

J. R. LOCK.
OIL WELL CAPPER.
APPLICATION FILED MAY 14, 1914.

1,130,181.

Patented Mar. 2, 1915.

2 SHEETS—SHEET 1.

Fig. 2.

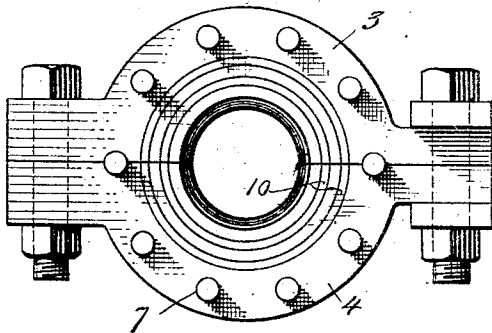


Fig. 3.

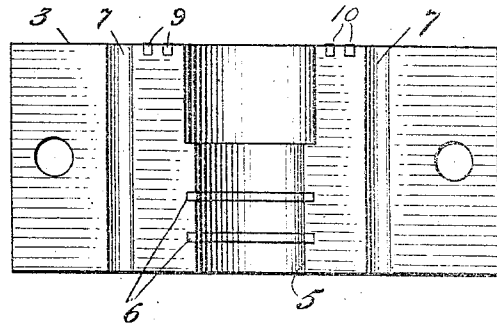


Fig. 1.

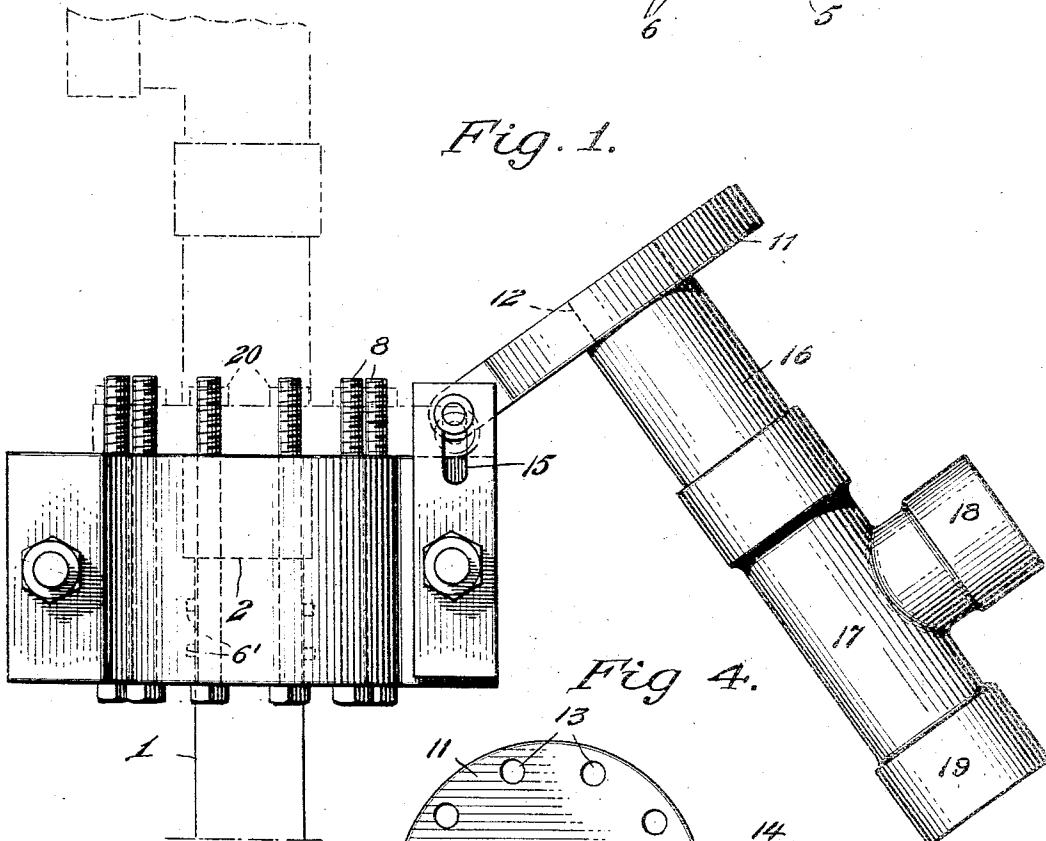
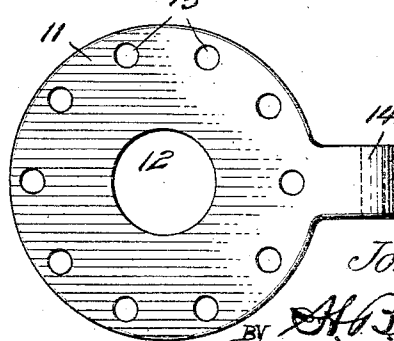


Fig. 4.



