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 WORKING BARREL FOR OIL WELL PUMPS.
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1,004,151.

Patented Sept. 26, 1911.

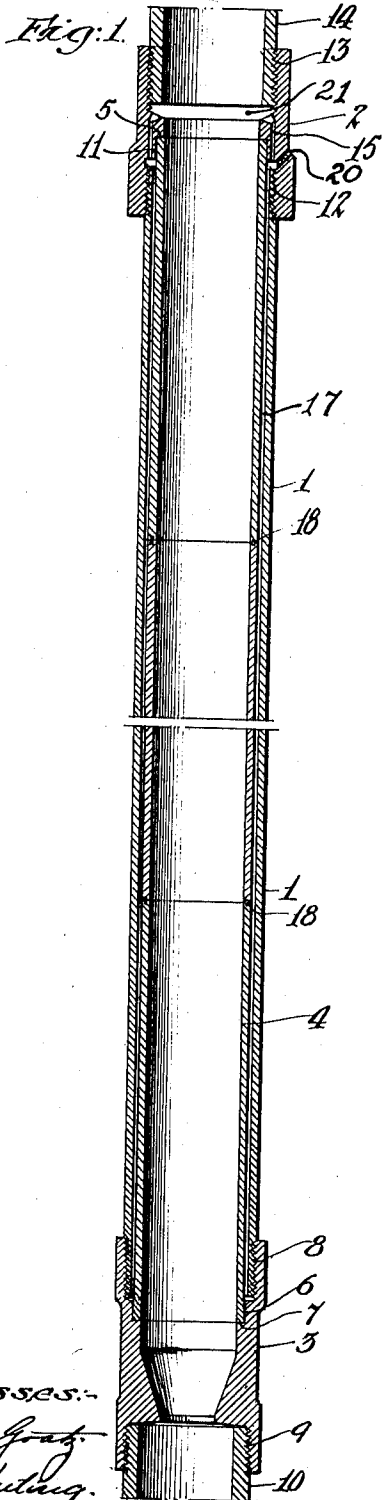


Fig. 2.

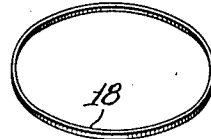
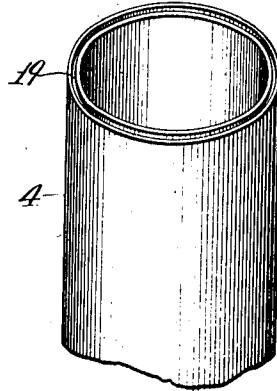


Fig. 3.



Witnesses:
 Louis W. Grant
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UNITED STATES PATENT OFFICE.

DANIEL DANIELS AND LYSLE P. BURGESS, OF LOS ANGELES, CALIFORNIA.

WORKING-BARREL FOR OIL-WELL PUMPS.

1,004,151.

Specification of Letters Patent. Patented Sept. 26, 1911.

Application filed September 13, 1909. Serial No. 517,527.

To all whom it may concern:

Be it known that we, DANIEL DANIELS and LYSLE P. BURGESS, both citizens of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Working-Barrel for Oil-Well Pumps, of which the following is a specification.

The main object of the present invention is to provide a working barrel for oil-well pumps with a lining formed in sections so as to be readily removable for repairs or renewal, said sections being held in such manner as to insure proper alinement thereof and give a smooth interior surface to the barrel.

A further object of the invention is to provide, in such a construction, means whereby the lining is supported within the outer shell of the working barrel by plastic filling introduced automatically by the operation of the pump.

In the accompanying drawings illustrating the invention: Figure 1 is a vertical section of the working barrel. Fig. 2 is a perspective of an interlocking ring which is interposed between the successive sections of the lining. Fig. 3 is a perspective of the upper portion of one of the lining sections.

The working barrel comprises an outer casing or shell 1 of cylindrical form, upper and lower collars 2 and 3 screwed thereto and a lining formed in sections 4 which engage with one another and with the upper and lower members 2, 3 as hereinafter described.

Each lining section 4 is formed as a cylindrical tubular member. The lowermost section 4 fits within a circular seat or wall 6 on the lower collar 3 with its end resting on a shoulder 7 on said collar, the interior diameter of said collar adjacent to said shoulder being the same as that of the lining section, so as to form a continuous surface when the section is placed in the collar. Said collar 3 is screw-threaded as at 8 to screw onto the lower end of the barrel casing 1 and is provided with a screw-threaded recess 9 at its lower end to receive the suction pipe indicated at 10. The upper collar 2 has a circular seat or wall 11 fitting the upper end of the top section 4 and a shoulder 5 adjacent thereto against which the upper end of said section abuts. Said collar 2 is provided with a screw-threaded portion 12 screwing on the upper end of the barrel cas-

ing 1 and with a screw-threaded portion 13 at its upper end into which screws the delivery pipe 14. In the case of large barrels, the said upper collar is further provided with a perforation or passage 15 extending through the body thereof from the space 21 above the shoulder 5 to a point below the circular wall 11, establishing communication from the working barrel space to the space 17 between the lining section and the outer barrel casing 1 for the purpose hereinafter set forth. This space between the lining sections 4 and the outer casing 1 insures that said casing will not contact with the linings and interfere with their accurate alinement, the lining sections being supported by their engagement with the circular walls 6 and 11, and the outside side of the lining sections being adapted to fit said circular walls but being smaller than the inside of casing 1, so as to form said space. An opening closed by a screw plug 20 is provided through the fitting 2, leading from the space within the collar to the outside collar.

