J. P. T. DAVIS.

BIT RECOVERING MEANS.

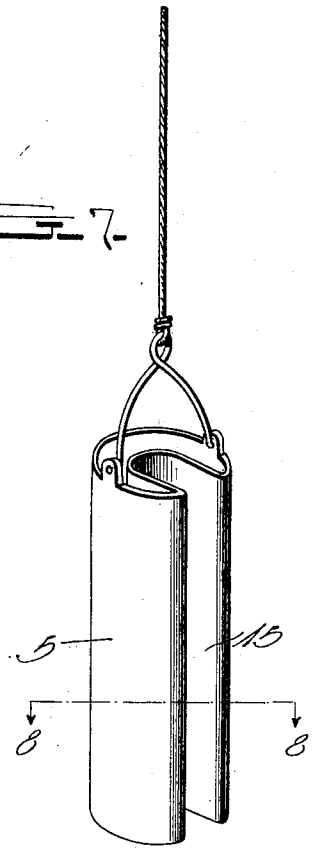
APPLICATION FILED SEPT. 15, 1919.

1,396,260.

Patented Nov. 8, 1921.

2 SHEETS—SHEET 1.

FIG. 7.



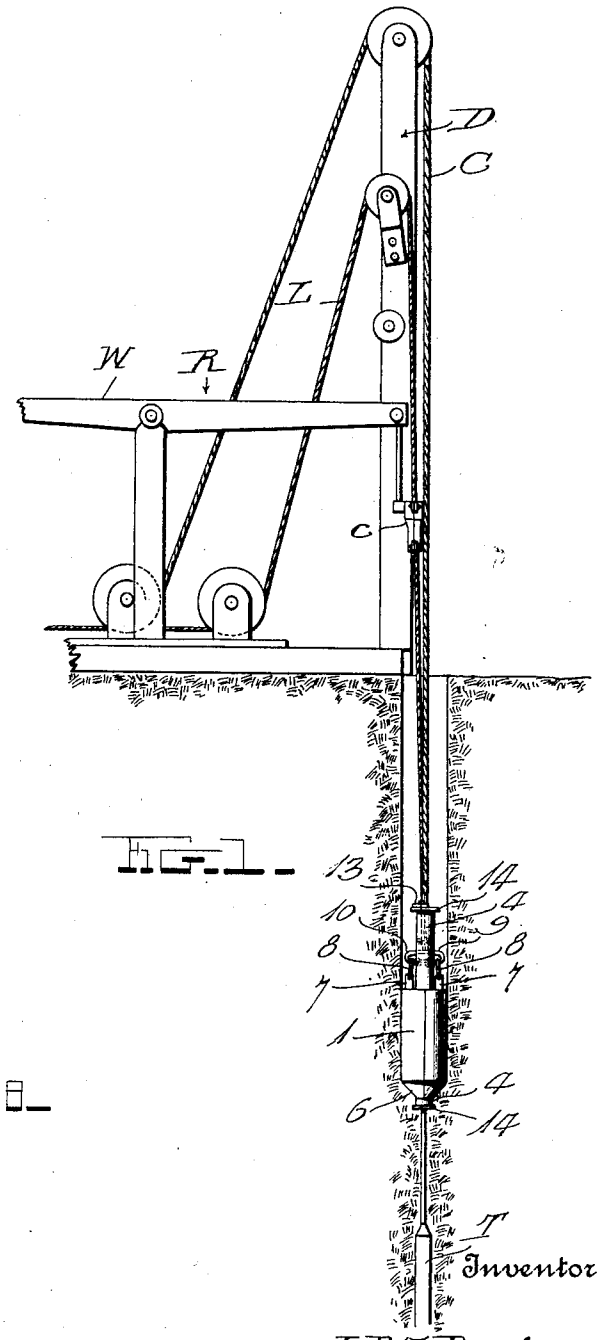
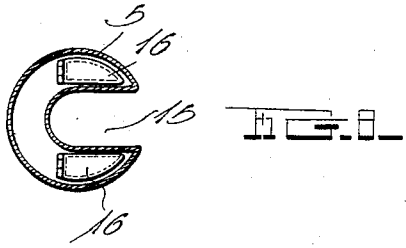


FIG. 8.



Witness:
H. Woodard

Inventor
J. P. T. Davis
By A. B. Williamson & Co
Attorneys

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2 SHEETS—SHEET 2.

