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A. P. McBRIDE.

WALL ANCHOR AND PACKER FOR GAS OR OIL WELLS.

APPLICATION FILED DEC. 6, 1904.

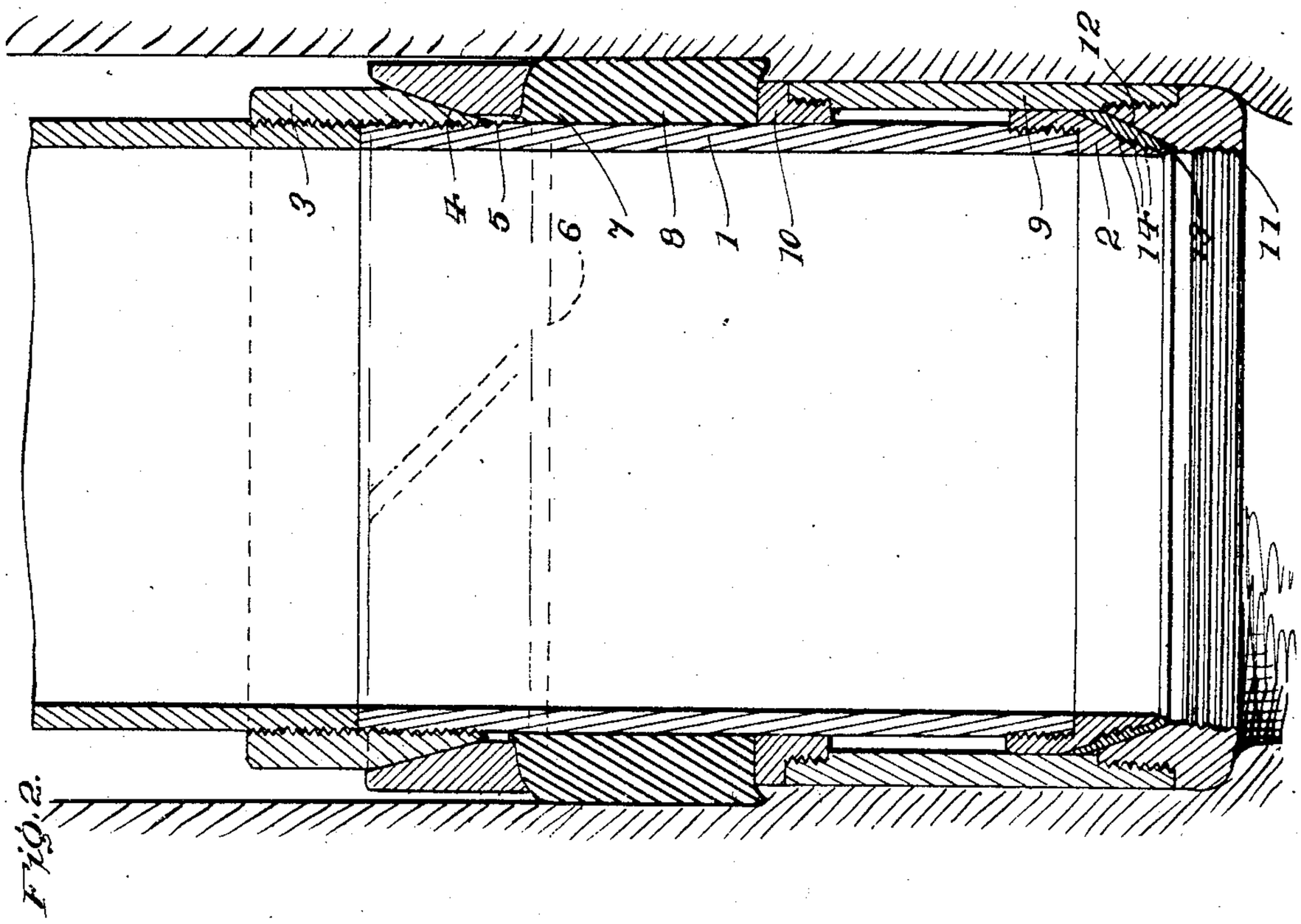

Fig. 2.

