

No. 743,543.

PATENTED NOV. 10, 1903.

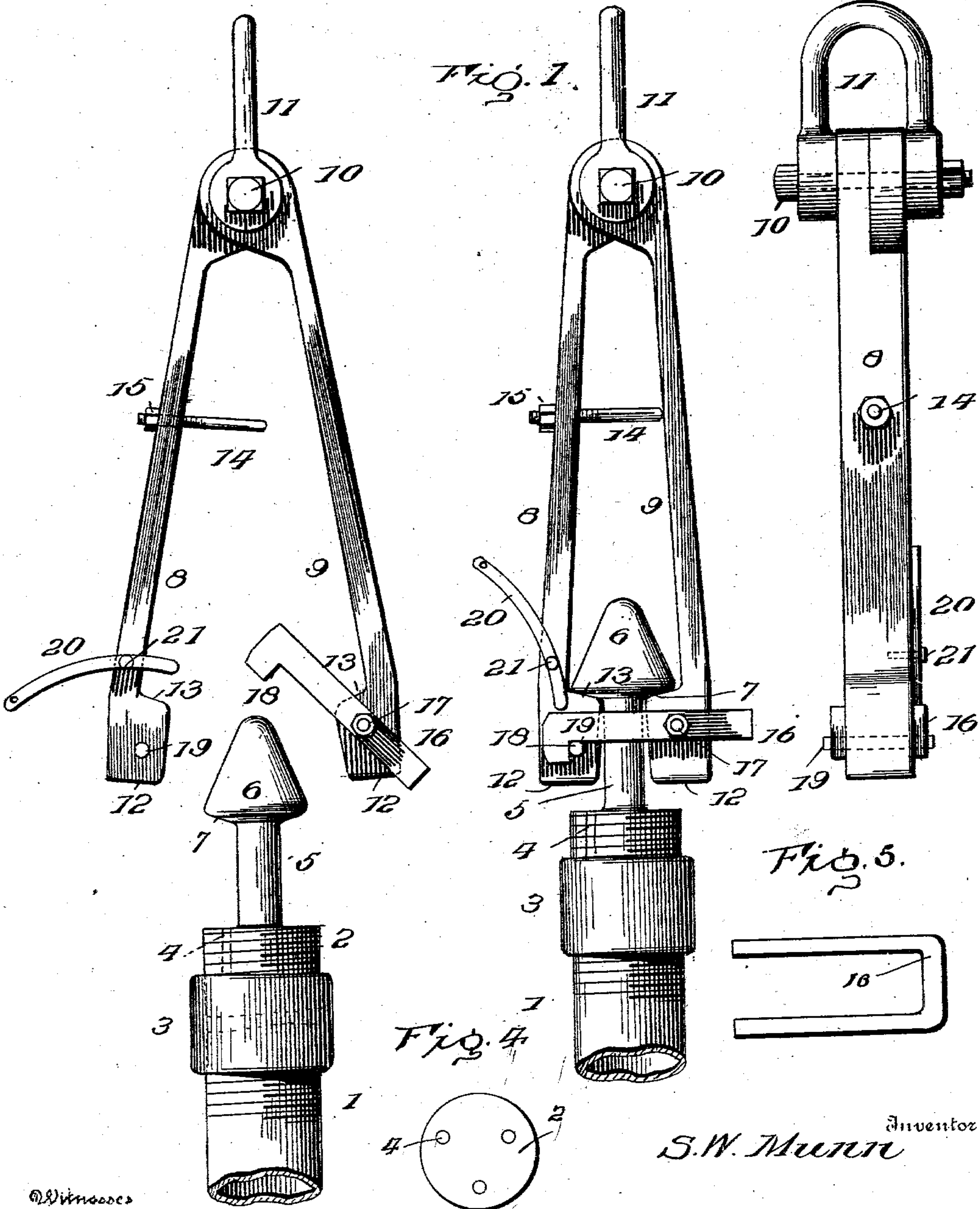
S. W. MUNN.
CASING PULLER.

APPLICATION FILED APR. 7, 1903.

NO MODEL.

Fig. 2.

Fig. 3.



S. W. Munn Inventor

Witnesses

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UNITED STATES PATENT OFFICE.

SILAS W. MUNN, OF MANNINGTON, WEST VIRGINIA.

CASING-PULLER.

SPECIFICATION forming part of Letters Patent No. 743,543, dated November 10, 1903.

Application filed April 7, 1903. Serial No. 151,525. (No model.)

To all whom it may concern:

Be it known that I, SILAS W. MUNN, a citizen of the United States, residing at Mannington, in the county of Marion and State of West Virginia, have invented certain new and useful Improvements in Casing-Pullers, of which the following is a specification.

