Feb. 17, 1953

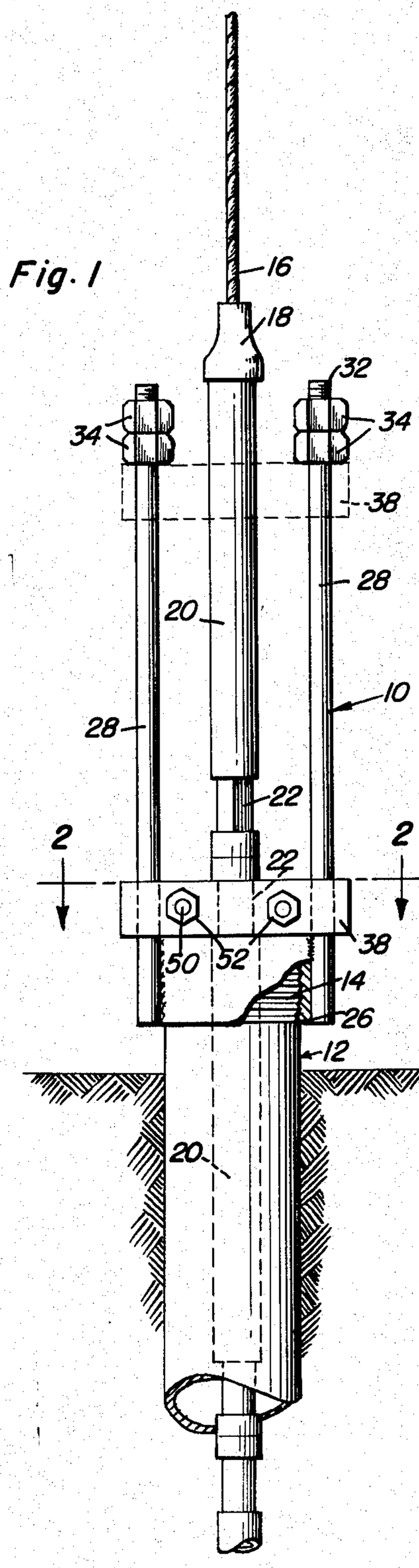
E. F. SHEAK

2,628,820

PIPE PULLER

Filed May 2, 1950

Fig. 1



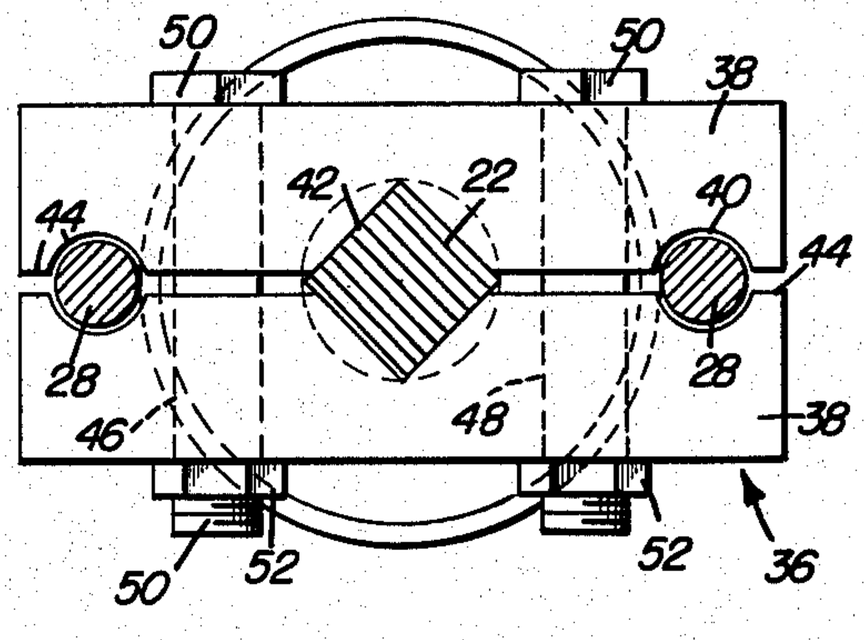
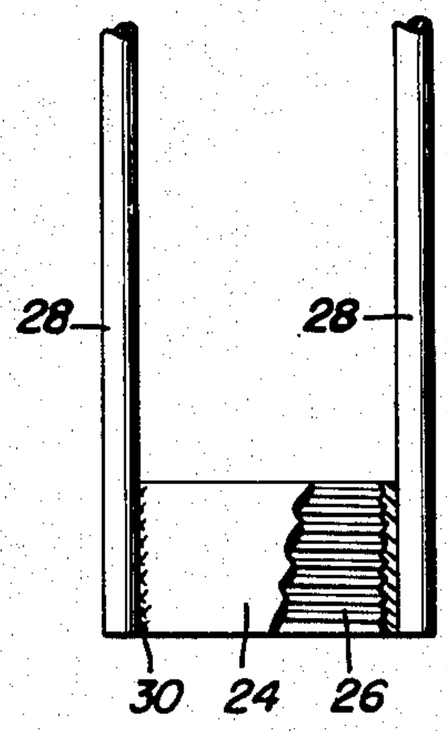


Fig. 2

Fig. 3



Elton F. Sheak

INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson

Attorneys

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UNITED STATES PATENT OFFICE

2,628,820

PIPE PULLER

Elton F. Sheak, North Lawrence, Ohio; Dorothy B. Sheak administratrix of said Elton F. Sheak, deceased

Application May 2, 1950, Serial No. 159,444

2 Claims. (Cl. 255—27)

1

The present invention relates to improvements in pulling devices and more particularly to well casing pullers.

