J. L. HOFFMAN.

OIL-WELL PACKING.

No. 170,563. Patented Nov. 30, 1875.

Fig 1

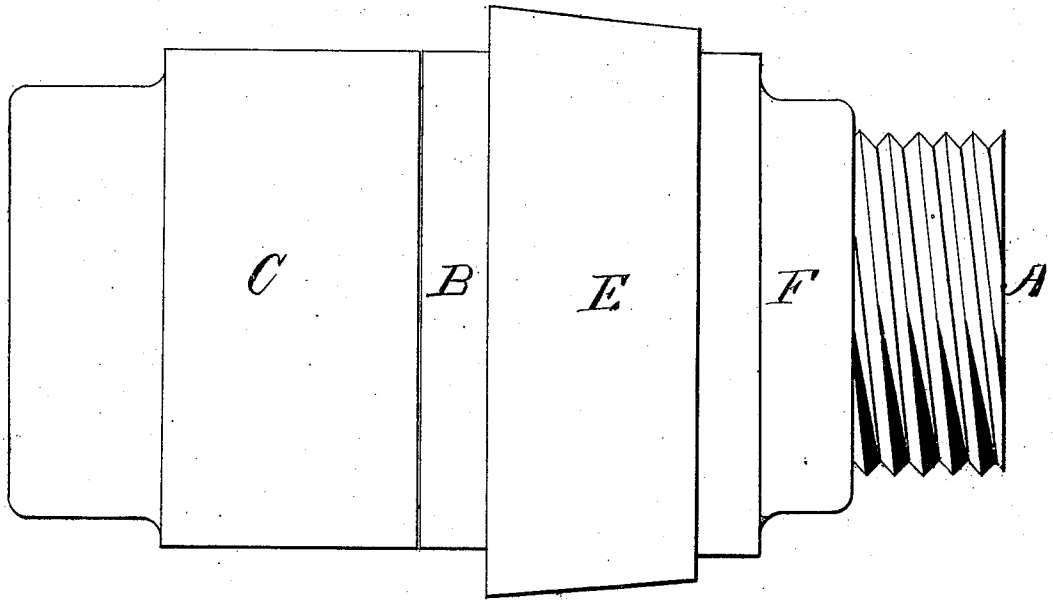
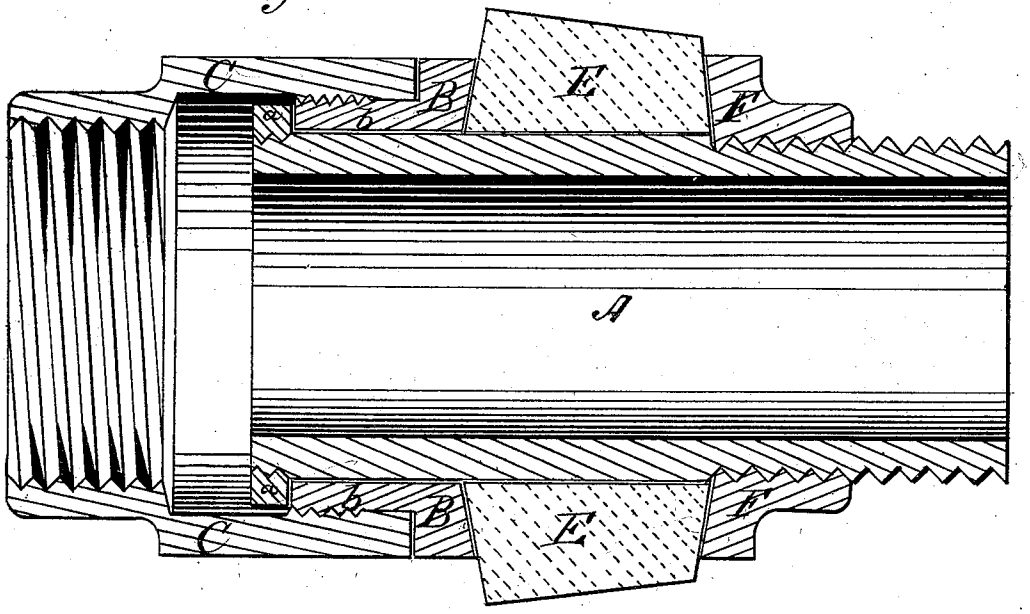


Fig 2



WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN L. HOFFMAN, OF OIL CITY, PENNSYLVANIA, ASSIGNOR TO ROBERT R. ARMOR, OF SAME PLACE.

