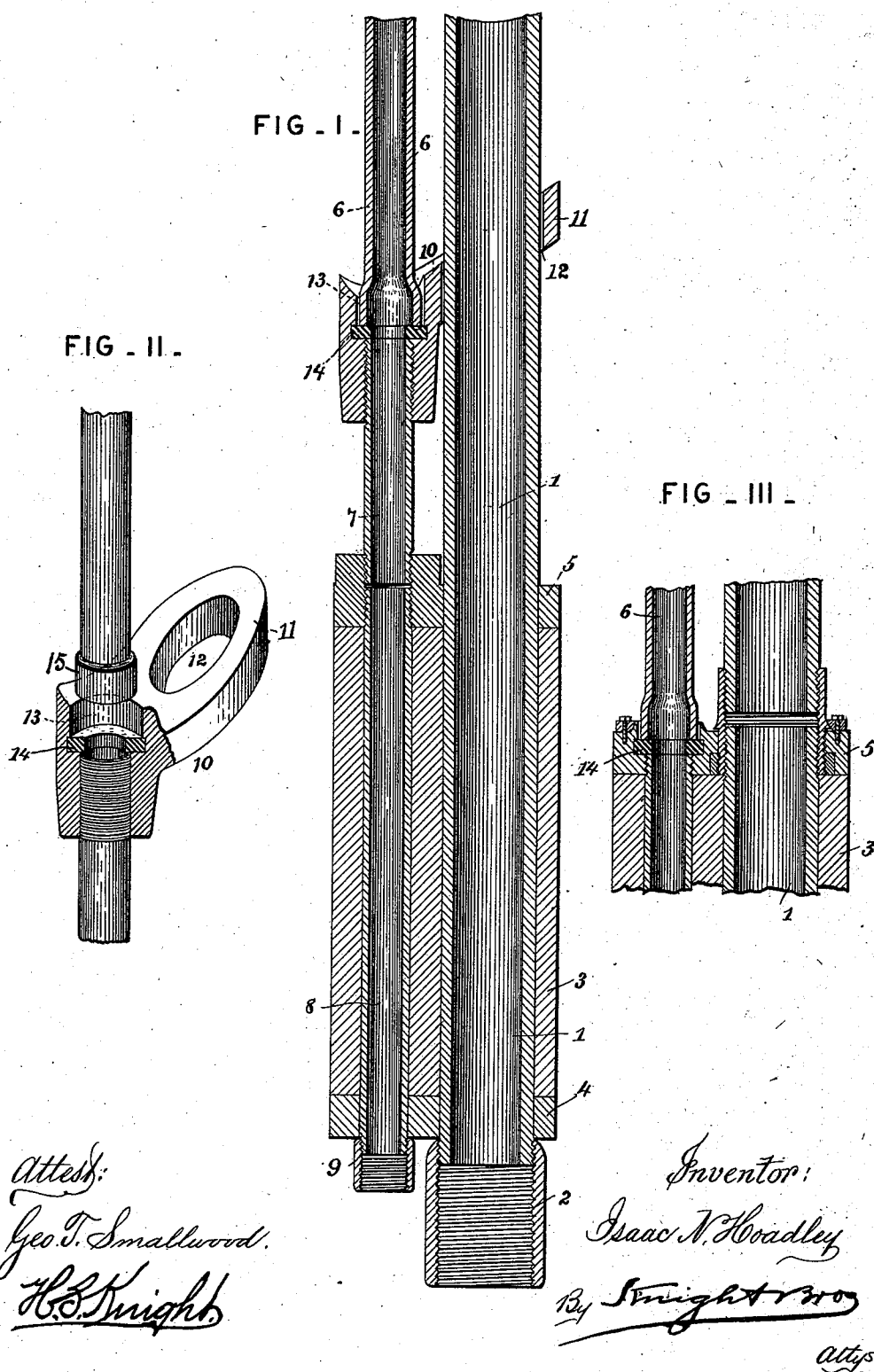


(No Model.)

I. N. HOADLEY.
PACKER FOR OIL OR GAS WELLS.

No. 381,013.

Patented Apr. 10, 1888.



Attest:
Geo. T. Smallwood.
H. S. Knight

Inventor:
Isaac N. Hoadley
By Stright & Co.
attys

UNITED STATES PATENT OFFICE.

ISAAC N. HOADLEY, OF BRADFORD, PENNSYLVANIA, ASSIGNOR TO THE
HOADLEY PACKER COMPANY, (LIMITED,) OF SAME PLACE.

PACKER FOR OIL AND GAS WELLS.

SPECIFICATION forming part of Letters Patent No. 381,013, dated April 10, 1888.

Application filed August 4, 1887. Serial No. 246,146. (No model.)

To all whom it may concern:

Be it known that I, ISAAC N. HOADLEY, a citizen of the United States, residing at Bradford, in the county of McKean and State of Pennsylvania, have invented certain new and useful Improvements in Packers for Oil and Gas Wells, of which the following is a specification.

