

J. F. MOODY.
GRIPPING DEVICE.
APPLICATION FILED MAY 9, 1919.

1,356,458.

Patented Oct. 19, 1920.
2 SHEETS—SHEET 1.

Fig. 1.

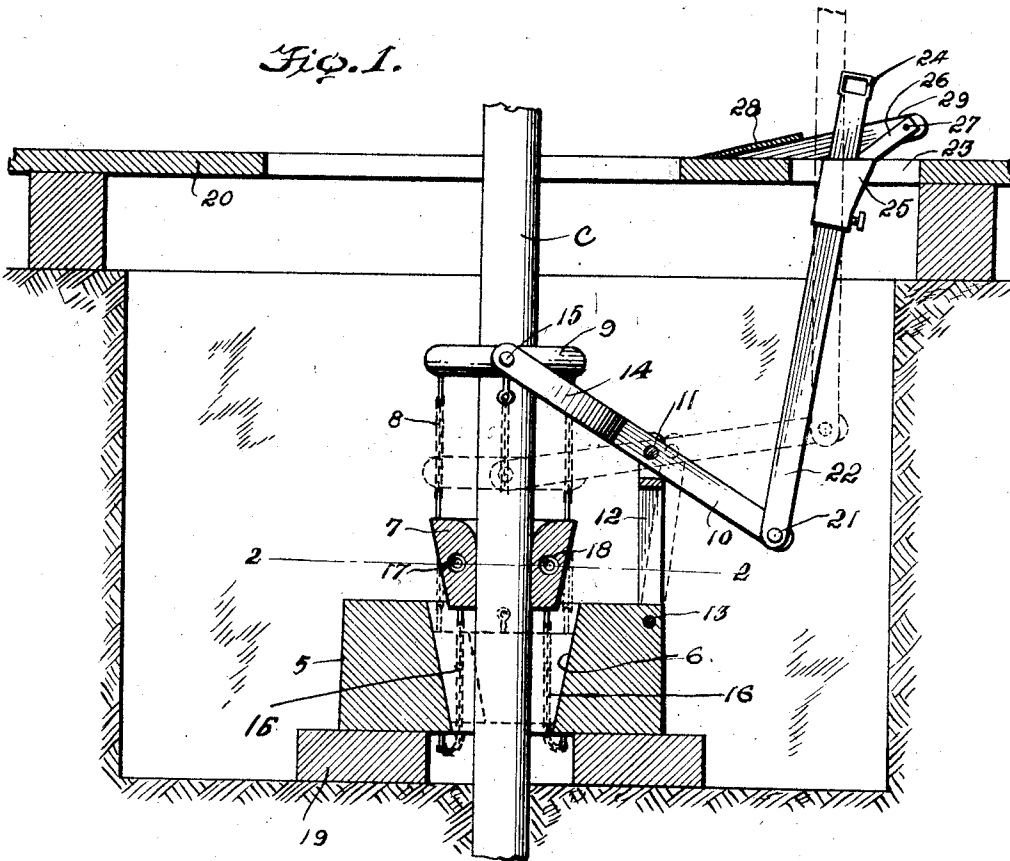
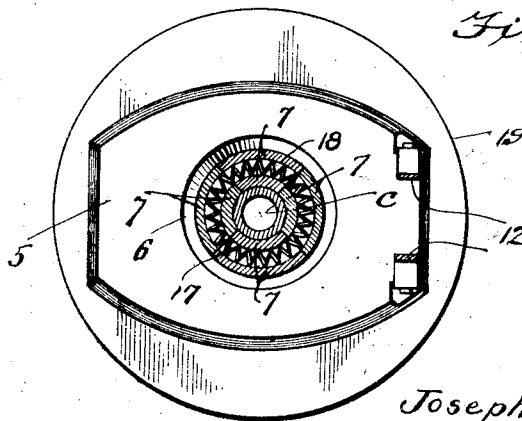


Fig. 2.



Inventor
Joseph F. Moody.

By *Michael R. Thomas*

Attorneys

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Fig. 3.

