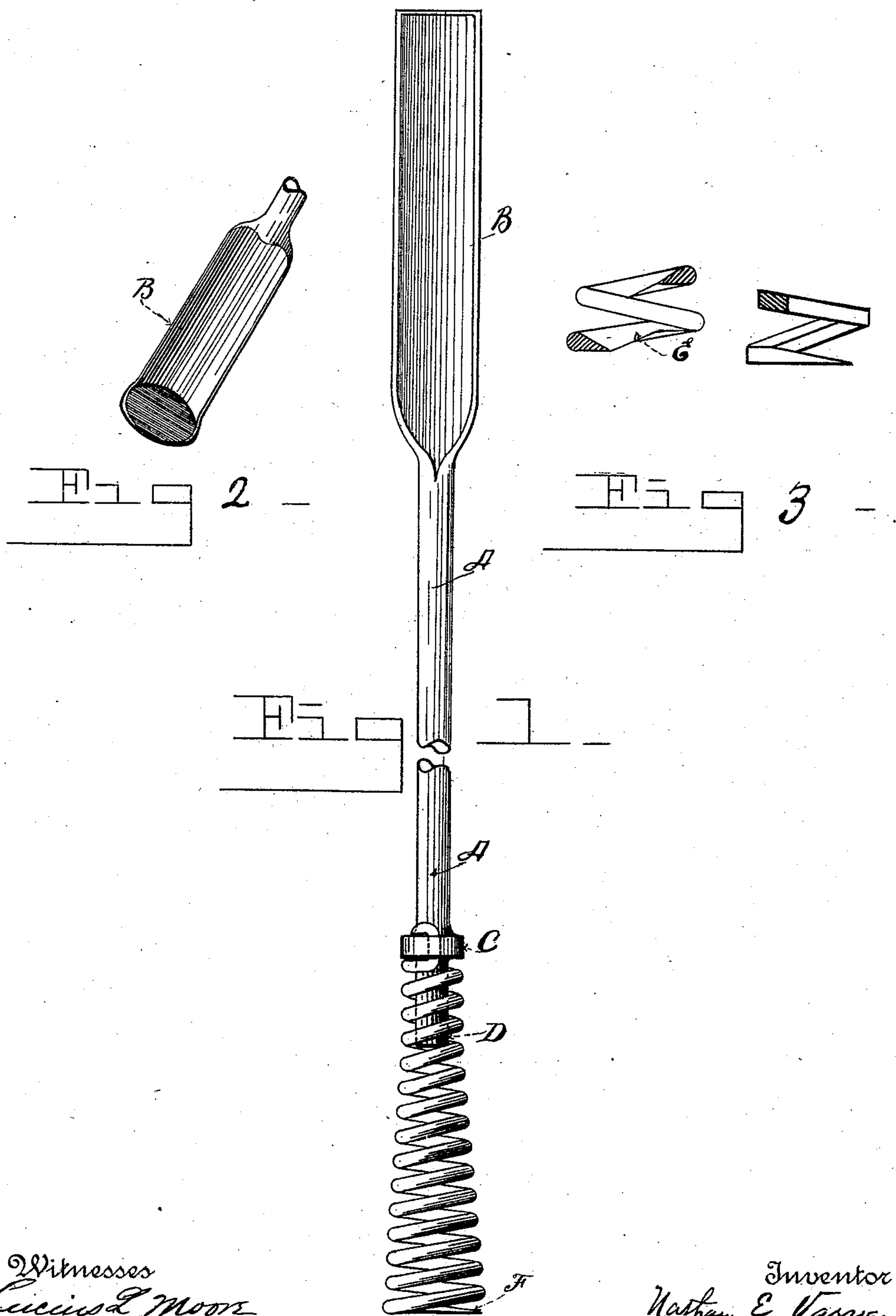


(No Model.)

N. E. VARNEY.  
MINER'S SPOONING TOOL.

No. 531,347.

Patented Dec. 25, 1894.



Witnesses  
Lucius L. Moore  
John A. Moore.

Inventor  
Nathan E. Varney  
By his Attorney  
Howard S. Bailey



# UNITED STATES PATENT OFFICE.

NATHAN E. VARNEY, OF DENVER, COLORADO, ASSIGNOR OF ONE-HALF  
TO LUCIUS L. MOORE AND JOHN A. MOORE, OF SAME PLACE.

## MINER'S SPOONING-TOOL.

SPECIFICATION forming part of Letters Patent No. 531,347, dated December 25, 1894.

Application filed February 19, 1894. Serial No. 500,771. (No model.)

*To all whom it may concern:*

Be it known that I, NATHAN E. VARNEY, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Miners' Spooning-Tools; 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in that class of mining tools known as drill spoons.

