No. 876,622. PATENTED JAN. 14, 1908.

D. F. COLLDEWEIH.

OIL PUMP.

APPLICATION FILED FEB. 13, 1906.

Fig. 1.

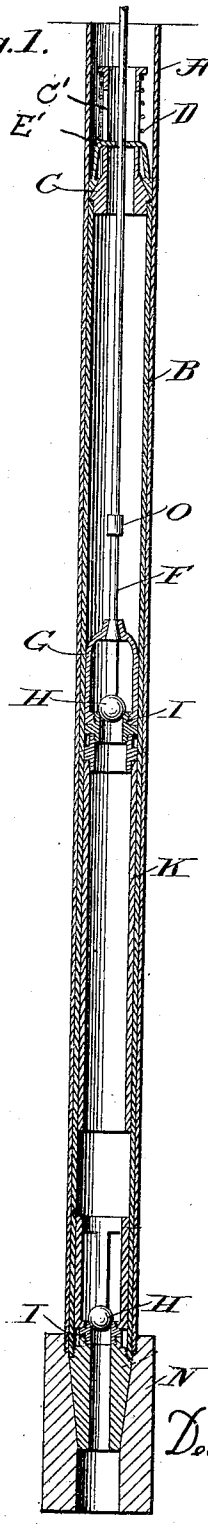


Fig. 2.

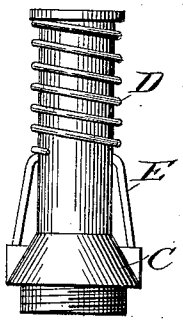
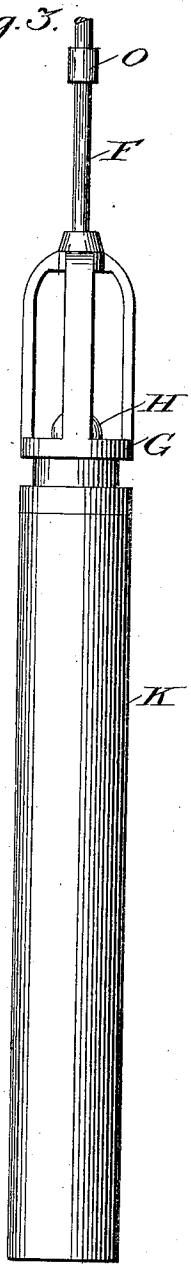


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

DEDERICK F. COLLDEWEIH, OF COALINGA, CALIFORNIA.

OIL-PUMP.

No. 876,622. Specification of Letters Patent. Patented Jan. 14, 1908.

Application filed February 13, 1906. Serial No. 300,945.

To all whom it may concern:

Be it known that DEDERICK F. COLLDEWEIH, citizen of the United States, residing at Coalinga, in the county of Fresno, and State of California, has invented new and useful Improvements in Oil-Pumps, of which the following is a specification.

My invention relates to improvements in pumps which are adapted for operation in deep wells.

It consists in the combination of parts, and in details of construction, which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a vertical section of the pump in position. Fig. 2 is an enlarged view of the head and locking device. Fig. 3 is a separate view of the pump plunger.

It is the object of my invention to provide a means for readily fixing a pump with its operative mechanism within the casing of deep well pumps so that the pump may be conveniently operated, and in the means for readily disengaging the pump and its barrel so that it may be removed from the casing, and all surrounding sand or other material allowed to fall back into the casing.

A is the well tube or casing, and B is a pump barrel adapted to slide freely within the casing. The lower end of this barrel is seated in a convergent or equivalent socket, as at N, and the upper end is locked in position by means of catches E which are carried upon the head C of the pump, and are normally forced down by a spiral spring D.

As shown in Fig. 2 the head C of the pump is provided with a reduced upwardly extending tubular portion having its sides longitudinally slotted at C′ and having at its upper end a collar against which the upper end of the spring D abuts, said spring encircling the tubular extension of the head as shown.

The catches E may be in the form of teeth, or other engaging parts, and are formed upon the lower ends of a yoke E′, the transverse upper portion of which extends through slots in the upper part of the head, so that the yoke and the catches may be forced upward by compressing the spring D, or forced down by the action of the spring; and when so forced down, the conical or divergent head C acts to force the catches E out and causes them to lock with the barrel.

Through a hole in the central portion of the yoke E′ passes the pump rod F, upon which is carried the plunger K, with the usual cage G, valve seat I, and valve H. Similar standing valves are located at the lower end of the pump barrel, and the reciprocation of the plunger causes the oil and material to be raised in the manner usual in such pumps.

O is a collar or equivalent projection fixed to the rod F at a point above the cage G, and when it is desired to remove the pump from the tubing in which it is fixed, the pump rod is raised above the normal length of its stroke, and the collar O entering the space within the head C comes in contact with the yoke E′ where it crosses within the head, and thus raises the yoke, compressing the springs D. This allows the sides of the yoke to move inwardly as the yoke is raised, and the catches E, by reason of being removed from the divergent part C of the head which previously engaged them with the tubing, will be withdrawn from their engagement, and thus released, so that the pump and all its connections can be readily withdrawn from the tubing; thus allowing oil, sand, or anything between the pump and the tubing to escape and fall back within the well.

When the pump is again let down into the tube it will be suspended by the rod F, and its weight being carried by the collar O will maintain the spring D in its compressed condition until the lower end of the pump barrel is seated at N, as previously described. Then the further downward movement of the rod carries the collar out of contact with the yoke, thus allowing the latter to be forced down by the spring D; and the yoke arms will be spread so that the parts E will engage the tubing and lock the pump in position, when it is again ready for operation, the working reciprocation of the pump rod not being sufficient to bring the collar O into contact with the parts within the pump head.

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

1. The combination with a well tube, of a pump barrel and contained mechanism slidable within said tube, a seat upon which the pump barrel is supported, a divergent head for the pump barrel, said head having a reduced upwardly extending tubular portion, and having its sides longitudinally slotted, a yoke having its cross bar extending through the slot of said extension and having its lower ends provided with latches to slidably engage the divergent portion of said head, and a spring encircling the tubular extension of the head

and bearing upon the cross bar of the yoke whereby the latches are forced into engagement with the divergent portion of the head to lock the barrel in place.

2. The combination with a well tube, of a pump barrel and contained mechanism slidable within said tube, a seat upon which the pump barrel is supported, a divergent head for the pump barrel, said head having a reduced upwardly extending tubular portion, and having its sides longitudinally slotted, a yoke having its cross bar extending through the slot of said extension and having its lower ends provided with latches to slidably engage the diverged portion of said head, and a spring encircling the tubular extension of the head and bearing upon the cross bar of the yoke whereby the latches are forced into engagement with the divergent portion of the head to lock the barrel in place, a plunger rod extending through the head and through the cross bar of the yoke, and a collar upon said rod adapted to be raised into the tubular extension of the head and into contact with the cross bar of said yoke whereby the yoke is raised and the catches disengaged to allow the bar to be removed from the tube.

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

DEDERICK F. COLLDEWEIH.

Witnesses:

W. M. DUNHAM,

J. D. GRESHAM.