

S. N. HALL.
WELL SCREEN.

APPLICATION FILED JUNE 30, 1908.

956,080.

Patented Apr. 26, 1910.

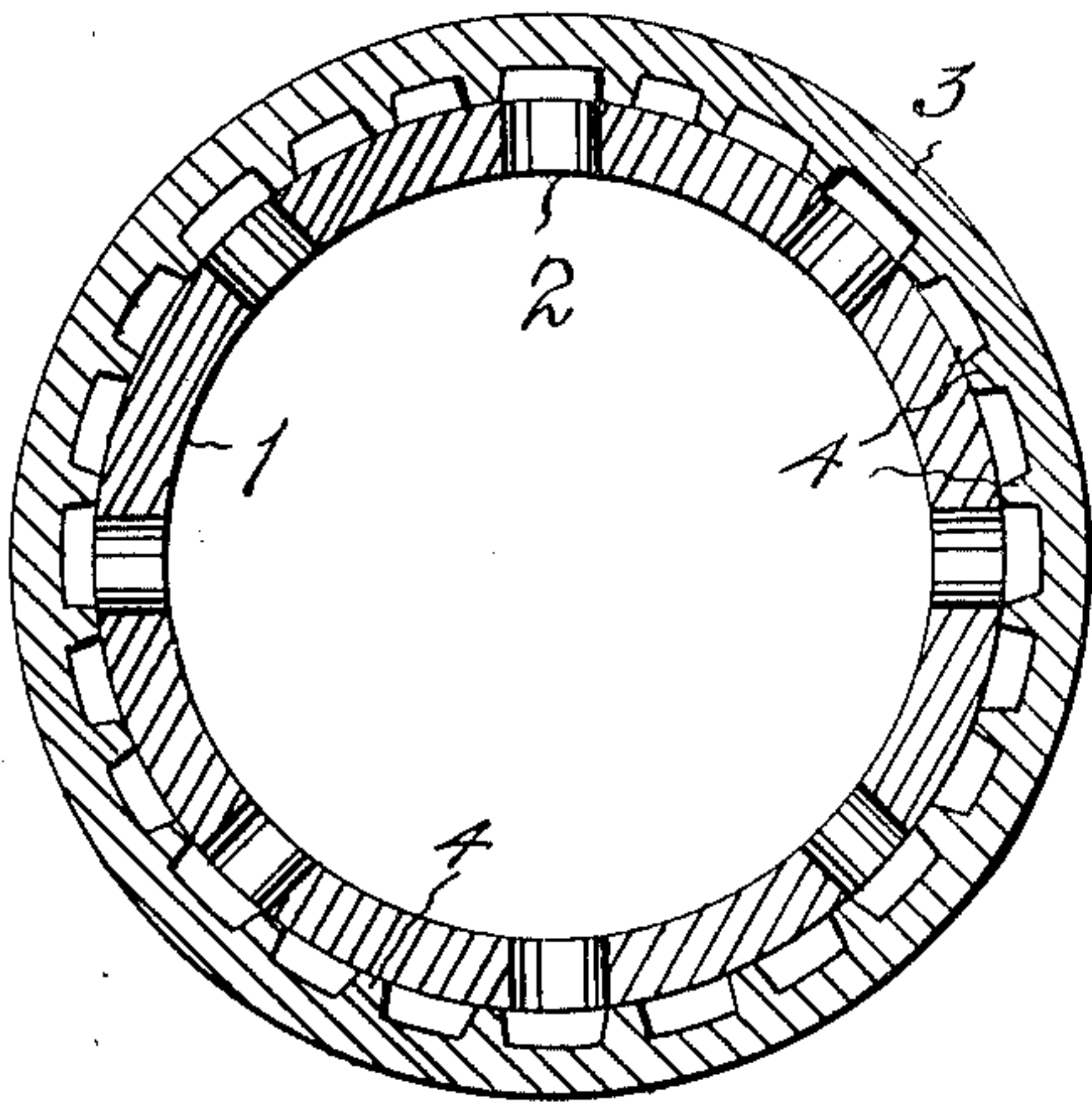


Fig. 2.