This invention provides a grapple of novel construction for use in connection with a headed plug to facilitate the removal of casing from deep wells or the lowering of same into place, according to the particular use of the invention. The extracting means are of such construction and manipulated in a manner to admit of jarring the casing, whereby the same is loosened and the removal greatly facilitated.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and drawings hereto attached.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the extracting means in operative relation and applied to a casing. Fig. 2 is a view similar to Fig. 1, showing the grapple released from the head of the plug. Fig. 3 is an edge or side view of the grapple. Fig. 4 is a view of the plug as seen from the lower end to show more clearly the vent-openings formed therein. Fig. 5 is a plan view of the U-shaped catch.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The extracting means comprise, essentially, two parts, a grapple and a headed plug, the latter being adapted to be fitted to the upper end of the casing or pipe 1 to be extracted or operated upon.

The plug is indicated at 2 and is slightly tapered and externally threaded to screw into coupling 3, fitted to the upper end of pipe or casing 1. Openings 4 are provided in the plug to admit of venting the pipe or casing.

Shank 5 projects centrally from plug 2 and is provided at its upper end with head 6 of conical form, shoulder 7 at the base of the head being slightly flared to permit of automatic disengagement of the grapple therefrom when the catch is released. The parts 2, 5, and 6 are preferably of integral formation, and plug 2 is adapted to be screwed into coupling 3 by a suitable tool, wrench, or spanner.

The grapple comprises arms 8 and 9, widened and overlapped at their upper ends and pivotally connected by means of bolt 10, to which clevis 11 is fitted and to which the operating rope or cable is adapted to be attached in any well-known manner. The lower ends of arms 8 and 9 are widened, as shown at 12, to form inner shoulders 13, which are adapted to engage under annular shoulder 7 of head 6, shoulders 13 being beveled or inclined in an opposite direction to shoulder 7, so as to insure disengagement of the grapple from the head 6 when arms 8 and 9 are released. A threaded pin 14 is mounted in a threaded opening in one of the arms, as 8, and projects inward toward arm 9 and is adapted to engage therewith to limit the closing of arms 8 and 9, thereby preventing the gripping ends 12 of the grapple from bearing against the sides of shank 5 with a pressure to prevent free play of the grapple, which is essential to the operativeness of the invention. A jam-nut 15 is fitted to the outer threaded end of pin 14 and secures same in an adjusted position.

Catch 16 is approximately of U form and embraces opposite sides of one of the arms, as 9, and is pivoted to the gripping end 12 thereof by bolt or fastening 17. The arms of catch 16 are adapted to embrace opposite sides of gripping end 12 of arm 8 and are provided at their ends with hooks or shoulders 18 to engage over the projecting ends of pin 19, so as to hold arms 8 and 9 closed, as indicated in Fig. 1. A lock 20 is pivoted at 21 to arm 8 and is adapted to engage with catch 16 and hold hooked or shouldered ends 18 in engagement with pin or stops 19. Lock 20 is adapted to be operated by means of a cord or rope attached thereto or may be released from catch 16 in any manner.

When the grapple is in engagement with

head 6, shoulders 13 and gripping ends 12 engage under shoulder 7, and said gripping ends are prevented from tightly embracing shank 5 by the pin or stop 14 in the manner stated. The lock 20 is turned in an upright position, so as to bring one end in engagement with catch 16 to hold parts 18 in engagement with part 19. When it is required to release the casing, pipe, or like article, lock 20 is operated and the grapple jarred or the outer end of catch 16 pressed upon by striking a projecting part in any manner found most expedient, thereby liberating arms 8 and 9, which separate under the lateral strain incident to engagement of the inclined shoulders 13 and 7.

A vital feature of this invention is the contraction and expansion of the casing whereby same is readily loosened and its withdrawal from the well greatly facilitated. It has been found by practical demonstration that a casing subjected to linear strain, as when applying force to extract same from the well, will stretch longitudinally and contract in diameter proportionately to the degree of pulling force applied thereto, and when suddenly released said casing will contract lengthwise and expand circumferentially, thereby enlarging the well and permitting the easy removal of the casing therefrom.

Having thus described the invention, what is claimed as new is—

1. Means for extracting casing and manipulating tubing, same comprising in combination a conical-headed plug and a grapple, the latter comprising pivoted members provided with shouldered gripping ends to engage under the head of said plug, a catch for holding the pivoted members against casual spread-

ing, and a lock for securing said catch, substantially as set forth.

2. Means for extracting casing and manipulating tubing, same comprising in combination a conical-headed plug, and a grapple, the latter comprising pivoted members provided with shouldered gripping ends to engage under the head of said plug, stops projected from the sides of one of the members, a catch pivoted to the other member and adapted to embrace the sides of both members, and a lock applied to the member having the stops and adapted to hold the catch in engagement therewith against casual displacement, substantially as set forth.

3. In means for extracting casing and handling tubing, the combination of a plug adapted to make screw-thread connection with the casing and provided with vent-openings and with an approximately conical-shaped head, a grapple comprising pivoted members having shouldered gripping ends for engagement with the head of said plug, and a catch for preventing casual spreading of said pivoted member, substantially as set forth.

4. In combination, a conical-headed plug, a grapple comprising pivoted members provided with gripping ends, a stop applied to one of said members to limit the closing thereof, and a catch for holding the pivoted members in engagement with the headed plug, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

SILAS W. MUNN. [L. S.]

Witnesses:

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