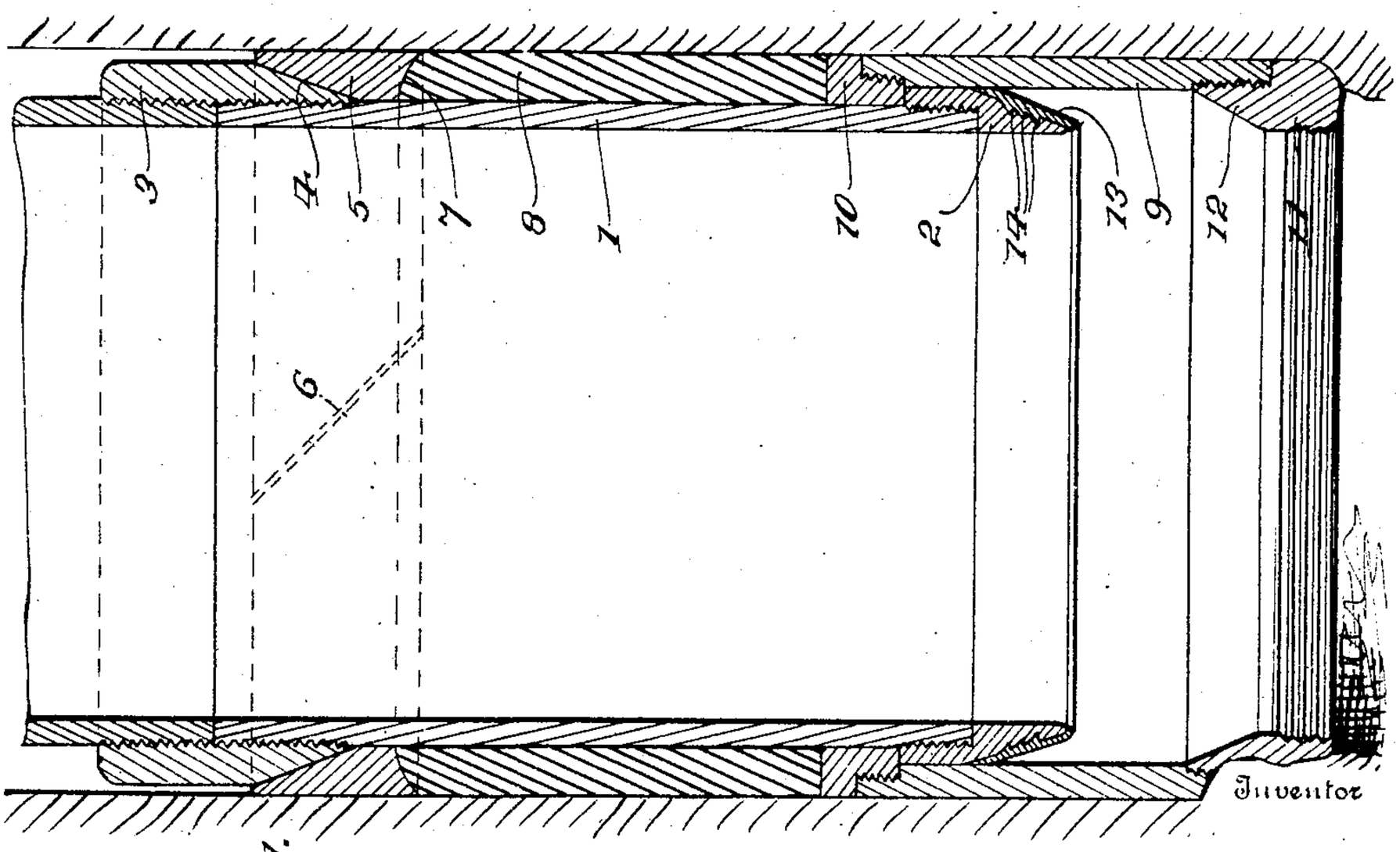

Fig. 1.

Witnesses

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UNITED STATES PATENT OFFICE.

ALBERT P. McBRIDE, OF INDEPENDENCE, KANSAS.

WALL-ANCHOR AND PACKER FOR GAS OR OIL WELLS.

SPECIFICATION forming part of Letters Patent No. 785,907, dated March 28, 1905.

Application filed December 6, 1904. Serial No. 235,684.

To all whom it may concern:

Be it known that I, ALBERT P. McBRIDE, a citizen of the United States, residing at Independence, in the county of Montgomery and State of Kansas, have invented certain new and useful Improvements in Wall-Anchors and Packers for Gas or Oil Wells, of which the following is a specification.

