April 3, 1928. 1,664,734

D. N. BRUNDY

PERFORATED CASING

Filed Feb. 2, 1926

Fig. 1.

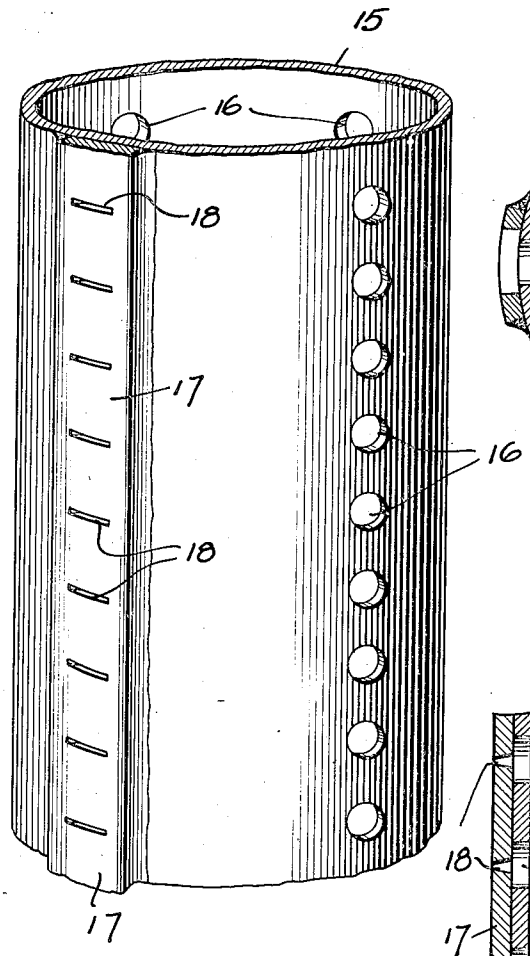


Fig. 2.

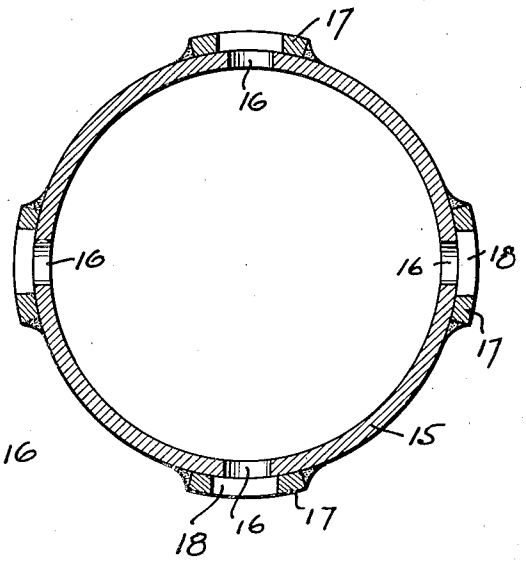
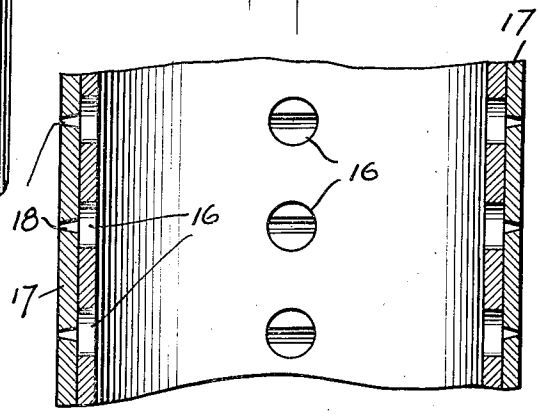


Fig. 3.



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UNITED STATES PATENT OFFICE.

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PERFORATED CASING.

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My invention relates to perforated casings as used in oil wells through which oil is obtained from the oil sands. Perforated casings as heretofore constructed have the perforations formed in the casing itself which presents the serious objection of directly exposing the casing to the wearing action of the sand contained in the oil as it flows inwardly into the casing, whereby the perforations are rapidly enlarged until the casing is so weakened that it collapses.

It is a purpose of my invention to provide a perforated casing constructed to allow the ready influx of oil into the casing, yet effectively protecting the casing proper against the wearing action of the sand and thereby preserving the original strength of the casing and preventing collapse.

I will describe only one form of perforated casing embodying my invention and will then point out the novel features thereof in claims.

In the accompanying drawings,

Figure 1 is a fragmentary view showing in perspective one form of perforated casing embodying my invention;

Figure 2 is a transverse sectional view of the casing shown in Figure 1;

Figure 3 is a fragmentary vertical sectional view of the casing shown in Figure 1.

Referring specifically to the drawings, in which similar reference characters refer to similar parts in each of the views, my invention, in its present embodiment, comprises a well casing designated at 15 provided at circumferentially spaced intervals with groups of perforations 16, with each group made up of a plurality of regularly spaced holes extending longitudinally of the casing.

For each group of holes, a strip or bar 17 of metal or other suitable material is welded along its edges to the outer side of the casing, there being one strip for each group of perforations, and each strip attached in covering relation to the holes. Each strip is relatively thick as compared to the thickness of the casing and is curved on its inner surface to conform to the exterior curvature of the casing in order that it may lie contiguous to the casing when in applied position. At intervals along the length of each strip, perforations in the form of slots 18 are formed, these slots extending transversely of the strip and spaced to correspond to the spacing of the hole 16 so that the slots register with the holes, as clearly illustrated in Figures 2 and 3. Each slot 18, as shown in Figure 3, is of V-form in cross section with its greatest width at the inner side of the strip in order that the slot may function to prevent as far as possible the passage of sand into the well casing, and further to prevent clogging of the slots with sand.

In practice, the slots 18, being in registration with the holes 16, permit oil to flow into the casing, and any wearing action of the sand carried by the oil is primarily imposed on the walls of the slots, so that should the slots become enlarged as a result of protracted use of the casing so as to materially weaken the strip, the strip can be readily removed and a new one substituted. It will be understood that the strip functions as a protector of the casing against the wearing action of the sand, and further it reinforces the casing at the points of perforation, thereby presenting a perforated casing of greatly increased strength and wearing qualities as compared to casings heretofore proposed.

Although I have herein shown and described only one form of perforated casing embodying my invention, it is to be understood that various changes and modifications may be made therein without departing from the spirit of the invention and the spirit and scope of the appended claim.

I claim as my invention:

A well casing having perforations therein, strips extending longitudinally of the casing and of curved form in cross section to conform to the outer curvature of the casing, said strips fixedly secured to the outer wall of the casing in covering relation to the openings so as to reinforce the casing around the openings, and having transversely extending slots spaced apart to correspond with the spacing of the casing openings and positioned in registration with the openings, said slots being of V shaped form in cross section with their greatest widths at the inner side of the strips and terminating at the outer sides of the strips in narrow slots so as to preclude the passage of sand into the casing and prevent clogging of the slots with sand.

DAVID N. BRUNDY.