In small wells where the oil-supply is only a few barrels a day and the casing has become worn and rusted, or in wells where it is necessary to shut off salt or fresh water from any source, it is important while shutting off the water from the well to yet allow the gas to escape, this being essential to the proper working of the pump.

My improvement therefore relates to that form of packer which is intended for use in connection with two pipes in an oil-well, one intended to carry off the oil and the other the gas, and the packer is of such construction as to be capable of location at any desired height in the well.

In the accompanying drawings, Figure I is a vertical section of a portion of oil and gas pipes bearing my improved packer. Fig. II is a sectional perspective view of the guide for the gas-pipe, the lower end of the gas-pipe being shown about to enter its seat. Fig. III is a vertical sectional view of a modified form of the invention, intended for use where the weight of the small pipe is not sufficient to set out the packing.

1 may represent a portion of one section of the oil-pipe, and 2 a coupling-thimble on the lower end of such section. This coupling-thimble may be at the base of the oil pipe if the section 1 be the lowermost section of the pipe, or it may serve for the attachment of additional sections of pipe if the packing is to be located at any desired distance above the bottom of the well.

The packing is shown at 3, being made of rubber, in customary cylindrical form, and rests by a metal flange, 4, on the thimble 2. The upper flange, 5, serves as a follower in compressing the said packing. The flanges 4 and 5 and the packing 3 surround loosely the pipe 1, so as to be out of frictional contact therewith.

6 is the gas-pipe having prolongations 7 8.

The section 8 is rigidly screwed into the upper flange, 5, above the packing 3, but at its lower end passes loosely through the flange 4, below the packing. A coupling-thimble, 9, on the lower end of section 8 serves for the attachment of additional lengths of gas-pipe, if desired. Into the flange 5 above the section 8 the section 7 of the gas-pipe is screwed, and upon its upper end this section supports a metallic guide, 10, which has an arm, 11, of elliptical or oval form, arranged in inclined position, as shown, so as to practically fill the oil-well transversely, and having a passage, 12, and seat 13, with rubber gasket 14 for the gas-pipe 6. The upper surface of the arm 11 is hollowed out slightly, as shown, so as to guide the lower end of the gas-pipe to its seat.

The following is the method of operation: The packer consists of the packing 3, and flanges 4 5 having been placed upon the proper section of the oil-pipe, with the guide 10 11, supported by the section 7, on the flange 5, and embracing such section of the oil-pipe, the latter is lowered into the well until the packing has reached the desired position, either at the bottom or at any height above the bottom which may be desired. The gas-pipe 6, having at its lower end a thimble, 15, is then lowered into the well. On coming in contact with the guide 11 said gas-pipe is directed toward the seat 13 in said guide, and rests upon the rubber gasket 14 in the bottom thereof. A practically-continuous gas-pipe is thus provided from beneath the lower flange, 4, of the packing to the top of the well. The weight of the gas-pipe, resting upon the gasket 14 and therefrom upon the flange 5, compresses the packing 3 between the flanges 5 and 4, thus expanding it against the sides of the well and preventing water in the upper portion of the well from access to the oil below. There is no trouble in removing this packer, as by lifting the small pipe from its seat the fluid above the seat 13 in the guide 10 falls through the lower sections of the pipe, thus taking all pressure off of the packing. As the fluid runs in, it can be pumped out before the tubing is removed.

It will be seen that with this packer in use the tubing can be hung from the casing-head. In the form shown in Fig. III, I have illus-

trated a method in which the expanding mechanism shown in my pending application, No. 226,267, filed February 2, 1887, may be applied to this invention. Here the rotation of the oil-pipe is intended to effect the setting out of the packing in cases where the weight of the small pipe is insufficient for this purpose.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. The combination, with the oil-pipe and a gas-pipe, one of which being in two or more sections, of a packing surrounding said pipes, a flange above and below said packing and supported by one of said pipes and adapted to compress said packing, the guides 10 and 11, supported by the upper flange and having a seat adapted to receive the upper section of the sectional pipe, substantially as set forth.

2. The combination, with the packing, the oil-pipe, and a flange surrounding said pipe

and adapted to compress said packing, of the gas-pipe made in sections, a guide having a perforated arm surrounding the oil-pipe, and a seat, one section of the gas-pipe carrying said guide and supported upon said flange, and a gasket in said seat adapted to support the upper sections of the pipe, as set forth.

3. The combination, with an oil-pipe and a gas-pipe, one of which being in two or more sections, of a packing surrounding said pipes, flanges above and below said packing supported by one of said pipes and adapted to compress said packing, one section of the sectional pipe being screwed into the upper flange, the guide 10 11, supported by said section, a gasket, and a seat in said guide, in which said gasket rests, adapted to receive the upper section of the said pipe, substantially as set forth.

ISAAC N. HOADLEY.

Witnesses:

A. W. NEWELL,
GEO. C. LEWIS.