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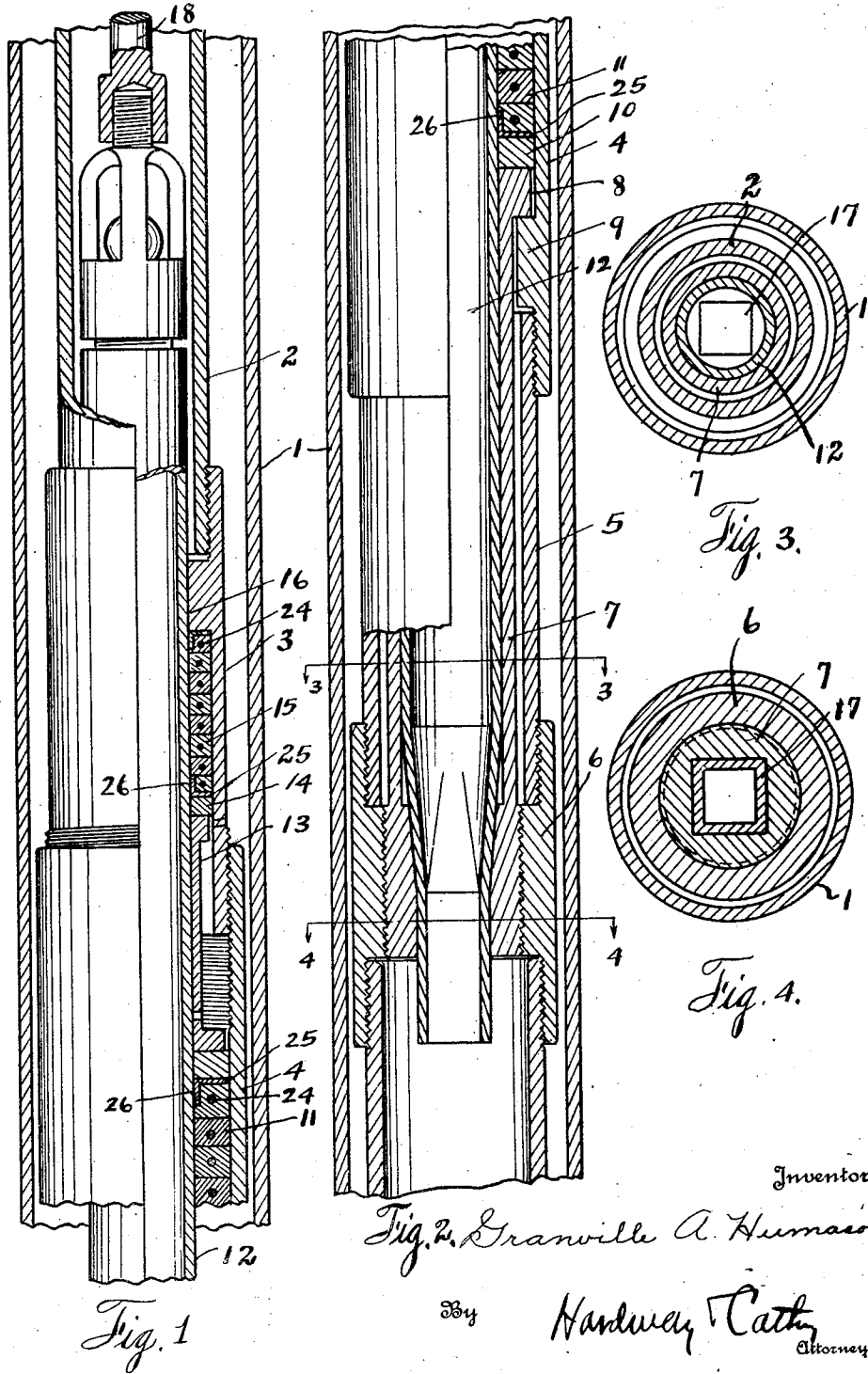
1,595,401

