

W. Y. FUQUA.
 PACKING MECHANISM FOR OIL AND WATER WELLS.
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1,127,428.

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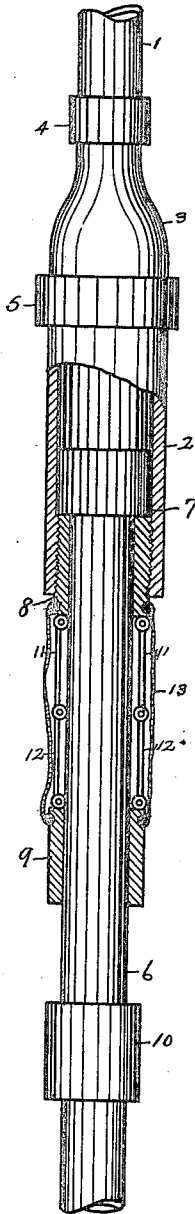


Fig. 2.

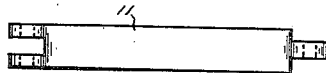


Fig. 4.

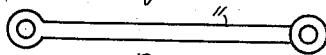


Fig. 5.

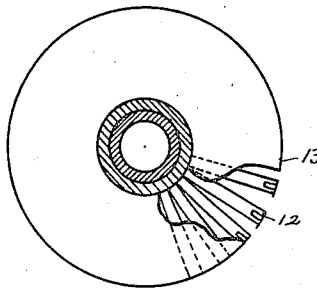


Fig. 3.

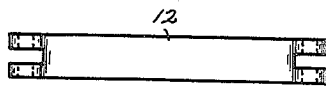


Fig. 6.

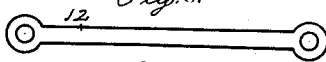


Fig. 7.

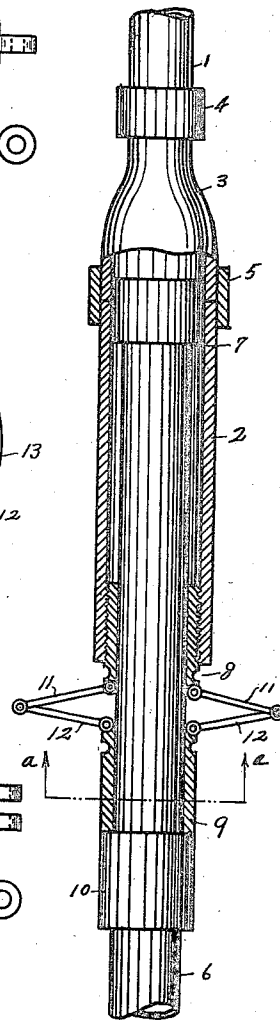


Fig. 1.

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PACKING MECHANISM FOR OIL AND WATER WELLS.

1,127,428.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM Y. FUQUA, a citizen of the United States, residing at Houston, in the county of Harris and State of Texas, have invented certain new and useful Improvements in Packing Mechanism for Oil and Water Wells, of which the following is a specification.

My invention relates to new and useful improvements in packing mechanism.

The object of the invention is to provide a mechanism of the character described designed to be used in wells for the purpose of casing off water.

As is well known, in boring an oil well a water vein is often encountered as well as oil and the water becomes mixed with the oil and otherwise interferes with the boring of the well.

It is the object of this invention to provide a device whereby the water may be entirely cased off from the oil so that it will not become mixed therewith or escape into the bore and be discharged to the surface.

With the above and other objects in view the 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:

Figure 1 is a sectional side elevation of the device showing the position it will assume when it is in use, the inclosing fabric being removed so as to expose the rib. Fig. 2 is a sectional side elevation showing the position it will assume when being lowered into or withdrawn from the well. Fig. 3 is a sectional view of the device taken on the line *a-a* of Fig. 1, and showing the same in the position as shown in Fig. 1, a portion of said device being broken away. Figs. 4 and 5 show a plan and edge view respectively of one form of the supporting ribs used in the construction of the device, and, Figs. 6 and 7 show plan and edge views respectively of another form of ribs employed.

Referring now more particularly to the drawing wherein like numerals of reference designate similar parts in each of the figures the numeral 1 designates the upper section of the pipe through which the oil is conducted from the bore; connected to this section is a short pipe section 2 of considerably larger diameter, these two sections being united by means of a reducing nipple 3, this

nipple being connected to the respective pipe sections 1 and 2 by means of the ordinary collars 4 and 5. Extending up into the pipe section 2 from beneath is another pipe section 6 considerably smaller in diameter than section 2 which carries an enlarged head or collar 7 at its upper end, said head fitting closely in the section 2 and closely surrounding said section 6 is an outwardly threaded cuff 8 which is designed to be screwed up into the inwardly threaded lower end of section 2 and to prevent the withdrawal of the head 7 from the said section 2. Closely surrounding the section 6 and beneath the cuff 8 is a sliding collar 9 which has free vertical movement relative to section 6 but whose downward movement is limited by means of the annular shoulder 10 which is integral with the section 6 and arranged beneath the collar 9; pivoted to the lower end of the cuff 8 and radiating therefrom are a plurality of inflexible ribs 11 and pivoted to the upper end of the sliding collar 9 and radiating therefrom are a corresponding number inflexible radiating ribs 12; the outer free ends of the respective ribs 11 being hinged to the outer ends of the corresponding ribs 12, as shown in Figs. 1 and 2. These ribs are covered on the outside by means of a strong oiled fabric covering or some similar strong flexible material; this covering is secured in place on the ribs in any preferred manner as by being sewed thereto or in any other way which may be preferred.

