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W. K. MORGAN

1,897,507

DOUBLE CROSS CENTER GUIDE AND PARAFFIN SCRAPER

Filed May 20, 1932

Fig. 1.

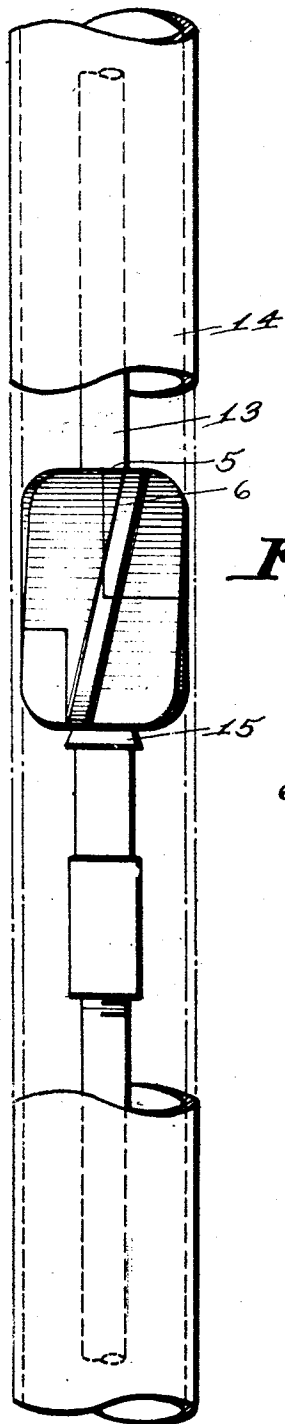


Fig. 2.

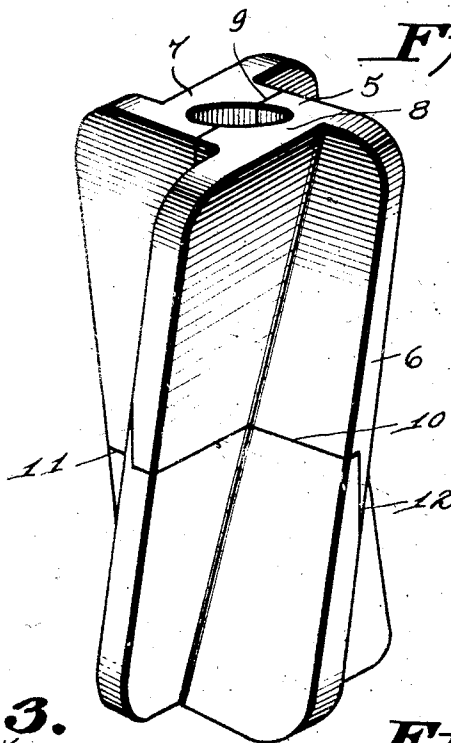


Fig. 3.

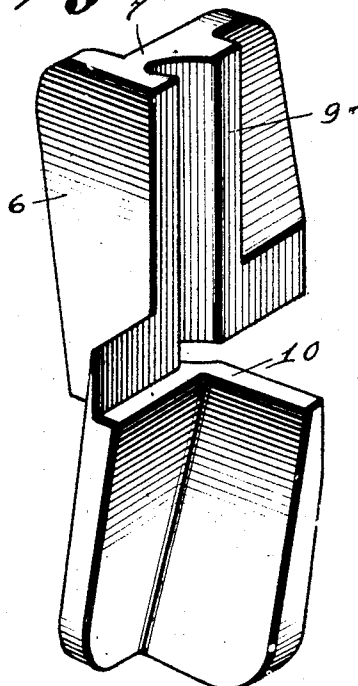
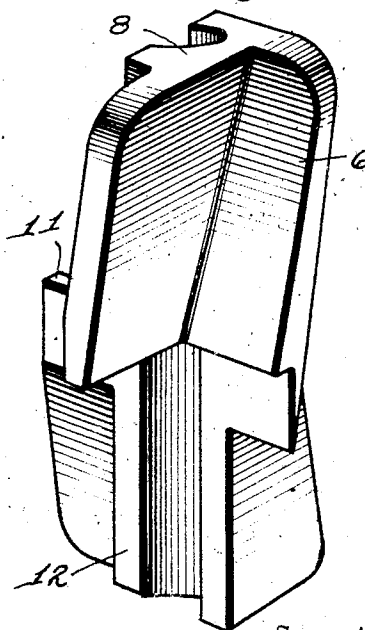


Fig. 4.



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DOUBLE CROSS CENTER GUIDE AND PARAFFIN SCRAPER

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My invention relates to a pump rod center guide and paraffin scraper, particularly adapted for centering the pump rod in the casing or tubing and for removal of paraffin from the walls of the casing.

It is well known by those skilled in the art that in most pumping oil wells, the accumulation of paraffin on the walls of the casing tends to obstruct the free flow of oil and interferes with the movement of the pumping rod. Many methods are now employed in the industry to remove the paraffin from the casing, but have been generally objectionable in that their use required that the flow of oil be stopped; or else were too complicated or impractical for use. It is also known that pump rods become worn due to the rod rubbing against the walls of the casing.

Accordingly, it is an object of the present invention, to provide a device which will serve as a pump rod center guide and paraffin scraper, removing the paraffin from the walls of the casing without interrupting the flow of oil, thereby permitting the oil flow to carry off the paraffin as rapidly as it is removed from the casing walls.

