E. J. NORTHRUP.

Oil-Saver and Casing-Head.

No. 200,471. Patented Feb. 19, 1878.

Fig: 1.

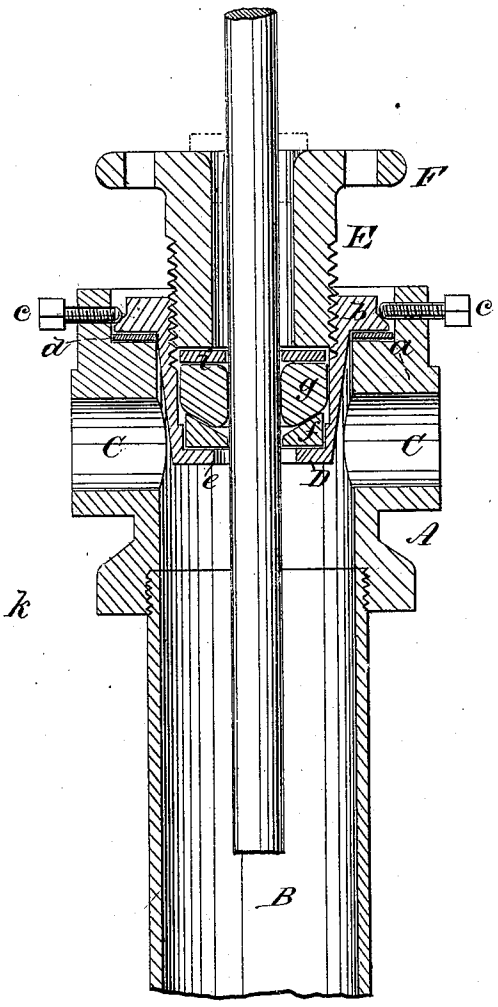


Fig: 2.

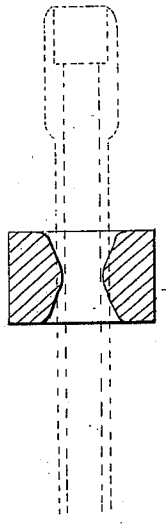


Fig: 3.



WITNESSES:

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EDGAR J. NORTHRUP, OF WARREN, PENNSYLVANIA.

IMPROVEMENT IN OIL-SAVER AND CASING-HEAD.

Specification forming part of Letters Patent No. **200,471**, dated February 19, 1878; application filed October 25, 1877.

To all whom it may concern:

Be it known that I, EDGAR J. NORTHRUP, of Warren, in the county of Warren and State of Pennsylvania, have invented a new and Improved Oil-Saver and Casing-Head, of which the following is a specification:

Figure 1 is a vertical section of my improved device. Fig. 2 is a detail view of the pipe-packing. Fig. 3 is a detail view of a split reducer.

Similar letters of reference indicate corresponding parts.

The object of my invention is to provide a head for an oil-well casing, by means of which the operation of boring the well may be continued after oil is reached.

The invention will first be described in connection with the drawing, and then pointed out in the claims.

Referring to the drawings, A is a head, which is bored cylindrically and screwed onto the upper end of the well-casing B. There are lateral openings C in the sides of the head, into which are screwed pipes for conducting oil to the tanks.

A rabbet, *a*, is formed in the inner portion of the head A, for receiving the beveled flange *b* of the cone D. Screws *c* pass through the sides of the head A, and bear upon the beveled surface of the flange *b*, holding the flange down upon a packing-ring, *d*. The cone is bored and threaded internally to receive the sleeve E, which is provided at its upper end with a hand-wheel, F.

The cone D is bored entirely through, and is provided with an internal flange, *e*, which supports a removable beveled ring, *f*, having a central aperture of sufficient size to receive the drill-operating cable. Upon the beveled ring *f* an elastic packing-ring, *g*, is placed, between which and the sleeve E washers *i* are placed.

The drill is operated by a cable, which slides through the packing-ring *g*. When oil is reached it is prevented from escaping around the cable by the packing-ring, and is conveyed away by pipes screwed into the lateral openings C. When the well is not flowing the packing-ring *g* is loosened, and the cable to which the drilling-tools are attached moves freely through it; but when the oil begins to flow, the packing is tightened by screwing down the sleeve E by means of the hand-wheel F. The cone D is removed from the head whenever the drill is taken from the well-casing.

When tubing is to be inserted in the casing B, the washers *i*, packing-ring *g*, and beveled ring *f* are removed, and the packing-ring *k* is placed upon the flange *e*, and is compressed by the sleeve E. The hole through the elastic packing-ring *k* is flared or countersunk upon each side, to facilitate the passage of the pipe-couplings through it.

The pipe-couplings are rounded at each end, and the pipe is smoothed, so that it will not tear or roughen the elastic packing-ring, through which it passes.

When a pipe of the required length has been introduced it is supported by placing the split sleeve G in the sleeve E below one of the couplings of the pipe, the flange *l* of the said split sleeve resting upon the upper end of the sleeve E, and supporting the pipe by engagement with the coupling.

I am aware that it is not new to use a flanged sleeve, or to combine a box and reciprocating plunger with a casing-tube having lateral openings; but

What I claim is—

1. The beveled ring *f* and washers *i*, in combination with the sleeve E and cone D, for adapting the same to an elastic cable-packing, as herein shown and described.

2. The packing-ring *k*, having an aperture flared or countersunk on both sides, as and for the purpose specified.

EDGAR J. NORTHRUP.

Witnesses:

HEPBURN MCCLURE,

THOS. KING.