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PUMP

Filed Sept. 21, 1925

2 Sheets-Sheet 1



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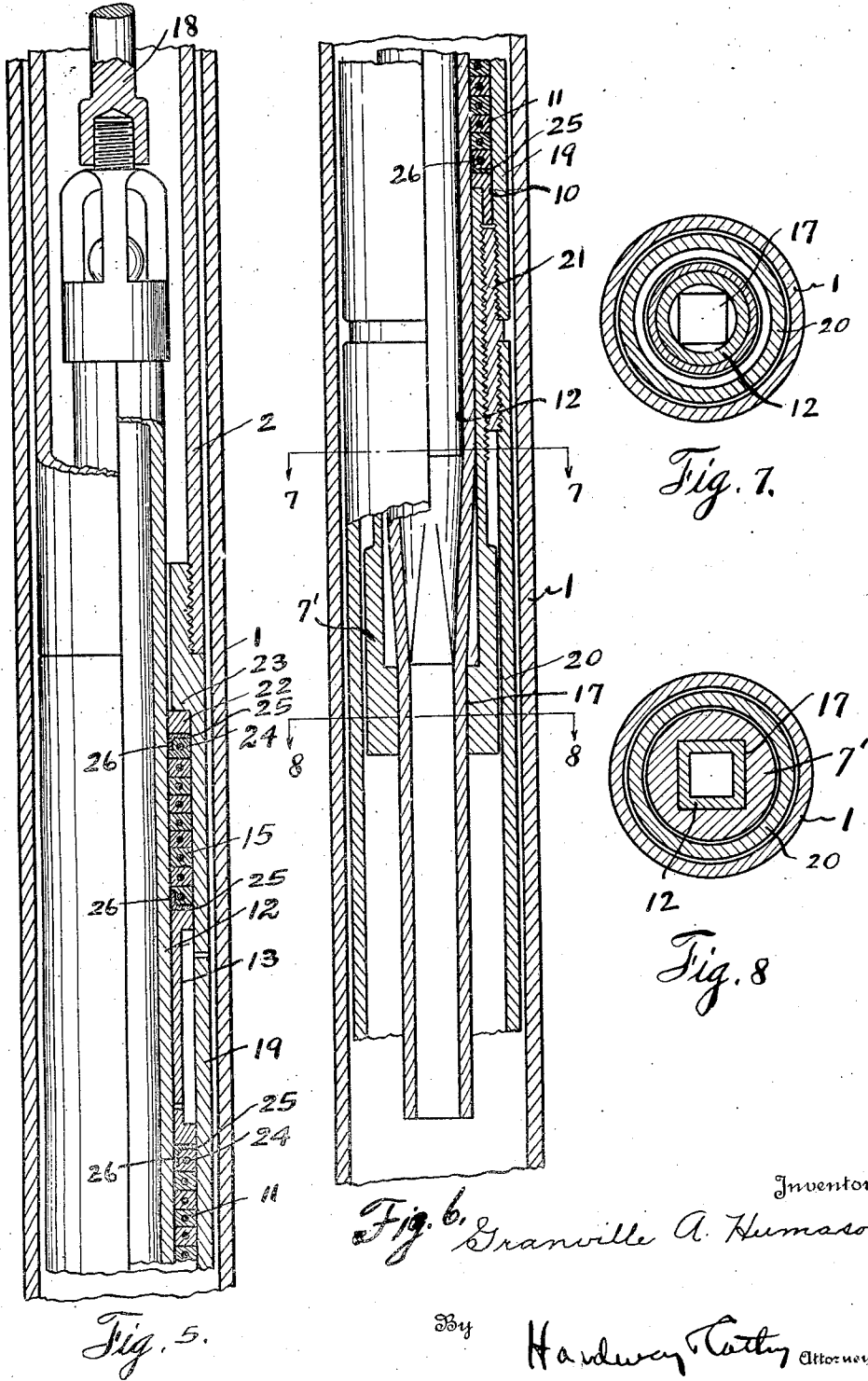
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2 Sheets-Sheet 2



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# UNITED STATES PATENT OFFICE.

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## PUMP.

Application filed September 21, 1925. Serial No. 57,635.

This invention relates to new and useful improvements in a pump.

One object of the invention is to produce a pump of the character described embodying a working barrel and a traveling valve controlled, plunger therein, which works through packing within the barrel around said plunger, and further embodies means through which the packing may be adjusted about the plunger.

Another object is to produce a pump of the character described embodying a sucker rod, through which the plunger is reciprocated, and through which the packing may be adjusted, about the plunger to tighten, or relieve said packing.

A further feature of the invention is to provide an upward type of packing and means for preventing its displacement.

With the above and other objects in view this invention has particular relation to certain novel features of construction, operation and arrangement of parts, an example of which is given in this specification and illustrated in the accompanying drawings, wherein:—

Figures 1 and 2 show side elevations of the upper and lower ends respectively, of the pump, shown partly in section.