The purpose of this invention is to devise an anchor for the foot of casing forming the lining of deep wells and to combine therewith packing to insure a tight joint being maintained between the well and the lower end of the casing at all times.

The invention consists of a tubular section, an expansible ring forming a retainer at the upper end thereof, a wall-anchor telescoping with the lower portion of the tubular section, packing between the expansible ring and telescoping anchor, and a packing and seat between the said tubular section and wall-anchor to form a tight joint in the event of the packing becoming impaired.

In the accompanying drawings, forming a part of the specification, corresponding and like elements are indicated by the same reference characters in both views.

In said drawings, Figure 1 is a vertical central section of an anchor and packer for deep wells embodying the invention, showing the normal position of the parts. Fig. 2 is a view similar to Fig. 1, showing the relation of the parts when the casing has settled, so as to bring the packing at the lower end of the tubular section upon its seat.

The tubular section 1 is adapted to be coupled to the lower end of the casing forming the lining of the well and is provided at its lower end with a ring 2, tapered upon the outer side at its lower end. A collar or band 3 is threaded to the upper end of the tubular section 11, and its lower end 4 is tapered. An expansible ring 5 is loose upon the upper portion of the section 1, and its inner side flares to conform to the taper 4 of the collar or band 3. A cut 6 is provided in the ring to admit of its expansion. The lower end 7 of the expansible ring 5 is beveled outward and downward to engage with the upper end of packing 8 and crowd same inward. The packing 8 may be of rubber and other compressible and expansible material commonly used in deep-well apparatus.

The wall-anchor is telescopically fitted upon the lower portion of the tubular section 1 and comprises a section of tubing 9 and upper and lower rings 10 and 11, the ring 10 engaging with the lower end of the packing 8 and limited in its downward movement by contact with the ring 2. The ring 11 is beveled upon its outer lower side to engage with the walls of the well by a wedge action. The inner upper end of the ring 11 is flared to form a seat 12 to receive the tapered portion of the ring 2. When the casing is in position, the ring 11 is fast in the well, wedging against the sides thereof, and as the casing settles the tubular section 1 telescopes within the part 9 of the wall-anchor, thereby compressing the packing 8 and forcing the ring 5 upward and causing it to expand by riding upon the taper 4. This prevents the upper end of the packing 8 crowding past the expansible ring 5, which constitutes a retainer therefor, and the packing 8, being forced outward by the longitudinal compression, forms a tight joint between the well-established section 1. Should the packing 8 become impaired or give way to such an extent as to permit the tapered end of the ring 2 to rest upon the seat 12, a tight joint is formed irrespective of the packing 8, thereby preventing any escape around the lower end of the casing and the well.

To insure the formation of a tight joint between the rings 2 and 11, the tapered portion of the ring 2 is provided with a covering 13, of lead or like comparatively soft metal, the same being pressed or molded upon the ring 2 and held from accidental displacement by means of a series of grooves 14, formed in the ring 2. The tapered end of the ring 2 constitutes the packing, and the lead 13, coming between the valve and the seat 12, conforms to the latter and results in a tight joint, which is essential to the efficiency of the device in order to prevent communication being established between the casing and the well at a point above the packing.

The packer may be used at the bottom of the well or at any point in its length, accord-

ing as exigencies of the case may require. When intended for application some distance from the bottom of the well, the packer has the ring 11 internally threaded at its lower end for attachment thereto of the lower string of casing, as shown in Fig. 1.

Having thus described the invention, what is claimed as new is—

1. In combination, a tubular section having upper and lower outer extensions, rings loose upon said tubular section, the upper ring being expansible, a packing loose on the tubular section and confined between said rings, a tubular section connected with the lower loose ring and having an annular shoe at its lower end, and a packing at the lower end of the first-mentioned tubular section to make a tight joint with said annular shoe.

2. In combination, a tubular section having an outer tapered portion at its upper end, a ring fitted to the lower end of the tubular section and tapered upon its outer lower portion, a wall-anchor telescoping with the lower portion of said tubular section and comprising a section of tubing and upper and lower rings, the latter constituting an annular shoe and having its inner upper portion flared to form a seat for the tapered ring at the lower end of the first-mentioned tubular section, and a packing between the wall-anchor and the first-mentioned tubular section.

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

ALBERT P. McBRIDE. [L. S.]

Witnesses:
E. S. ELLIS,
EDGAR H. BRENNAN.