Witnesses:

B. M. Offutt,

C. J. Allen

Inventor:

John R. Lock

By H. B. Willson & Co.
Attorneys

J. R. LOCK.
OIL WELL CAPPER.
APPLICATION FILED MAY 14, 1914.

1,130,181.

Patented Mar. 2, 1915.

2 SHEETS—SHEET 2.

Fig. 5.

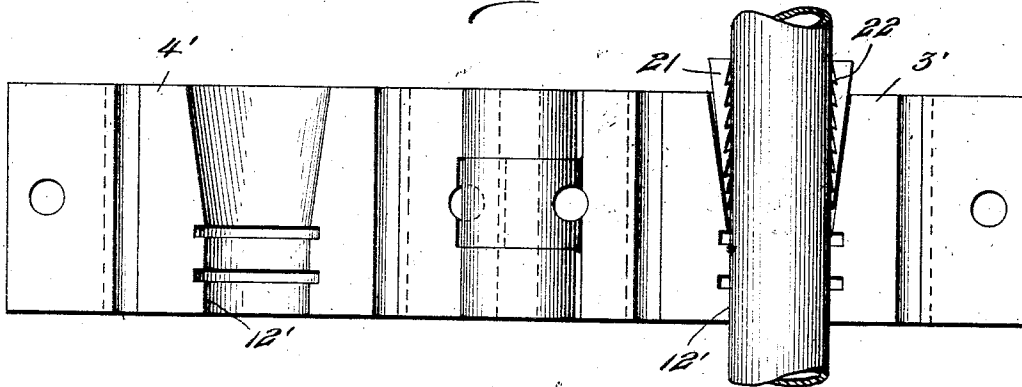


Fig. 6.

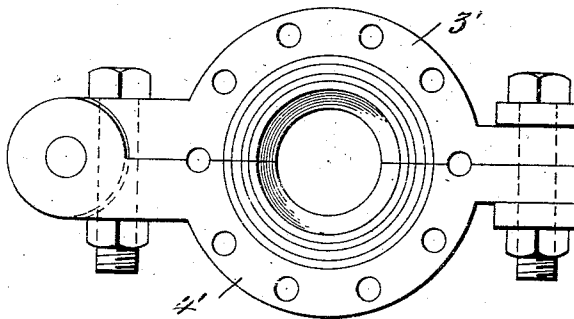
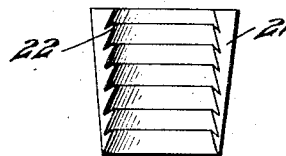


Fig. 7.



Fig. 8.



Inventor

John R. Lock

Witnesses

E. M. Offutt
E. E. Cannon

By *A. B. Williamson & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

JOHN R. LOCK, OF FELLOWS, CALIFORNIA, ASSIGNOR TO ALEX WARK, OF BAKERSFIELD, CALIFORNIA.

OIL-WELL CAPPER.

1,130,181.

Specification of Letters Patent.

Patented Mar. 2, 1915.

Application filed May 14, 1914. Serial No. 836,615.

To all whom it may concern:

Be it known that I, JOHN R. LOCK, a citizen of the United States, residing at Fellows, in the county of Kern and State of California, have invented certain new and useful Improvements in Oil-Well Cappers; and I do 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.

This invention relates to improvements in well cappers and is designed more particularly for the capping of oil wells of the type known as gushers.

The object of the invention is to provide capping means for oil wells which is so constructed and operated as to avoid the necessity of direct application of manual labor at the mouth of the well casing, being operable from a point remote from the well and thereby protecting the operators and avoiding all danger of contact with the oil or gas emitted by the well.

