

Aug. 26, 1924.

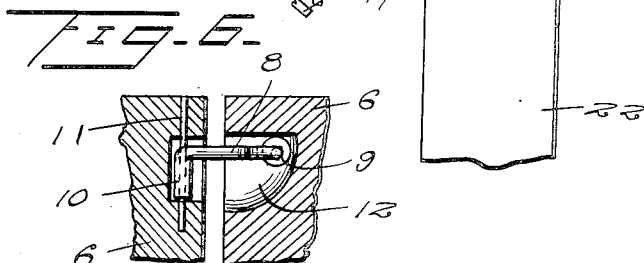
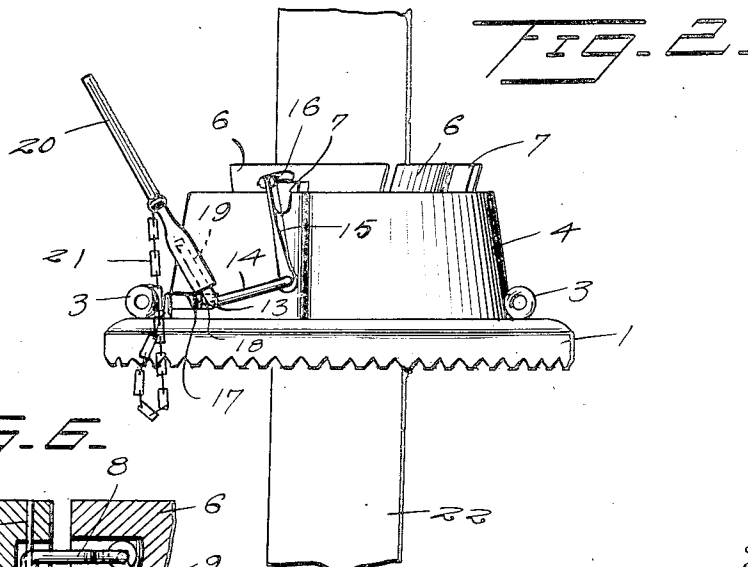
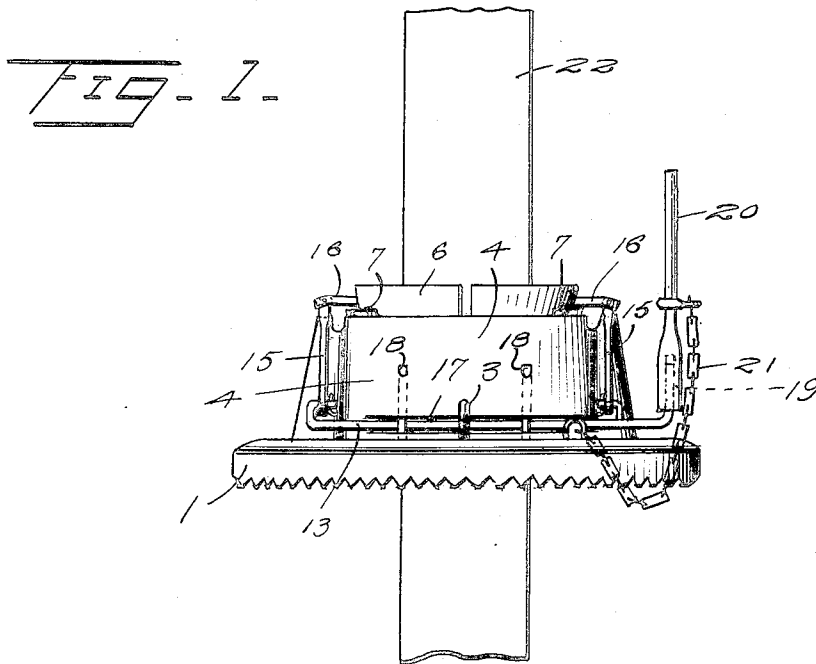
1,506,581

E. P. HALLEY

DEEP WELL CASING CLAMP

Filed Nov. 3, 1923

2 Sheets-Sheet 1



Inventor

E. P. Halley

By

W. A. H. J. Co.
Attorney

Aug. 26, 1924.

