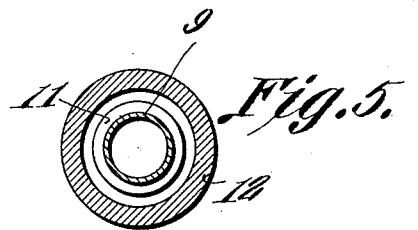
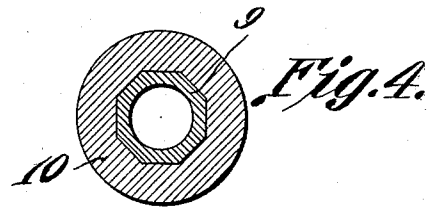
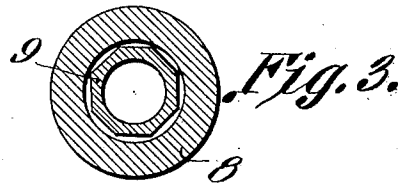
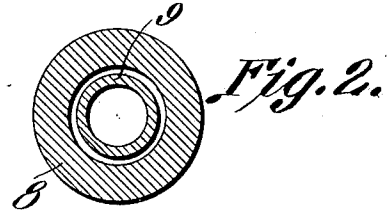
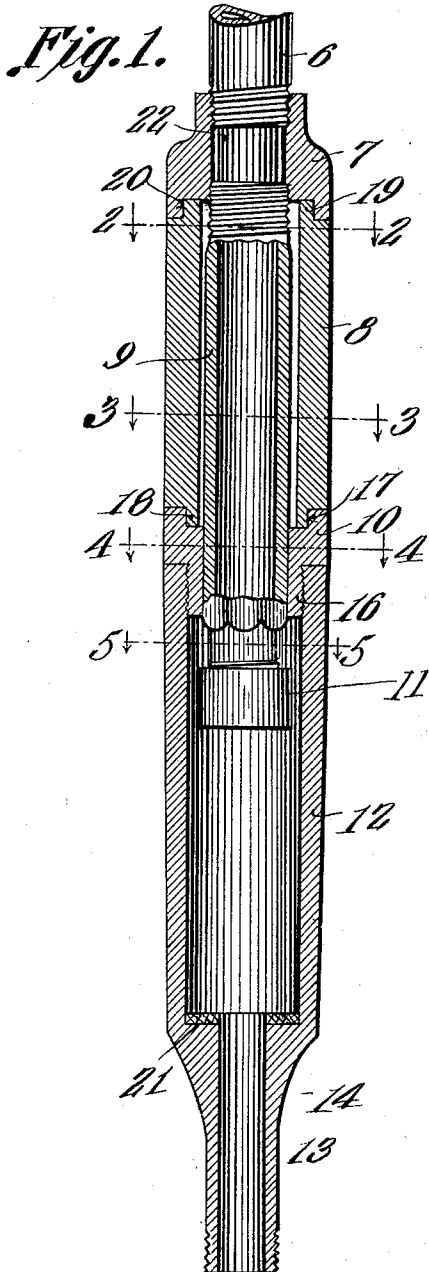


L. P. BOOE & R. DAVIS.
GAS WELL PACKER.
APPLICATION FILED SEPT. 7, 1911.

1,038,080.

Patented Sept. 10, 1912.



Witnesses

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UNITED STATES PATENT OFFICE.

LEX P. BOOE AND RAY DAVIS, OF CHANUTE, KANSAS.

GAS-WELL PACKER.

1,038,080.

Specification of Letters Patent. Patented Sept. 10, 1912.

Application filed September 7, 1911. Serial No. 648,205.

To all whom it may concern:

Be it known that we, LEX P. BOOE and RAY DAVIS, citizens of the United States, residing at Chanute, in the county of Neosho, State of Kansas, have invented a new and useful Gas-Well Packer, of which the following is a specification.

This invention relates to packers for gas wells, and has for its object to provide a suitable packer for the lower end of a pipe which is sunk into the well for the purpose of shutting out water and other foreign matter from the bottom of the well, the use of which is common practice.

A further object is to provide an improved construction of packer of this character in which the upper and lower portions are constrained from rotating with respect to each other.

With the above and other objects in view, this invention is embodied in the novel construction, arrangement and combination of the parts of a packer.

The invention is illustrated in the accompanying drawings, in which similar reference characters indicate similar parts, and in which:

Figure 1 is a longitudinal central section taken through the packer, parts shown in full. Fig. 2 is a section on the line 2—2 of Fig. 1. Fig. 3 is a section on the line 3—3 of Fig. 1. Fig. 4 is a section on the line 4—4 of Fig. 1. Fig. 5 is a section on the line 5—5 of Fig. 1.

