June 1, 1926. 1,586,852

J. E. STALSBY ET AL

PIPE PULLER

Filed Oct. 10, 1924

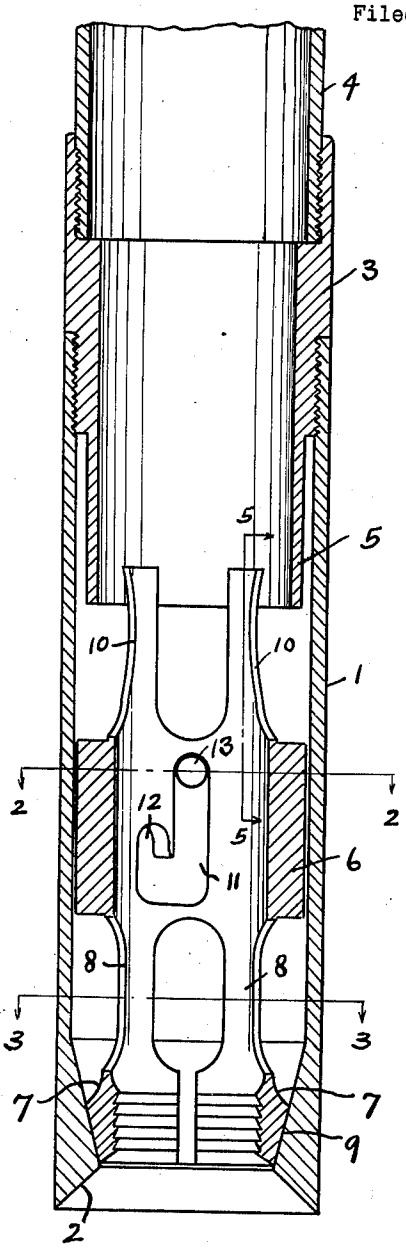


Fig. 1.

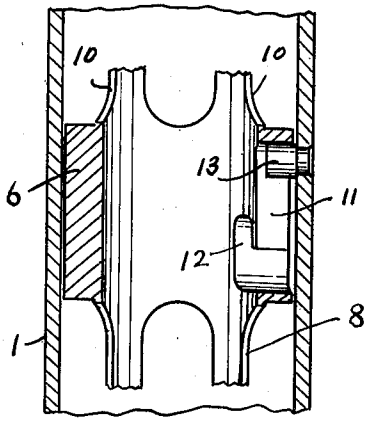


Fig. 4.

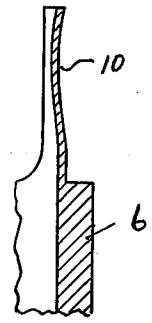


Fig. 5.

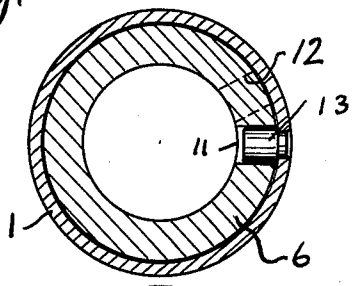


Fig. 2.

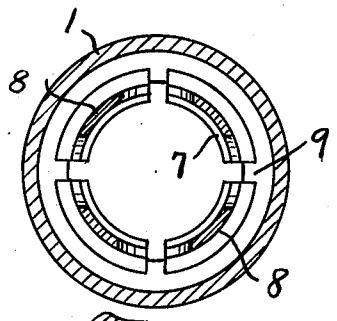


Fig. 3.

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UNITED STATES PATENT OFFICE.

JAMES E. STALSBY AND JOHN R. MARTIN, OF HOUSTON, TEXAS, ASSIGNORS TO W-K-M COMPANY, OF HOUSTON, TEXAS, A CORPORATION OF TEXAS.

PIPE PULLER.

Application filed October 10, 1924. Serial No. 742,918.

This invention relates to new and useful improvements in a pipe puller.

