J. P. & S. H. GORDON.

Water Packings for Oil-Wells.

No. 196,220. Patented Oct. 16, 1877.

Fig 1.

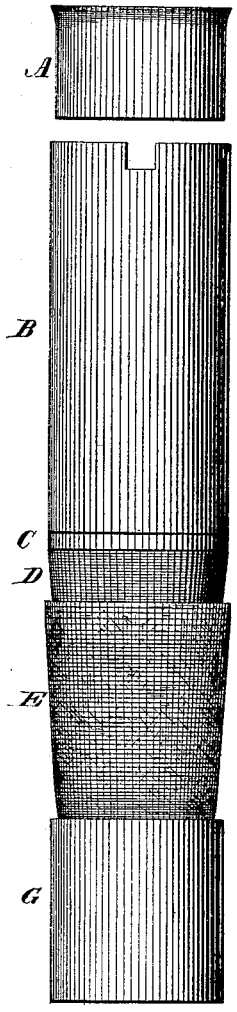
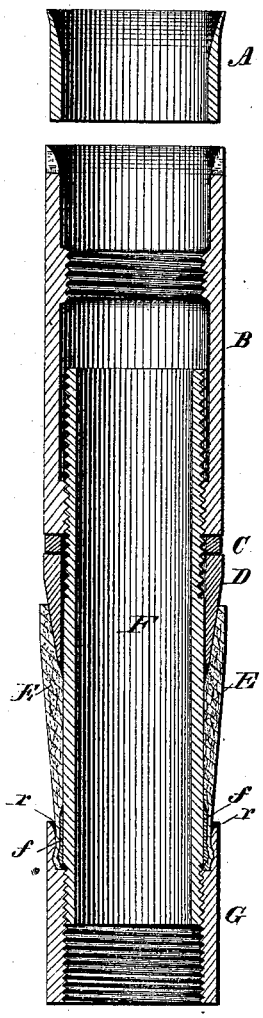


Fig 2.



Witnesses.

Harry King

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UNITED STATES PATENT OFFICE.

JAMES P. GORDON, OF COAL VALLEY, ILLINOIS, AND SAMUEL H. GORDON, OF KARNS CITY, PENNSYLVANIA.

IMPROVEMENT IN WATER-PACKINGS FOR OIL-WELLS.

Specification forming part of Letters Patent No. **196,220**, dated October 16, 1877; application filed August 27, 1877.

To all whom it may concern:

Be it known that we, JAMES P. GORDON, of Coal Valley, Rock Island county, Illinois, and SAMUEL H. GORDON, of Karns City, in the county of Butler and State of Pennsylvania, have invented certain new and useful Improvements in Water-Packers for Oil-Wells; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 is a side elevation of our improved packing device, and Fig. 2 is a vertical central section of the same.

The same letter indicates the same part in both the figures of the drawing.

This device is an improvement on the packer for shutting off water from oil-wells for which Letters Patent No. 167,400 were issued to James P. Gordon, September 7, 1875.

The object of this improvement is the same as that of the patented invention referred to—to facilitate the stopping off water from oil-wells when veins occur below the depth to which the casing for shutting off the surface-water is usually sunk; and the improvement consists in a modification of the upper packer of Patent No. 167,400, by which the packer remains stationary while the cone is forced down under it to drive it outward against the well-wall, instead of the packer being driven down over the cone, as in the patent.

In using the invention described in the patent, we found that it was not practicable to force the leather packing down over the cone, owing to the friction between the outer surface of the packer and the rock composing the well-wall. The grit would cut and destroy the packer.

No change is made in the lower packing device, or in the method of introducing the apparatus into the well and holding it to its desired position. These, therefore, need not be described.

In the drawings, E marks the packer, which is a long cylinder of leather or rubber, of conoidal form, whose lower end is received in an annular recess, *r*, formed in the upper end of coupling G. The packer is placed on the outside of cylinder F, and within it is inserted the annular follower *f*. Above the packer E, on cylinder F, is the conoidal cylinder D, the lower edge of which is received below the upper edge of the packer E. When the cone D is driven down, the packing is forced outward to fill the space between the well-wall and the casing. On top of the cone D is placed the friction-ring C, which separates it from the lower end of the driver B, by the descent of which the cone D is driven down under the packer E.

The driver B is tapped to receive the screw-thread cut on the outside of cylinder F, and, by means similar to those described in Patent 167,400, is screwed down upon the cone D at the proper time to force out the packer against the well-wall to prevent the rise of the water. The lower edge of the packer is held, water-tight, against the casing in the recess *r*, formed by the lip on the upper edge of the coupling G, as seen in Fig. 2. This lip or rim may be provided with a slight annular inward projection or indentation, to co-operate with a small follower, *f*, similarly indented, on the outside of cylinder F, in griping and securely holding the lower edge of the packer E, and preventing the entrance of water beneath it.

A represents a short bell-mouthed cylinder, called a "drop-band," which rests on the top of the driver, and serves as a conductor or guide for the introduction into the packing device of tools or pumping apparatus, or any of the objects it may become necessary to insert in the well. This band, being short, is more readily introduced, and accommodates itself better to any variations in the line of the well than a long cylinder.

What we claim is—

1. The stationary conoidal packer E, in combination with the movable conoidal cylinder D and the parts A B C of the apparatus, for driving said cylinder D under the packer to force it outward, all in the manner and for the purpose set forth.

2. The combination, with the packer E, of the indented follower *f* and the indented lip of

band or coupling G, for the purpose of clamping the lower edge of the packer to the cylinder F, in the manner and for the purpose specified.

3. The combination, with the described packing device—viz., the parts B D E *f* G—of the drop-band A, constructed and operating as described, for the purpose stated.

In testimony that we claim the foregoing as our own we hereto affix our signatures in presence of two witnesses.

JAMES P. GORDON.
SAMUEL H. GORDON.

Witnesses:
A. M. BLOMQUIST,
WM. A. KRAMER.