P. S. HOVIS.

RELEASE JOINT FOR WELL CASINGS.

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1,199,029.

Patented Sept. 19, 1916.

Fig. 1.

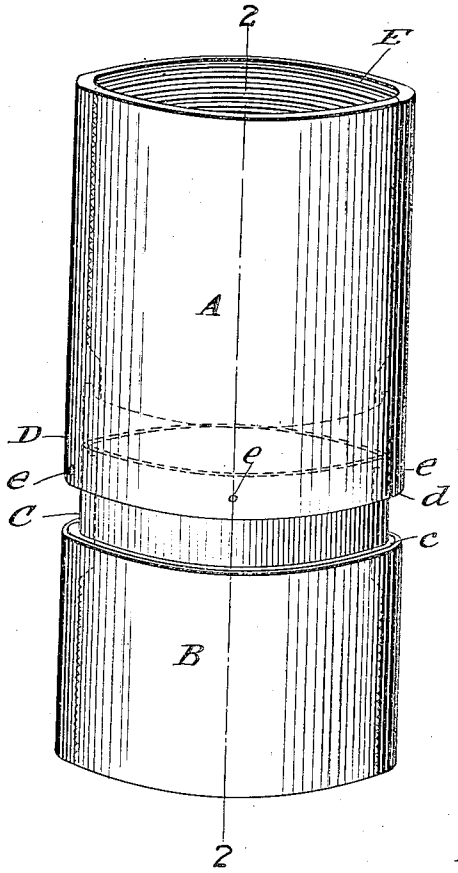


Fig. 2.

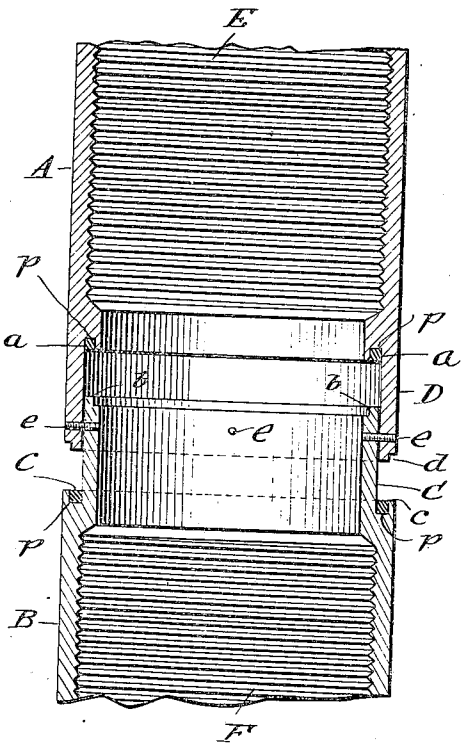
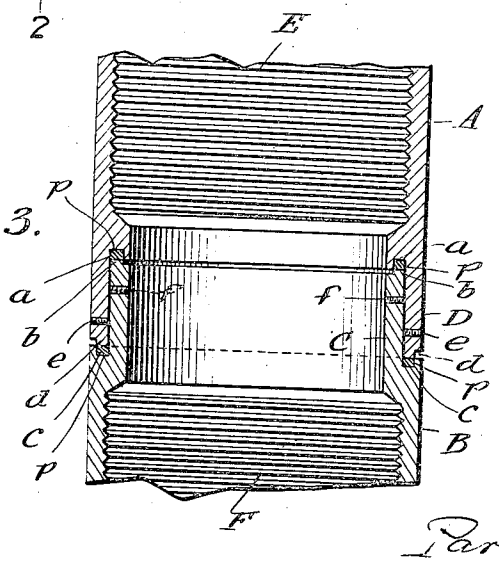


Fig. 3.



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UNITED STATES PATENT OFFICE.

PARK S. HOVIS, OF WOOSTER, OHIO.

RELEASE-JOINT FOR WELL-CASINGS.

1,199,029. Specification of Letters Patent. Patented Sept. 19, 1916.

Application filed June 15, 1916. Serial No. 103,888.

To all whom it may concern:

Be it known that I, PARK S. HOVIS, a citizen of the United States, residing at Wooster, in the county of Wayne and State of Ohio, 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. Its object is to afford improved means for 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.

It consists of the construction and use of a release-joint for the casing or pipe, adapted to be located at any desired point in the well, preferably near the bottom, or between the lower sections of the casing thereof, whereby the main body of the casing may be withdrawn readily from the lower sections, leaving the latter in the well, by the intervention of said release-joint, as hereinafter more fully set forth and stated in the appended claims.

