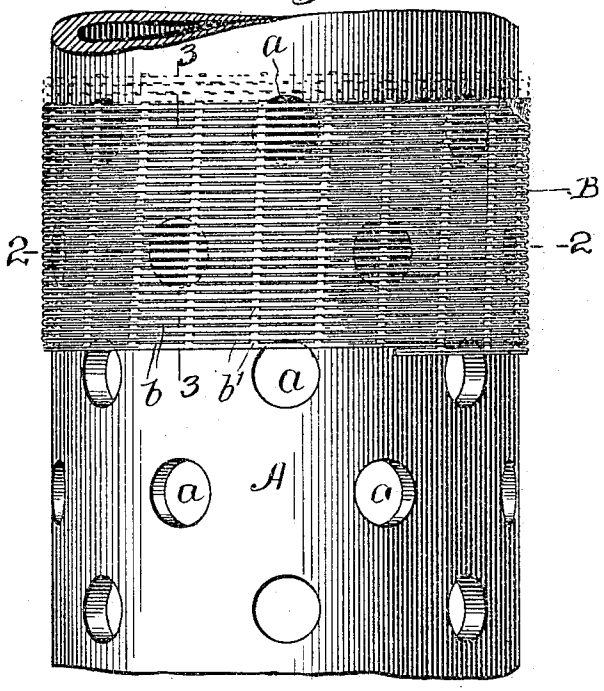
No. 787,912. PATENTED APR. 25, 1905.

F. I. GETTY.

STRAINER FOR OIL OR WATER WELLS.

APPLICATION FILED FEB. 5, 1904.

Fig. 1.



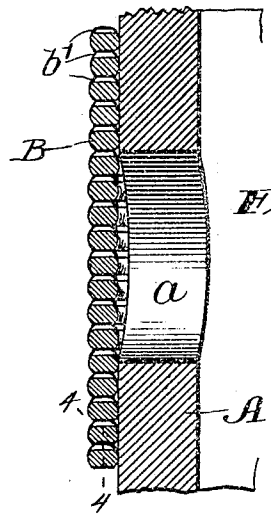


Fig. 3.

Fig. 2.

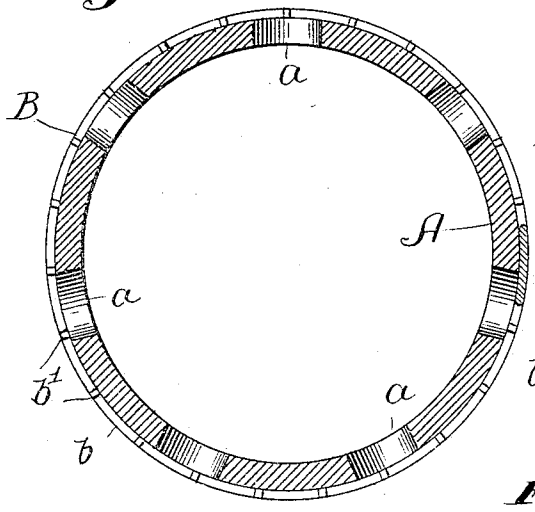


Fig. 4.

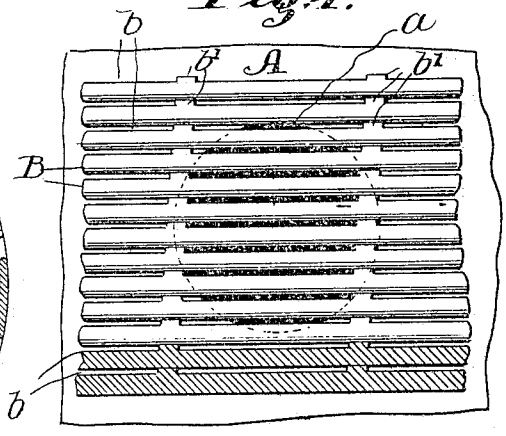
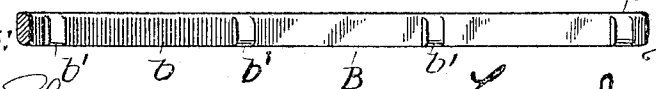


Fig. 5.



Witnesses:
Chas. O. Shervey
L. L. Hamed

Inventor:
Fred I. Getty
by H. Butler
Atty

No. 787,912. Patented April 25, 1905.

UNITED STATES PATENT OFFICE.

FRED I. GETTY, OF JENNINGS, LOUISIANA, ASSIGNOR OF ONE-FOURTH TO WILLIAM H. ROWBOTHAM, OF JENNINGS, LOUISIANA.

STRAINER FOR OIL OR WATER WELLS.

SPECIFICATION forming part of Letters Patent No. 787,912, dated April 25, 1905.

Application filed February 5, 1904. Serial No. 192,091.

To all whom it may concern:

Be it known that I, FRED I. GETTY, a citizen of the United States of America, residing at Jennings, in the parish of Calcasieu and State of Louisiana, have invented certain new and useful Improvements in Strainers for Oil or Water Wells, of which the following is a specification.

My invention relates to certain new and useful improvements in strainers for oil and water wells; and its object is to produce a device of this class which shall have certain advantages, which will appear more fully and at large in the course of this specification.

To this end my invention consists in certain novel features of construction, which are clearly illustrated in the accompanying drawings and described in this specification.