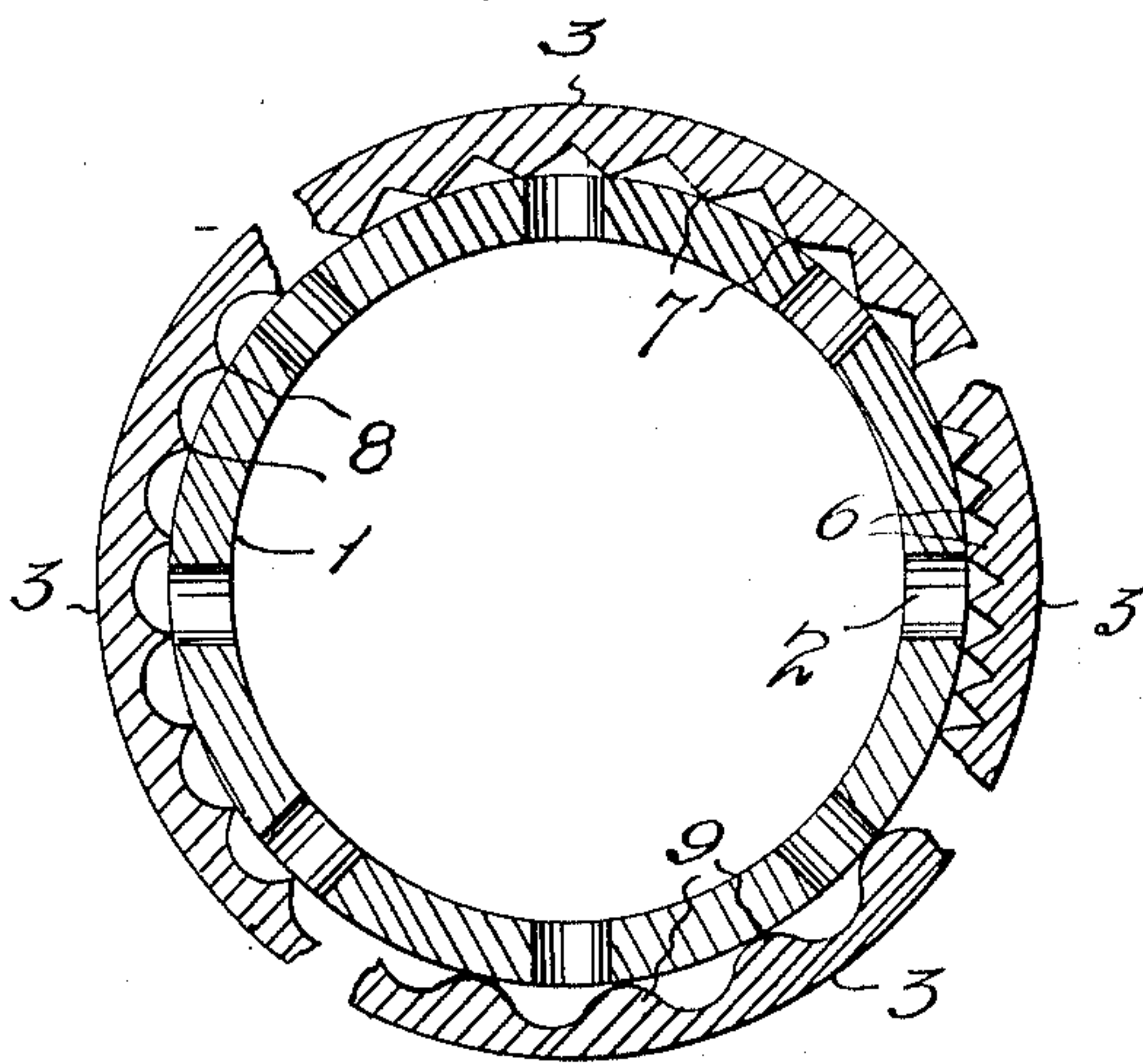


Fig. 3.

