H. C. THRIFT.

WELL CAPPING DEVICE.

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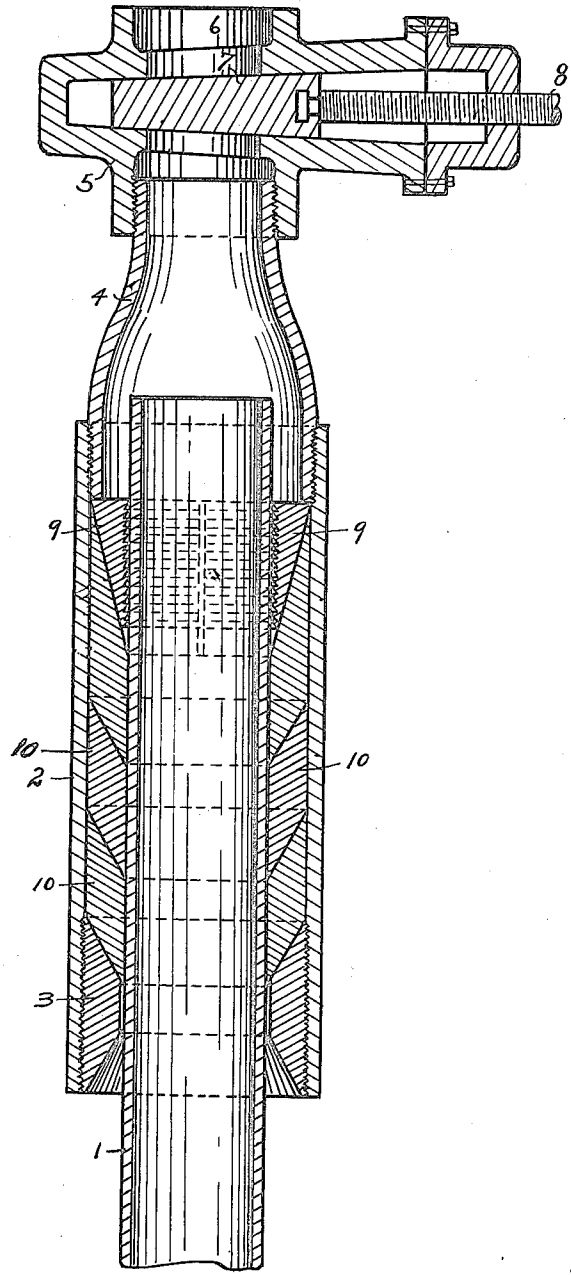
1,323,660.

Patented Dec. 2, 1919



Inventor

Homer C. Thrift.

By

Hardway & Cutler

Attorneys.

UNITED STATES PATENT OFFICE.

HOMER C. THRIFT, OF HOUSTON, TEXAS, ASSIGNOR OF ONE-HALF TO CHARLES H. LANE, OF HOUSTON, TEXAS.

WELL-CAPPING DEVICE.

1,323,660. Specification of Letters Patent. Patented Dec. 2, 1919.

Application filed March 28, 1919. Serial No. 285,725.

To all whom it may concern:

Be it known that I, HOMER C. THRIFT, a citizen of the United States, residing at Houston, in the county of Harris and State of Texas, have invented certain new and useful Improvements in Well-Capping Devices, of which the following is a specification.

This invention relates to new and useful improvements in a well capping device.

One object of the invention is to provide a device of the character described which is designed to be attached to the upper end of a well casing whereby said casing may be closed to prevent the escape of oil and gas. In the production of oil, a casing is usually set in the hole drilled, and when the oil strata is reached, the fluid pressure is often such that the oil and gas is forced by internal pressure up through the casing, and escapes, the pressure often being such that the well can not be controlled. It is the object of this invention to provide a preventer which may be attached to the upper end of the casing, and whereby said upper end may be closed preventing the escape of oil and gas.

Another object of the invention is to provide a device of the character described, which may be cheaply and easily constructed, and easily applied to the well casing, and which will effectually seal the upper end of said casing against the escape of oil and gas.

With the above and other objects in view, the invention has particular relation to certain novel features of construction, operation and arrangement of parts, an example of which is given in this specification and illustrated in the accompanying drawings, wherein:

The figure shows a vertical sectional view of the device as applied to the well casing.

Referring now more particularly to the drawings, the numeral 1 designates the well casing fitted over the upper end of which, there is a tubular sleeve 2, into the lower end of which, there is threaded the upwardly flared collar 3, which fits loosely over the casing 1.

Threaded into the upper end of the sleeve 2, there is a nipple 4, whose upper end is reduced, and outwardly threaded, and onto which there is screwed the valve casing 5, having the central passageway 6, which is opened and closed by means of the gate valve 7. This valve is manually operated through the valve rod 8, which is threaded through the wall of the casing 5, and whose inner end has a swivelling connection with the valve 7.

Surrounding the casing within the upper end of the sleeve 2, there are the arcuate wedge shaped slips 9, 9, which fit around the casing, and whose inner faces are serrated, forming arcuate teeth, which are adapted to engage with the casing, and said slips are held in position by means of the nipple 4, whose lower end rests thereagainst, when screwed into position. Interposed between the collar 3, and the slips 9 are a plurality of rings, 10, preferably formed of lead or other soft metal. These rings are tapered downwardly and flared upwardly, the lower ring fitting within the flared collar 3, and the upper ring receiving the wedge shaped slips 9, 9. Each ring is fitted into the flared upper end of the member below it.

As the drilling proceeds, the gate valve 7 is opened, so as not to interfere with the operation, but in case, the well starts to blow out, said valve may be manually closed, and the pressure within the casing will exert a strong upward pull on the sleeve 2, through the nipple 4, carrying the collar 3 upwardly and the slips 9 will engage the casing and securely hold it, causing the inner rings 10 to be compressed between the collar 3 and the slips 9, and being of soft metal, the same will expand, forming a close fitting joint with the casing and preventing the escape of fluid down between the upper end of the casing and the sleeve 2, thus effectually closing the top of the casing and preventing the escape of oil and gas.

What I claim is:

1. A device of the character described, including a tubular member adapted to be fitted over the upper end of a well casing, means for opening and closing the upper end of said member, pipe engaging means interposed between said member and the casing, expansible rings within said tubular member, and surrounding said casing, and arranged underneath said pipe engaging means, and an annular member fixed within the lower end of said tubular member

which operates against said rings to compress them when said tubular member is moved lengthwise relative to the casing.

2. A device of the character described, including a tubular member adapted to be fitted over the upper end of a well casing, means for opening and closing the upper end thereof, an upwardly flared collar threaded into the lower end of said tubular member, upwardly flared expansible rings arranged consecutively within said tubular member, the lower of which is fitted within said collar said rings being interposed between said tubular member and casing, and surrounding the latter, and engaging slips wedgelike in form, fitted within the uppermost ring.

3. The combination with a well casing, of a sleevelike member fitted over the upper end thereof, a valve for opening and closing the upper end of said member, an expansible ring surrounding said casing within said sleevelike member, means carried by the lower end of said member and engaging against said ring, when the member is moved upwardly relative to the casing, and pipe engaging slips fitted within said ring and actuated by the latter to engage with said casing when the sleevelike member is moved upwardly relative to the casing, said ring being at the same time compressed by said means.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HOMER C. THRIFT.

Witnesses:
WM. A. CATHEY,
E. V. HARDWAY.