

No. 772,065.

PATENTED OCT. 11, 1904.

A. C. SMITH.
WELL DRILLING CABLE.
APPLICATION FILED APR. 19, 1904.

NO MODEL.

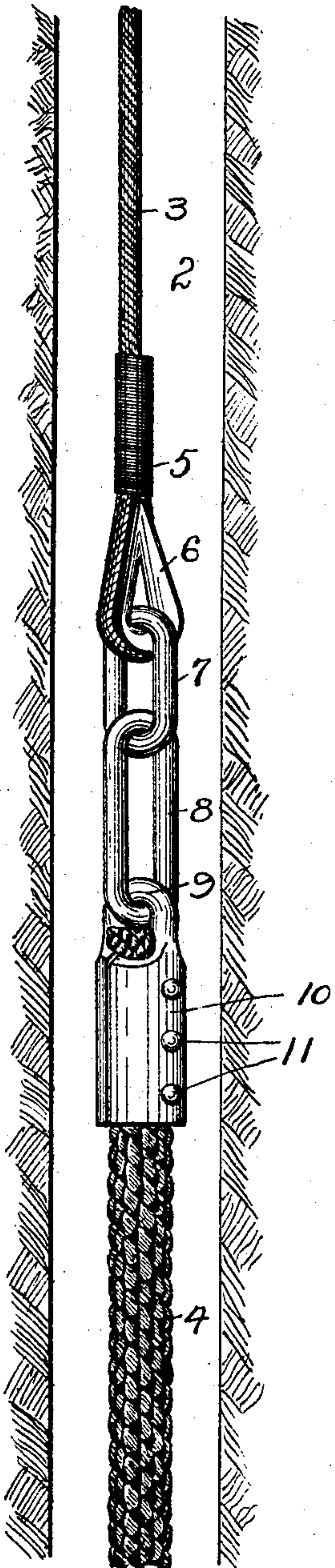


Fig. 1

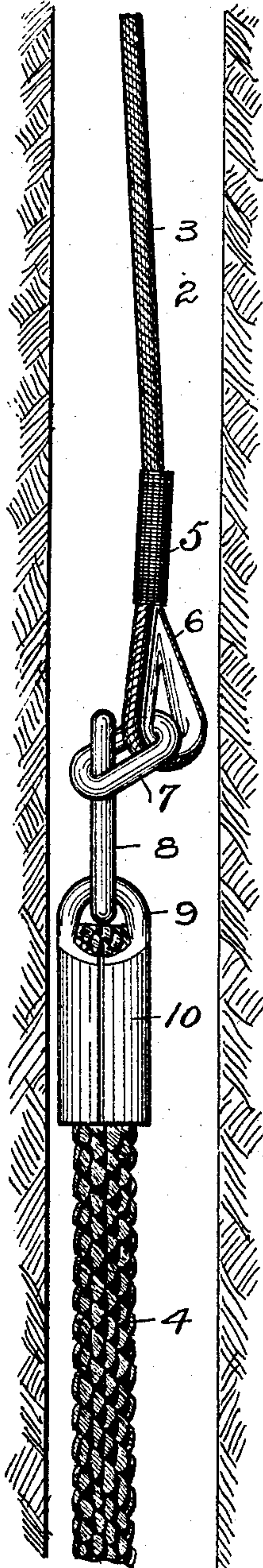


Fig. 2

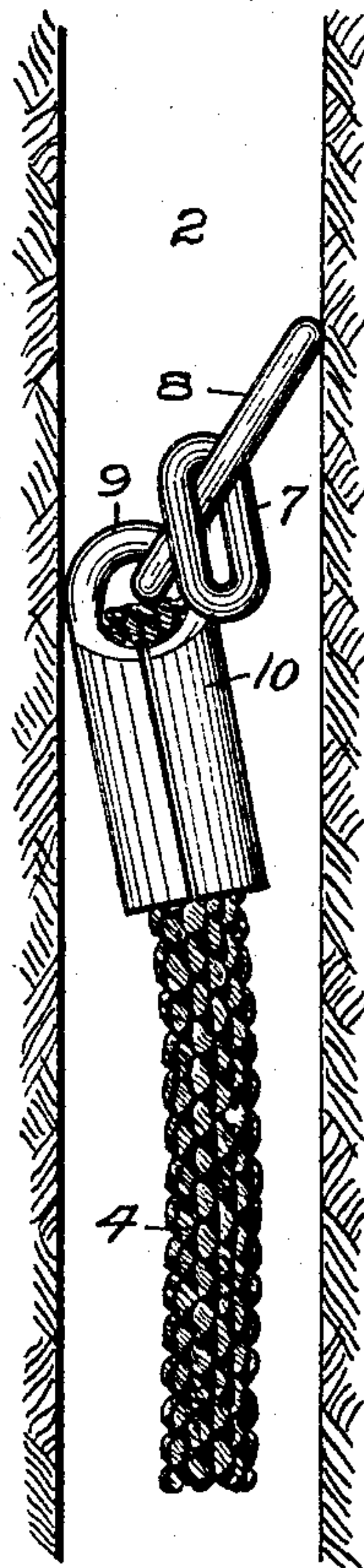


Fig. 3

Witnesses

Lindsey & B. Little
Ginnie M. Myers.

Inventor

A. C. Smith
By J. M. Harbit
att'y.

UNITED STATES PATENT OFFICE.

ANDY C. SMITH, OF BROOKVILLE, PENNSYLVANIA.

WELL-DRILLING CABLE.

SPECIFICATION forming part of Letters Patent No. 772,065, dated October 11, 1904.

