No. 793,415. PATENTED JUNE 27, 1905.

J. T. CALLANAN.

WALL PACKER.

APPLICATION FILED OCT. 12, 1904.

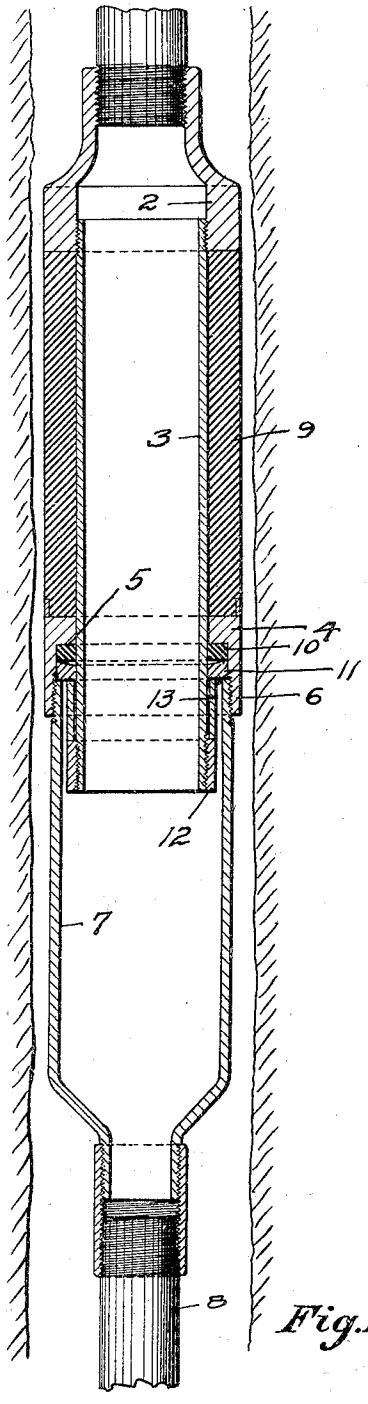


Fig. 1

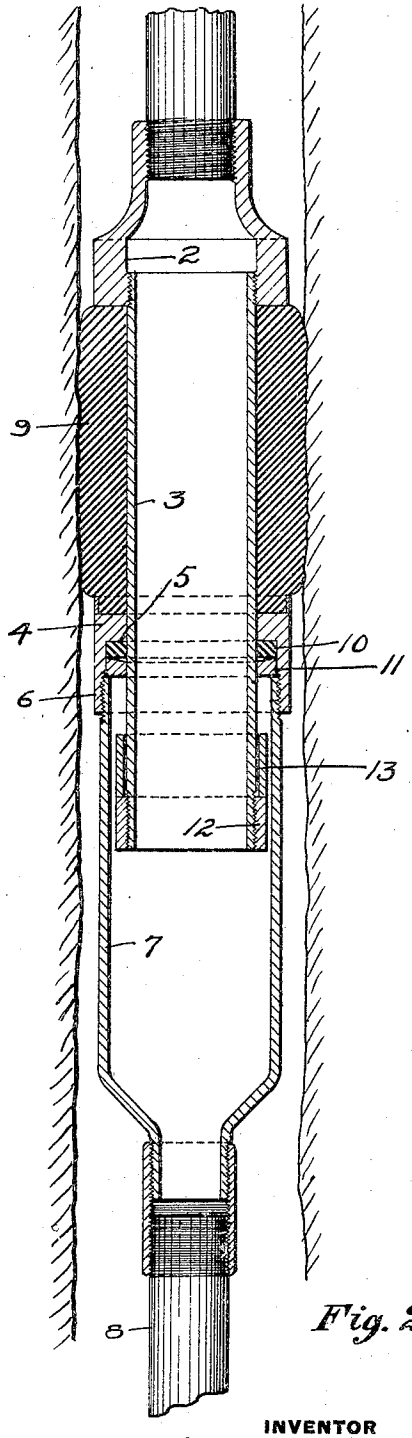


Fig. 2

WITNESSES

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No. 793,415. Patented June 27, 1905.

UNITED STATES PATENT OFFICE.

JAMES T. CALLANAN, OF PARKERSBURG, WEST VIRGINIA, ASSIGNOR TO THE PARKERSBURG MACHINE COMPANY, OF PARKERSBURG, WEST VIRGINIA, A CORPORATION OF WEST VIRGINIA.