When drilling holes in rock it is necessary to clean the rock cuttings from them every few minutes, otherwise they will clog the drill; and the objects of my invention are, first, to provide a combination spoon in which is combined the common form of spoon with an improved device of larger capacity which is better adapted to remove the cuttings when water is used to facilitate the drilling and also when they are dry and pack in the holes; second, to provide a spoon capable of enveloping and retaining the muddy contents of the drilled holes until it is withdrawn. I attain these objects by the mechanism illustrated and described in the accompanying drawings and specifications, in which—

Figure 1 represents in elevation my improved miner's spoon. Fig. 2 represents a perspective of the spoon end of the common form of miners' spoon. Fig. 3 represents two different cross sections of the helical device which constitutes my improvement.

Similar letters of reference refer to similar parts throughout the several views.

Referring to Fig. 1, A. designates the spoon handle. B. designates the common form of spoon-bowl which is extensively used at the present time. This form works fairly well when the cuttings are in a semi-fluid state from the use of water when drilling, but if the muddy contents are too liquid, it runs largely out of the spoon and back into the hole as it is withdrawn. If the contents are too dry this form of spoon does not readily work under

them, especially in a down hole, being more apt to cushion on top. Frequently they are packed tight in the bottom of a hole by the drill, and in order to extract them frequent insertions of the spoon are necessary at each cleaning of the hole. This consumes considerable time. Consequently it is desired that the hole be cleared at one insertion of the spoon if possible, or at least with not more than two or three. To accomplish this I form a shoulder C. on the handle A. near its extremity, allowing the end D. to extend beyond it.

My improved spoon consists of a helical line of tempered steel preferably cone-shaped. It is secured to the shoulder C. of the handle by passing the end through the shoulder and turning it to one side. The helix should fit snugly to the end of the handle in order to give it a good bearing and to stiffen it against lateral movement at this end. This form of spoon possesses the advantage of conforming itself by easily bending to crooked holes which are unavoidable when the drill encounters seams in the rock. The extremity F of the helix I taper to an edge which enables the spoon to scrape the bottom of the hole.

In Fig. 3 I show two helical wires of different cross sections to illustrate, that while any form of cross section can be used, some are better adapted to the purpose than others, that shown at E. being especially fitted for it.

In Fig. 1 I show a round wire which works well.

To clean a drill hole the spoon is inserted and pushed to the bottom of it and then withdrawn. If the contents are like mud it will pass between the coils of the helix which will hold it and it will be withdrawn with it and will operate the same way if it is dry, but if it is packed in the bottom of the hole it will be necessary to give it one or two or several revolutions which causes the sharp edge to screw into it and hold it until it is withdrawn, when if it is struck against anything the cuttings or mud will drop from it.

These spoons are made of various lengths, the usual length being about three feet. By combining my improved spoon with the common form in one tool I am able to extract the cuttings very quickly and thoroughly, and in some cases it would be desirable to make my



improved spoon on either one or both ends of the handle or rod, and to forge, or form the helix directly from it, but I have illustrated it attached to the rod A. to show that it can  
5 be applied to a spoon and rod already made.

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

1. In a miner's spoon, a rod having a shoulder near one end, a steel wire coiled into a cone, and having a pointed base terminal end, and coiled adjacent to the apex end around the end of said rod, and a hole through said shoulder in which said coil is secured, as specified.  
10

2. In a miner's spooning tool, the combination of a rod having an enlargement near one end, and a cone-shaped bowl formed of a spirally coiled wire, having its base terminal flattened and pointed, and its apex end emerging into a cylindrical coil and wound round the end of said rod, and secured to said enlargement, as set forth.  
15 20

3. In a miner's spooning tool, the combination of a rod having the miner's spoon forged on one end and an enlargement formed near the opposite end, provided with an axially arranged hole, with a steel wire coiled to form a cylindrical, hollow cone, said cone emerging at the apex end into a cylindrical coil, adapted to fit tightly the end of said rod and to pass through the hole in said enlargement, and having the base terminal of the wire  
25 30

cone flattened wedge-shaped to a point, as herein specified.

4. The combination in a miner's spooning tool, of a spoon formed of a steel wire, spirally wound into a cone, the coils of which are slightly separated, and the base wire of which is flattened and pointed at the end, and the apex of which extends cylindrically and embraces the end of the rod, with a rod provided with a collar near one end, to which the apex end of said coil is secured.  
35 40

5. In a miner's spoon, a spooning bowl consisting of a steel spring round wire spirally coiled into a flexible cone, the base terminal end of which is beveled off to form a wedge-shaped point and the apex end of which emerges into a cylindrical coil, a rod suitable for a handle fitting tightly in the cylindrical portion of the spiral cone, an enlargement on said rod near one end, a small hole through said enlargement through which the apex terminal end of the wire may be drawn and bent to secure said spiral cone to said rod, and a common bowl spoon forged on the opposite end of said rod, as specified.  
45 50 55

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

NATHAN E. VARNEY.

Witnesses:

LUCIUS L. MOORE,  
JOHN A. MOORE.