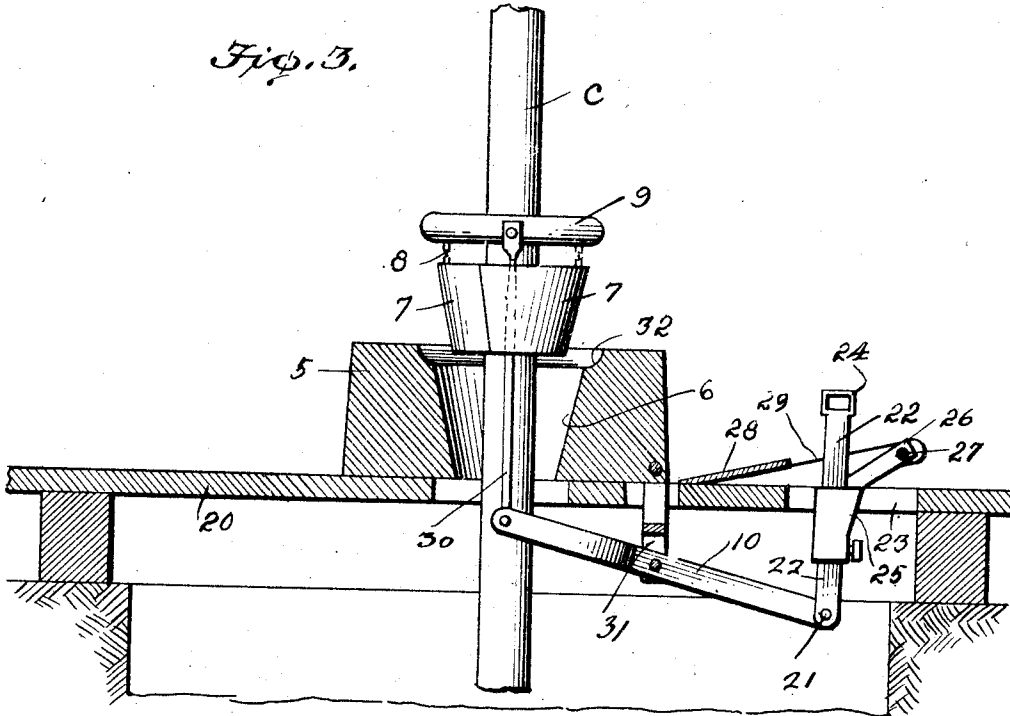
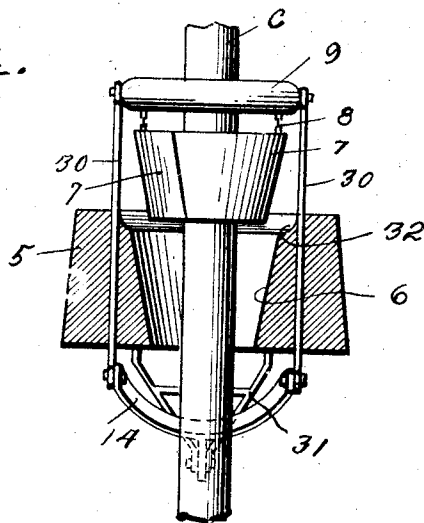


Fig. 4.



Inventor
Joseph F. Moody.

By *Wm. R. Thomas, Jr.*

Attorney &

UNITED STATES PATENT OFFICE.

JOSEPH F. MOODY, OF AUGUSTA, KANSAS.

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1,356,458.

Specification of Letters Patent.

Patented Oct. 19, 1920.

Application filed May 9, 1919. Serial No. 295,940.

To all whom it may concern:

Be it known that I, JOSEPH F. MOODY, a citizen of the United States, residing at Augusta, in the county of Butler and State of Kansas, have invented new and useful Improvements in Gripping Devices, of which the following is a specification.

The device which is the subject matter of the present application for patent is designed for gripping oil or other well casings, pipes, etc., as they are being raised or lowered, and its object is to provide a simple and highly efficient device of this character, the same consisting in a novel combination and arrangement of parts to be hereinafter described and claimed.

In order that the invention may be better understood, reference is had to the accompanying drawings forming a part of this specification, and in said drawings,

Figure 1 is an elevation of the invention, partly in section;

Fig. 2 is a horizontal section on the line 2-2 of Fig. 1;

Fig. 3 is a view similar to Fig. 1 showing a modification, and

Fig. 4 is a cross section of Fig. 3 with parts in elevation.

Referring specifically to the drawings, 5 denotes a support or base block having a vertical opening 6 in which seats a series of wedge shaped gripping jaws 7 commonly known in the art as "slips," the same being arranged in a circular series through which the well casing C extends. The opening 6 has a downward taper and the slips 7 are slidable therein, and hence when they move downwardly in the opening they are crowded inwardly to grip the casing C or other part to be operated on, and when they move upwardly they recede and release the same. The inner faces of the slips are serrated to obtain a firm grip on the casing or other part.

