June 19, 1928. 1,674,084

G. AUSTIN

CONCRETE SCREEN FOR WATER WELLS

Filed Oct. 25, 1926

Fig. 1

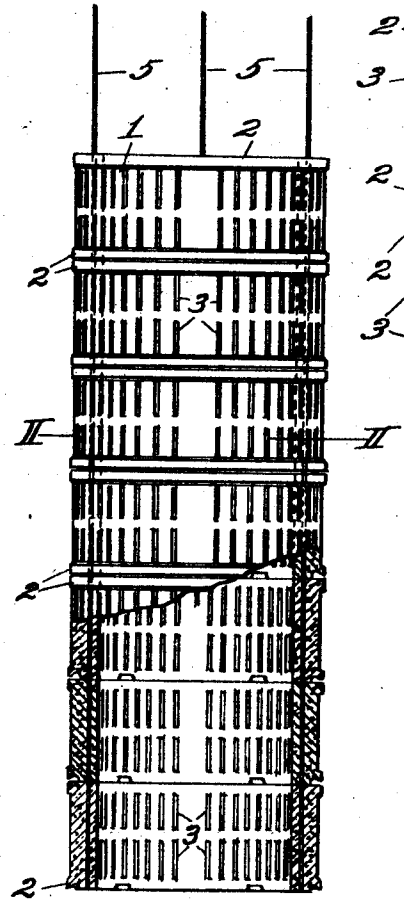


Fig. 3

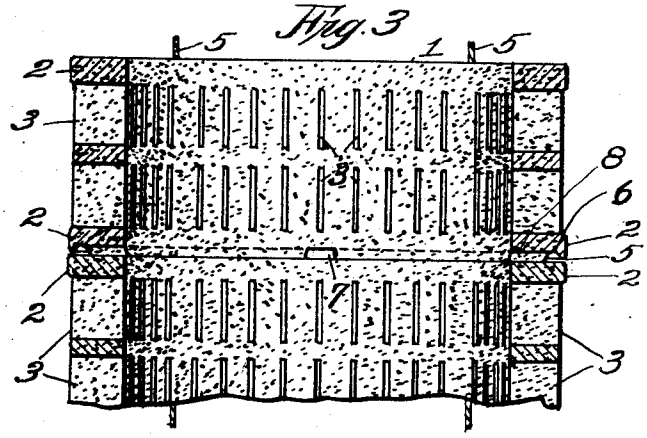


Fig. 4

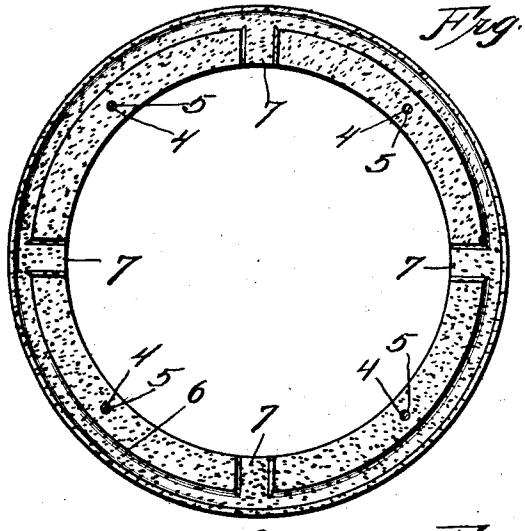


Fig. 2

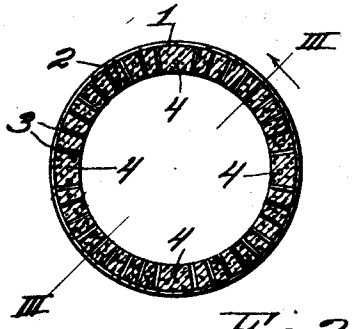
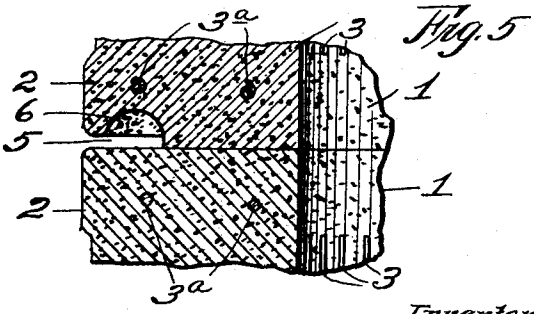


Fig. 5



Witness:

R. C. Hamilton

Inventor:

George Austin.

