C. L. MICHOD.

ARMORED WELL SCREEN.

APPLICATION FILED SEPT. 30, 1911.

1,019,986.

Patented Mar. 12, 1912.

Fig. 1.

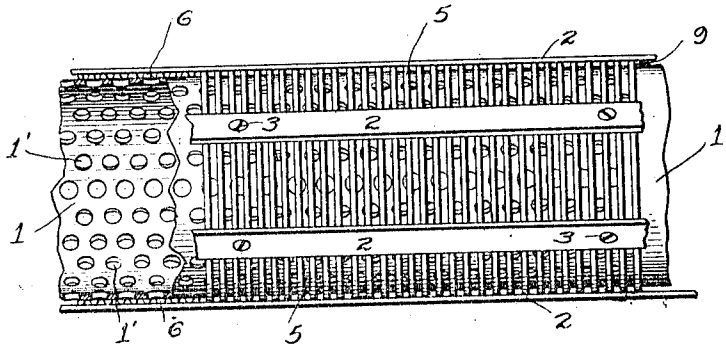


Fig. 2.

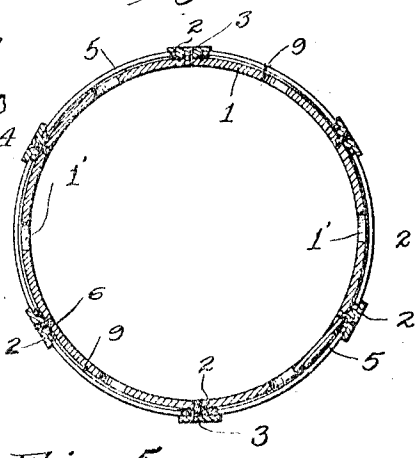


Fig. 3.

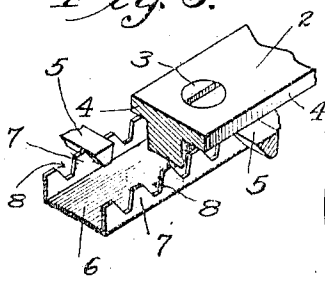


Fig. 4.

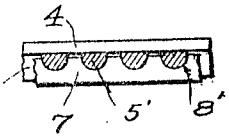
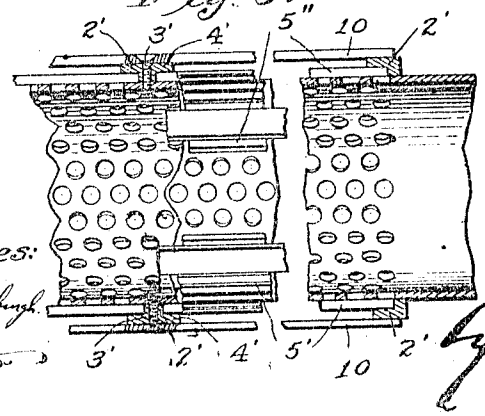


Fig. 5.



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UNITED STATES PATENT OFFICE.

CHARLES L. MICHOD, OF LOS ANGELES, CALIFORNIA, ASSIGNOR OF ONE-HALF TO LLEWELLYN IRON WORKS, OF LOS ANGELES, CALIFORNIA, A CORPORATION OF CALIFORNIA.

ARMORED WELL-SCREEN.

1,019,986. Specification of Letters Patent. Patented Mar. 12, 1912.

Application filed September 30, 1911. Serial No. 652,217.

To all whom it may concern:

Be it known that I, CHARLES L. MICHOD, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Armored Well-Screen, of which the following is a specification.

This invention relates to screens for perforated well casings, and the main object of the invention is to provide such a screen with an armor for holding it securely on the casing and protecting it from displacement by contact with the surrounding earth.

Another object of the invention is to provide a well screen of this character having maximum percolating capacity.

Other objects of the invention will appear hereinafter.

The accompanying drawings illustrate embodiments of my invention, and referring thereto: Figure 1 is a side elevation of the screen and casing with portions broken away. Fig. 2 is a transverse section. Fig. 3 is a fragmentary perspective showing the manner in which the screen members are secured in position. Fig. 4 shows another form of the screen members and retaining means. Fig. 5 is a longitudinal section of another form of the invention.