To facilitate the manipulation of the slips 7, they are suspended by chains or other suitable flexible connections 8 from a ring 9 carried by a lever 10 which is fulcrumed at 11 on a swinging support 12 pivoted at 13 to the base 5. The end of the lever 10 carrying the ring 9 is forked, as shown at 14, to straddle the latter, and the fork branches are pivoted to the ring as shown at 15. The entire set of slips can therefore be simultaneously elevated to release the casing C. The upward movement of the slips

is limited by chains 16 connected to the bottom thereof and anchored to the bottom of the base 5.

The slips 7 are also flexibly connected in a circular series by a spring or other suitable flexible means 17. Each slip has a horizontal transverse opening 18 from one side edge to the other, and the openings of the slips are in alinement or registry to produce a continuous or annular opening through the series, in which latter the spring 17 seats, the spring being in annular form and having a tendency to crowd the slips inwardly to grip the casing C. The spring holds the slips snugly around the casing C and also prevents them from slipping unevenly from one casing section to another when they are released. It will be understood however, that the tension of the spring is not great enough to cause the slips to grip the casing when they are elevated, so as not to interfere with the movement of casing through the series of slips.

The device is shown supported on sill blocks 19 located on the floor of the usual cellar beneath floor 20 of the derrick.

To the outer end of the lever 10 is pivotally connected, as shown at 21, a link 22 which extends upwardly to the derrick floor 20 and through a slot 23 therein. By means of this link the lever 10 may be swung to elevate or lower the slips 7 as hereinbefore described. The upper end of the link 22 has a hand-hold 24 to facilitate its operation.

On the upper end of the link 22 is an adjustable abutment 25 engageable by a dog 26 for locking the link so that the lever 10 may remain in the position it was placed to elevate the slips. A downward movement of the link 22 swings the lever 10 to elevate the slips, and it is held down by the dog 26, and upon releasing the latter, the link is released to allow the lever to swing to lower the ring 9, whereupon the slips descend to grip the part C.

The dog 26 is pivoted at 27 to a support 28 mounted on the derrick floor 20, said support having spaced parts 29 between which the dog seats and between which the upper end of the link 22 extends.

The slips 7 may also be controlled from the under side of the base 5 as shown in Figs. 3 and 4. Here the base has two diametrically opposite vertical holes in which rods 30 are slidably mounted, said rods sup-

porting the ring 9 at their upper ends, above the base. The lever 10 is connected to the lower ends of the rods, beneath the base 5, and it is pivoted to a swinging support 31 on the bottom of the base. This structure enables the device to be supported on the derrick floor 20.

In the top of the base 5 may be a recess 32 to seat the ring 9 when it is down so as to leave the top of the latter free of obstructions which might interfere with elevators or other appliances attached to the casing C above the ring.

The device provides a handy and safe device for running in and pulling out well casing or other parts of the well, it can be easily handled, and it is out of the way so as not to interfere with other operations. If the hoisting line or the derrick gives away, while the slips 7 are up, they can be instantly lowered to grip the casing or other part by kicking the link 22 away from the dog 26, which releases the lever 10 and allows the ring 9 to lower the slips 7 to grip the casing. When lowering casing sections, the section below a coupling collar can be gripped to allow tightening of the collar if it is loose, which is sometimes the case. The device can be easily controlled by the driller or other person handling the machinery by which the casing or pipe is being elevated or lowered. The drawings show the base 5 provided with four slips 7, but their number is immaterial and may be varied as desired.

I claim:

1. A gripping device comprising a base having a downwardly tapered vertical open-

ing, a series of slips flexibly connected in a circular series and adapted to enter the opening in the base, a supporting member carrying the slips, and means carrying the supporting member and operable to raise and lower the same to elevate and lower the slips.

2. A gripping device comprising a base having a downwardly tapered vertical opening, a series of slips flexibly connected in a circular series and adapted to enter the opening in the base, a supporting member above the slips, flexible suspension means connecting the slips to said member, and means carrying the supporting member and operable to raise and lower the same to elevate and lower the slips.

3. A gripping device comprising a base having a downwardly tapered vertical opening, a circular series of slips adapted to enter the opening in the base, a resilient member connecting the slips to contract the same, a supporting member carrying the slips, and means carrying the supporting member and operable to raise and lower the same to elevate and lower the slips.

4. A gripping device comprising a base having a downwardly tapered vertical opening, an annular supporting member positioned above the base, a series of flexibly connected slips suspended from the supporting member and adapted to enter the aforesaid opening when said member is lowered, and raising and lowering means for the supporting member.

In testimony whereof I affix my signature.

JOSEPH F. MOODY.