

Feb. 21, 1939.

M. B. GRAHAM

2,148,019

FISHING TOOL

Filed July 26, 1937

Fig. 1.

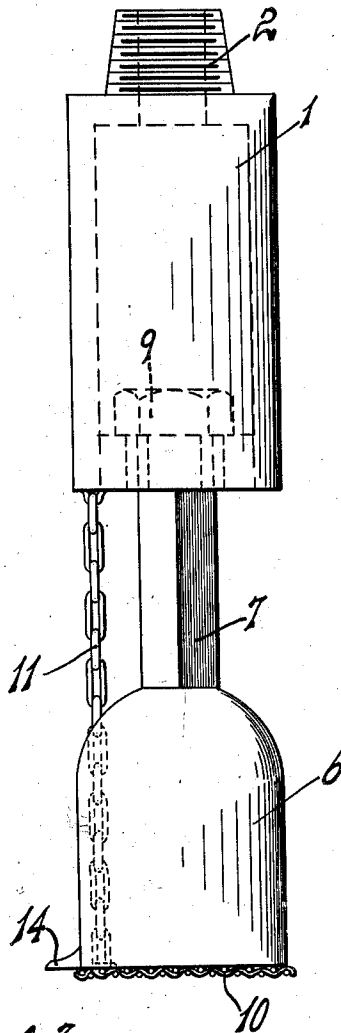


Fig. 2.

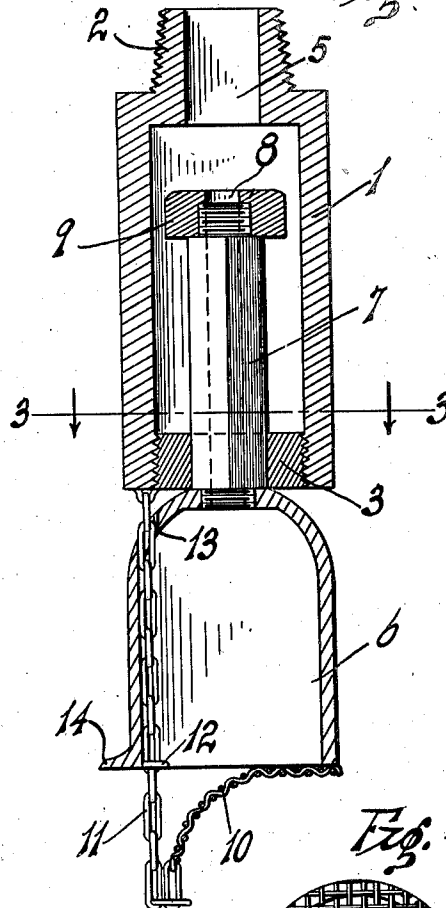


Fig. 3.

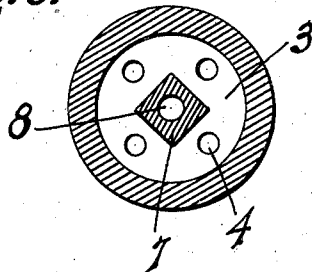
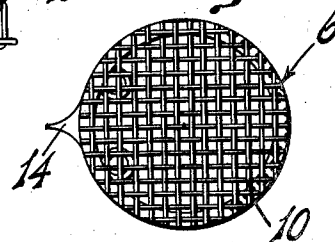


Fig. 4.



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2,148,019

FISHING TOOL

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Application July 26, 1937, Serial No. 155,697

5 Claims. (Cl. 294—86)

This invention relates to a fishing tool, whereby small objects such as drilling cones, particles of metal, small shafts, and the like, may be recovered from the bottom of a bored hole, such as an oil well.

An object of my invention is to provide a fishing tool of the basket type, in which a flexible closure at the bottom of the basket is caused to open while the lost articles in the well are being sought, and is closed upon raising the tool upwardly, preparatory to returning the tool to the surface.

Another object is to provide a novel fishing tool of the character stated in which the flexible closure in the bottom of the basket is connected to a portion of the tool by a suitable flexible means, whereby the closure is permitted to remain open while the tool is on the bottom of the bored hole, and is automatically closed as the tool is lifted upwardly.

Other objects, advantages and features of invention may appear from the accompanying drawing, the subjoined detailed description and the appended claims.

In the drawing

Figure 1 is a side elevation of the tool.

Figure 2 is a longitudinal sectional view of the same with the tool in an opening position.

Figure 3 is a sectional view taken on line 3—3 of Figure 2.

Figure 4 is a bottom plan view of the tool.