IMPROVEMENT IN OIL-WELL PACKINGS.

Specification forming part of Letters Patent No. **170,563**, dated November 30, 1875; application filed April 17, 1875.

To all whom it may concern:

Be it known that I, JOHN L. HOFFMAN, of Oil City, in the county of Venango and State of Pennsylvania, have invented a new and valuable Improvement in Oil-Well Packing; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a side elevation of my device; and Fig. 2 is a longitudinal vertical sectional view of the same.

This invention has relation to improvements in packing for oil-wells.

The object of the invention is to devise an accurate and reliable means for preventing the flow of water and other fluids from above downward, to mingle with the oil exuding from a natural reservoir in the earth into the bore of a well; and it consists in the novel construction and arrangement of the parts, as will be hereinafter more fully set forth.

In the annexed drawings, A designates a short section of oil-tubing, which is in the nature of a joint-pipe, and is designed to be located between the water and the oil-springs. The lower end of this section is screw-threaded, and its upper end provided with an exterior flange, *a*, for a purpose hereinafter explained, which flange may be either a component part of its pipe or a separate and detachable ring screwed into position thereon, and prevented from backward rotation by a suitable key. B represents a tubular sleeve, having a screw-threaded rabbet, *b*, which is passed, with its reduced end foremost, over the plain end of tube A, and is screwed into a coupling-joint, C, which passes snugly over the flange *a* of the said tube, forming an air-tight joint therewith. The lower end of sleeve B forms, with pipe A, an acute angle for a purpose hereinafter made clear, and the upper end of coupling C is provided with a female screw-thread, for the purpose of attaching thereto an upper section of tubing, to which may be coupled, in any suitable manner, as many sections as may be necessary to reach the surface of the earth. Sleeve B and coupling C are prevented from casual detachment from pipe A by means of the flange *a* on the upper end of the latter, and they have a slight endwise movement on the said pipe, for the purpose of expanding and thrusting against the wall of the bore a rubber packing-ring, E, of suitable dimensions, which ring is supported from below by an annular ledge, F. This ledge is screwed upon the lower end of pipe A with its upper inclined edge close up against ring E, as shown in Fig. 2, the said edge forming, with the length of the pipe, an acute angle, as does also the lower edge of sleeve B, for the purpose of affording a hold to the ledge and sleeve upon the packing-ring.

When oil is struck in boring, it has heretofore been usual to lower well-tubing into the bore and pump up commingled oil and water into a tank, when upon settling, the oil rises upon the surface of the water, and is separately drained off therefrom. This means of obtaining oil is attended with great expense, as the water is generally in excess, and while costing quite as much to pump out, is utterly useless and unsaleable. This defect is effectually done away with by my improved joint, as the weight of the upper sections of tubing will cause the packing-ring to be forcibly expanded against the wall of the bore, thus cutting off the water-springs above from the oil springs below, and allowing the proceeds of the latter to be pumped out, to a great extent, free of water.

I am aware that a well-tube, surrounded by a packing device, compressed as desired, by means of a lower screw-threaded and an upper wedge-shaped ring, both concentric with the tube, as shown in Letters Patent granted to D. B. Lathan, dated July 10, 1866, No. 56,234, has heretofore been employed, and I therefore lay no claim to such invention.

What I claim as new, and desire to secure by Letters Patent, is—

The combination of the tube A, screw-threaded at its ends, and provided with a

screw-threaded flange, *a*, the screw-threaded annular ledge F, having an upper inclined face, packing-ring E, with inclined faces, the screw-threaded sleeve B, having an inclined flange on its lower end, and screw-threaded coupler C, all constructed and arranged as shown and described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JOHN L. HOFFMAN.

Witnesses:

F. W. HAYS,

ROBERT R. ARMOR.