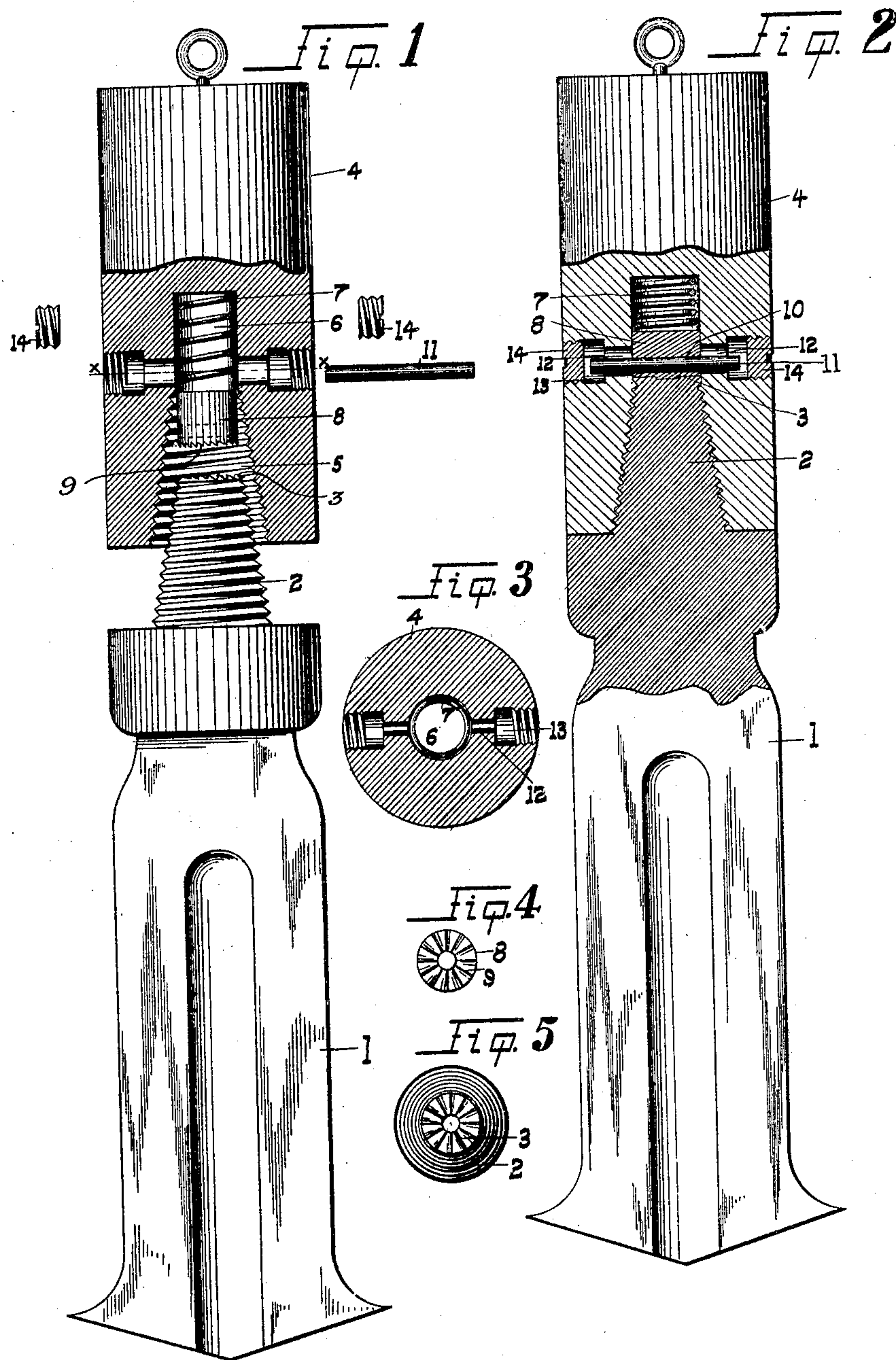


No. 804,185.

PATENTED NOV. 7, 1905.

E. A. DAVISON.
COUPLING FOR WELL DRILLING TOOLS.
APPLICATION FILED MAY 13, 1905.



Witnesses

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UNITED STATES PATENT OFFICE.

