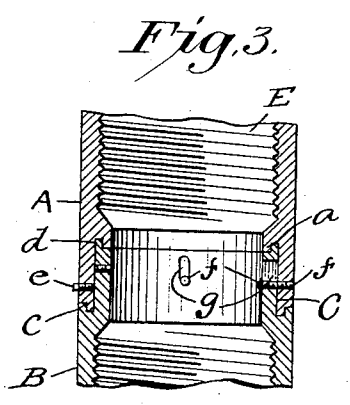
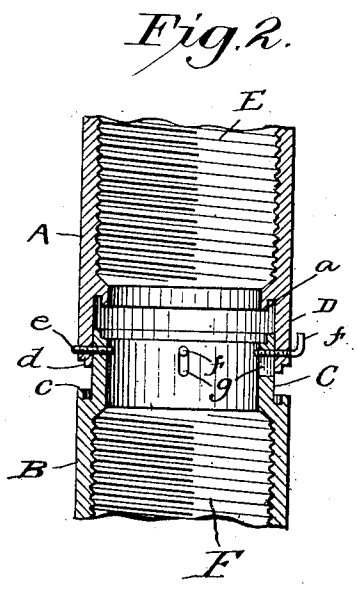
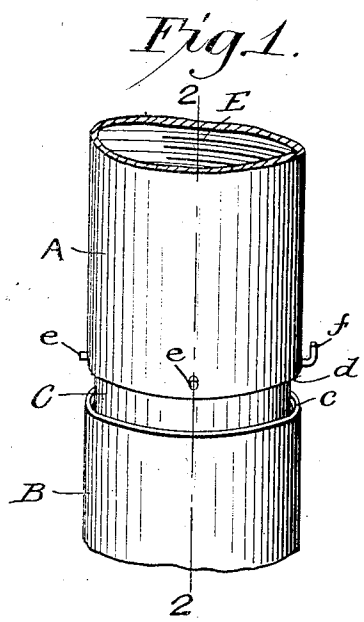


P. S. HOVIS.
 RELEASE JOINT FOR WELL CASINGS.
 APPLICATION FILED NOV. 26, 1920.

1,370,447.

Patented Mar. 1, 1921.



Inventor:
 Park S. Hovis.
 By Hiram S. Swartz Atty.

UNITED STATES PATENT OFFICE.

PARK S. HOVIS, OF BUTLER, PENNSYLVANIA.

RELEASE-JOINT FOR WELL-CASINGS.

1,370,447.

Specification of Letters Patent.

Patented Mar. 1, 1921.

Application filed November 26, 1920. Serial No. 426,633.

To all whom it may concern:

Be it known that I, PARK S. HOVIS, a citizen of the United States, residing at Butler, in the county of Butler and State of Pennsylvania, have invented a new and useful Release-Joint for Well-Casings, of which the following is a specification.

My invention relates to improvements in casings and pipes for oil, gas and Artesian wells, wherein metal casings and pipes are sunk to a considerable depth in the earth, and particularly to improvements in my former invention for the same purpose, for which Letters Patent of the United States were issued to me, dated Sept. 19, 1916, No. 1,199,029.

Its object is principally to provide improved means for holding opposite members of the release-joint together while lifting or withdrawing such casings or pipes from wells of this character in case of abandonment of the well, or for any other reason requiring their withdrawal; and secondly to provide means for actuating both members rotarily, simultaneously in either direction after the members of the joint have been forced together as hereafter set forth.

It consists, in addition to providing a release-joint for the casing or pipe, whereby the main body of the casing may be withdrawn readily from the lower sections thereof, and leaving the latter in the well, as shown in my said former patent, of means for threading and unthreading the pipe at said joint by preventing the members of the joint from rotating upon each other while the upper portion of the pipe or casing is being rotated, as experience has shown to be advantageous in certain cases, all as hereinafter more fully set forth and stated in the appended claims.

My invention is illustrated by the accompanying drawings, in which similar letters and figures of reference indicate like parts.

Referring thereto, Figure 1 is a view in perspective of a release-joint section embodying my invention; Fig. 2 is a vertical cross section of Fig. 1 on the dotted line 2-2 thereof; and Fig. 3 is a vertical section of the same, showing the parts of the joint section in closed relation to each other.