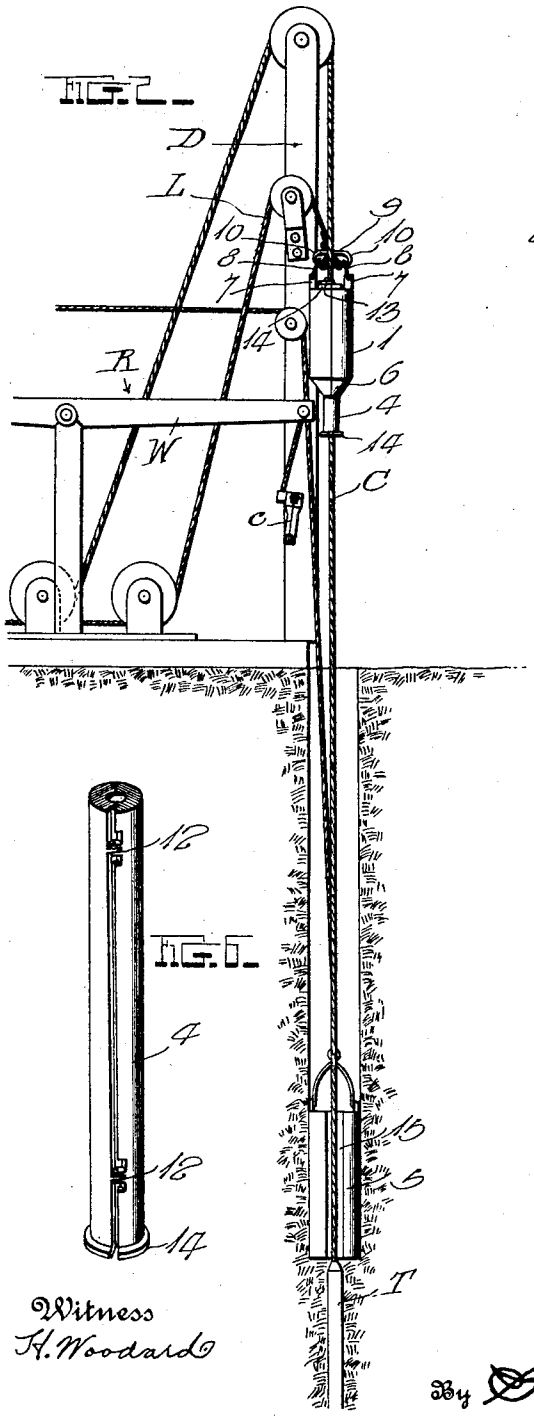


FIG. 1.

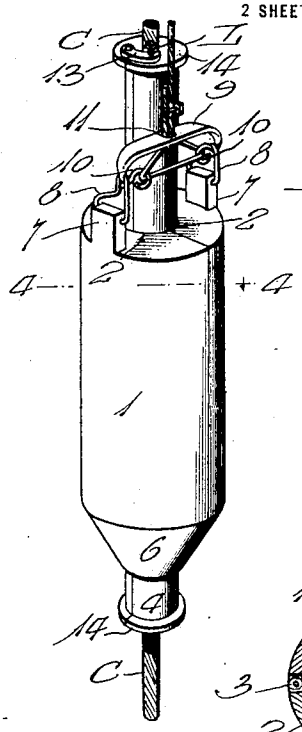


FIG. 3.

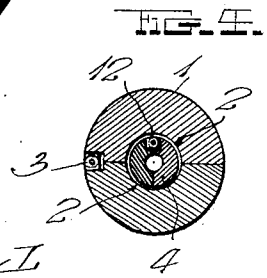


FIG. 4.

FIG. 6.

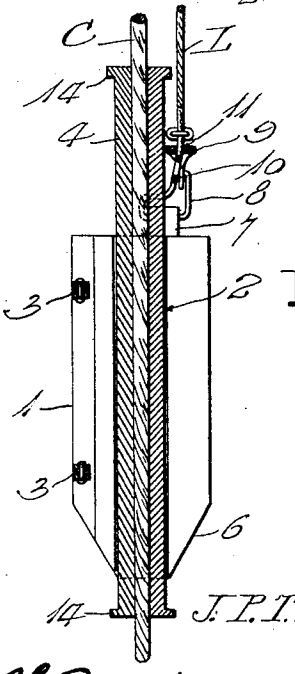


FIG. 5.

Witness
H. Woodard

Inventor
J. P. T. Davis

By H. B. Williamson & Co

Attorneys

UNITED STATES PATENT OFFICE.

JOHN P. T. DAVIS, OF ELK CITY, KANSAS.

BIT-RECOVERING MEANS.

1,396,260. Specification of Letters Patent. Patented Nov. 8, 1921.

Application filed September 15, 1919. Serial No. 323,803.

To all whom it may concern:

Be it known that I, JOHN P. T. DAVIS, a citizen of the United States, residing at Elk City, in the county of Montgomery and State of Kansas, have invented certain new and useful Improvements in Bit-Recovering Means; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to well drilling and more particularly to devices for recovering drill bits from a well in case the latter is caved in above the bit, and the principal object of my invention is to provide a novel arrangement of parts whereby such recovery of the bit may be effected without the necessity of cutting the cable to which the bit is attached.

