No. 691,994. Patented Jan. 28, 1902.

F. I. WEBBER.

WELL SCREEN.

(Application filed July 11, 1901.)

(No Model.)

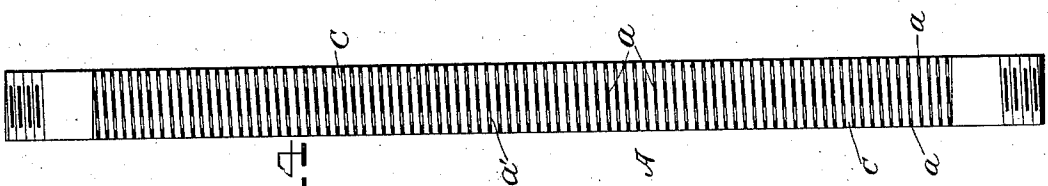


Fig. 4.

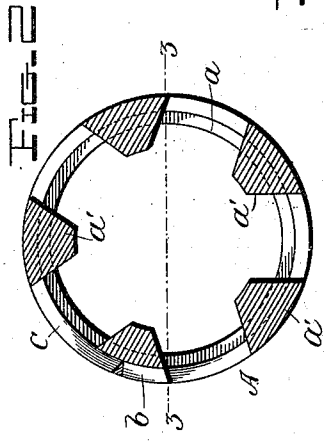


Fig. 2.

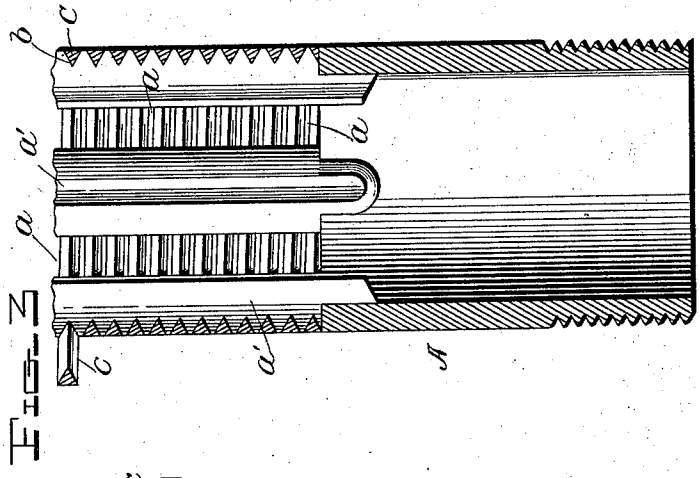


Fig. 3.

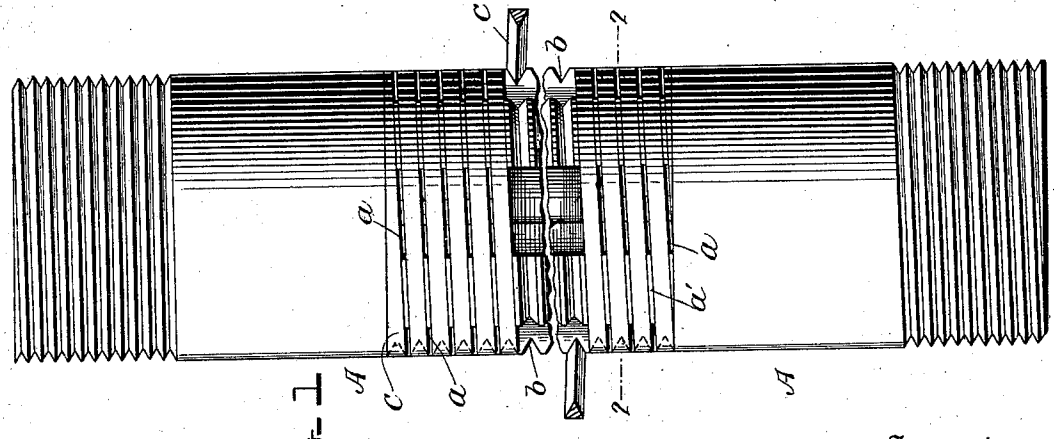


Fig. 1.