An object of the present invention is to provide a well casing puller that is positive in operation, convenient in use, easily installed in a working position and easily disconnected therefrom, economical of manufacture, relatively simple, and of general superiority and serviceability.

A further object of the present invention is to provide a novel arrangement of elements whereby the pull exerted by the pulling cable is evenly imparted to the well casing.

Another object of this invention is to provide such well casing pulling means that will effectively pull the casing without damaging the threads thereon.

Various other objects and advantages will be apparent from the detailed description to follow. In the description as well as in the claims, parts are at times identified by specific names for convenience, but such nomenclature is intended to be as generic in its application to analogous parts as the prior art will permit.

My invention is clearly defined in the appended claims.

The best form in which I have contemplated applying my invention is illustrated in the accompanying drawings, wherein:

Figure 1 is a vertical plan view showing the casing puller positioned on the well casing;

Figure 2 is a horizontal transverse sectional view taken substantially along the plane of 2—2 of Figure 1; and

Figure 3 is a view of part of the pipe pulling device with parts in section.

Referring more particularly to the drawings, wherein like numerals designate like parts throughout, numeral 10 designates generally the well casing puller of the present invention. The numeral 12 refers to the well casing which is shown positioned in the ground. The well casing 12 is provided with external threading at its upper end at 14, as is conventional.

The means for pulling the casing consists of a steel rope 16 which fits into the rope socket 18 which is, in turn, fastened to a steel stem 20. For best results, the steel stem is usually made to a length of 10 or 12 feet. The steel stem 20 is provided with a non-circular shank portion 22, as shown best in Figure 2. This non-circular portion 22 is provided as a wrench engaging means whereby the steel stem may be rotated. The non-circular portion 22 is preferably made rectangular since this form is most easily machined. Any number of these steel stems 20 may be connected to each other by any conventional connecting means to produce the desired length.

2

The second part of the well casing puller consists of a tubular or cylindrical member 24 which is internally threaded at 26. Secured at diametrically opposed points on the exterior of the cylindrical member 24 and axially aligned therewith is a pair of upstanding guide elements 28. The guide elements 28 may be secured to the cylindrical member 24 by any conventional means, but are shown here secured by weld at 30. The upper ends of the guide elements are externally threaded at 32 and have stop nuts 34 positioned thereon for a purpose hereinafter described.

The third part of the well casing pulling device consists of clamping means designated generally at 36. The clamp means 36 is formed from a pair of bars 38, which are rectangular in cross-section, and which are each provided with a pair of arcuate recesses 40 which are adapted to cooperate with the upstanding guide elements 28. Each of the bars 38 is also provided with an angular recess 42 on its internal face 44 for cooperation with the non-circular portion 22 of the steel stem 20. Each of the bars 38 is provided with a pair of transversely extending bores 46 and 48 which are adapted to receive bolts 50 and nuts 52 for clamping the two bars on the non-circular portion of the steel stem. It is to be noted that when the bars are in clamping relation with the rectangular portion 22 of the steel stem that the arcuate recesses 40 provide substantially circular bores of a diameter greater than that of the guide elements 28.

From the foregoing description it is believed that the operation of the well casing puller will be readily understood by one skilled in the art. The internally-threaded cylindrical member 24 is secured on the upper end of the well casing 12 and the clamp bars 38 are secured in clamping relation with the non-circular portion 22 of the steel stem. It should be noted here that the time consumed in positioning the well casing puller on the well casing is extremely limited. After the puller has been positioned on the casing, the steel rope 16 may be reciprocated by any of the conventional means, and it will be readily seen that upward movement of the steel rope 16 will project the clamp bars against the nuts 34 with great impact, thus lifting the well casing 12. It will further be noted that the pulling force will evenly be distributed from the guide elements to the cylindrical member and well casing.

Having described the invention, what is claimed as new is:

1. A well casing puller comprising: an internally threaded cylindrical member adapted to be threadably mounted on the upper end of the well casing, a pair of upstanding guide elements secured to said cylindrical member, stop means mounted on the upper ends of said guide elements, a cable pulling means having a rectangular section, clamping means mounted on said pulling means and guided for vertical movement by said guide means whereby when said cable is pulled said clamping means will abut said stop means thereby pulling said well casing, said clamping means consisting of a pair of bars of rectangular cross-section, a pair of recesses in said bars for cooperation with said guide elements, a triangular cross-sectioned recess in each of said pair of bars for cooperation with said rectangular section of said cable pulling means, and means for urging said bars towards each other.

2. A well casing puller comprising: an internally threaded cylindrical member adapted to be threadably mounted on the upper end of the well casing, a pair of upstanding guide elements secured to said cylindrical member, stop means mounted on the upper ends of said guide elements, a cable pulling means, clamping means mounted on said pulling means and guided for vertical movement by said guide means whereby when said cable is pulled said clamping means will abut said stop means thereby pulling said well casing, said clamping means consisting of a pair of bars of rectangular cross-section, a pair of recesses in said bars for cooperation with said guide elements, a triangular cross-sectioned recess in each of said pair of bars for cooperation with said cable pulling means, said cable pulling means being provided with a rectangular cross-section portion, and means for urging said bars towards each other and comprising a pair of bolts received in apertures in said bars, and nuts on said bolts for clamping said bars together and to the rectangular cross-section portion of said pulling means.

ELTON F. SHEAK.

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