Another object of the invention is to provide capping means which may be applied to the well casing below the upper or discharge end thereof and which carries cut off valves or gates permitting the stopping of the flow after which a suitable connecting pipe may be applied leading to a reservoir so that when the gate is again opened, the flowing oil may be saved and stored.

In accordance with this invention, the capping device is made in sections to adapt it to be readily applied to the well tubing or casing below the upper end thereof and this capping device is of a size permitting the movement of the capper longitudinally of the well tubing until arrested by the usual collar at the upper end thereof, the parts being so proportioned that the gate valves carried by the capper will then be above the outlet end of the well casing or tubing.

With the above objects in view, the invention consists of certain novel features of construction, and combination and arrangement of parts as will be more fully described and claimed.

In the accompanying drawings:—Figure 1 represents a side elevation of this improved capper showing it applied to an oil

well tube with the hinged portion shown swung downwardly in inoperative position in full lines and in operative position in dotted lines; Fig. 2 is a top plan view thereof; Fig. 3 is a front elevation of one of the clamping sections viewed from the inside; Fig. 4 is a plan view of a portion of the swinging member; Fig. 5 is a front elevation with the sections in open position, showing another form of the invention; Fig. 6 is a top plan view thereof; Fig. 7 is a detail plan view of one of the slips; and Fig. 8 is a front elevation thereof taken from the inside.

In the embodiment illustrated, a well casing 1 is shown which may be taken as indicative of that portion of the well casing projecting above the surface of the ground or at least the accessible end of the casing and as is customary, the outer end of this casing is provided with the usual sleeve or collar 2 exterior to the casing.

The capping structure comprises 2 semi-tubular members 3 and 4 having their meeting edges longitudinally disposed and in the same diametric plane when the two members 3 and 4 are brought together. The internal diameter of the associated semi-cylindrical parts 3 and 4 of the capping device is greater than the external diameter of the collar 2 and one end of each of the capping members is formed with an inwardly directed enlargement 5 which when the capping member is applied to the pipe 1, closely hugs the pipe, the internal diameter of the enlarged end of the capping member conforming quite closely to the external diameter of the pipe 1 and which is provided on its inner face with a plurality of annular packing grooves 6 spaced longitudinally and when the capping member is applied to the pipe 1, packing rings 6' are introduced in these grooves 6 to form a fluid tight connection between the well casing and the capping members.

The semi-tubular sections 3 and 4 are provided with a plurality of spaced longitudinally extending bores 7 arranged concentric with the capping member and forming an annular series of bolt receiving apertures through which bolts 8 are adapted to extend as shown clearly in Figs. 1 and 2. The threaded ends of said bolts are arranged

upwardly some distance above the upper faces of the members 3 and 4 for a purpose to be described. The upper face of the capping member formed by the sections 3 and 4 is provided with a plurality of annular packing grooves 9 adapted to receive suitable packings 10 for forming a fluid tight connection between this clamping portion of the capping member and the hinged portion now to be described. The hinged portion of this capping member comprises a disk-like plate 11 having a central opening 12 adapted to register with the opening formed by the tubular sections 3 and 4 and which is also provided with an annular series of apertures 13 positioned to register with the bores 7 in the clamping capping member and to receive the bolts 8 when in operative position. This plate 11 has a laterally extending bearing 14 forming the hinge knuckle for the swinging or hinged portion of the capping member and which is here shown hingedly mounted on a suitable pintle shown mounted in a slot 15 formed in the engaging flanges of the members 3 and 4 at one side thereof. A pipe 16 is secured to the plate 11 over the opening 12 therein and has a T-pipe 17 mounted on its free outer end as is shown clearly in Fig. 1. The stem portion 18 of said T-pipe opens laterally and is provided with a gate valve not shown. The outer, open end 19 of this pipe 17 is also provided with another gate valve, also not shown and through which the oil is adapted to flow after the hinged portion has been disposed in upright position over the clamping capping member with the bolts 8 extending through the apertures 13 therein. After this hinged portion has been swung in upright position as shown in dotted lines in Fig. 1, suitable nuts 20 are applied to the bolts 8 thereby firmly securing the swinging portion in operative position.

By arranging the T-pipe 17 on the end of the pipe 16 the oil or gas may be directed either upward through the gate in the end 19 or through the gate in the stem portion 18 at one side of the pipe, and a Y coupling pipe is preferably disposed in the stem 18 of the pipe 17 to enable the flow of oil or gas to be directed through either one or the other of the two pipes at the side by shutting the gate valve in the upper end 19 of the pipe 17 and thus providing an extra gate at the side for use in case one should become disabled.