One object of the invention is to provide a pipe puller designed to engage over the upper end of pipe stuck in a well bore, and by means of which the pipe may be withdrawn.

Another object of the invention is to provide a pipe puller of the character described which may be readily released from the pipe and withdrawn, in case the pipe cannot be dislodged, and removed from the bore.

With the above and other objects in view this 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:—

Figure 1 is a vertical sectional view of the device.

Figure 2 is a cross sectional view taken on the line 2—2 of Figure 1.

Figure 3 is a cross sectional view taken on the line 3—3 of Figure 1.

Figure 4 is a fragmentary vertical sectional view, and

Figure 5 is a fragmentary vertical sectional view of the jaw carrier taken on the line 5—5 of Figure 1.

Referring now more particularly to the drawings, wherein like numerals of reference designate similar parts in each of the figures, the numeral 1 designates a tubular guide, whose lower end is thickened and flared, as at 2, to direct, or guide, the puller over the pipe to be pulled. Threaded into the upper end of the guide there is a coupling 3 unto the upper end of which the lower end of the string of pipe 4, is threaded. The lower end of the coupling 3 is formed into a depending sleeve 5, spaced from the upper end of the guide 1.

Within the guide 1 there is an annular jaw carrier 6, which carries depending pipe gripping means, preferably in the form of jaws 7. These jaws are preferably connected integrally with the carrier 6 by means of the flexible arms, 8. The guide 1 is formed with an internal, inwardly converging seat 9 and the outer sides of said jaws have a taper to correspond to the taper of said seat 9.

Projecting upwardly from the carrier 6 there are a plurality of flexible pipe gripping fingers 10, for a purpose to be hereinafter explained.

The carrier has a vertical slot 11, whose lower end is formed with a lateral notch 12 and the guide 1 has an inwardly projecting stud 13 which works in said slot.

In operation the device is lowered in the well bore over the pipe to be pulled, with the stud 13 in the slot 11. As the puller moves downwardly over the pipe the friction of the jaws and the fingers 10 with said pipe will hold the jaws above the seat 9 so that they will be in expanded position and will not engage with said pipe. An upward pull on the string 4 will operate to carry the seat into contact with the jaws 7 and contract said jaws around, and in engagement with, the pipe to be pulled, and a further upward pull on the string will, in most cases dislodge the stuck pipe so that it may be pulled out and thus recovered.

In case the stuck pipe cannot be pulled the string 4, and guide 1 are lowered. The grip of the fingers 10 on the stuck pipe will hold the jaw carrier and jaws stationary until the stud 13 has moved down to the lower end of the slot 11, and the jaws are thus unseated and release the pipe. The string 4 is then partly turned to carry the stud 13 around into the notch 12 to hold the jaws unseated and in released position, and the string of pipe 4 is pulled upwardly to withdraw the device from the bore.

What we claim is:—

1. A pipe puller including a tubular guide having an inwardly converging seat and being flared beneath said seat, an annular jaw carrier within said guide, a plurality of jaws depending therefrom and connected thereto by means of flexible arms, the outer sides of said jaws having a taper corresponding to the taper of said seat, a plurality of flexible pipe gripping fingers projecting upwardly from said carrier, said carrier being provided with a vertical bearing whose lower end is formed with a lateral notch and a stud carried by the guide and projecting inwardly into said bearing.

2. A pipe puller including a tubular guide having a downwardly contracted seat and being flared outwardly beneath said seat, an annular jaw carrier fitted within the guide and formed to receive the pipe to be pulled, flexible arms depending from said carrier, a

pipe engaging jaw carried by the lower end of each arm whose outer side is tapered to conform to said seat and whose inner side is toothed, flexible pipe gripping fingers upstanding from said carrier, said carrier and guide being formed, one with a vertical slot whose lower end has a lateral notch, and the other with a stud which projects into said slot.

In testimony whereof we have signed our names.

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JOHN R. MARTIN.