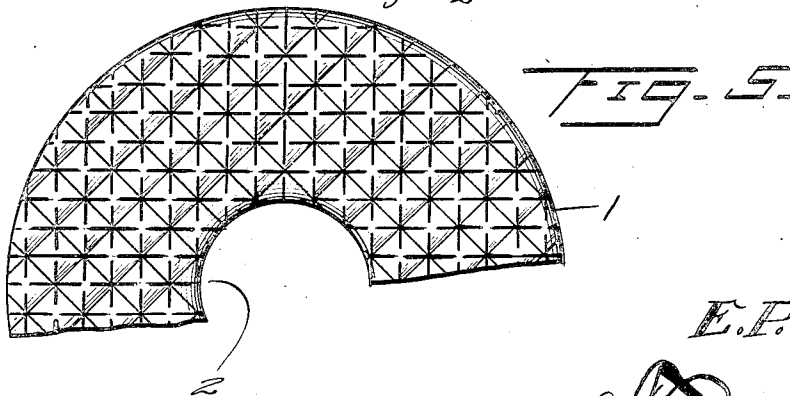
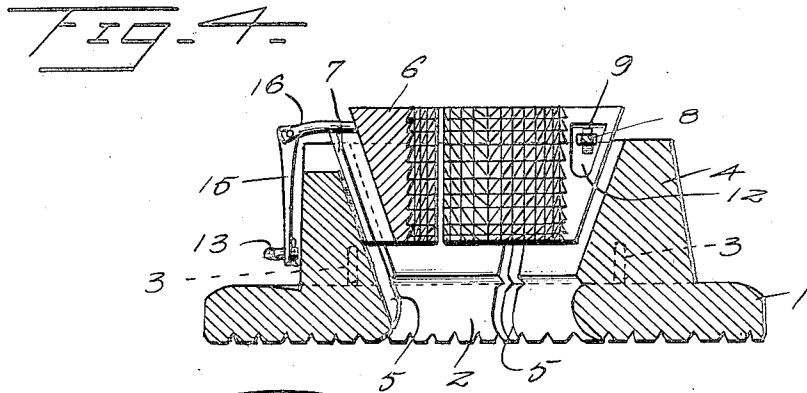
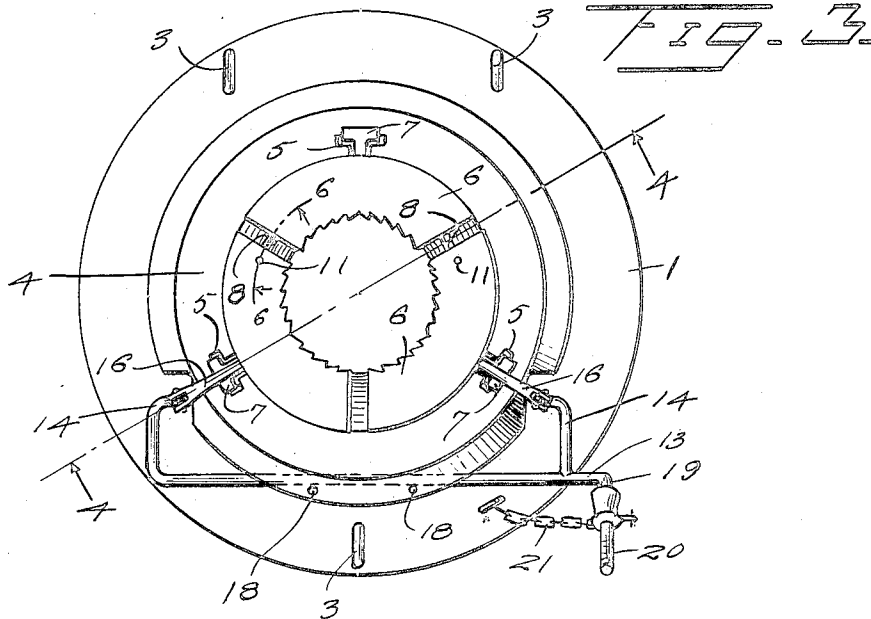
1,506,581

E. P. HALLEY

DEEP WELL CASING CLAMP

Filed Nov. 3, 1923

2 Sheets-Sheet 2



Inventor
E. P. Halley

By *A. H. H. H. H. H.*
Attorney

Patented Aug. 26, 1924.

1,506,581

UNITED STATES PATENT OFFICE.

ELTON P. HALLEY, OF SANDERSON, TEXAS.

DEEP-WELL-CASING CLAMP.

Application filed November 3, 1923. Serial No. 672,605.

To all whom it may concern:

Be it known that I, ELTON P. HALLEY, a citizen of the United States, residing at Sanderson, in the county of Terrell and State of Texas, have invented certain new and useful Improvements in Deep-Well-Casing Clamps; 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 invention has for its object to provide a clamp which is automatic in action in gripping the casing of deep wells, such as oil and artesian, so as to support the same and prevent the casing from dropping back into the well when partly withdrawn and the tools are shifted to obtain a new grip in the process of removing the casing from the well.

Other objects and advantages will be apparent and suggest themselves as the nature of the invention is understood.

While the drawings illustrate an embodiment of the invention it is to be understood that in adapting the same to meet different conditions and requirements, various changes in the form, proportion and minor details of construction may be resorted to without departing from the nature of the invention.