Means are provided for interlocking the ends of adjacent sections 4 to hold them in rigid and alined relation. Said means preferably consists of rings 18 adapted to fit in annular grooves 19 in the ends of the adjacent sections; each section, except the highest and lowest, having an annular groove 19 in its upper and lower ends. The highest and lowest sections need not be provided with these grooves, except at the end which engages with another section.

The working barrel is assembled as follows: The outer barrel casing 1 being screwed into the lower collar 3, the lowermost section 4 is dropped into place within the barrel casing 1 and falls onto the shoulder 7 within the circular seat 6 which holds it in proper position. One of the rings 18 is then dropped on top of the first section and seated in the annular groove 19 thereof. The next lining section 4 is then put in place with its bottom groove 19 engaging over said ring, said ring being of sufficient height to occupy and fit both the adjacent annular grooves and interlock the adjacent sections together. This building-up operation continues until the topmost section 4 is put in place, whereupon the top collar 2 is screwed onto the barrel casing 1, a suitable mandrel, not shown, being placed within the lining during this operation to hold the parts in absolute alinement, this mandrel being slightly

larger in diameter than the actual piston which is to be employed. When the collars have been screwed with moderate pressure in this manner, the said mandrel is removed 5 and the actual working piston is inserted and the collars are then screwed home with great pressure, binding the lining sections end to end in a substantially rigid and continuous lining. In the case of small working 10 barrels, the rigidity thus afforded is sufficient for working purposes, but in the case of large barrels it is desirable to provide further means for lateral support of the sections within the outer casing and this 15 is furnished by a plastic packing in the following manner: In the operation of oil-pumps there is in general considerable sand pumped with the oil and the oil and sand passing through the perforations 15 enters 20 the space 17 between the lining sections and the barrel casing 1 and fills said space so that eventually said space becomes occupied with a substantially solid, but somewhat plastic, filling of sand and oil which serves 25 to hold the lining sections in place and takes, to some extent, the lateral strain therefrom, communicating it to the outer barrel casing 1.

What we claim is:

30 1. A working barrel comprising an outer cylindrical casing, upper and lower collars screwed thereon, each of said collars having a circular internal wall and a shoulder adjacent thereto, and a lining for said barrel 35 consisting of sections placed end to end, the upper and lower sections fitting within said circular walls and abutting against said shoulders respectively, the outside surface of the linings being smaller than the inside 40 of the outer casing, so that the linings are not in contact with said casing, means at the adjacent ends of said sections for interlocking said sections, said sections having annular grooves at their adjacent ends, and said 45 interlocking means consisting of rings slidably and removably fitting in said grooves.

2. A working barrel comprising an outer cylindrical casing, upper and lower collars screwed thereon, each of said collars having

a circular internal wall and a shoulder adjacent thereto, a lining for said barrel consisting of sections placed end to end, the upper and lower sections fitting within said circular walls and abutting against said shoulders respectively, the outside surface of 55 the lining sections being smaller than the inside of the outer casing, so as to leave a space therebetween, means at the adjacent ends of said sections for interlocking said sections, said sections having annular 60 grooves at their adjacent ends and said interlocking means consisting of rings slidably and removably fitting in said grooves one of said collars having a passage establishing communication from the interior of 65 the working barrel to the space between the sections and the outer casing for the purpose set forth.

3. A working barrel comprising an outer cylindrical casing, upper and lower collars 70 screwed thereon, each of said collars having a circular internal wall and a shoulder adjacent thereto, a lining for said barrel consisting of sections placed end to end, the upper and lower sections fitting within said 75 circular walls and abutting against said shoulders respectively, the outside surface of the lining sections being smaller than the inside of the outer casing, so as to leave a space therebetween, means at the adjacent 80 ends of said sections for interlocking said sections, one of said collars having a passage establishing communication from the interior of the working barrel to the space between the sections and the outer casing for 85 the purpose set forth, and said collar having a passage extending from the aforesaid passage to the outside of the collar, and a removable plug for closing said passage.

In testimony whereof, we have hereunto 90 set our hands at Los Angeles, California, this 4th day of September 1909.

DANIEL DANIELS.
LYSLE P. BURGESS.

In presence of—

ARTHUR P. KNIGHT,
FRANK L. A. GRAHAM.