In the drawings, A and B are the two parts of my release-joint section, which register, one over the other at their inter-section and are adapted to be separated by the withdrawal of the upper portion of the

casing from the well in case the lower end portion thereof becomes fast in the earth, as commonly occurs in deep well drilling.

To provide for holding the adjacent sections of the well casing together so as to be impervious to either water or gas, I provide as in my said former patent, a sleeve portion A, which is threaded at its upper end E to engage the adjacent section of the well casing above it, and adapt a lower portion B to couple with said sleeve by a snugly fitting neck C detachably secured thereto, the lower portion being also threaded at its lower end F for coupling with the lower section of the well casing in the usual manner. The parts A and B are made impervious to water and gas by means of the annular shoulder or rim *c* at the junction of the neck C, adapted to register with the corresponding rim *d* which projects downwardly over said neck from a sleeve or collar D surrounding the same. The sleeve D projects downwardly from the upper part of the joint A terminating with the said rim *d*. An annular rim *a* is also constructed in like manner on the interior of the sleeve portion D where the latter terminates upwardly, and is adapted to meet and register with the corresponding rim *b* which projects upwardly within said sleeve around the top of the neck C. For better prevention of the escape of water and gas between the parts of the joint I cut a shallow furrow in one or both of said rims and fill up the furrow with a softer metal—such as lead or block tin, as heretofore which serve as a pliable cushion, the several parts being fitted to meet simultaneously, against each other, respectively.

To hold said parts A and B either partly separated, as shown in Fig. 2, or with said rims in contact, as shown in Fig. 3, I pass threaded bolts made of some soft metal such as copper, or the like, through said sleeve and neck at a plurality of points sufficient to hold the joint from separating under ordinary pressure, and adapted to be sheared off by forcing the parts together or a part as the case may be, thus leaving the part of the casing above the joint free therefrom, and leaving the part of the casing below the joint to remain in the well.

Heretofore all said release bolts were made alike, and to be sheared off simultaneously by forced pressure in either longitudinal direction.

Experience has demonstrated that it is advantageous in many cases to have a number of said bolts remain unsheared off by the downward pressure or bringing of the parts of the joints together, and a number thereof which can be sheared off only when the parts are drawn apart, said unsheared bolts serving meanwhile to afford means for preventing one part from rotating upon the other when the casing is rotated above the joint.

Accordingly I construct, in addition to the release bolts heretofore employed—marked *e e*—a plurality of similar bolts—marked *f f*—and make for the latter corresponding longitudinal slots *g g*, either in the neck *C* or in the sleeve *D*, as may be preferred, of sufficient length to permit the parts to meet together endwise without shearing off said bolts; and I so locate the upper part of the said slots, respectively, as to coact with the bolts *e e* and thus give added strength to the joint when the pressure is in one direction vertically, and less resistance is afforded to their being drawn apart. It will be seen that the bolts *f f* can only be sheared off when the parts of the joint are being drawn apart, the other bolts being sheared off by movement in either vertical direction.

By this means I provide means for rotating the lower part of the joint by the rotation thereon of the upper part after the bolts

e e have been sheared off as aforesaid, leaving the bolts *f f* to be sheared off when the members of the joint are drawn apart as aforesaid, and at the same time I preserve all the advantages of a release joint which is rendered impervious while in use, as heretofore.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is—

A release joint for well casings and pipes, comprising, in combination, a pair of opposite pipe coupling sections removably fitted together a projecting sleeve on one section provided with an annular rim; a neck projecting from the opposite section provided with an annular rim—the rims adapted to coact upon each other; and means, including one or more soft metal bolts, for holding tentatively the opposite rims apart, and for releasing said sections from each other by longitudinal draft in one direction; and one or more soft metal bolts operative in longitudinal slots within said joint, substantially as set forth and for the purpose specified.

In witness whereof I have hereunto set my hand at Wooster, Ohio, this 27th day of August, 1920.

PARK S. HOVIS

In presence of two witnesses:

CHARLES C. JONES,
HIRAM B. SWARTZ