In the aforesaid drawings, Figure 1 is a side elevation of a piece of the strainer, a portion of the wire covering being omitted to show the perforated pipe underneath. Fig. 2 is a transverse section in the line 2 2 of Fig. 1. Fig. 3 is a longitudinal section in the line 3 3 of Fig. 1 upon a greatly enlarged scale. Fig. 4 is an elevation similar to Fig. 1, but on a much larger scale, two of the turns of wire being shown in section; and Fig. 5 is a perspective view of a piece of wire from which my improved strainer is constructed.

Referring to the drawings, A is a piece of pipe of the ordinary form, which is provided with a plurality of perforations *a*, 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 the fluid flows or percolates in through the perforations *a* from the earth, which lies immediately in contact with the tube. 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 foreign matter before it enters the pipe and still will not interfere to any serious extent with the passage of fluids, such as oil, water, or gas. My improved device for accomplishing this purpose consists of a coil of flexible wire B, which surrounds the pipe, the turns of the wire overlying and partially closing the perforations *a*. The wire of which this straining or filtering device is made is shown in cross-section in Fig. 3 upon an enlarged scale, where it will be seen it has two parallel flat surfaces at top and bottom and two curved surfaces at the sides. The upper flat surface of the wire consists of a series of depressions *b*, separated from each other by the points *b'*, which are approximately the full original size of the wire from which this particular-shaped strainer-wire is prepared. The lower surface of the wire on the pipe is perfectly plain. The wire is prepared from ordinary drawn wire circular in cross-section by passing it between rolls, one of said rolls being plain and the other being provided with a plurality of longitudinally-extending scores or grooves at short intervals. In this way the round wire is provided with two flat surfaces, one of which has a series of depressions, as above described.

In forming my improved strainer or screen one end of the wire is secured to the pipe A and the wire is then wound around it with one of its curved faces in contact with the pipe and its plain surfaces at right angles to the axis of the pipe. Each coil of wire in winding is pressed firmly against the preceding coil, so that when complete it is impossible for the coils to slip along longitudinally on the pipe so as to make wide spaces between them. When sufficient wire has been wound around the pipe to cover all of the perforations, the end is secured to the pipe by any suitable means—as, for instance, by soldering or brazing it thereto. In this way a strainer is made comprising a perforated pipe upon which a plurality of turns of wire are wound closely together, each turn pressing against the adjacent ones and having their curved surfaces on the outside and against the pipe.

Heretofore strainers for the above purpose have been made by simply winding coils of wire around a perforated pipe, the said coils being wound a short distance apart, so as to leave a space between them through which fluids may pass. In some cases the wire of

the coils is mutilated at infrequent points by throwing up a bur or chip which extends outwardly and meets the wire of the adjacent coil, and thereby tends to prevent said coils from slipping out of place. There are many objections to strainers of this kind, the principal one being the practical impossibility of securing accurate construction, so that the spaces between the coils are of uniform width. In my improved strainer, however, in which the coils are pressed firmly together and in which the openings through which the fluid passes are formed by depressions which are frequently sunk into the body of the wire during the process of winding by accurately-constructed rolls, it is evident that uniformity in the width of the said openings is attained, as well as rigidity of the entire coiled covering on the perforated pipe, because of their being wound so closely together.

The operation of this device will be readily apparent. Any sand and foreign matter will strike against the wire and will be by it prevented from entering the pipe, while oil or other fluids will be free to pass through the openings formed by the depressions in the coils.

I am aware that strainers for wells have been made composed of perforated pipe surrounded by coils of round wire having depressions or notches at right angles to the axis of the pipe, and I am also aware that strainers have been made from perforated pipe with squared wire having a flat surface in contact with the pipe. I believe, however, it is novel to construct a strainer, as set forth, with a wire having curved surfaces in contact with the pipe and flat surfaces at right angles to the axis of the pipe, one of said surfaces having lugs which contact with the other surface of the next succeeding turns of the wire. This structure has certain advantages over those shown in the references in that it is much cheaper and easier to construct than a structure composed of wire with a flat surface in contact with the pipe, and each turn of wire is prevented from twisting with reference to the pipe by the contacting of the lugs upon it with the flat surface of the turn on one side and by the contacting of its flat surface with the lugs on the opposite side. This peculiar manner of alining the wires of the strainer is, I believe, novel and forms the essential feature of my invention.

I realize that considerable variation is possible in the details of this construction without departing from the spirit of the invention, and I do not, therefore, desire to limit myself to the specific form herein set forth.

I claim as new and desire to secure by Letters Patent—

1. In a device of the class described, the combination with a suitably-perforated pipe, of a coil of wire surrounding said pipe and overlying said perforations, the wire composing said coil having a plain surface on one side, and a series of depressions on the opposite side, the plain surface lying approximately at right angles to the axis of the pipe, and two curved surfaces, one of which contacts with the wall of the pipe.

2. In a device of the class described, the combination with a suitably-perforated pipe, of a coil of wire surrounding said pipe and overlying said perforations, the wire composing said coil having two flat surfaces, one of which is plain and the other being composed of a series of closely-spaced flat-bottomed depressions sunk into the wire, the said two surfaces being approximately at right angles to the axis of the pipe, and two curved surfaces, one of which contacts with the wall of the pipe.

In witness whereof I have signed the above application for Letters Patent, at Jennings, in the parish of Calcasieu and State of Louisiana, this 30th day of January, A. D. 1904.

FRED I. GETTY.

Witnesses:
E. S. HEMPSTEAD,
W. C. FALLS.