Application filed April 19, 1904. Serial No. 203,847. (No model.)

To all whom it may concern:

Be it known that I, ANDY C. SMITH, a citizen of the United States, residing at Brookville, in the county of Jefferson and State of Pennsylvania, have invented certain new and useful Improvements in Well-Drilling Cables, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to a wire well-drilling cable having a section of manila or hemp rope at its lower end, from which the drilling-tools are suspended, and has particular reference to simple, improved, and efficient means for connecting or uniting the two kinds of cable.

While wire rope is less costly and more durable than hemp rope, it has not come into general use for well-drilling purposes for several reasons. One is that it does not possess that inherent springing or stretching property which is necessary, or at least highly desirable, for work of this kind, and forming, as it does, a practically unyielding connection between the walking-beam and the tools the beam and engine are subjected to very severe and destructive wear. Furthermore, the stroke of the tools corresponds at all times to the stroke of the beam, whereas with hemp or manila cable the working stroke of the tools is considerably greater than that of the beam, owing to the springing action of the cable. Various yielding or compensating appliances have been designed for supplying this deficiency in the wire cable, so that the action may be the same as with a manila cable. It has even been proposed to splice a section of hemp rope to the lower end of the wire cable, and thus gain the advantages attaching to an all-manila cable; but the problem has not been entirely solved by providing for a yielding or compensating stroke. The constant kinking or bending of the wire cable, particularly at its point of connection with the tools, causes it to wear rapidly and break, and this tendency is greatly aggravated by the crystallizing of the wire strands due to the shocks and jars which are communicated directly thereto when the tools strike bottom, and even with a section of manila rope between the tools and

wire rope the objection is not overcome in the absence of a connection or union between the two ropes that will not communicate the destructive jars and shocks from one to the other.

In the present invention I make use of a section of manila or hemp rope and provide for yieldingly connecting the same to the wire rope in such manner that no jars or shocks are communicated from one to the other, and there is no tendency on the part of the wire to kink or bend when slack.

In the accompanying drawings, Figure 1 is an elevation of my improved connecting means, showing the same taut, as when lifting or lowering the tools; and Fig. 2 is a similar view illustrating a position assumed by the connecting means when the cable is slack. Fig. 3 illustrates a position assumed by the parts when in a well after the drilling-cable has become separated therefrom.

Referring to the drawings, 2 designates the well-hole.

3 is the wire rope, and 4 the section of manila or hemp rope to which the tools (not shown) are secured. The lower end of the wire rope 3 is looped at 5 to embrace a thimble 6, and secured within this thimble is short link 7, from which depends the relatively long link 8, and this link in turn unites with eye 9 of clamp 10, secured by rivets 11 to the upper extremity of the manila cable 4. Link 7 must be of such length that it will readily turn down or over link 8, as shown in Fig. 2, so as not to interfere with the relative movements of the cable-sections when slack. Link 8 should be sufficiently long not to turn downward at such time or when the wire cable 3 has become detached therefrom, as in Fig. 3, but to simply turn outward or laterally against the wall of the hole and in such position that it may be readily grasped or engaged by a grappling-hook or other fishing-tool. If link 8 were enabled to turn or fold downward, it would tend to wedge the cable in the hole. With the described construction such a happening is impossible, and this larger link will so sustain or guide the smaller link 7 that the latter, neither alone nor in connection with thimble 6, can get in such position as to be-

come wedged in the hole and obstruct the operation. It is further evident that with my improved coupling or connection there is no positive union between the manila and wire cable, so that the shocks and jars incident to the strokes of the tools cannot be communicated to the wire cable as they would be if the connection were direct and unyielding.

While I have tried various forms of link connections, I have secured the best results with the form herein disclosed. At the same time I do not desire to restrict myself thereto, and as I believe I am the first to provide a yielding or compensating connection for the wire and manila or hemp rope as distinguished from a direct or unyielding and shockcommunicating connection I desire to cover the same broadly regardless of its specific embodiment.

By the terms "hemp" and "manila" rope or cable I refer to and desire to include any and all forms of rope of whatsoever material possessing the springing or stretching qualities of hemp rope.

With my improved connection I secure all of the advantages incident to the use of manila cable, and at the same time I avoid all the disadvantages attaching to the use of wire cable alone. The length of the manila or hemp section may vary, though I have found that about two hundred feet is all that is required. It will be observed that the several elements of my improved connection are of such form that they will readily pass around the crown-pulley and wind on the cable-reel.

I claim—

1. A well-drilling cable comprising a wire

rope, and a hemp rope flexibly connected thereto.

2. A well-drilling cable comprising a wire rope, and a hemp rope having a longitudinally-yielding connection with the wire rope.

3. A well-drilling cable comprising a wire rope, a hemp rope, and a flexible coupling member connecting the same.

4. A well-drilling cable comprising a wire rope, a hemp rope, and a linked coupling member for uniting the same.

5. A well-drilling cable comprising a wire rope, a hemp rope, and a coupling member having links adapted to move longitudinally with relation to each other.

6. A well-drilling cable comprising a wire rope, a hemp rope, and a coupling member having relatively long and short links with the longer link below the shorter link.

7. A well-drilling cable comprising a wire rope having a thimble at its lower end, a hemp rope having an eye at its upper end, a relatively long link connected to said eye, and a relatively short link connecting the longer link and the wire-rope thimble.

8. The combination of two cables, and a coupling for uniting the cable ends, said coupling consisting of relatively long and short interlocking links secured, respectively, to the ends of the cables.

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

ANDY C. SMITH.

Witnesses:

JOHN M. VAN VLIET,
JOHN T. REED.