My invention is illustrated by the accompanying drawings, in which similar letters 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, as will be hereinafter more fully explained.

In the drawings, A and B are the two parts of the release-joint section, which register one over the other at their intersection, and are adapted to be separated by the withdrawal of the upper part of the casing from the well in case the lower end portion of the casing becomes fast therein, as commonly occurs when the well casing extends to a great depth in search for oil, gas or water.

In order to make the joint of the two sections capable of holding the adjacent sections of the well casing together, and also provide for their forcible separation when desired, and also make their joint impervious to either water or gas, as required in the sinking of gas and oil wells, I provide a sleeve portion A, which is threaded at its upper end E to engage the adjacent section of the well casing above it, in the usual way of a coupling for well casings, and adapt a lower part B to couple into said sleeve by means of a snugly fitting neck C, temporarily secured thereto, as hereafter described, said lower part being also threaded at its lower end F for coupling with the lower section of the well casing, in the usual manner. To make the coupling of said parts A and B impervious to water and gas, I construct an annular shoulder or rim *c* at the junction of the neck C, in such manner as to register with the corresponding rim *d* which projects downwardly about said neck from a sleeve or collar D surrounding the same. An annular rim *a* is also constructed in like manner on the interior of the sleeve portion A, where the latter terminates upwardly and is adapted to meet and register with the corresponding rim *b*, which projects upwardly within said sleeve from said neck C. Said rims *a* and *b* and *c* and *d* are so constructed with reference to each other as to meet simultaneously when the parts A and B are forced together, as hereafter stated. Moreover, to more perfectly secure a gas-tight fitting of said rims upon each other respectively, I cut a shallow furrow *p* in the face of each annular shoulder, and in a plane with the adjacent rim of the opposite member, and fill up said furrow with a softer metal than the casing, preferably with block tin or the like, to constitute a pliable cushion on which the adjacent rim may impinge when said members A and B are forced together. In cases where the gas pressure is light, a single annular shoulder and cushion on either one of said members, instead of both, may be sufficient to prevent leakage, and may be omitted from the other member accordingly within the scope of my invention. To hold the said members temporarily, either partly separated, as shown in Fig. 2, or with said rims in contact with each other, as shown in Fig. 3, I fasten them with a series of threaded bolts *e e*, made of copper or other soft metal of sufficient strength and size for the purpose, passed through the said sleeve and neck, substantially as shown in Fig. 2, so that when said parts are desired to be forced either apart or together, said bolts may be simultaneously sheared off by the co-action of said members upon each other. Said shearing off may be done either when the casing strikes the rock bottom, or by draw-

ing upwardly on the casing with force sufficient therefor. By the means aforesaid when the lower end of the well casing is stuck fast all of said casing, except one or more sections thereof at the bottom of the well, may be readily withdrawn by the severance of said release-joint, and the latter is rendered impervious while in use, as aforesaid.

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

1. In a device of the character described, a release joint for oil, gas or Artesian well casings, comprising a pair of opposite pipe coupling sections removably fitted together, a sleeve on one section terminating with a rim, a neck on the other section adapted to slidably fit into said sleeve and terminating with a rim, an annular shoulder on either one of said sections fitted to engage the rim of the opposite section, and means for removably securing said sections together whereby they may be separated by draft in one direction, substantially as set forth.

2. A release-joint for well casings, comprising the combination of a pair of opposite pipe-coupling sections removably fitted together, a projecting sleeve terminating in a rim on one section, a neck projected from the other section adapted to fit within said sleeve, said neck terminating in a rim, an annular shoulder on each of said sections fitted to register in plane with the rim of the opposite section, and means for holding said sections together or enabling them to be separated by longitudinal draft in one direction, substantially as set forth.

3. 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 terminating with an annular rim, a neck projecting from the opposite section terminating with an annular rim, and adapted to fit within said sleeve, an annular shoulder projecting laterally within said sleeve section, an annular shoulder projecting outwardly from said neck section, an annular furrow in said shoulders respectively, a soft metal packing in said furrows respectively, and means, including one or more soft metal bolts for holding said opposite rims apart, and for releasing said sections from each other by longitudinal draft in one direction, substantially as set forth and for the purpose specified.

In witness whereof I hereunto set my hand this 13 day of May A. D. 1916.

PARK S. HOVIS.

In presence of two witnesses:
HIRAM B. SWARTZ,
CHAS. CURRY.