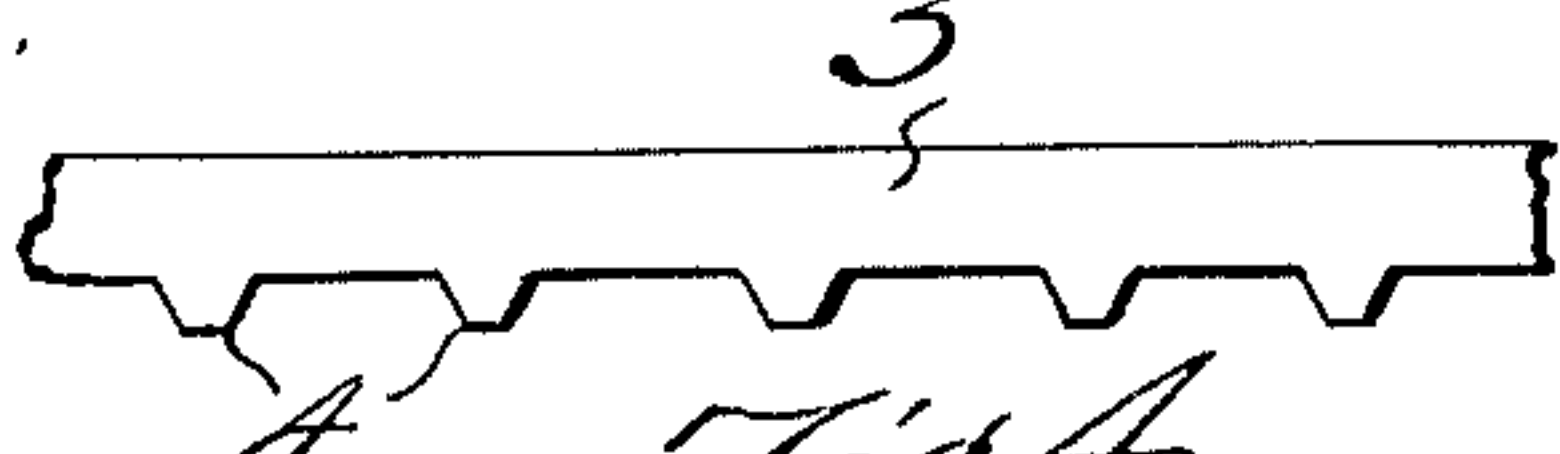


Fig. 4.

WITNESSES:

Gymk Davis
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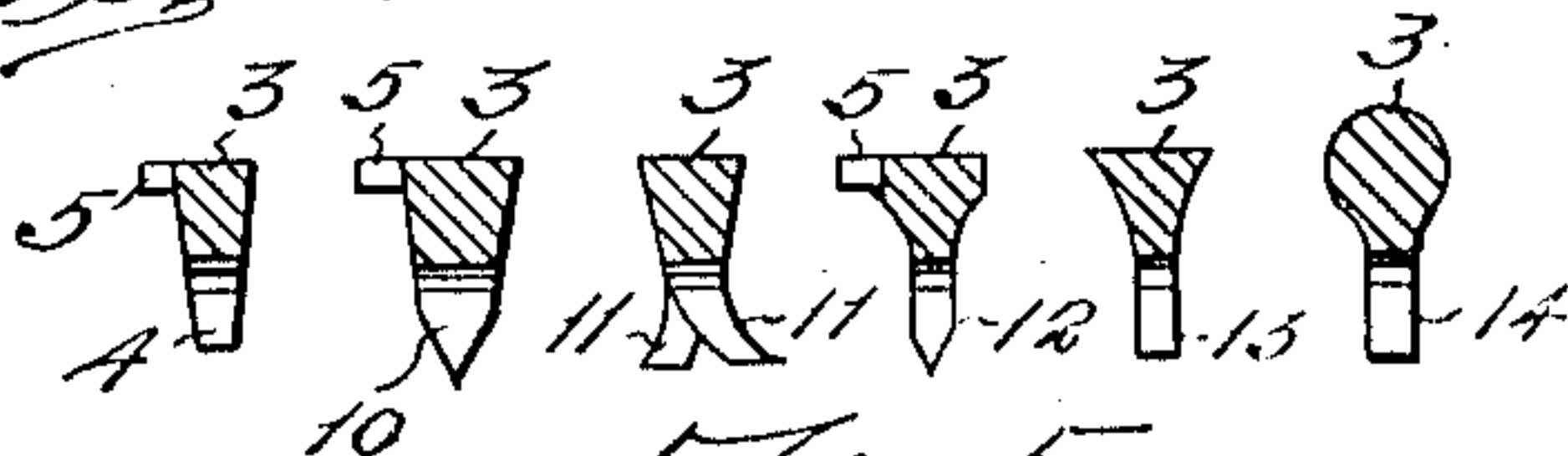