With the foregoing in view, the invention resides in the novel construction and arrangement of parts hereinafter described and claimed, the descriptive matter being supplemented by the accompanying drawings forming a part of this application.

Figure 1 is a side elevation of a portion of a well drilling rig showing the bit of the present invention in use for pulverizing the earth which has caved in over the well drilling tool.

Fig. 2 is a view similar to Fig. 1 illustrating the bailer in use to remove the earth, rock, etc., pulverized by the bit above mentioned.

Fig. 3 is a perspective view of the pulverizing bit and the guide on which it operates.

Fig. 4 is a horizontal section on the plane of line 4—4 of Fig. 3.

Fig. 5 is a vertical section of the bit.

Fig. 6 is a sectional perspective view of the bit guide.

Fig. 7 is a perspective view of the bailer.

Fig. 8 is a horizontal section on the plane of line 8—8 of Fig. 7.

In the drawings above briefly described, I have shown a portion of a well drilling rig R which includes a derrick frame D, cable C depending from said frame and carrying a drill bit T, a walking beam W and a suitable clamp *c* carried by the walking beam for attachment to the sand line L when it is desired to operate my improved bit during the operation of recovering a lost drilling tool.

In carrying out my invention, I employ a vertically elongated drilling bit 1 formed of two vertical sections having channels 2 in their inner sides, said sections being shown hinged together at 3, whereby they may be either closed directly around the cable C or around a tubular guide 4 which preferably surrounds said cable. It thus follows that when the sand line L is attached to the bit 1 and lowered into the well, operation of the walking beam W will vertically reciprocate said bit and thus caved in material above the lost tool T may be pulverized sufficiently for the greater part of such material to be held in suspension in the water around the cave in. After this pulverizing is accomplished, the bit 1 is removed and a bailer 5 is operated by the sand line L to remove all of the pulverized material.

The bit 1 is by preference pointed at its lower end as indicated at 6 and I have shown the upper ends of its two sections provided with lugs 7 in which the lower ends of open links 8 are pivoted. A cross arm 9 above the links 8 is provided with hooked ends 10 which extend inwardly through the links in question, said cross arm having a central opening 11. The lower end of the sand line L is formed into a loop, is passed through the opening 11, and hooked over the ends 10 of the cross arm 9, and by this arrangement, the cable is attached to the bit and at the same time the two hinged sections of said bit are held in closed position, either directly around the cable C, or around the guide 4. This guide is preferably employed to shield the cable C against wear, the bit moving upon said guide more than the latter shifts upon the cable. The guide in question is of tubular form, constructed of two sections hinged together at 12, a suitable latch 13 being employed to hold said sections closed around the cable. Both ends of guide 4 are provided with flanges or other suitable means 14 to prevent movement of the bit entirely from said guide, in either direction.

The bailer 5 is preferably of cylindrical form with a vertical channel 15 in one side to receive the cable C when said bailer is being raised and lowered. The bottom of

this bailer may be provided with suitable flap valves 16 which open upwardly to allow the water and pulverized material to enter, but close when the bailer is raised.

In operation, assuming that the well has caved in around the drilling tool T on the end of the cable C, the bit 1 and its guide 4 are closed and fastened around said cable and are lowered into the well by the sand line L. The walking beam W is then connected with the sand line by the clamp *c* and by this means, the bit 1 may be reciprocated vertically to pulverize the caved in material, in the meantime so stirring the water as to cause the latter to carry a large portion of the pulverized material in suspension. The bit 1 is raised when its use is no longer needed and the bailer 5 is operated to bail out the material and the water previously acted upon by the bit. By operating the device in this manner, the tool T may be recovered without the necessity of cutting the cable C, this being of great importance.

Since probably the best results may be obtained from the details disclosed, they may well be followed, but within the scope of the invention as claimed, numerous minor changes may well be made.

I claim:

1. A bit of the herein described class formed of two vertical sections hinged together and having channels in their inner sides, and means for holding said sections closed around a cable.

2. A bit of the herein described class formed of two vertical sections hinged together and having channels in their inner sides, open links pivoted to and rising from the upper ends of said sections, a cross arm having hooked ends extended inwardly through said links, said cross arm having a central opening, and a cable having a looped end passing through said opening and hooked around said ends of said cross arm.

3. A drilling bit of the class described formed of two vertical sections having vertical channels in their inner sides, means for holding said sections closed with their channels in registration with each other, and a tubular guide slidably received in said channels, said guide being formed of two sections having channels to receive a tool carrying cable, means for holding said guide sections closed around the cable, and stop means on said guide to prevent removal of said bit from said guide.

In testimony whereof I have hereunto set my hand.

JOHN P. T. DAVIS.

Witnesses:
J. A. BROWN,
BEATRICE WORTHINGTON.