(No Model.)

W. S. MOSES.

Tool for Clearing Rock Drill Holes.

No. 230,145. **Patented July 20, 1880.**

Fig. 1.

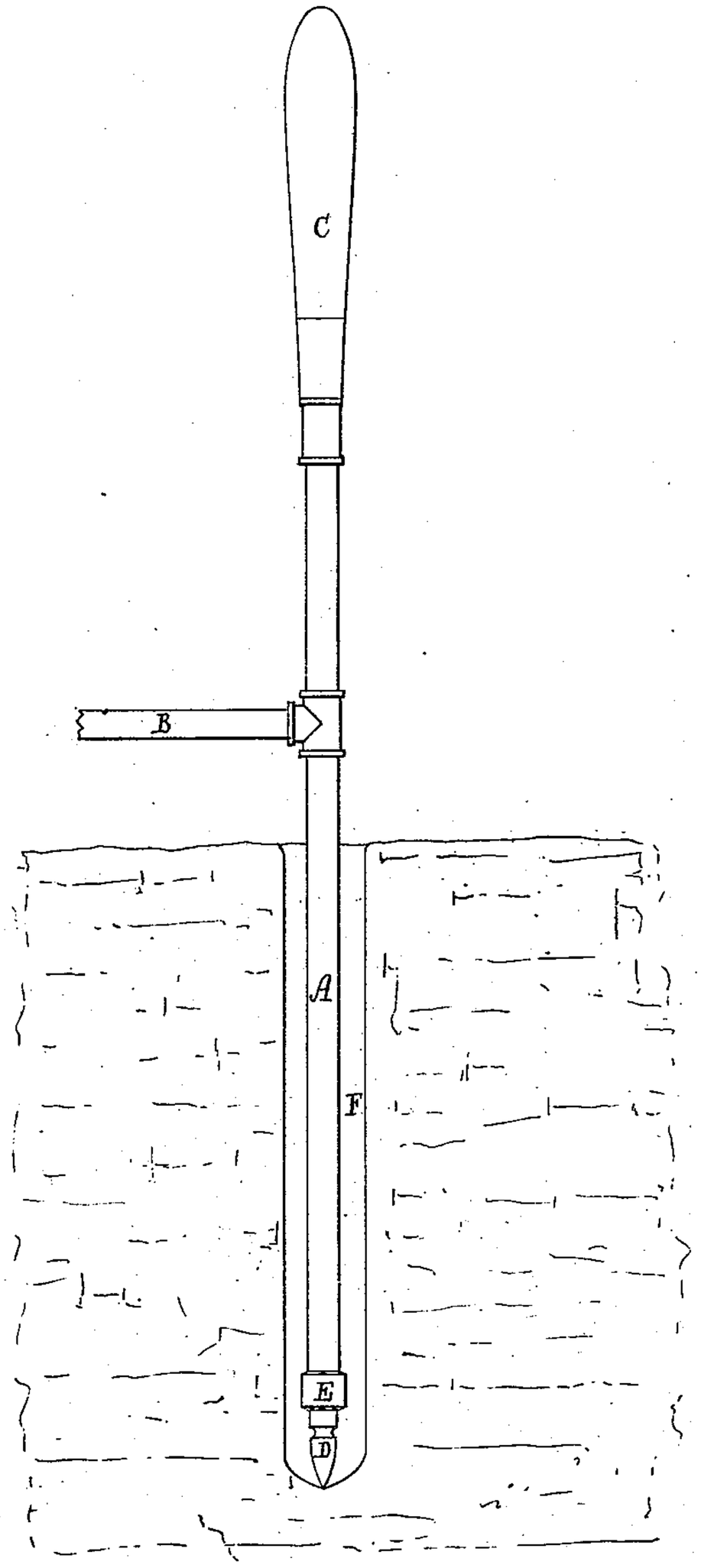

Fig. 2.

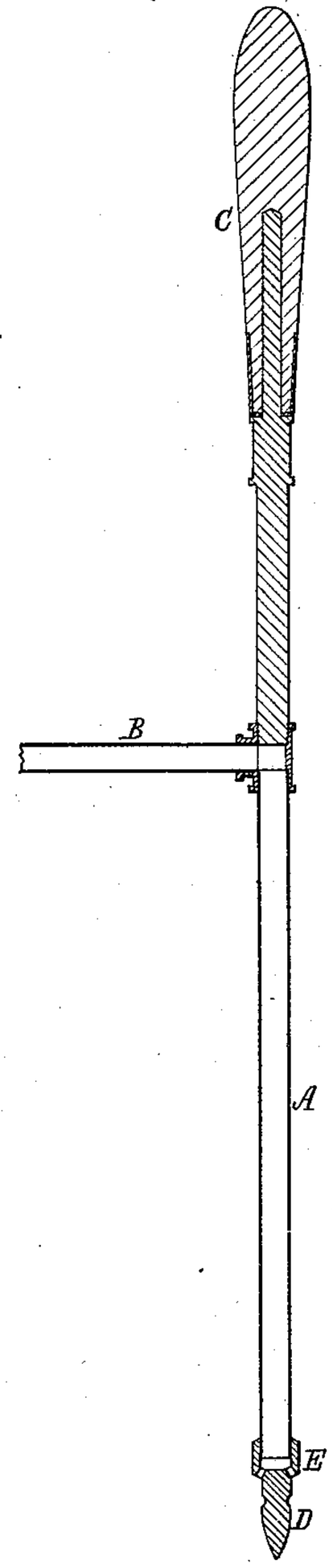

Fig. 3.