Fig. 5.

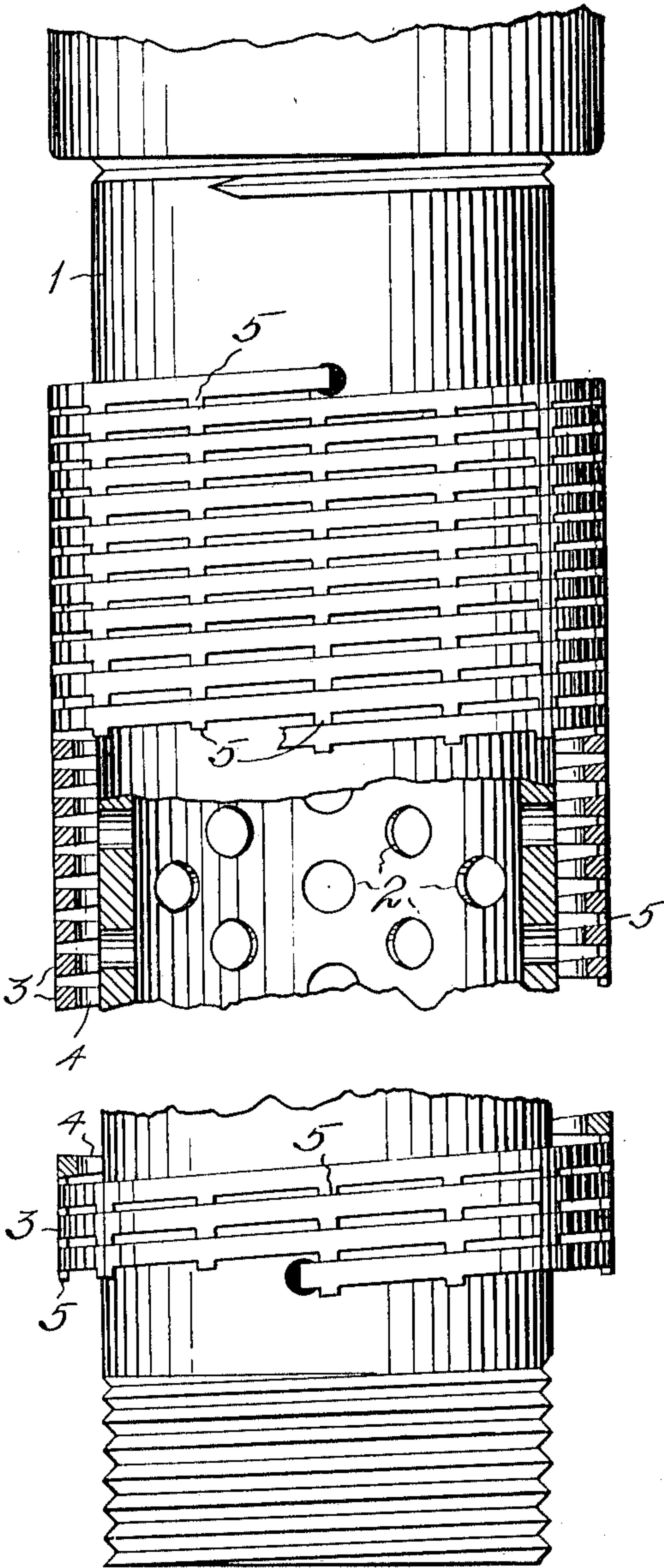


Fig. 1.