By Thorpe Gerard

attys

Patented June 19, 1928. 1,674,084

UNITED STATES PATENT OFFICE.

GEORGE AUSTIN, OF KANSAS CITY, MISSOURI.

CONCRETE SCREEN FOR WATER WELLS.

Application filed October 25, 1926. Serial No. 144,198.

This invention relates to concrete screens for water wells, and more especially to screens composed of any required number of sections arranged in superimposed relation, and the object is to produce an efficient and inexpensive screen capable of accommodating any flow of water and possessing great strength and rigidity.

To this end the invention consists in certain novel and useful features of construction and combinations of parts as hereinafter described and claimed, and in order that it may be fully understood, reference is to be had to the accompanying drawing, in which:

Figure 1 is a side elevation, partly in section, of a well screen embodying the invention.

Figure 2 is a section on the line II—II of Figure 1.

Figure 3 is an enlarged fragmental vertical section.

Figure 4 is an inverted plan view of a section of the screen.

Figure 5 is an enlarged vertical section of adjoining sections in a different radial plane from the planes of Figures 1 and 3.

Referring to the drawing in detail, 1 indicates a well screen of cylindrical form, composed of a sufficient number of superimposed sections to extend through a particular water-bearing stratum of sand and gravel, the undermost section (not shown) having a solid bottom or closure as customary.

Each section is diametrically enlarged at its ends to provide circumferential ribs 2, upon which the sections can be conveniently rolled about and which will lend strength to the sections and protect the edges of narrow vertical water-intake slots 3 formed in the walls of each section between the ribs 2 thereof. To provide the maximum of intake opening without appreciably weakening the sections, the slots of each section are in two series so as to leave the central parts of the sections unbroken by slots or openings, it being understood that the sections may be reinforced by metal if desired, as for example, by rings 3^a or the like.

At four points the sections are provided with vertical holes 4, no slots 3 being provided in the radial planes of such holes, as it is preferable that cables 5 upon which the sections are successively strung when about to be lowered to position, shall be protected as fully as possible from the corroding effects of water.

The lower ends of the sections are provided with annular grooves 6, the same being near the outer margins to leave the walls inward of the groove, of wide area for firm rest upon the underlying sections. The outer walls of the grooves are not only relatively narrow, but are shallower than the inner walls so as to be spaced from the underlying sections and thus provide horizontal annular mouths 7 through which water may readily enter the corresponding grooves, which water will pass through radial passages or channels 8, to the interior of the sections, the horizontal water-ways at the ends augmenting the intake capacity of the screen.

It is preferred to form the grooves in the bottoms of the sections as they are obviously less liable to chokage than if in the tops of the sections. Furthermore they obviate the necessity of providing recesses for the reception of means for lowering the sections into position in a well hole, as such lowering means can be engaged with the passage or channels 8. The lowering means referred to is not illustrated as it forms no part of the invention and may be of any preferred or conventional character, which will release each section as it comes to rest on the bottom of the well hole or the previously lowered section, it being understood that the sections are strung upon the cables before being lowered so as to be stacked in perfect alinement without the necessity of any adjustment after being deposited upon the previously placed sections, the cables being secured in any suitable manner, not shown, to the bottom section so that they can be drawn taut to serve properly as guides, without detachment from the bottom section.

From the above description it will be apparent that I have produced a device of the character described which possesses all of the features of advantage set forth as desirable, and while I have described and claimed the preferred embodiment of the same I reserve the right to make all changes properly falling within the spirit and scope of the appended claims.

I claim:

1. In a well screen, a concrete section of cylindrical form provided between its ends with vertical radial passages, the upper end

of the section being horizontal and smooth and the lower end provided near its outer edge with a circular groove, the lower end of the section depending to a lower plane inward of the groove than outward thereof, and providing a horizontal lower face; the depending inner portion having a series of horizontal passages connecting the said groove with the interior of the section.

2. In a well screen, a concrete section of cylindrical form, provided at its upper and lower ends with outwardly-projecting circumferential ribs and between the ribs with vertical radial passages, the upper end of the section being horizontal and smooth and the lower end provided near its outer edge with a circular groove, the lower end of the section depending to a lower plane inward of the groove than outward thereof, and providing a horizontal lower face; the depending inner portion having a series of horizontal passages connecting the said groove with the interior of the section.

In witness whereof I hereunto affix my signature.

GEORGE AUSTIN.