Referring specifically to the drawings, 6 designates the pipe above the packer, which is of usual diameter, somewhat less than the diameter of the well. To the lower end of the tube 6 is secured the packer which will be described directly.

The packer comprises a lower bowl-shaped section 12 having the upper end thereof open and internally screw-threaded. An integral nipple 13 projects or depends from the lower end of the section 12 and the duct 14 thereof communicates with the lower end of the recess or basin within the said section. The upper end of the nipple 13 is increased in diameter to blend or merge into the lower end of the said section, whereby the packer can be conveniently sunk into the well. A head 10 having a lower nipple 16 is secured on the upper end of the section 12, the nipple 16 being provided with external screw-threads engaging with the internal screw-threads in

the upper end of the said section. The head 10 has a non-circular opening therethrough, being shown as octangular, and in the upper end thereof is provided a socket 17. A sleeve 8 of rubber or other elastic material is arranged above the head 10 and is provided with a reduced portion or nipple 18 on the lower end thereof which enters the socket 17 of the head 10, forming a male and female joint.

Above the sleeve 8 is arranged an upper head 7 having a bore or passage therethrough and having the lower socket 20 into which an upper reduced portion or nipple 19 of the sleeve 8 engages to form a male and female joint between the head 7 and the sleeve 8. The bore of the head 7 indicated at 22 is provided at its upper and lower ends with screw-threads, the lower end of the tube 6 being screw-threaded and engaging the upper end of the said head. A tubular member 9 having the body thereof of non-circular contour, shown as being octangular in form, has the upper end thereof externally screw-threaded and engaging in the lower end of the bore 22 of the head 7, the body thereof passing snugly through the passage in the head 10. The tubular member 9 being noncircular in contour and fitting snugly within the passage through the head 10 which is non-circular, prevents the rotation of the said member within the said head or vice versa. A collar 11 is screw-threaded onto the lower end of the tubular member 9 and is spaced above the bottom 21 of the basin or recess within the section 12. The head 7, sleeve 8, head 10, and the section 12 are all circular in contour and flush at the joints thereof.

As shown in the drawings, the ends of the tubular member 9 are reduced alike and are circular, said ends being provided with external screw-threads, which provides for a certain novel feature. The reciprocation of the tubular member 9 through the head 10 will cause the tubular member to be worn, particularly at the corners, in which event, the tubular member may be detached and reversed to bring the unworn or upper portion thereof within the head 10, thus renewing the life of the packer. A tight fit between the tubular member 9 and the head 10 is essential in order to prevent the egress or ingress of matter through the packer.

In use, the packer, after being assembled, is screwed on the lower end of the pipe

which is to be sunk into the well and the pipe is then lowered into the well in the customary manner, a short section of pipe being secured below the packer (not shown). When the lower section of the pipe strikes the bottom of the well the weight of the upper pipe 6 rests on the sleeve 8 which in having its ends compressed bulges under the load of the upper pipe, or causes the sides thereof to be distended, to engage the sides of the well. This closes the passage between the pipe and the walls of the well whereby the water and other matter above the said packing are prevented from falling into the bottom of the well which contains the "gas sand". It will be noted that the lower section of pipe may have a screw-threaded engagement with the nipple 13 for connecting the lower section of pipe and packer together. This lower section of pipe has openings therein intermediate its ends, or is caged intermediate its ends to permit the gas to enter the said section of pipe and pass up through the packer into the upper portions of the pipe to be exhausted from the well in the usual manner. The tubular member 9 being of non-circular contour and slidably fitting within the non-circular passage through the head 10 prevents the head 7 from revolving with respect to the head 10 and the section 12 thus holding the various parts of the packer in non-rotatable position with respect to each other. The upper portions of pipe are usually connected by a coupling having right and left-handed screw threads,

and when it is desired to remove the upper portions of the pipes from the well, it being understood that the packer in remaining in the well for a period of time becomes firmly embedded therein and is practically impossible to remove, the said pipe is rotated to unscrew from the nipple above the packer and can then be removed, leaving the packer in the well. The packer and the section of pipe below same may be "fished" from the well after the upper portions of the pipe have been removed.

What is claimed is:

A well packer comprising a lower hollow section, a head in screw-threaded engagement with the upper end thereof and having an octangular opening therethrough, an upper head having a bore therethrough, a tubular octangular member fitting slidably through the opening in the former head and having its ends reduced alike and circular and provided with external screw-threads, a collar engaged on the lower end of the tubular member, the upper end of the tubular member engaging in the bore of the latter head, and an elastic sleeve on the tubular member between the said heads.

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

LEX P. BOOE.
RAY DAVIS.

Witnesses:

R. B. USHER,
HARRY WALLACE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."