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SAMUEL N. HALL, OF HOUSTON, TEXAS.

WELL-SCREEN.

956,080.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, SAMUEL N. HALL, 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 constructed to produce the same and better results than those formed with longitudinal ribs or spiral grooves but to do away with the ribs or ridges and accomplish the desired results by projections formed on the wire supporting it on the screen body.

Among other objects are the increase of the filtering or screening surface and an enlarged clearing space between the wire and the body and thus the provision of an unobstructed space permitting the fluid after it has passed the outer screening surface or wire to pursue the shortest course to the perforations of the body, and further to prevent sand and other foreign matter clogging between the wire and the body.

Finally the object of the invention is to provide a device of the character described that will be strong, durable and efficient, and simple and comparatively inexpensive to produce, also one in which the several parts will not be liable to get out of working order.

With the above and other objects in view, the invention has relation to certain novel features of construction and operation, an example of which is described in the specification and illustrated in the accompanying drawings, wherein:

Figure 1 is an elevation of the screen, a portion being broken away and partially in section, Fig. 2 is a horizontal cross sectional view, Fig. 3 is a cross sectional view showing modified forms of wire in position, Fig. 4 is a detail of the wire, and Fig. 5 illustrates in cross-section several of the forms of wire which may be used.

In carrying out my invention I employ the usual cylindrical body or pipe 1 having perforations or openings 2 desirably spaced. The outer surface of the body is not treated by forming or placing ribs thereon or cutting grooves as has heretofore been the practice. The invention lies almost exclusively in the wire and the manner of placing it on

the body. The wire 3 as shown in Figs. 1, 2 and 4 is of the inverted truncated conical shape having its widest portion directed outward. From the narrow portion lugs or studs 4 project. These lugs are suitably formed on the wire and taper inward, their smallest portion resting on the body. On one side, the wire is formed with laterally projecting spacing bosses 5 disposed at regular intervals.

The wire is wound upon the body, the starting end being suitably fastened. As the wire is wound, the lugs come to rest on the body and the bosses of one winding or convolution contact with the smooth side of the next convolution. In this way the wire is spaced as it is wound, giving spaces of required degree between the convolutions and it is evident that by varying the projection of the bosses, the width of the spaces may be regulated.

The lugs support the wire off of the body and obviate continuous supports between the wire and the body as is the case where ribs or grooves are used. For in that case each rib or support forms a longitudinal obstruction and the ridge between each spiral of a groove also forms an obstruction.

With the present device only the small ends of the lugs rest on the body and only the lugs extend between the wire and the body so that no continuous support is had and the liquid after passing between the convolutions of the wire or the outer screening surface, may pursue the shortest course to the perforations 2. This not only provides a more free passage, but offers less resistance to the liquid thereby reducing the liability of "clogging" to a minimum.

It is to be understood that various modifications of the wire may be made and some of these are illustrated in Figs. 3 and 5. In Fig. 3 the lugs are close together as indicated at 6 which is desirable in some cases, while at 7, 8 and 9 still other forms of lugs are set forth.

Fig. 5 illustrates several different forms of wire and lugs in cross section. 3 shows the wire illustrated in Figs. 1, 2 and 4 having the lugs 4 and the bosses 5. 10 shows a lug tapered to a point. 11 shows a wire having oppositely directed lugs with the bosses 5 omitted. The lugs disposed this way prevent the wire from tipping laterally. At 12 another form of wire and pointed lug is

shown, while 13 sets forth another form. 14 shows a round wire and straight lug without the spacing bosses 5.

What I claim, is:

- 5 A well screen of the character described, comprising a perforated tubular portion, and a screen positioned around the outer surface of said tubular portion comprising wire rings or coils having a relatively restricted
10 inner bearing edge provided with a multitude of transverse passages divided by rela-

tively fine bearing points and a relatively wide outer portion having spacing projections to afford inlets between the coils or rings, substantially as described. 15

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

SAMUEL N. HALL.

Witnesses:

A. SCHLAFLI,

WM. A. CATHEY.