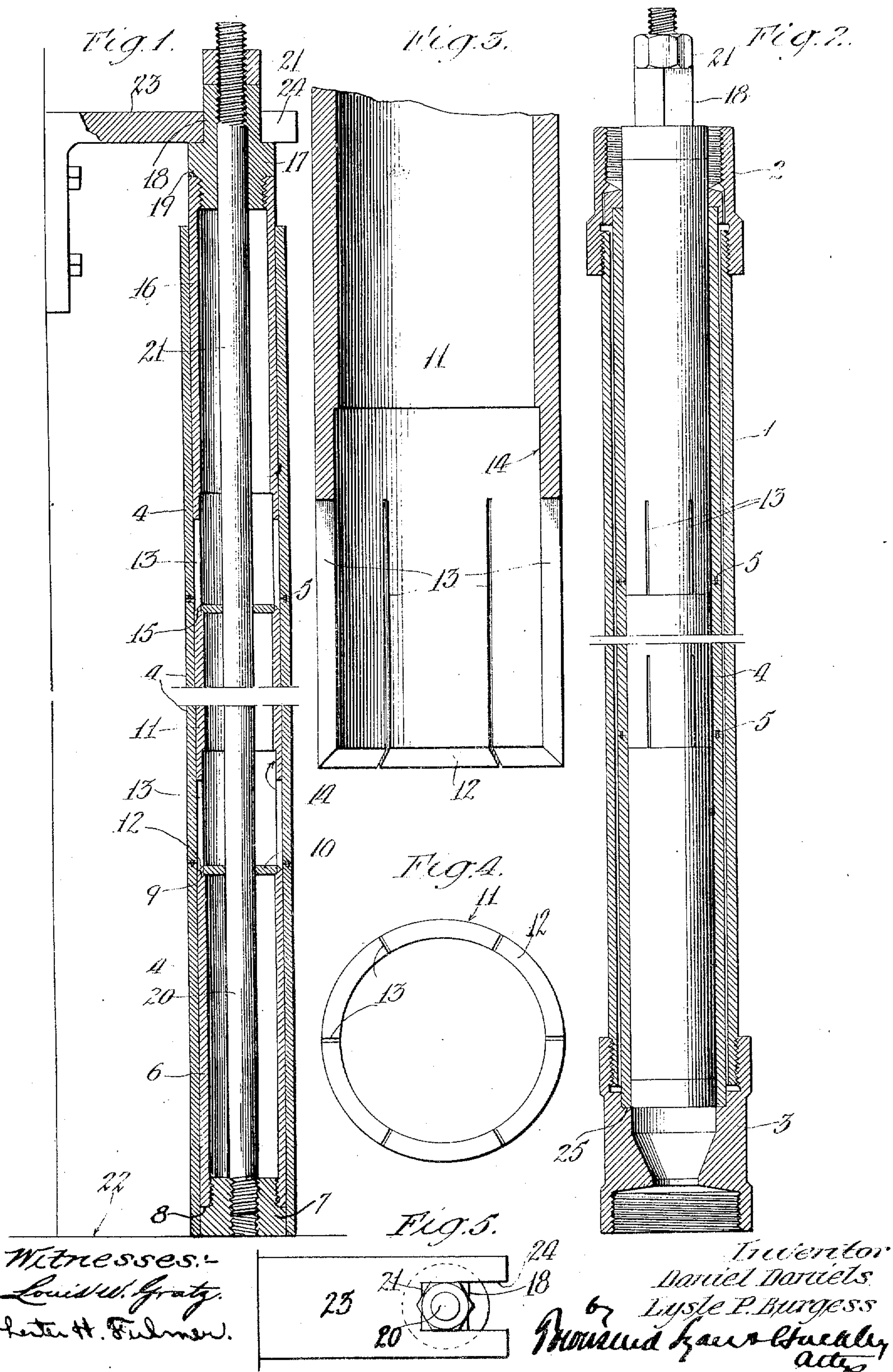


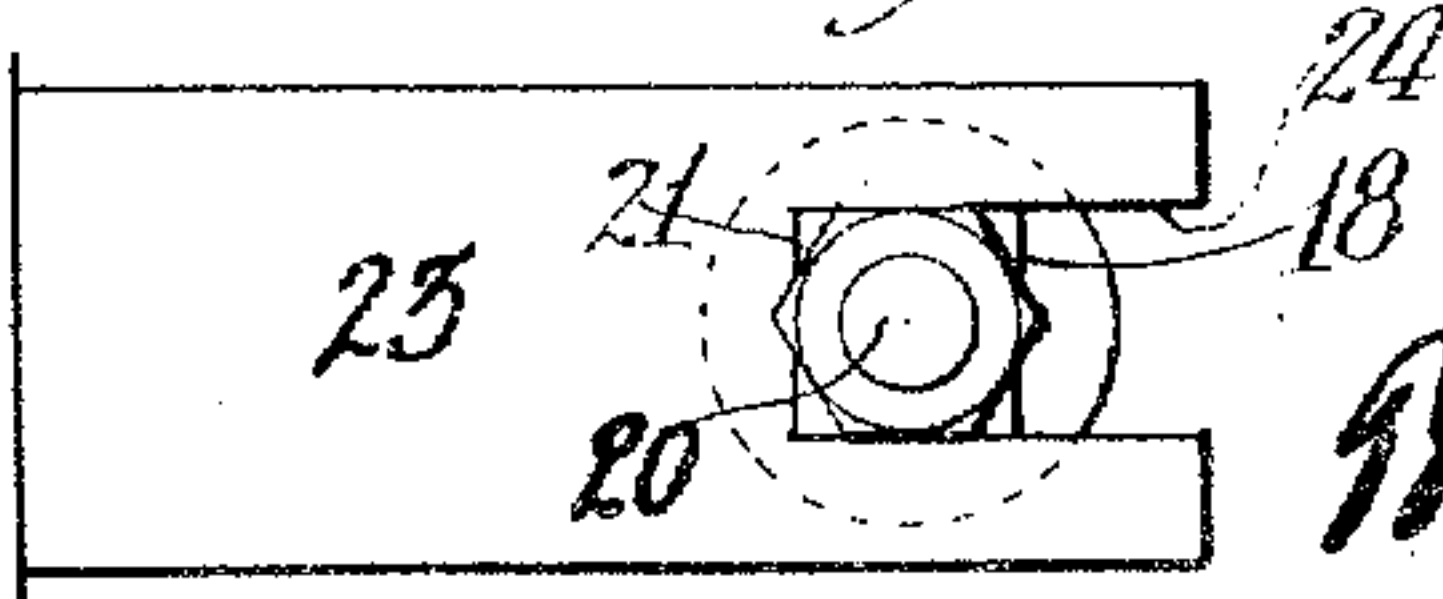
D. DANIELS & L. P. BURGESS.
LINING PLUNGER FOR OIL WELL PUMPS.
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987,347.

Patented Mar. 21, 1911.



Witnesses:-
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UNITED STATES PATENT OFFICE.

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

LINING-PLUNGER FOR OIL-WELL PUMPS.

987,347.

Specification of Letters Patent.

Patented Mar. 21, 1911.

Application filed June 18, 1910. Serial No. 567,699.

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 Lining-Plunger for Oil-Well Pumps, of which the following is a specification.

This invention relates to oil well pumps and particularly to the assembling of working barrels for oil pumps of the character shown in our application for patent filed September 13, 1909, Serial No. 517,527, in which the lining of the working barrel is made up of a series of sections, and one of the main objects of the present invention is to provide a device of the character described which will line up the sections of the working barrel.

Another object of the invention is to provide a device of the character described in which the lining of the working barrel made up of a plurality of sections may be assembled and handled as a unit.

Another object of the invention is to provide a device of the character described which is simple and economical in construction and efficient in operation.

In the accompanying drawings which illustrate the invention: Figure 1 is a vertical sectional view of the lining plunger with the sections of a working barrel lining assembled thereon. Fig. 2 is a sectional view through the working barrel of an oil well, showing the manner of placing the lining in the working barrel. Fig. 3 is an enlarged sectional view of a portion of one of the sections of the lining plunger. Fig. 4 is an inverted plan view of the lining plunger shown in Fig. 3. Fig. 5 is a plan view of the device shown in Fig. 1.

As illustrated in Fig. 2 of the drawing the working barrel comprises an outer casing or shell 1 of cylindrical form, upper and lower collars 2 and 3 respectively screwed thereto, and a lining formed of sections 4 which engage with one another and with the upper and lower members 2, 3. Means are provided at the ends of the sections for interlocking the sections consisting of rings 5 which fit into grooves in the ends of the sections 4 so that the sections are held in alinement between the collars 2 and 3. It is essential that the sections composing the lining of the working barrel should be lined

up absolutely true so that a smooth surface is presented to the pump piston. This result may be best accomplished by assembling the sections before placing them in the working barrel and for this purpose a lining plunger is used consisting of a series of tubular sections held together by a clamping rod.

