No. 776,749. PATENTED DEC. 6, 1904.

O. A. MANN.

SUCKER ROD GRAB.

APPLICATION FILED APR. 4, 1904.

NO MODEL.

Fig 5

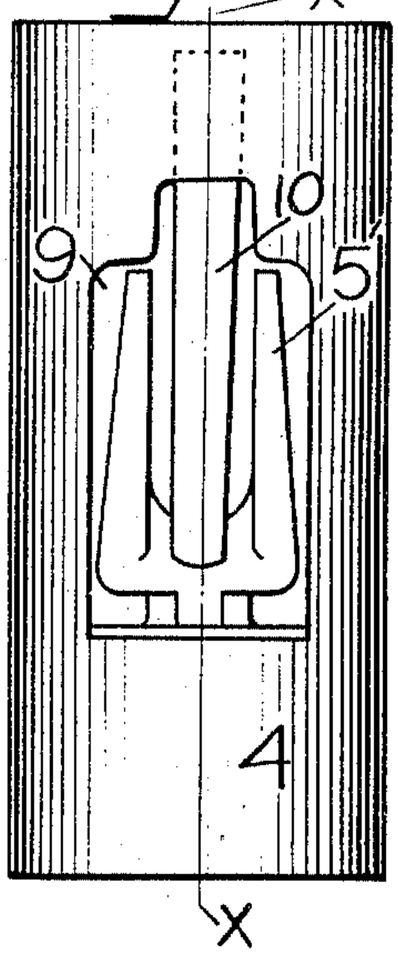


Fig 6

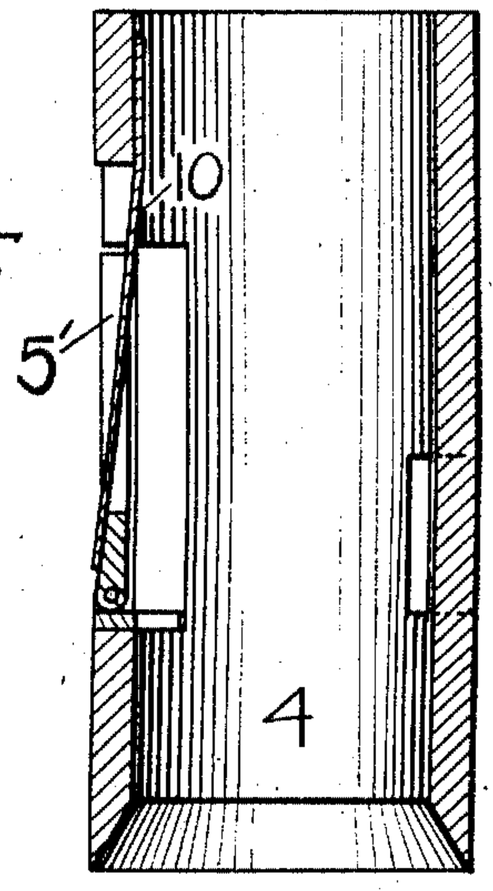


Fig 1

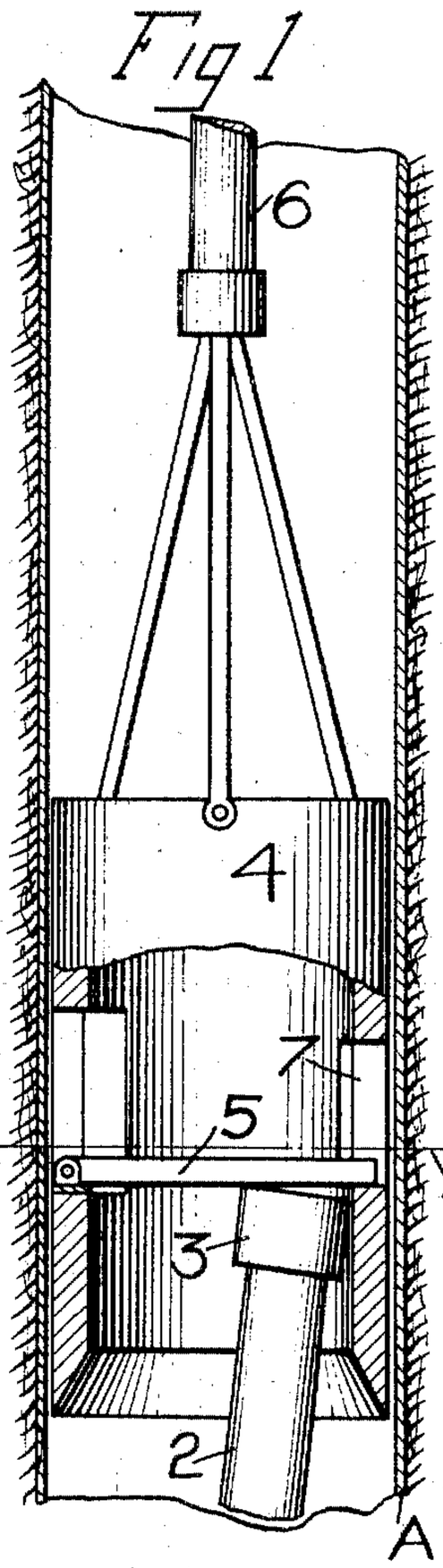
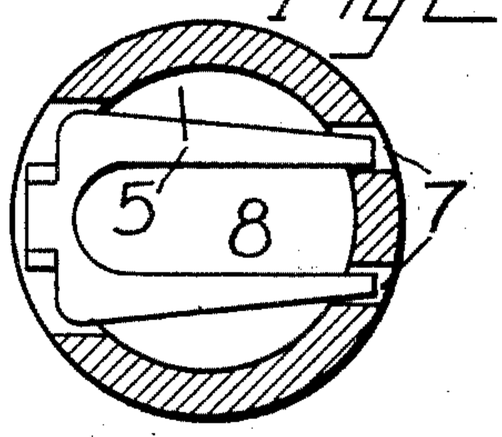