When a stream of water has been encountered and it is desired to case the same off and stop the flow thereof up into the bore, the device is assembled as shown and attached to a string of pipe of sufficient length to bring the casing device to the proper point when the pipe has been lowered in the bore. The upper section 1 is then forced downwardly and the collar 9 seats upon the shoulder 10 and as additional force is applied to the section 1 the ribs 11 and 12 are forced to spread outwardly in the manner of an umbrella carrying the fabric 13 out with them and said ribs are gradually forced into the soft sides of the bore until the lower end of cuff 8 seats upon the upper side of collar 9 and the fabric 13 being impervious to liquid passage thus entirely cuts off the flow of water therethrough and prevents the water of one side thereof from mingling with the oil of the other side. The

oil is then pumped out passing through the pipe sections 6, 2 and 1 and is delivered free from water to the surface.

The fabric 13 is not, in all cases, essential to the operation of the device, as the ribs when forced into the walls of the bore, as hereinbefore described, will obstruct the fluid passageway to such an extent that the detritus in the fluid and earth and other matter will gradually collect between said ribs and finally completely block the bore and entirely cut off the flow of fluid from one side of the device to the other.

What I claim is:

1. A device of the character described composed of two pipe sections, one telescoping within the other, said sections having a continuous fluid passageway therethrough and being secured together so as to be freely slidable lengthwise relative to each other, a collar upon the inner section, a plurality of ribs pivoted to the outer section and a plurality of ribs pivoted to the collar, the free ends of the corresponding ribs of the two series being hinged together, said ribs being inflexible and projecting outwardly at approximately right angles to the pipe when the outer section is forced against the collar.

2. A device of the character described composed of telescoping pipe sections having a continuous fluid passageway therethrough and secured together so as to be freely movable lengthwise relative to each other, a collar upon the inner section, a plurality of ribs pivoted to the outer section and a plurality of ribs pivoted to the collar, the corresponding ribs of the two series being hinged together and adapted to project out at approximately right angles to the pipe when the outer section is forced against the collar, and a flexible member secured to said pipe sections and surrounding said ribs and adapted to be forced outwardly from said sections by said ribs.

3. A device of the character described including an upper and a lower pipe section, said sections being slidably secured together, a collar upon the lower pipe section, a plurality of ribs pivoted to the lower end of the upper pipe section, a corresponding number of ribs pivoted to said collar, the corresponding ribs being hinged together in such a manner that the said ribs will project out from the pipe at approximately right angles when the upper section is forced against said collar and a covering composed of flexible material impervious to the passage of fluid enveloping said ribs.

4. A device of the character described including an upper and a lower pipe section, said sections telescoping and being secured together, so as to be freely movable lengthwise relative to each other, a collar upon the lower pipe section, a plurality of hinged members, each of which is secured at one

end to the upper pipe section and at the other end to said collar, said hinged members being so arranged as to fold when the upper section and the collar are moved toward each other and when folded to project out at approximately right angles from said pipe sections.

5. A device of the character described including upper and lower pipe sections, the lower of said sections telescoping into the upper section and the sections being movable lengthwise relative to each other and having a continuous fluid passageway therethrough, an enlarged head carried by the free end of the lower section and a cuff threaded into the free end of the upper section, so as to lock against said head and prevent the separation of the sections, a collar upon the lower pipe section, a plurality of inflexible ribs pivoted to the lower end of said cuff and a corresponding number of similar ribs pivoted to the upper end of said collar, the corresponding ribs being hinged together, said ribs being arranged to project outwardly as said collar and cuff are forced together.

6. A device of the character described, including upper and lower pipe sections, the lower of said sections telescoping into the upper section, and the sections being freely movable lengthwise relative to each other and having a continuous fluid passageway therethrough, an enlarged head carried by the free end of the lower section and a cuff threaded into the free end of the upper section, so as to lock against said head and prevent the separation of the sections, a collar upon the lower pipe sections, a plurality of inflexible ribs pivoted to the lower end of said cuff and a corresponding number of similar ribs pivoted to the upper end of said collar, the corresponding ribs being hinged together, said ribs being arranged to project outwardly as said collar and cuff are forced together, and a flexible covering surrounding said ribs and secured above and below the ribs to the respective pipe sections.

7. A device of the character described including upper and lower pipe sections, the lower of said sections telescoping into the upper section and the sections being freely movable lengthwise relative to each other and having a continuous fluid passageway therethrough, an enlarged head carried by the free end of the lower section, a cuff threaded into the free end of the upper section, so as to lock against said head and prevent the separation of the sections, a collar upon the lower pipe section, a plurality of inflexible ribs pivoted to the lower end of said cuff, a corresponding number of similar ribs pivoted to the upper end of said collar, the corresponding ribs being hinged together, said ribs being arranged to project outwardly, elbow fashion, as said collar and

cuff are forced together and fold one toward the other and a flexible covering surrounding said ribs and secured above and below the ribs to the respective pipe section.

5 8. A device of the character described composed of two telescoping pipe sections, having a fluid passageway therethrough and secured together so as to be freely slidable lengthwise relative to each other, two series
10 of ribs, the ribs of one series being pivoted to one section and the ribs of the other series having engagement with the other section,

the corresponding ribs of the two series being hinged together in such manner as to allow the said corresponding ribs to fold one 15 toward the other, and project out at approximately right angles to the pipe.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM Y. FUQUA.

Witnesses:

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