The lower or bottom section 6 is provided with a head 7 screwed into the end thereof so that the lower edge of the section 6 abuts against a flange 8 on the head. The upper end of the section 6 has its outer edge beveled as shown at 9 and is provided with a perforated cap 10 seated upon a shoulder formed within the end of the section. The intermediate sections 11 are similar in form, each section 11 consisting of a tubular body portion having the inner lower edge beveled as shown at 12 corresponding to the top of the adjacent section below. Each section 11 is slotted from the bottom upward as indicated at 13 so that the bottom portion of the section may be expanded as hereinafter described. For the purpose of equalizing the expansion on all sides of the section the bottom of each section is counterbored as indicated at 14. The top of each of the intermediate sections 11 is beveled at 15 in the same manner as the lowermost section and is also provided with a perforated disk 16. The lower part of the uppermost section 16 is formed identically the same as the lower portion of the intermediate sections having a beveled inner edge 12 and slots 13. The top of the section 16 is provided with a head 17 having a square portion 18, the head being screwed into the section 16 so that the top of the section 16 abuts against a shoulder 19 formed on the head. Screwed into the head 7 in the bottom section 6 is a clamping rod 20 which extends through the hollow sections and through the head 17, the upper end being threaded to receive a nut 21.

The device is used in the following manner: As shown in Fig. 1, the sections comprising the plunger are assembled on the clamping rod 20, the nut 21 being arranged so that the sections of the lining plunger are supported on each other in upright position on the floor 22, in which position the sections forming the lining of the working barrel are slipped down on the lining plunger, the sections of the lining plunger being arranged so that the slotted end of each section engages the lower end of a lining

section and the upper end of the next section below at the joint thereof, after which the square portion 18 of the head 17 is moved into engagement with any suitable
 5 brace or bracket 23 having a corresponding square slot or opening 24 therein so that the lining plunger is prevented from turning. The nut 21 is then tightened against the
 10 upper face of the head 17 drawing the two ends of the plunger together and expanding the lower end of each of the sections of the plunger due to the beveled ends of the sections coacting with each other.

The portion of each section of the lining
 15 plunger expanded by the above operation aligns the sections of the working barrel and clamps them firmly together on the lining plunger. The lining plunger and the sections of the lining of the working barrel
 20 thereon are then removed bodily and placed within the working barrel as shown in Fig. 3, with the lowermost section of the lining resting on a shoulder 25 in the lower collar
 25 3 of the working barrel. The upper collar 2 is then screwed fast to the casing or shell so that the sections comprising the lining are securely engaged between the upper and lower collars of the working barrel after
 30 which the nut 21 may be unloosened and the lining plunger removed, leaving the working barrel ready to receive the regular pump piston.

It is understood that the lining plunger may be made longer or shorter as occasion
 35 requires by changing the number of sections on the clamping rod, and it is further understood that the lining plunger may be used for lining up and clamping any construction made up of a series of tubular
 40 sections. It is also understood that the sections of the lining plunger may be varied in length or size or in number to meet the particular conditions for which it is used.

What we claim is:

45 1. A lining plunger comprising a series of tubular sections having their adjacent

ends correspondingly beveled and means for clamping said sections together.

2. A lining plunger comprising a series of tubular sections having their adjacent
 50 ends correspondingly beveled and having their lower ends slotted, and means for clamping said sections together to expand the slotted ends of the sections.

3. A lining plunger comprising a series
 55 of tubular sections one above the other, each of said sections having their adjacent ends correspondingly beveled, a head in the lower section, each of the remaining sections having their lower ends slotted, a head in the
 60 upper section, a rod secured in the head in the lower section and extending through the head in the upper section, and means for clamping said sections on said rod to expand the slotted ends of the sections.
 65

4. A lining plunger comprising an upper tubular section having a head in the top thereof, a lower tubular section having a head in the lower end thereof and a perforated cap in the top thereof, intermediate
 70 sections between said upper and lower sections, all of said sections having their adjacent ends correspondingly beveled, the top section and the intermediate sections each having their lower ends slotted, a perforated
 75 cap in the top of each intermediate section, a clamping bolt secured in said head in the lower section and extending through the head in the top section, said bolt being threaded, and a nut on said bolt abutting
 80 against the top of the head in the upper section to expand the slotted ends of the sections.

In testimony whereof, we have hereunto set our hands at Los Angeles, California,
 85 this 10th day of June, 1910.

DANIEL DANIELS.
 LYSLE P. BURGESS.

In presence of—

FRANK L. A. GRAHAM,
 P. H. SHELTON.