Fig 2



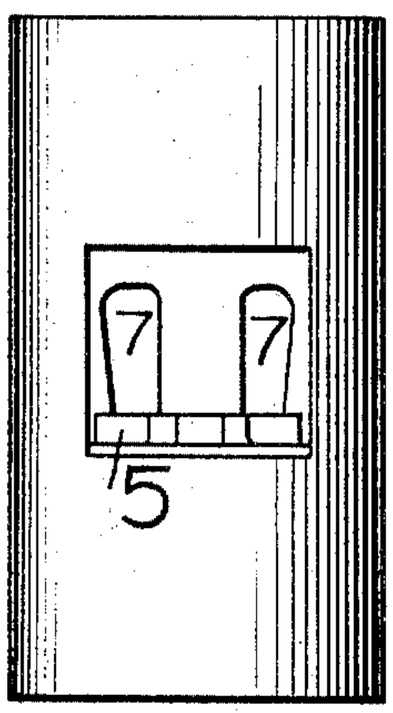


Fig 3

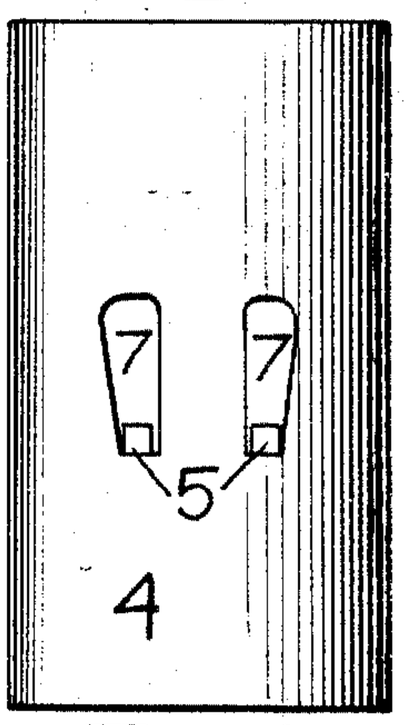


Fig 4

Witnesses

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No. 776,749. Patented December 6, 1904.

UNITED STATES PATENT OFFICE.

OMAR A. MANN, OF OILCENTER, CALIFORNIA.

SUCKER-ROD GRAB.

SPECIFICATION forming part of Letters Patent No. 776,749, dated December 6, 1904.

Application filed April 4, 1904. Serial No. 201,421. (No model.)

To all whom it may concern:

Be it known that I, OMAR A. MANN, a citizen of the United States, residing at Oilcenter, in the county of Kern and State of California, have invented new and useful Improvements in Sucker-Rod Grabs, of which the following is a specification.

My invention relates to improvements in means for recovering broken sucker-rods or other and similar obstructions from oil-wells.

It consists, essentially, of a hollow cylinder having a hinged bifurcated member arranged to bridge the opening and of guide means on the cylinder for engaging the sides of the bifurcated member to prevent the latter from spreading, the object being to render the device practicable in case the couplings have become badly worn and tapered and where there is a heavy strain to contend against.

Having reference to the accompanying drawings, Figure 1 is a vertical central section of a well, showing my invention. Fig. 2 is a section on line *y y* of Fig. 1. Fig. 3 is a view of the grab looking from the left of Fig. 1. Fig. 4 is a view of the grab looking from the right of Fig. 1. Fig. 5 is a rear view of the modified form. Fig. 6 is a section through line *x x*, Fig. 5.

