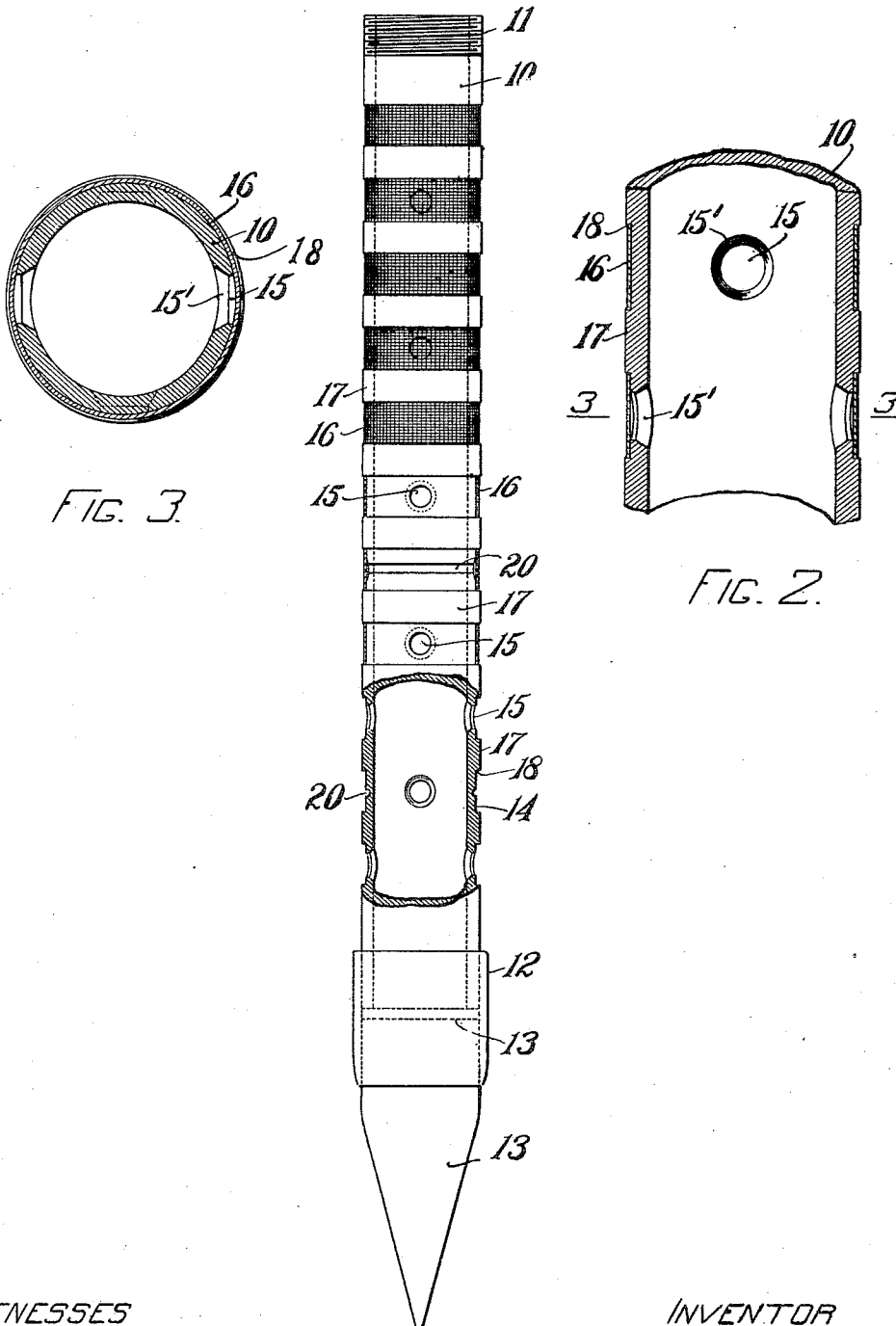


FIG. 3.

FIG. 2.

FIG. 1.

WITNESSES

Anna D. Lindley,
 Joseph T. Brown.

INVENTOR
 CHARLES G. SMITH
 BY HIS ATTORNEYS

Mitchell, Chadwick & Kent

UNITED STATES PATENT OFFICE.

CHARLES G. SMITH, OF SOMERVILLE, MASSACHUSETTS.

STRAINER FOR DRIVEN WELLS.

971,156.

Specification of Letters Patent. Patented Sept. 27, 1910.

Application filed July 20, 1908. Serial No. 444,312.

To all whom it may concern:

Be it known that I, CHARLES G. SMITH, a citizen of the United States, residing at 61 Marshall street, Somerville, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Strainers for Driven Wells, of which the following is a specification.

This invention relates to improvements in strainers for driven wells.