Witnesses

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FRANK I. WEBBER, OF OXFORD, NEBRASKA, ASSIGNOR OF THREE-FOURTHS TO JOHN W. TRAMMEL, GEORGE H. CHRIST, AND NEAL A. PETTYGROVE, OF OXFORD, NEBRASKA.

WELL-SCREEN.

SPECIFICATION forming part of Letters Patent No. 691,994, dated January 28, 1902.

Application filed July 11, 1901. Serial No. 67,922. (No model.)

To all whom it may concern:

Be it known that I, FRANK I. WEBBER, a citizen of the United States, residing at Oxford, in the county of Furnas and State of Nebraska, have invented certain new and useful Improvements in Well-Screens; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to made and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to well-screens, and has for its object the production of an improved appliance of this character adapted for use in water or oil wells and possessing advantages in point of great strength and durability and high efficiency, the screen being constructed to obtain without liability of clogging an uninterrupted flow of water or oil, as the case may be, free from sand or other formation.

Other advantages possessed by my invention are set forth in the following description, directed to the details of construction, and in connection with such description attention is called to the accompanying drawings, in which—

Figure 1 is an elevation, partly broken away, of a pipe or tube section equipped with my invention. Fig. 2 is a horizontal section on line 2 2 of Fig. 1. Fig. 3 is a vertical sectional view on line 3 3 of Fig. 2. Fig. 4 is a reduced elevation of the complete pipe or tube section equipped with the invention.

In the drawings, A denotes the pipe or tube, preferably circular in cross-section and threaded at its ends for connection with other imperforate pipe or tube sections or casings. Intermediate of its ends are a plurality of longitudinally-arranged slots *a a*, five being shown, although the number may be increased or diminished. The vertical ribs *a' a'* between the slots and which are preferably integral with the pipe or tube section are reinforced at their inner sides, being substantially of triangular form in horizontal section. Such reinforcement obtains great strength and rigidity and more than compensates for the weakening effect of the slots.

A groove *b*, preferably of V form in cross-section, extends spirally from end to end of the ribs *a'*. Seated in the groove is a wire *c*, which in the construction of the appliance is wound spirally about the ribbed portion of the pipe or tube section, the ends of the wire and, if desired, the entire length being brazed, soldered, or otherwise firmly secured in place. The wire is preferably of triangular form in cross-section, whereby its inner two faces or sides conform to the shape of the groove which they engage, and its outer face is flush with the imperforate end portions of the pipe or tube section. The groove *b* is so arranged that the coils of wire are out of contact, thereby providing, with the slots *a*, orifices for the passage of the water or oil. The area of these orifices will be governed by the character of the ground in which the well is located. By reference more particularly to Fig. 3 it will be observed that the triangular form of wire employed obtains an inwardly-flared orifice, the increasing size of which absolutely prevents all clogging. Consequently the water or oil has at all times an uninterrupted flow. The conformation of the wire to the V-shaped groove precludes movement and dislodgment of the coils, thereby maintaining the area of the orifices.

The appliance has a very large screening capacity, which does not impair its strength and rigidity, owing to the reinforcement of the ribs. The ends of the appliance are, as before stated, threaded, whereby it can be employed as a drop-screen in tubular wells or as a part of the tube. It may be used as a drop-screen in a casing-well or may be a part of the main casing. Also it may serve as a driven-well point.

I claim as my invention—

1. A well-screen consisting of a tube having intermediately of its ends longitudinal ribs and slots between the ribs, a V-shaped groove extending spirally through the outer surface of the ribs, and a triangular-shaped wire conforming to and seated in the groove with its outer surface flush with the unslotted

portion of the tube, and the coils of the wire spaced apart and providing inwardly-flared orifices.

2. A well-screen consisting of a tube having screw-threaded ends and intermediately thereof longitudinal reinforced ribs and slots between the ribs, a V-shaped groove extending spirally through the outer surface of the ribs, and a triangular-shaped wire conforming to and seated in the groove with its outer surface flush with the tube ends, and the coils of the wire spaced apart and providing inwardly-flared orifices.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK I. WEBBER.

Witnesses:
D. D. McINTYRE,
T. B. HUFF.