A represents a well-tubing, and 2 is a broken sucker-rod having the coupling member 3, which it is assumed is to be recovered from the well.

The grab comprises a hollow cylinder 4 and a hinged bifurcated member 5. The cylinder has a loose sliding fit in the tubing and is provided with suitable means of attachment with a rod 6, by which it is operated from the surface. The lower edges of the cylinder are preferably beveled, so as readily to slip over the end of a sucker-rod section and cause the latter to pass up centrally through the cylinder into engagement with the latch or clutch member 5. As shown in the drawings, the member 5 is hinged intermediate of the ends of the cylinder 4, and the points of its forks are adapted to seat in downwardly-convergent guide-slots 7 in the opposite side of the cylinder.

The construction of the latch member 5 is such that as the cylinder 4 is slipped down over a sucker-rod the latter may lift up on the latch 5 and inevitably feed into the crotch-opening 8 of the latch. The width of the opening 8 is slightly greater than the diameter of a sucker-rod to be recovered and less than that of the coupling carried by that rod, so that as the cylinder is drawn upward and the latch falls down into slots 7 to bridge the opening in the cylinder the latch will embrace the sucker-rod and engage beneath the coupling to lift the obstruction out of the well.

By providing the guides or keepers formed by the walls of slots 7 the forks of the latch are prevented from spreading. It was found that without some such protective means against lateral strain a rod would not infrequently slip back into the well, especially where the couplings had become badly worn.

The latch 5 is of such length that it will not protrude beyond the cylinder when lying in horizontal working position and is hinged to swing upwardly into the cylinder to allow a coupling freely to pass up through.

In Figs. 5 and 6 I have shown a modified form of my device in which the clutch member 5′ is arranged to swing up and backward practically into the plane of the rear wall of the cylinder to give more room for the ingress of a sucker-rod section and prevent possible jamming. In this case the slot 9 at the rear of the cylinder, wherein the clutch is hinged, is enlarged to accommodate the clutch and let it stand substantially vertical. A spring 10 coacts with the wall of the cylinder and the clutch to close the latter.

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

1. A device of the class described comprising a hollow cylinder and a bifurcated clutch member hinged intermediate of the ends of the cylinder and arranged to bridge the opening therethrough.

2. A device of the class described, comprising a hollow cylinder, a hinged bifurcated clutch member thereon arranged to bridge the opening in said cylinder, and a keeper for the free ends of said clutch member.

3. A device of the class described comprising a frame open at top and bottom, a hinged bifurcated clutch member arranged to bridge the opening therethrough, and means engaging the sides of said member to prevent spreading of the forks.

4. A device of the class described comprising a frame open at top and bottom, a hinged bifurcated clutch member carried by said frame and arranged to bridge the opening therethrough, and downwardly-convergent guide means for the ends of the forks of said member.

5. A device of the character described comprising a hollow cylinder, and a clutch member hinged intermediate of the ends of the cylinder and arranged to bridge the opening therethrough, said cylinder having slots in its side opposite the hinged end of said member to afford a seat for said member.

6. A device of the character described comprising a hollow cylinder and a bifurcated clutch member hinged at one side and intermediate of the ends of said cylinder and arranged to seat in downwardly-convergent slots in the opposite side of said cylinder.

7. A sucker-rod comprising a hollow cylinder, and a spring-actuated bifurcated clutch member arranged to bridge the cylinder-opening.

8. A sucker-rod grab comprising a hollow cylinder and a spring-actuated clutch member hinged at one side and intermediate of the ends of the cylinder and arranged to bridge the cylinder-opening.

9. A sucker-rod grab comprising a hollow cylinder having diametrically-opposed slots in its sides and a clutch member hinged in one of said slots and seating in the other.

10. A sucker-rod grab comprising a hollow cylinder having diametrically-opposed slots in its sides and a spring-actuated clutch member hinged in one of said slots and seating in the other.

11. A sucker-rod grab comprising a hollow cylinder having a slot in one side, a clutch member hinged in said slot and arranged to swing into a plane substantially coincident with the plane of the cylinder and keepers in the opposite wall of the cylinder for the free end of the clutch member.

12. A sucker-rod grab comprising a hollow cylinder having a slot in one side, a clutch member hinged in said slot and arranged to swing into a plane substantially coincident with the plane of the cylinder, keepers in the opposite wall of the cylinder for the free end of the clutch member, and a spring acting upon said clutch to return it into the cylinder.

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

OMAR A. MANN.

Witnesses:
GEORGE ALLAN,
W. J. HARRIS.