ERWIN A. DAVISON, OF STOCKTON, CALIFORNIA, ASSIGNOR TO UNIVERSAL NUT-LOCK COMPANY, OF STOCKTON, CALIFORNIA, A CORPORATION.

COUPLING FOR WELL-DRILLING TOOLS.

No. 804,185.

Specification of Letters Patent.

Patented Nov. 7, 1905.

Application filed May 13, 1905. Serial No. 260,223.

To all whom it may concern:

Be it known that I, ERWIN A. DAVISON, a citizen of the United States, and a resident of Stockton, in the county of San Joaquin and State of California, have invented certain new and useful Improvements in Couplings for Well-Drilling Tools, of which the following is a specification.

My invention relates to improvements in well-boring apparatus, and particularly to the mechanisms for joining the different parts thereof together immovably during operation, but separable when desired. The greatest trouble with well-boring is that the different sections of the mechanism used for the same are liable to come apart when in the well. For instance, the drill will come apart from the rod to which it is connected, and thus, unless the operators are able to grapple it and pull it from the well, the well has to be abandoned, which, of course, means a great loss of time or money. My invention covers a device for joining these different sections by the use of which it is impossible for them to come apart except when it is desired to separate them.

In the accompanying drawings and the following specification I describe the invention as it is used in connection with a drill; but in practice it may be used in connection with all well-boring tools, pumps, pump-rods, &c.

In the drawings similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a view of my device, showing the parts dissociated. Fig. 2 shows the same with the parts connected. Fig. 3 is a view taken on a line $x-x$ of Fig. 1. Fig. 4 is a bottom plan view of a pawl-collar. Fig. 5 is a top plan view of a drill.

1 designates a drill provided with the usual cone-shaped threading 2. On the apex of said cone are a series of ratchets 3.

4 is a drill-rod provided with the usual interior threading 5 adapted to receive the threading 2. Extending upward from said interior threading 5, is a cavity 6, in which cavity is placed an expansive spring 7, which presses on a pawl-collar 8. Said collar fits in the cavity 6 outward from the spring 7 and has its under side formed with ratchet-teeth

9, serving as pawls, these teeth being adapted to coact with the ratchets 3. Said pawl-collar 8 is also provided with a transverse slot 10, adapted to receive a pin 11, the outer ends of said pin extending through slots 12 in the side walls of the cavity 6, said slots enlarging into screw-holes 13, provided with screw-caps 14.

In using the invention the pawl-collar 8 and spring 7 are always kept in position in the cavity 6 and all the different kinds of tools are provided with the ratchets 3.

In screwing a drill or other tool into the rod 4 the rotary movement gradually works the teeth 3 and 9 together and causes these teeth to interlock, thus holding the tool or drill in place and preventing it from being turned in the reverse direction until the pin 11 is removed or grasped and moved upward, which movement disengages the teeth 9 from the teeth 3, and the tool or drill is free to turn and may be unscrewed from the rod 4 at will.

The purpose of the removable pin 11 is that if the teeth 3 and 9 become so battered by the jar that they cannot be disengaged from each other then the said pin may be removed, which would permit the pawl-collar to be carried downward with the threaded portion 2.

The caps 14 are for the purpose of preventing the pin 11 from becoming dislodged and also to prevent dirt or other extraneous matter from entering the cavity 6 and preventing the spring 7 from performing its functions.

Many slight changes in the form and details of my invention may be resorted to at will without departing from the spirit thereof. Hence I consider myself entitled to all forms of the invention as may fall within the intent of my claim.

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

In a device of the kind described the combination of a drill or other tool provided with a threaded portion, ratchets on the outer end of said threaded portion, a drill-rod provided with interior threading adapted to receive said first-named threaded portion, a cavity extending upward from said interior threading, small slots extending through the side walls of said cavity and enlarging into screw-

holes, screw-caps in said screw-holes, a pawl-collar arranged in said cavity and provided with a transverse slot, a pin removably secured in said transverse slot and extending
5 through said first-named slots, and a spring bearing between said pawl-collar and said drill-rod, as specified.

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

ERWIN A. DAVISON.

Witnesses:

PERCY S. WEBSTER,
JOSHUA B. WEBSTER.