In the application of this device, the members 3 and 4 are first clamped around the pipe 1 in the position shown in Fig. 1 and the hinged portion of the capping device carrying the gate valves is swung into operative position by the pulley lines in ordinary use on derricks employed in connection with oil wells and drops down over

the upper end of the casing with the bolts 8 entering the apertures 13 therein. This may be accomplished by men at a point some distance from the well and after said hinged portion has been swung over the clamping capping member, the nuts are then applied to the bolts 8, the packing 10 in the grooves 9 forming a fluid tight connection between the swinging capping member and the clamping capping member. When this hinged portion is in upright position on the clamping capping member, the oil or gas will flow through the pipes 16 and 17 through either of the gates as may be desired.

In Figs. 5 to 8, another form of capping member is shown adapted for use on a well casing which has no collar or from which the collar has been removed or broken. In this form of the invention, clamping members 3' and 4' are employed which are similar to the member 3 and 4 of the other figures except that they have no enlarged portion at the lower end thereof, the bore 12' extending therethrough being enlarged at its upper end and flared to receive a set of slips 21 which are here shown provided with teeth 22 and are constructed in the form of half circles tapering toward one end and when the members 3' and 4' have been clamped around the well casing, the slip rings 21 are inserted in the tapered portion of the bore and the teeth thereof biting into the well casing afford a firm gripping action securely connecting the members 3' and 4' to the casing so that when the upright or hinged portion of the capping device is hoisted into place and bolted down to the clamping member, the slips have the same holding effect on the capping device as if a collar were employed.

The slot 15 is designed to prevent bruising of the threads on the bolts 8 permitting the hinged member to be first moved upwardly to the limit of said slot, to position the apertures 13 directly over the bolt ends and then allow it to drop down on said bolts. Similarly, when lowering said hinged member, it is first raised to the limit of the slot 15 to disengage the apertures 13 from the bolts and it is then swung downward into the full line position shown in Fig. 1.

From the above it will be obvious that the capping device is normally in position on the well casing with the hinged portion swung down as shown in full lines in Fig. 1, a hoisting cable, not shown, being preferably engaged with the hinged portion so that in the event a "gusher" is struck during the process of drilling, all that is necessary is to connect the cable on said hinged capping member with the hoisting mechanism and pull said member into upright position over the well casing and thereby close it. It will thus be seen that this capper can

be very quickly adjusted and can be installed and operated by the regular well crew.

I claim as my invention:

5 1. The combination with the outlet tube of an oil well, of a tube engaging capping member, a swinging member hinged to said tube engaging member, said tube engaging member and hinged member being provided
10 with interlocking elements for securing them together in operative position.

2. The combination with the outlet tube of an oil well, of a tube engaging capping member having elements projecting above
15 its upper end, a swinging member hinged to said tube engaging member and having apertures positioned to register with the projecting elements on said tube engaging member, when the members are in operative
20 position.

3. The combination with the outlet tube of an oil well, of a tube engaging capping member having a longitudinally extending slot at its upper end, a swinging member
25 pivoted to slide in said slot, said members being provided with interengaging connecting elements.

4. A well cap comprising a longitudinally divided two-part capping member
30 adapted to encircle a well casing and having a plurality of longitudinally extending bores, bolts extending through said bores, a

swinging member hinged to said two-part member and provided with a base plate having apertures positioned to register with
35 and engage said bolts.

5. A well cap comprising a longitudinally divided two-part capping member adapted to encircle a well casing and having an annular series of longitudinally extending bores, bolts extending through said
40 bores, a swinging member hinged to said two-part member and provided with a base plate having an annular series of apertures positioned to register with and engage said
45 bolts, nuts for engaging said bolts for locking said members in connected position.

6. The combination with the outlet tube of an oil well, of a tube engaging capping member, a swinging member hinged to said
50 tube engaging member, said tube engaging member and hinged member being provided with interlocking elements for securing them together in operative position, said hinged member comprising a base plate, a
55 pipe mounted thereon, and a T-pipe connected with said first mentioned pipe.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN R. LOCK.

Witnesses:

DANIEL W. HUGHES,

THOMAS F. LITAKER.