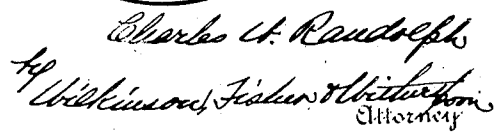
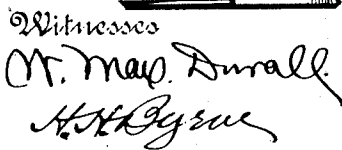


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UNITED STATES PATENT OFFICE.

CHARLES W. RANDOLPH, OF VIVIAN, LOUISIANA.

OIL-WELL CASING AND PACKING THEREFOR.

1,043,723.

Specification of Letters Patent.

Patented Nov. 5, 1912.

Application filed March 22, 1912. Serial No. 685,593.

To all whom it may concern:

Be it known that I, CHARLES W. RANDOLPH, a citizen of the United States, residing at Vivian, in the parish of Caddo and State of Louisiana, have invented certain new and useful Improvements in Oil-Well Casings and Packing Therefor; and I do hereby 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 make and use the same.

The present invention relates to oil well casings and packings therefor, and has for its purpose to provide a construction wherein both of these elements are incorporated in one and the same pipe during manufacture, to the end of simplicity in construction and more effectiveness in use.

The invention further proposes an arrangement wherein the casing and packing are lowered into the well boring as an integral unit, and having means for effecting the release of the packing which will of itself assume its functional position, and thereafter effectively prevent any flowing of water from the ground above into the oil well.

With these and other objects in view the invention consists in the novel details of construction and combinations of parts more fully hereinafter disclosed and particularly pointed out in the claims.

Referring to the accompanying drawings forming a part of this specification in which like numerals designate like parts in all the views:—Figure 1 is a part elevation and central sectional view of the combined casing and packing; Fig. 2 is a front elevational view showing the packing elements in operative position; and Fig. 3 is a top plan sectional view taken on the line 3—3 of Fig. 1.

Referring to the construction in detail, the same consists in a pipe 1 of multiple thicknesses, and which is screw-threaded at its upper end to receive the usual conveyer pipe 2. Said pipe 1 is divided, or split, circumferentially, and for its greater portion, along the lines 3 and 4 to separate the thickness into separate elements 5, 6 and 7, arranged concentrically, as clearly illustrated in Fig. 3.

The element 5 constitutes the well casing and projects below the lower edges of the elements 6 and 7, where it is provided with screw threads 8 to receive the usual casing shoe, not shown. Said casing 5 is integral,

or unbroken, throughout, to the end of giving an absolutely closed conduit for the flow of oil through the pipe 2 leading above the ground.

The elements 6 and 7 are split, or divided axially of the pipe along the lines 9 and 10, whereby to provide a plurality of segmental sections 11 and 11^a. Said sections constitute the packing for the casing and are adapted to be expansible, or readily removable, whereby to spread and have close engagement against the earth of the well, and in that position to form a water seal, preventing water from above intermingling with the oil field, as heretofore stated.

It is proposed to design the construction so that water will not leak through the openings between the segmental sections, and to that end the axially disposed cuts 9 and 10 are arranged in offset relation, and by reason of which the outer series of sections 11 overlie the opening between the inner series of said sections, as in the manner illustrated in Figs. 2 and 3.

The inner series of segmental sections 11^a terminate above the screw-threaded end of the casing 5, whereby to permit the application of the casing shoe, and the lower edges of said members 11^a are beveled, as at 12, to provide a substantially sharp peripheral edge. The outer series of sections 11 terminate above the inner series 11^a, whereby to leave an exposed rim or collar 13 on said inner series when the parts thereof are in contracted relation. And the lower edges of the sections 11 are beveled, as at 14, but which are disposed inwardly, or in the reverse direction to that of the beveled edges 12.

The purpose of the beveled edges 14 and 12 is that the former permit the packer to be easily lowered into the well without danger of the segments coming in contact with some obstruction and being pulled outwardly; and the latter (bevels 12) cut or shave the wall of the well and therefore form a packing.

The expansible segments 11 and 11^a are designed to be held in relatively contracted relation for the insertion of the pipe to position in the well boring, and to that end there is provided a readily releasable holding means, consisting of tie rods 15, which pass through the well casing 5 and engage with opposite pairs of segmental sections by having their respective ends 16

upset, as indicated in Fig. 1. Said rods 15 are designed to be readily breakable, whereby the same may be broken and the segments 11 and 11^a permitted to expand through the medium of any suitable device, such as a stone or other object, which is dropped through the pipe 2 and casing 5, as will be understood.

It is obvious that those skilled in the art may vary the details of construction and arrangement of parts without departing from the spirit of my invention, and, therefore, I do not wish to be limited to such features except as may be required by the claims.

What I claim is:—

1. The combination with a casing for wells, of a packing therefor comprising overlapping expansible segmental sections, and means for holding said sections in relatively contracted position, substantially as described.

2. The combination with a casing for wells, of a packing therefor comprising expansible elements formed integrally with said casing, substantially as described.

3. The combination with a casing for wells, of a packing therefor comprising overlapping expansible segmental sections formed integrally with said casing, and means for holding said sections in relatively contracted position, substantially as described.

4. A combined casing and packing for wells comprising a pipe of multiple thicknesses, one of said thicknesses providing the well casing, and the other of said thicknesses providing a packing comprising expansible sections, substantially as described.

5. A combined casing and packing for

wells comprising a pipe of multiple thicknesses, one of said thicknesses providing the well casing, and the other of said thicknesses providing a packing comprising segmental and overlapping expansible sections, substantially as described.

6. A combined casing and packing for wells comprising a pipe of multiple thicknesses divided longitudinally and circumferentially into an annular and segmental sections; said annular section providing the well casing, and said segmental sections providing a packing, substantially as described.

7. A combined casing and packing for wells comprising a pipe of multiple thicknesses divided longitudinally and circumferentially into an annular and segmental sections; said annular section providing the well casing, and said segmental sections providing a packing, and releasable tie rods for holding said expansible sections in relatively contracted relation, substantially as described.

8. A combined casing and packing for wells comprising a pipe of multiple and integral thicknesses divided longitudinally and circumferentially into an annular section, and overlapping segmental sections; said annular section providing the well casing and said segmental sections providing an expansible packing; and a plurality of releasable tie rods for temporarily holding said expansible sections in relatively contracted relation, substantially as described.

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

CHARLES W. RANDOLPH.

Witnesses:

S. C. HEWES,

C. KELLER.