Referring to the accompanying drawings forming a part of the application:

Figure 1 is an elevational view showing the application of the invention,

Figure 2 is a view similar to Figure 1 taken at right angles thereto,

Figure 3 is a top plan view showing the parts on a larger scale,

Figure 4 is a detail sectional view on the line 4-4 of Figure 3,

Figure 5 is a detail view of a portion of the base as seen from the bottom side, and

Figure 6 is a sectional detail view on the line 6-6 of Figure 3.

Corresponding and like parts are referred to in the following description and designated in the several views of the drawings by like reference characters.

The numeral 1 designates the base which, as shown, is preferably of circular outline and formed with a central opening 2, the inner edge of which is made rounding, as indicated most clearly in Figure 4. The bottom side of the base is roughened, corrugated or otherwise formed to prevent slipping upon the foundation when the clamp

is in operation. Eyes 3 or analogous elements are provided on the base 1 to receive anchoring means whereby to prevent movement of the base when screwing or unscrewing the casing section. The elements 3 may receive bars or pipes whereby to connect the base to the well rigging or make the same secure in any preferred way against turning. A guide 4 is provided upon the top side of the base 1 and consists of a boss or ring in line with the opening and having its inner wall upwardly flared and provided at intervals with guide grooves 5 of substantially T-form in cross section. In the preferable construction, the guide 4 and base 1 constitute parts of a single casting.

A plurality of segmental jaws 6 are provided to coact with the guide 4 and their outer sides are inclined to conform to the flare of the inner wall of the guide 4, whereby an upward movement of the jaws causes the same to expand or move outwardly, and a downward movement to contract or move inwardly, whereby to release the casing or automatically grip the same. The inner or gripping faces of the jaws have their axial elements straight so as to engage with the casing throughout their extent. T-ribs 7 formed upon the outer sides of the jaws 6 intermediate their vertical edges coact with the T-grooves 5 to retain the jaws in place and direct them in their vertical movement. The inner faces of the jaws are toothed or roughened to insure a positive grip to prevent any possible slipping of the casing when screwing or unscrewing the sections or when the hoisting force is relaxed to permit readjustment of the tool.

Jaw actuating means are associated with adjacent jaws, the intermediate jaw being connected with the adjacent jaws to move therewith. The connecting means between the intermediate jaw and the jaws connected with the operating means is shown most clearly in Figure 6 and consists of an arm 8 having a roller 9 at its outer or free end and having a sleeve 10 at its inner or pivotal end to receive a pintle 11, whereby the said arm is pivotally connected to the jaw 6 to which the operating means is connected. A recess 12 formed in the edge of the intermediate jaw receives the outer end of the arm 8. The construction and relationship of the connecting means between the jaws is such as to insure a synchronous movement of the several jaws.

The jaw operating means comprise a rod 13 from which arms 14 project in the same direction and which are connected by means of links 15 with arms 16 projecting outwardly from adjacent jaws 6. The rod 13 is mounted in a slot 17 provided in a side of the guide 4 adjacent the base 1 and is retained in the slot by means of pins 18. An end of the rod 13 is bent laterally as indicated at 19 to receive a handle or lever 20 which is detachably connected thereto. To prevent loss or misplacement of the handle 20, it is attached to the base 1 by means of a short chain 21 or other flexible connection.

In the operation of the device, it is supported upon a suitable foundation at the mouth of the well in position to receive the casing 22 which is passed through the guide 4, base 1 and jaws 6. By reason of the upward flare of the inner wall of the guide 4 and the corresponding inclination of the outer sides of the jaws 6, the latter are normally held contracted so as to automatically grip the casing 22 and prevent its falling back into the well or turning when screwing or unscrewing sections. When a lifting force is applied to the casing 22, the jaws receive a corresponding upward movement and automatically release their grip but a lowering of the casing causes the jaws 6 to contract and grip the casing to prevent its downward or rotary movement.

What is claimed is:

1. A casing clamp comprising a base in-

cluding a guide having its inner wall upwardly flared, casing gripping jaws disposed within said guide and having their outer sides inclined to conform to the flare of the inner wall of the guide, jaw operating means having positive connection with two of the jaws, and connecting means between an intermediate jaw and the adjacent positively operated jaw, the same comprising an arm pivoted at one end to one of the jaws and having its opposite end entering a recess of the adjacent jaw.

2. A casing clamp comprising a base including a guide having its inner wall upwardly flared, casing gripping jaws disposed within said guide and having inclined outer sides to conform to the flare of the inner wall of the guide, arms secured to and extending laterally from two of said jaws, connecting means between an intermediate jaw and an adjacent positively operated jaw, said means comprising an arm pivoted at one end to one of the jaws and having its opposite end entering a recess of the adjacent jaw, a shaft journaled on the base, arms projecting from the shaft, links connecting the last mentioned arms and the arms on the jaws, and means to actuate said shaft.

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

ELTON P. HALLEY.

Witnesses:

G. J. HENSHAW,
F. N. HARRELL.