More particularly it relates to strainers such as are used at the admission holes for water at the bottom of an Artesian or driven well. A strainer of this sort, upon which the present invention is an improvement is shown in the patent issued to Benjamin F. Smith and myself jointly, on May 19, 1896, No. 560,441. In a strainer as represented in that patent, the wire gauze or netting which constitutes the strainer is exposed to abrasion and rupture by contact with rocks, stones and earth as the pipe is driven downward; the holes through the pipe for admission of water are liable to become plugged with rust or sediment; and any sedimentary matter which enters the strainer is liable to work its way downward through the spiral to the bottom, where it collects and gradually clogs one hole after another from the bottom upward.

It is one of the objects of the present invention to avoid these objections. This is done by the means hereinafter described, one embodiment of which is illustrated in the accompanying drawings in which—

Figure 1 represents a section of pipe having the strainer applied thereto, said figure representing in its upper portion a complete pipe and strainer; below which is a portion with the pipe complete but with the strainer in medial vertical section; below which is a portion with the strainer entirely removed and the pipe represented in vertical medial section; below which is still another portion representing the point of the pipe in elevation; Fig. 2 is an elevation of a portion of the pipe and strainer in vertical medial section on a larger scale; and Fig. 3 is a plan represented in section on line 3—3 of Fig. 2.

Referring to the drawings 10 represents a section of pipe preferably of galvanized iron, and preferably having screw threads at each end, these being seen at the top end at 11 and being concealed from view at the bottom where the pipe enters the coupling 12. Said coupling furnishes means for connecting the

point 13 to the lower end of the pipe, said point being screwed into the coupling and being formed in any suitable or customary manner for facilitating the progress of the pipe downward into the earth when driven from above. As many sections of pipe with strainer as desired may be added above that here shown.

The exterior of the pipe is formed of a considerable number of depressed channels or grooves 14. Holes 15 through the pipe are located in these channels 14. These channels pass cylindrically around the pipe, and in each of them is a ribbon 16 of wire gauze, netting or perforated sheet metal, preferably of brass or other non-corrosive material. The depth of the channels 14 is such that when the ribbons 16 are wrapped smoothly around the pipe therein, the exterior of the pipe will be flush with or preferably will project a little beyond the outside of the ribbon.

In the drawing, the portions of the pipe intervening between the channels 14 are marked 17 and it will be seen that the diameter of these is slightly greater than the diameter of the ribbon 16 when in place. The ribbon thus placed may be fastened to the pipe by solder or otherwise, being attached by drops of solder at several places; and when properly fixed lies smooth against the bottom of the channel 14 and is closely and firmly supported thereby; and its edges are protected by the shoulders 18 between the portions 14 and 17 of the pipe. The holes 15 connect the interior of the pipe with the bottoms of said channels 14. These holes may be as numerous as desired and may be of any size desired. They are countersunk on the inside as at 15' leaving a rather thin edge at the outside of the hole.

If desired a supplementary channel may be made in the bottom of channels 14, connecting the exterior of orifices or holes 15 by a passage which is beneath the screen. One such supplementary channel is represented in about the middle of Fig. 1; and another in the lower part of the figure, although it is contemplated in cases where these channels are used that they may be used throughout. These channels enlarge the area of adjacent subsoil which is available for feeding each hole, without detracting from the protection which the strainer has.

Any suitable size or kind of material or

structure thereof may be used for the strainer. Owing to the intimate fastening of the material to the pipe and the close fit of the pipe and strainer to each other; and
5 owing to the complete protection of the edges of the strainer ribbons, a less expensive strainer may be used than is required by some of the systems and the pipe and strainer can be driven down in rock and
10 hard soil without the screen being torn off. Owing to the annular character of the channels as distinguished from the spiral channel shown in the patent above mentioned, the entrance of sand or sediment or the for-
15 mation of rust in the upper portion of the strainer does not result in clogging the lower holes, because while the spiral permits such matter to settle down between the pipe and the strainer till the bottom holes are filled,
20 no such settling is possible where the channels are not spiral. If, for any reason, an over abundance of sedimentary matter enters opposite one hole, the effect of such foreign matter is limited to that one hole where it
25 enters, the other holes remaining free. Owing to the interior countersinking of the holes 15 no sediment can clog a hole or stop

it because no place exists where it can lodge. In this respect the invention is an improvement over those pipes in which there has
30 been an exterior countersinking of the hole or in which there has been no countersinking at all.

I claim:—

In apparatus of the sort described, the
35 combination of a well pipe having an exterior surface formed in annular ribs arranged relatively near together, with grooves intervening and openings through the pipe
40 from the grooves to the interior; and annular screens seated in the grooves; the exterior of the whole having a substantially uniform diameter, with the rib and screen
45 faces parallel to the axis; the shoulders at the edges of the ribs projecting abruptly and to a diameter but little exceeding that of the adjacent screen.

Signed by me at Boston, this 9th day of July 1908.

CHARLES G. SMITH.

Witnesses:

EVERETT E. KENT,
JOSEPH T. BRENNAN.