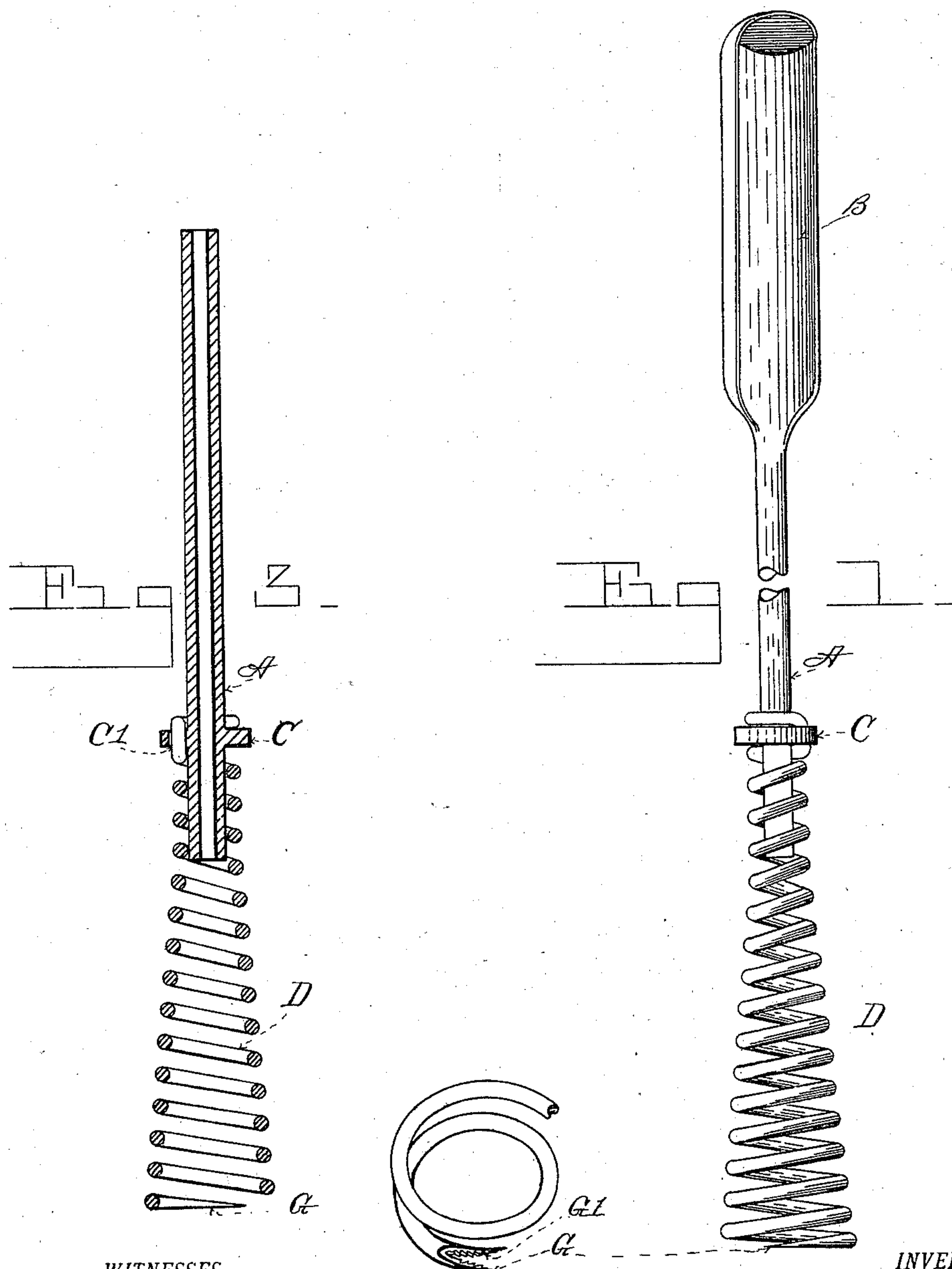


(No Model.)

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

No. 540,201.

Patented May 28, 1895.



WITNESSES:

John A. Moore.
N. C. Vincent

INVENTOR

Nathan E. Varney.
BY
H. S. Bailey
ATTORNEY

UNITED STATES PATENT OFFICE.

NATHAN E. VARNEY, OF DENVER, COLORADO.

MINER'S SPOONING-TOOL.

SPECIFICATION forming part of Letters Patent No. 540,201, dated May 28, 1895.