WALL-PACKER.

SPECIFICATION forming part of Letters Patent No. 793,415, dated June 27, 1905.

Application filed October 12, 1904. Serial No. 228,221.

To all whom it may concern:

Be it known that I, JAMES T. CALLANAN, a citizen of the United States, residing at Parkersburg, in the county of Wood and State of West Virginia, have invented certain new and useful Improvements in Wall-Packers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to that class of packers for oil and gas wells wherein a rubber sleeve or annulus is contracted longitudinally, and thereby caused to expand laterally against the wall of the well and form the necessary seal. The gas in the well beneath the packer frequently attains very high pressure, and it is not unusual for this high-pressure gas to work its way upward between the rubber sleeve and the packer-body and force the rubber from position and render the packer absolutely useless.

The primary object of the present invention is to so pack or guard the lower or telescoping end of the packer-body as to effectually confine the gas beneath the packer and prevent the same from dislodging the rubber.

In the accompanying drawings, Figure 1 is a vertical sectional view of my improved packer, showing the position of the members as the packer is being lowered into a well; and Fig. 2 is a similar view showing the packer set in position in a well.

Referring to the drawings, 2 indicates the upper end or head of the packer, and 3 is the tubular body thereof which is freely movable through bottom head 4. The lower portion of this head is recessed to form seat or shoulder 5, and its rim-like extremity 6 is threaded internally to unite with the bottom tubular section 7, from which depends anchor-tube 8 to the bottom of the well. A rubber sleeve or annulus 9 closely fits body 3, being confined thereon between heads 2 and 4.

The operation is well understood by those skilled in the art. To set the packer, anchor-tube 8 is made of sufficient length to rest on the bottom of the well and support the packer at the point where it is desired the same shall be located. The anchor-tube and tubular section 7 comprises a positive support for head 4, and the weight of the tubing above operates to depress the same and lower body 3 through head 4, as indicated in Fig. 2, thereby compressing rubber 9 and forcing it outward tightly against the sides of the well and sealing the same.

In using packers of this character in high-pressure gas-wells the gas has frequently shown a tendency to work upward around the exterior of body 3 and force its way between the body and rubber 9, thus dislodging the rubber and rendering the packer practically useless. To obviate this difficulty, I have surrounded the lower portion of tubular body 3 with a rubber or other suitable packing-ring 10, which bears against face or shoulder 5 and which is held thereagainst by ring 11. This ring is engaged by the inner end of bottom section 7, which operates as a gland for compressing the packing sufficiently to prevent the passage of gas between it and packer-body 3. The inner face of ring 11 is preferably beveled, as shown, for the purpose of crowding packing 10 inward radially against body 3.

In assembling the packer and for holding the members together temporarily until bottom section 7 is in place I provide the lower extremity of body 3 with a threaded socket 12 and interpose a ring-like washer 13 between this socket and ring 11 for the purpose of holding the members assembled and for compressing packing 10 in a preliminary way. However, when bottom section 7 is screwed into place the upper extremity thereof engages and forces inward rings 11 and 10, thus relieving socket 12 and tubular packer-body 3 of all strain incident to compressing the packing. Socket 12 and washer 13 form the necessary external enlargement of the lower end of body 3, so that the members will hold together when withdrawing the packer from the well.

I claim—

1. The combination of a packer-body, a head at the upper end of and movable with the body, a bottom head through which the packer-body

moves, the under portion of the bottom head being formed with a shoulder and extended beneath said shoulder with the extended portion threaded internally, packing surrounding the body and bearing against the shoulder, a bottom section of the packer uniting with the threaded lower portion of the bottom head and adapted to engage and compress said packing, and packing material confined on the body between the heads.

2. The combination of a tubular packer-body, a head at the upper end of and movable with the body, a bottom head through which the body moves, the lower portion of the bottom head being recessed and formed with a shoulder, packing surrounding the body and bearing against the shoulder, a collar adjustable on the lower extremity of the body for engaging and temporarily securing the packing, a bottom section of the packer uniting with the head and engaging and permanently compressing said packing, and packing material confined on the body between said heads.

3. The combination of a packer having telescoping sections, a head embracing the inner section and adjustably uniting with the outer section, a packing-ring surrounding the inner section and bearing against said head, and a ring interposed between the packing and the adjustable outer section.

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

JAMES T. CALLANAN.

Witnesses:

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ALEX. S. MABON.