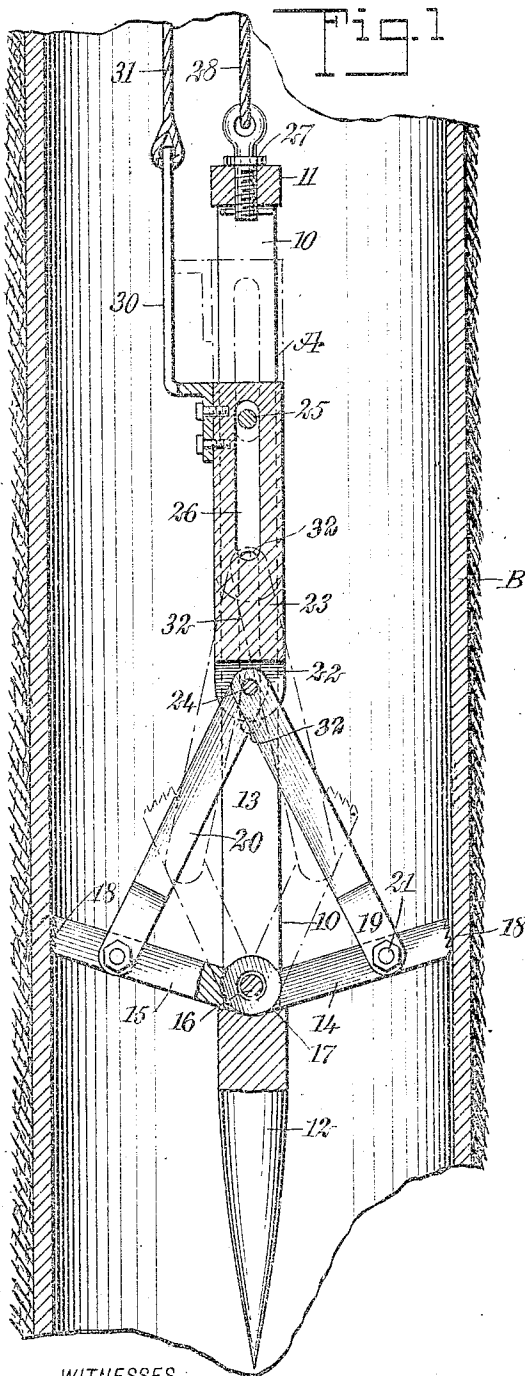


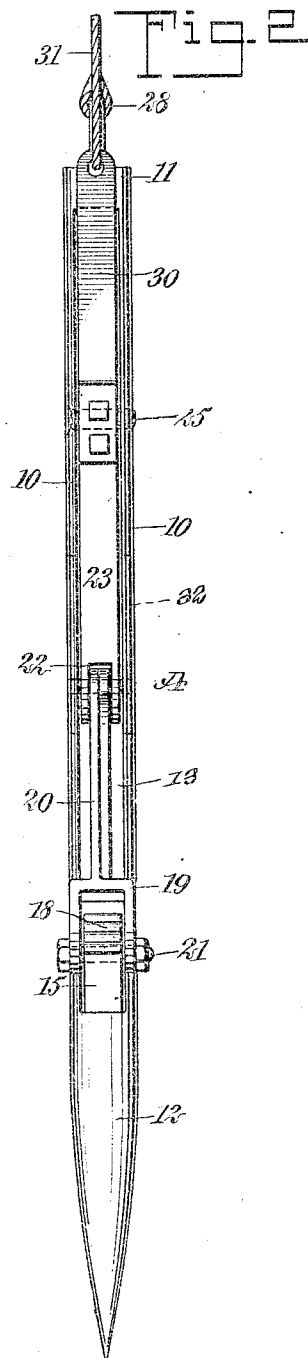
No. 880,404.

PATENTED FEB. 25, 1908.

R. G. SANFORD.
PIPE FISHING TOOL.
APPLICATION FILED OCT. 24, 1907.



WITNESSES
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UNITED STATES PATENT OFFICE.

ROBERT G. SANFORD, OF YONKERS, NEW YORK.

PIPE-FISHING TOOL.

No. 880,404.

Specification of Letters Patent.

Patented Feb. 25, 1908.

Application filed October 24, 1907. Serial No. 398,928.

To all whom it may concern:

Be it known that I, ROBERT G. SANFORD, a citizen of the United States, and a resident of Yonkers, in the county of Westchester and State of New York, have invented a new and useful Improvement in Pipe-Fishing Tools, of which the following is a full, clear, and exact description.

My invention relates to that class of tools that is employed to fish for pipes in Artesian wells, with a view to withdraw the pipes or other tubular objects contained in the well.

The purpose of the invention is to provide a very simple, durable, and economic form of such tool and one that is under the complete control of the operator at all times, and to so construct the tool that when it is introduced into a pipe and is drawn up by means applied to its body portion, the jaws carried by the body will practically sustain it and so grapple the interior of the pipe or tube as to carry the same upward with it.

It is also a purpose of the invention to provide means whereby should it be found impossible to dislodge the pipe that the tool grapples, the tool can be quickly and conveniently disconnected and withdrawn therefrom without in any manner injuring the tool.

The invention consists in the novel construction and combination of the several parts as will be hereinafter fully set forth and pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the views.

Figure 1 is a longitudinal section through a portion of the pipe and the improved tool contained therein, illustrating the tool in positive lines as grappling the pipe and in dotted lines as released therefrom; and Fig. 2 is a longitudinal edge view of the tool.