A further object of the invention is to provide a device of the above-mentioned character which will serve to center the pump rod in the casing or tubing, so that during the pumping operation the pump rod will not rub against the walls of the casing.

A still further object of the invention is to provide a device of the above-mentioned character composed of interlocking sections which may be readily applied to the pump rod without the use of screws or bolts, the sections being held together by the casing or tubing in which the pump rod reciprocates.

Another object of the invention is to provide a device of the above-mentioned character which is simple and durable in construction, reliable and efficient in operation and inexpensive to manufacture.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawing, forming a part of this specification and in which like

numerals are employed to designate like parts throughout the same,

Fig. 1 is a side elevation view of the device applied to a pump rod within the tubing.

Fig. 2 is a perspective view of the device, and,

Figs. 3 and 4 are perspective views of the sections forming the device.

In the drawing, wherein for the purpose of illustration, I have shown a preferred embodiment of my invention, the numeral 5, denotes an elongated tubular body having formed integral with the outer walls thereof, a series of spaced spiral fins or ribs 6, extending longitudinally of the body and disposed at an angle to the longitudinal axis thereof.

The body is composed of complementary sections 7 and 8, formed by splitting the body longitudinally of its center, as at 9, for one-half its length and then horizontally, as at 10, the lower half of the body being split horizontally, as at 11, from the opposite side of the body to the horizontal split 10, and then longitudinally of the center of the body, as at 12, the upper and lower longitudinal splits 9 and 12, being in planes at right angles to each other. Thus, it is seen that when the sections 7 and 8 are assembled together around the pump rod 13, they are locked against independent longitudinal movement by the interlocking flanges and shoulders of the sections, produced by forming the sections in the aforementioned manner, and are held together by the casing or tubing 14 in which the pump rod reciprocates. The pump rod 13 and casing 14 are of the conventional type and when the device is mounted on a section of the pump rod it normally rests on the collar 15 formed integral with the pump rod.

In use, the device may be readily applied to the pump rod 13, by bringing the interlocking sections 7 and 8 together around the pump rod and then inserting it into the casing 14. The device is of such diameter as to snugly fit within the casing, thus centering and guiding the pump rod in its reciprocating movement, so it will not rub against the walls of the casing. When it is de-

sired to remove the paraffin which has accumulated on the walls of the casing, the pump rod 13 is pulled upwardly the desired length, causing the fins or ribs 6, to scrape the paraffin from the walls of the casing and the natural flow of the oil from the well will carry the loosened paraffin out of the casing.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same and that certain changes in the shape, size and arrangement of the parts may be made without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, I claim:—

1. A pump rod guide and paraffin scraper including a body having ribs formed on its outer surface, said body being composed of complementary sections having interfitting shoulders securing the sections together against independent longitudinal movement.

2. A pump rod guide and paraffin scraper for oil well pumps including a tubular body having ribs formed on its outer surface, said body being composed of complementary sections adapted to embrace a pump rod, said sections having longitudinal upper co-acting faces and lower co-acting faces, the upper faces being disposed in a plane at right angles to the lower faces.

3. A pump rod guide and paraffin scraper including complementary sections adapted to be loosely mounted on a pump rod in confronting relation and cooperating locking means on said sections securing them together against independent longitudinal movement.

4. A pump rod guide and paraffin scraper including interfitting sections for mounting on a pump rod, said sections being freely movable radially into and out of interfitting relation, the sections being secured together against independent longitudinal movement when in interfitting position.

5. A pump rod guide and paraffin scraper including interfitting sections for mounting on a pump rod, said sections being freely movable radially into and out of interfitting relation, and means securing the sections together against independent longitudinal movement when in interfitting position.

6. A pump rod guide and paraffin scraper including interfitting sections for mounting on a pump rod, and means integral with said sections securing them together against independent longitudinal movement.

7. A pump rod guide and paraffin scraper including a body composed of interfitting sections adapted to be loosely mounted on a pump rod in confronting relation, means securing said sections against independent longitudinal movement and spiral fins extending longitudinally of said body.

8. A pump rod guide and paraffin scraper including a tubular body composed of com-

plementary sections, said sections having longitudinal upper co-acting faces and longitudinal lower co-acting faces, the upper faces being disposed in a different plane than the lower faces.

9. A pump rod guide and paraffin scraper including a tubular body composed of complementary sections, said sections having longitudinal upper co-acting faces and longitudinal lower co-acting faces, the upper faces being disposed in a different plane than the lower faces, and cooperating means on said sections securing them together against independent longitudinal movement.

10. A pump rod guide and paraffin scraper including a tubular body having spiral fins extending longitudinally thereof, said body being divided longitudinally to provide complementary sections adapted to embrace a pump rod and means on said sections securing the sections together against independent longitudinal movement.

11. A pump rod guide and paraffin scraper including a tubular body divided longitudinally to provide complementary sections adapted to embrace a pump rod and cooperating means on said sections securing the sections together against independent longitudinal movement.

12. A pump rod guide and paraffin scraper including a tubular body composed of complementary sections for embracing a pump rod, said sections having longitudinal upper co-acting faces and longitudinal lower co-acting faces, the upper faces being disposed in a different plane than the lower faces, and interfitting shoulders formed on said sections, securing them together against independent longitudinal movement.

13. A pump rod guide and paraffin scraper including a tubular body divided longitudinally to provide complementary sections adapted to embrace a pump rod, said sections having interfitting shoulders securing the sections together against independent longitudinal movement.

In testimony whereof, I affix my signature.
WILLIAM K. MORGAN.