Referring more particularly to the drawing, the numeral 1 indicates a hollow housing which is attached to the bottom of the drill pipe (not shown) by means of the threaded reduced section 2. The lower end of the housing 1 is closed by a head 3. A plurality of circulation holes 4 extend through the head 3 for the purpose of permitting drilling mud to circulate downwardly around the lower portion of the tool.

The drilling mud is forced downwardly in the drill pipe in the usual and well known manner, and thence through the bore 5 in the reduced section 2. A basket 6 of suitable shape and size is mounted below the housing 1. This basket is connected to the housing by means of the square post 7. This post is provided with a central bore 8 through which circulating mud passes.

The post 7 fits in the square hole in the head 3 and it will thus be evident that when the housing 1 is rotated with the drill pipe, the basket 6 will also rotate, however, the basket 6 has a longitudinal movement relative to the housing 1, because of the slidable mounting of the post 7 in the head 3.

A stop block or shoulder 9 is provided on the upper end of the post 7 for the purpose of limiting the downward movement of the basket 6 and to prevent the parts of the tool from becoming disconnected. A flexible closure or gate 10 is mounted on the bottom of the basket 6 and this gate is preferably formed of some suitable flexible material and is preferably a foraminated material, such as heavy wire mesh, or the like. The gate 10 is fixedly attached to the bottom of the basket 6 throughout a portion of its circumference, and the balance of the gate is free to move to one side or fold in order to permit lost articles to pass into the basket. A chain 11 is fixedly attached to the housing 1 and passes downwardly through an opening 13 in the upper portion of the basket. The chain may also pass through guide loops 12 on the inside of the basket 6, and the lower end of the chain is secured to the free end of the gate 10.

A finger 14 on the bottom of the basket 6 tends to force objects toward the center of the hole and thence into the basket 6, as the tool is resting on the bottom of the hole and is being rotated through the medium of the drill pipe.

In operation, the tool is lowered into the well until the basket 6 rests on the bottom of the hole. Further lowering of the drill pipe will cause the body 1 to slide downwardly to the position shown in Figure 2. This will cause a slackness to occur in the chain 11, which permits the flexible gate 10 to be pushed to one side for the purpose of admitting lost objects in the bottom of the hole. Since the gate 10 is flexible, the free end thereof will either crumple to one side and bend either downwardly or upwardly, thereby partially opening the bottom of the basket an amount sufficient to admit small lost objects in the bottom of the hole. The rotation of the tool on the bottom of the hole will bend or fold the gate 10 to one side of the basket 6—that is, the free end of the gate will fold towards the attached end. The greater friction on the outer edge of the gate against the bottom of the hole will cause the gate to bend or fold towards the attached side or end.

When the tool is moved upwardly, the basket 6 will drop down due to its weight, thus causing the chain 11 to be drawn taut, as shown in Figure 1, thus pulling the gate or closure 10 across the bottom of the basket 6.

Having described my invention, I claim:

1. A fishing tool comprising a housing, adapted to be attached to the drill pipe or the like, a basket, means slidably mounting the basket below the housing, a yieldable closure on the bottom

of the basket, a portion of the closure being fixedly attached to the basket, the balance of the closure being free, flexible means attached to the free end of the closure and to the housing, whereby the closure is permitted to open or close as the tool is operated in a well.

5 2. A fishing tool comprising a housing, adapted to be attached to the drill pipe or the like, a basket, means slidably and non-rotatably mounting the basket below the housing, a yieldable closure on the bottom of the basket, a portion of the closure being fixedly attached to the basket, the balance of the closure being free, flexible means attached to the free end of the closure and to the housing, whereby the closure is permitted to open or close as the tool is operated in a well.

10 3. A fishing tool comprising a housing, a basket slidably and non-rotatably mounted below the housing, a yieldable gate on the lower end of the basket and a flexible link attached at one end to the gate, and the other end to the housing,

whereby the gate is opened or closed, as the basket moves relative to the housing.

4. A fishing tool comprising a hollow housing, a basket, a post rising from the basket and extending into the housing, said post being slidably and non-rotatably mounted in the housing, a flexible gate on the lower end of the basket and a flexible link connecting the swinging end of the gate and the housing.

5. A fishing tool comprising a hollow housing, a basket below the housing, a post rising from the basket and extending into the housing, said post being slidably and non-rotatably mounted in the housing, a flexible gate mounted on the lower end of the basket, a portion of the gate being fixedly attached to the basket, the remainder of the gate being free to flex, and a flexible link connected at one end to the free end of the gate, and the other end being connected to the housing.

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