The body A of the device consists of two parallel side members 10 connected at the top by a cross bar 11 that may be integral with said side members, the side members being connected at the bottom by a point 12, which point is preferably solid, as is illustrated, and constitutes an integral portion of the sides 10 of the body, whereby a longitudinal opening or slot 13 is provided in the body between its side members 10.

Two jaws 14 and 15 are employed that are in the form of bars of suitable length, and

these bars are by preference rectangular in cross section. The jaws 14 and 15 are brought together at the bottom portion of the opening 13 and are connected preferably by a rule joint, so that no strain will be sustained by the pivot pin 16 while the device is in action. The bottom wall 17 of the opening 13, or the upper end portion of the point 12, is inclined from the center upwardly in opposite directions, and these inclined surfaces 17 give a slight upward inclination to the jaws 14 and 15 when they extend out in opposite directions from the said body, which is their working position. The outer ends of the jaws 14 and 15 are usually inclined from the top downward and are provided with teeth or serrations 18, but I do not limit myself to the inclination of the ends of said jaws or to any cross sectional shape.

The lower bifurcated ends 19 of links 20, are pivotally connected with the jaws 14 and 15 between their ends, by means of suitable pivot pins 21, and the upper ends of these links 20 are brought together and are made to enter a longitudinal slot 22 in the bottom of a block 23, that is mounted for sliding movement in the space between the sides 10 of the body, and the said upper ends of the links 20 are pivoted to the said block 23 by the same pivot pin 24. The block 23 is limited in its movement by passing a pin 25 from side to side of the body through a longitudinal slot 26 in the block, therefore the block 23 can only move a distance corresponding to the length of the said slot 26, as is illustrated in Fig. 1.

At the upper cross bar 11 of the body, an eye 27, a clevis, or the like, is secured, and a hoist or lift rope or cable 28 is attached to the said eye or clevis, as is particularly shown in Fig. 1. The block 23 is adapted to have sliding movement independent of the up and down movement of the body in being introduced into a pipe B, or when drawn therefrom; this is usually accomplished by securing a bracket 30 to one side of the block 23, the said bracket having an outward and an upward direction, as is particularly shown in Fig. 1, and a release cable 31 is attached to this bracket.

In the operation of the tool, it is dropped down into the pipe B and after it has assumed a proper position in the pipe and the lift or hoist cable 28 is drawn upon, the jaws 14 and 15 take such hold against the inner face of the pipes as to carry the pipe upward

with the tool, when the latter is withdrawn under ordinary conditions. If, however, it is impossible to dislodge a pipe by means of the said tool, then when the tool is drawn up by means of the hoist rope or cable 28, the release rope or cable 31 is also drawn upon, and when the said cable 31 is placed under tension, the block 23 is slid upward and the links 20 cause the jaws 14 and 15 to simultaneously fold upward substantially close to the sides of the body out of possible engagement with the wall of the pipe, as is shown in dotted lines in Fig. 1, enabling the tool to be withdrawn entirely from the pipe without injury to the tool.

When the jaws grip the pipe, the members of the rule joint come together and relieve the pivot pin from all strain, which pin is only in service when the jaws are not jammed. If by any chance the jaws should puncture the pipe, they may possibly drop at a right angle to the frame, but are held from dropping lower by their attached links. The device will grip a pipe anywhere in its length, and the device can be lowered into a pipe when the latter is inclined, and the more the device is drawn upon the tighter will be the grip.

In order to prevent side movement of the lower ends of the block 23, I cause the pivot pin 24 of the links 20 to pass through and have guided movement in longitudinal slots 32 in the sides of the body of the device.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. A lifting tool consisting of a slotted body, the bottom wall of the said slot being inclined from the center upward in opposite directions, opposing jaws hinged within the slotted portion of the body over the bottom wall thereof and extending outward beyond the body in opposite directions and with an upward inclination, means for lifting the body, and independent means for carrying the jaws toward the body.

2. A lifting tool consisting of a body having parallel side members connected at the top and at the bottom, and forming a longitudinal opening between the side members, jaws hinged within the opening over the bottom wall and arranged to extend outward in opposite direction, lifting means connected with the upper end of the body, a block mounted to slide in the space between

the side members of the body, links pivotally connected at their lower ends with the said jaws, a pivot pin connecting the upper ends of said links with the lower end of said sliding block, the ends of said pivot pin engaging longitudinal slots in the side members of the said body, a pin secured to the side members of the body and extending through a longitudinal slot in the said block, and lifting means connected with the said block.

3. A lifting tool consisting of a slotted body, the bottom wall of the said slot being inclined from its center upward in opposite directions, arms hinged within the slotted portion of the body over the bottom wall thereof, which arms extend outward in opposite directions with a slight upward inclination, lifting means for the body, a block mounted to slide in the body, link connections between the said sliding block and the said arms, and means for controlling the movement of the sliding block independently of the lifting means for the body.

4. A lifting tool consisting of a body having a longitudinal slot or opening, the bottom wall of the said slot being inclined from its center upward in opposite directions, jaws hinged within the slotted portion of the body over the bottom wall thereof, the said jaws extending outward in opposite directions with an upward inclination, lifting means connected with the upper end of the body, a block mounted to slide in the slot in said body and having a slot in its bottom, links having bifurcated lower ends pivotally connected with the said jaws between their ends, the upper ends of said links extending within the slot in the bottom of said block and pivotally connected by a pin to said block, the ends of the pivot pin engaging longitudinal slots in the sides of the body, said block having a longitudinal slot in its upper portion, a pin secured to the sides of the body and passing through the said slot in the block to limit the movement of said block, a bracket secured to one side of the block, and lifting means connected with said bracket.

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

ROBERT G. SANFORD.

Witnesses:

J. FRED. ACKER,
JOHN P. DAVIS.