Application filed September 29, 1894. Serial No. 524,502. (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 miners' spooning tools, and the objects of my invention are, first, to provide a tool for removing rock cuttings from drill holes; second, to provide a tool adapted to remove pieces of broken drills and tamping and charges that have missed fire. I attain these objects by the mechanism illustrated and described in the accompanying drawings and specification, in which—

Figure 1 represents an elevation of my improved miners' spooning-tool. Fig. 2 represents a fragment of the same in perspective. Fig. 3 represents a sectional elevation of the spoon with a tubular handle.

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

A designates a hollow or solid rod which forms the handle of the spoon. At one end I form preferably by forging a common form of miners' bowl spoon B. I claim nothing new on this form of spoon, except that it makes, when combined with my improved spoon, a good combination to have on one handle. The bowl of this spoon is formed by a semi-circular shell of metal with a lip at its lower end which adapts it to hold thick muddy material if it gets underneath it. Upon the opposite end of the handle, a short distance from its end, I form a collar C through which I make a hole C'. The rod extends beyond this collar and supports a conical shaped coil of wire D. This conical coil forms the bowl of my improved miners' spoon. The coil at the apex end is made to fit tightly the end of the handle, so as to hold it firmly in alignment with it. That end of the cone is secured to the collar by passing it through the hole C'

and bending it to secure it to it. The collar also forms an abutment for the coil when pressing down on the handle to force the spiral through the cuttings. That part of the conical coil which fits the end of the handle is straight, and the cone part extends from the end of the handle three or four inches terminating in a flattened bifurcated end G, which is formed to make a wedge shaped space in the point, the inner edges of which are ragged or preferably have teeth G' cut into them, as shown in Fig. 2. The ends are slightly flared outward so that they will more readily guide and catch pieces of drills and other substances between them.

It will be seen that my spoon consists of a helical wire wound in the form of a cone with the convolutions of the wire spaced a short distance apart and with its terminal end divided to form an oblique, angular space at its end. I preferably use a round, steel wire to form the spoon of, because it is cheaper and easier to work, although almost any other form of cross-section would answer the purpose, and in an application filed February 19, 1894, Serial No. 500,771, I show other forms applicable for this purpose.

When drilling holes in rock it is frequently necessary to free the cuttings from them to prevent their clogging the drill. Water is generally used when drilling as it expedites the work. Consequently the cuttings are mud, or if the hole is drilled dry and in dry rock, they are powdered rock. To remove them, the spoon is inserted and pressed through the water and mud to the bottom of the hole which causes the material to surge up in the center of the cone and between the convolutions of its coils. These retain it as the spoon is withdrawn from the hole, and it is only necessary to strike or jar the spoon to dislodge it. It sometimes happens that the cuttings pack in the hole, in which case it is necessary to turn the spoon one or more times and screw the coils into it.

It frequently happens in drilling rock that the points of the drills crumble or break, either from being over-tempered, or from too heavy striking upon them. When this occurs the piece or pieces must be removed before the drilling can be resumed. I have especially designed the terminal end of the coil

for this purpose by bifurcating it to form a wedge-shaped space in the end, and on the inner sides of the ends I have cut teeth to make the wedge-shaped opening ragged.

5 This is adapted when the spoon is turned in the hole to contact with the piece or pieces of drill and wedge them between the divided ends of the coil so that they can be withdrawn. It is also of great value in removing charges
10 that have missed fire. The tamping, which is the covering of the blasting charge generally consists of rags and the bifurcated end is well adapted to catch them, and also to fasten to the paper covering of giant powder
15 cartridges, enabling them to be removed with safety. By attaching rags to the end of the coil it makes an excellent swab for cleaning the holes and preparing them for the blasting charge.

20 In Fig. 3 I illustrate the spoon in section and with a tubular handle. This form makes the spoon lighter. The collar C, can be shrunk on, or a hole could be drilled directly through the metal through which to pass the
25 end of the coil, or a portion of the tube could be swaged to one side.

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

30 1. The combination in a miner's spooning

tool of a rod having formed at one end a common miner's spoon and near the opposite end a collar; of a conical, helical coil fitting the end of said rod and secured to said collar and provided with a bifurcated end, for the pur- 35
pose specified.

2. The combination in a miner's spooning tool of a conical coil of wire provided with a pointed and divided terminal end adapted to penetrate and hold the material used in the
40 blasting of rock, with a rod having a common concave semi-circular form of spoon at the opposite end, as set forth.

3. The combination in a spooning tool of a handle, a miner's bowl spoon on one end of
45 said handle, and a conical, helical wire coil with a bifurcated terminal end at the other, as set forth.

4. The combination in a miner's spooning tool of a tubular handle having a miner's bowl
50 spoon at one end and a conical, helical coil provided with a bifurcated end secured to the other, as set forth.

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

NATHAN E. VARNEY.

Witnesses:

JOHN A. MOORE,
N. C. VINCENT.