1 designates a well casing consisting of a pipe perforated as indicated at 1'. Bars or ribs 2 are secured to the casing 1 and are provided with means for securing the screen members in place. In the form of the invention shown in Figs. 1 and 2, these bars extend longitudinally of the casing, and are secured to the casing, for example, by means of screws 3. Said bars 2 are provided with lateral extending flanges 4, extending over the screen members to retain the same in place and to serve as an armor for said screen members. The screen members are formed as bars 5 held in holders 6, preferably formed as sheet metal channel members inserted beneath the rails or bars 2, said channel members being perforated for the passage therethrough of the screws 3 so that said screws fasten said channel members as well as the bars 2 in place. Each channel member 6 is formed with upturned edges or flanges 7 having notches or recesses 8 receiving and fitting the respective screen members 5, each screen member being seated at each end in the notch 8 of the flange 7 at that end, and being held down in place by the engagement of the flange 4 of the bar 2 thereover. In the form shown in Fig. 3, the screen sections 5 are formed as wedge-shaped bars fitting in corresponding wedge-shaped slots 8 in the flanges 7 with their broader faces exposed at the outside, but the form of these screen members may be varied without departing from my invention, for example, as shown in Fig. 4, the screen members may be semi-circular as shown at 5' and the notches 8' for receiving the same may be correspondingly semi-circular. Or in place of the screen means consisting of the bars as shown, any suitable screen means may be used extending under the flanges of the ribs and held thereby in place on the casing. The operation of this form of my invention is as follows: The holders 6 being put in place on the casing and the screen members 5 inserted in the notches in said holders, the bars 2 are placed over said screen members and secured to the casing by the screws or fastening means 3, thereby securing the screen members firmly in position on or over the casing, but leaving a space 9 between the inner faces of the screen members and the outside of the casing, the flanges 7 holding the screen members spaced somewhat apart from the casing so as to form this free space whereby free opportunity is presented for the fluid to pass or percolate between the screen bars or members 5 and the casing and through the perforations 1' of the casing. As the casing is driven into or turned in the ground the armor strips or bars 2 serve to protect the screen bars or members 5, holding the same in position on the casing and preventing them from being stripped or displaced therefrom.

In the form of my invention shown in Fig. 5 the armor strips or bars 2' are formed as annular ribs or rings surrounding the casing and secured thereto, for example, by means of screws 3', said rings having flanges 4' extending over the screen bars 5'' and retaining the same in position on the casing. Additional armor member 10 may be provided, consisting of longitudinal bars secured to the annular bars or rings 2', for example, by means of the screws 3' aforesaid.

What I claim is:

1. The combination of a perforated pipe, metal ribs secured on the outside of said pipe, and screen bars extending between

said ribs on the outside of the pipe, said ribs having portions extending over said screen bars and said bars being held inwardly by said ribs and being held outwardly, independently of said ribs.

2. The combination of a perforated pipe, ribs extending over and secured to said pipe and having lateral extending flanges, and screen bars extending on the outside of the pipe between the said ribs, said screen bars extending beneath said flanges of said ribs and being held outwardly independently of said ribs.

3. The combination of a perforated pipe, ribs extending over and secured to said pipe, screen bars extending on the outside of the pipe between the said ribs, said ribs having portions extending over said screen bars, and means separate from said ribs extending between said screen bars and pipe to space and support the screen bars from the pipe.

4. The combination of a perforated pipe, channel members in contact with said pipe and having upwardly extending flanges, said flanges being provided with a series of notches, ribs extending in the channel of said channel members, means engaging said ribs and channel members to secure the same to the pipe, and screen bars extending between said ribs and over the casing, and seated in said notches in said channel members, said screen bars extending under the flanges of said ribs and being spaced from the casing by said flanges of the channel members.

5. The combination with a perforated pipe, of ribs secured to said pipe, screen means extending between said ribs and supported so as to be held outwardly independently of said ribs, said ribs having portions extending over said screen means to hold the screen means inwardly toward the pipe.

6. The combination with a perforated pipe, ribs secured thereto, screen means extending between said ribs, said ribs having portions extending over said screen means to hold the same from outward displacement, and means separate from said ribs, extending between the said screen means and pipe for holding the screen means outwardly against said ribs and supporting and spacing the screen means from the pipe.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 11th day of August, 1911.

CHARLES L. MICHOD.

In presence of—

ARTHUR P. KNIGHT,
GLADYS RUSSELL.