Figure 3 shows a cross sectional view thereof, taken on the line 3—3 of Figure 2.

Figure 4 shows a cross sectional view, taken on the line 4—4 of Figure 2.

Figures 5 and 6 show respectively upper and lower ends of a slightly modified form of the pump.

Figure 7 shows a cross sectional view, taken on the line 7—7 of Figure 6, and

Figure 8 shows a cross sectional view taken on the line 8—8 of Figure 6.

Referring now more particularly to the drawings, wherein like numerals of reference designate similar parts in each of the figures, the numeral 1 designates the well casing and the numeral 2 designates the pump tubing to the lower end of which a working barrel is attached. In the form shown in Figures 1 to 4 this barrel is formed with three sections, an upper section 3, an intermediate section 4 and a lower section 5. The upper section is threaded onto the lower end of the tubing and the respective upper and lower ends of the intermediate section are threaded onto the adjacent ends of the upper and lower sections 3 and 5. The lower end of the lower section 5 is

threaded into a coupling 6 and within the barrel there is an elongated gland 7, whose upper end has an annular external rib 8, which interlocks with an annular rib 9, carried by the coupling 4. The upper end of the gland supports a metal ring 10 which in turn supports the packing 11, which is within the pump barrel around the plunger 12. This packing supports a spool like spacer 13 whose upper end supports a metal ring 14, which also supports a packing 15, around said plunger. The upper end of the packing 15 abuts the annular internal rib 16, within the barrel section 3.

The lower end of the gland 7 has a vertical, polygonal bearing 17 and the lower end of the plunger is extended and formed to fit through said bearing 17, when the plunger is in lower position. This arrangement forces the gland to turn when the plunger is turned. The gland is connected to the coupling 6 by left hand threads and in order to tighten up the packing the sucker rod 18 which is connected to the plunger, is turned to the right and the gland 7 will be correspondingly turned and thereby forced up against the packing 11, to tighten the same and cause it to fit more closely about the plunger, and in a like manner the spacer 13 will be forced up against the packing 15 to tighten it also.

In the form shown in Figures 5 to 8 the pump barrel is composed of two sections, an upper section 19 and a lower section 20 connected by an internally left hand threaded coupling 21. In this form the gland 7' is threaded through the coupling 21 and its upper end abuts the metallic ring 10' which in turn supports the packing 11; the spacer 13 and packing 15 of this form are supported and arranged in a manner similar to these parts shown in Figure 1. In Figure 5 there is a metal ring 22 supported by the packing 15 and abutting the internal shoulder 23 at the upper end of the barrel.

The lower end of the gland 7' also has the polygonal bearing 17 to receive the correspondingly shaped, extended lower end of the plunger. This end of the plunger is of such length that it will not be withdrawn from said bearing upon up stroke of the plunger and will always be in position to turn said gland.

The packing, in this form may be tightened up in the same manner as above explained.

In each form a novel type of flexible packing is shown, which is adapted to be wound spirally about the plunger. This packing may be formed of rubber, rubberized fabric, or other suitable material, and is preferably substantially square in cross section, and has a steel wire core 24, which tends to hold the same expanded against the barrel and thus holds the packing in place, in the barrel, when the plunger is withdrawn. The packing is further retained in place by upper and lower retaining rings 25, 25, which abut the packing ends and are provided with inside retaining flanges 26, 26 which fit within the packing.

What I claim is:—

1. A pump including a barrel, a plunger therein, packing in the barrel around the plunger, means within the barrel beneath the packing and operatively connected with, and adapted to be rotated by the plunger, through which the packing may be adjusted about the plunger.
2. A pump including a working barrel a plunger therein, packing in the barrel about the plunger, end abutments confining

said packing, one of said abutments being located beneath the packing and having a threaded connection with the barrel and also being operatively connected with the plunger and being adapted to be rotated therefrom.

3. A pump including a barrel, a plunger therein, packing in the barrel around the plunger, a gland having a threaded connection with the barrel and abutting the lower end of the packing, said plunger and gland having parts adapted to interlock and through which the rotation of the plunger will be imparted to the gland.

4. A pump including a barrel, a plunger therein, packing in the barrel around the plunger, a gland having a threaded connection with the barrel and abutting the lower end of the packing, said plunger and gland having parts adapted to interlock and through which rotation of the plunger will be imparted to said gland and an abutment within the barrel against which the upper end of the packing abuts.

In testimony whereof I have signed my name to this specification.

GRANVILLE A. HUMASON.