Witnesses.

S. N. Piper

W. W. Lunt

Inventor.

Walter S. Moses.

by attorney.

R. H. Eddy

UNITED STATES PATENT OFFICE.

WALTER S. MOSES, OF GLOUCESTER, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND JAMES S. JEWETT, OF SAME PLACE.

TOOL FOR CLEARING ROCK-DRILL HOLES.

SPECIFICATION forming part of Letters Patent No. 230,145, dated July 20, 1880.

Application filed May 17, 1880. (No model.)

To all whom it may concern:

Be it known that I, WALTER S. MOSES, of Gloucester, in the county of Essex and State of Massachusetts, have invented a new and useful Improvement in Tools for Clearing Rock-Drill Holes; and I do hereby declare the same to be described in the following specification, reference being had to the accompanying drawings, of which—

Figure 1 is a longitudinal and transverse section of a rock-drill hole with my appliances arranged therein for cleansing it of débris or drill-cuttings, or such and water. Fig. 2 is a vertical section, and Fig. 3 a lower end view of the said apparatus.

The nature of my invention is duly set forth in the claims hereinafter presented.

The apparatus I use for effecting the clearing of a drill-hole of accumulations therein, as well as the cleansing it, may be thus described: It, as represented, consists of a long tube, A, provided with an induct, B, a handle, C, a tapering or conical foot, D, and a rose, E, the latter having a series of jet-holes opening downward and extending around the foot D at its junction with it, (the said rose.) The tube I usually make in separate sections or lengths, with couplings at the ends to properly connect them. The handle I form of wood or some other proper bad conductor of heat.

In using the apparatus or drill-hole clearer, as described, it is to be first introduced point foremost into a rock-drill hole, F, until the conical or tapering foot may rest on the bottom of such hole or upon the mass of matter to be removed from the hole. This having been done, steam at high pressure is to be caused to pass into the induct and thence down through the bore of the tube and through and out of the rose, and thence up and out of the drill-hole and around the tube. In so doing the steam will rush against and drive upward before it the matter or matters to be removed from the hole, any water that may have accumulated in the hole being also thrown out. The heat imparted by the steam to the surface of the hole will, soon after removal of the tube from the hole or stoppage of the flow of steam out of the tube, cause the hole to become dry.

The handle, of wood, admits of the tube being manipulated or lifted more or less, as occasion may require, by an attendant while steam may be in the tube, or it may be in a heated state.

In practice it has been found that very deep drill-holes in ledges of rock may be cleaned, in manner as above described, with extraordinary facility and in a very short period of time, and far better than by a tube with a valve at its bottom and a foot extending below such valve. Such requires the removal of the tube from the hole in order to remove therefrom the matter to be extracted, whereas by my mode of operating the said matter is thrown up the hole by and ejected therefrom with the steam while the tube may be in the hole.

The office of the pointed foot is to enable the pipe to settle in the matter at the bottom of the drill-hole and to keep the rose at a proper distance therefrom, as may be necessary for its jets to operate to the best advantage. The diameter of the tube should be sufficiently less than that of the drill-hole to allow the matter to be moved by the steam to freely pass upward in the hole and to the mouth thereof.

I am aware that it is not new to clear a drill-hole by means of a chambered drill provided with an induct and educts, and by cool water under pressure forced into the drill and through its educts and up through the hole, such being described in the United States Patent No. 51,230.

My invention is an important improvement on such, as in carrying it out I use steam, and consequently employ heat, whereby I effect new and useful results not attainable with water alone or water not vaporized, for with steam I not only free the drill-hole of the drillings, but, at the same time, of water, and by heating the rock cause rapid evaporation of the liquid adhering to its surface. I am thus saved all necessity of subsequently removing the water from the hole, as is required by the process described in the said United States Patent No. 51,230.

Furthermore, my apparatus is not a drill, for it has at its lower end no cutters or cutting-edges to interfere with or obstruct the escape of the drillings. It has projecting from

and below its rose a conical foot simply, by which the drillings can freely escape entirely around it; and, furthermore, the apparatus has a wooden handle at top to enable it to be manipulated while it is heated by the steam, such not being the case with the drill shown in the said patent.

What, therefore, I claim as my invention is as follows, viz:

1. The improved mode, substantially as described, of clearing a drill-hole of drillings and water, it consisting in introducing into such hole to, or near to, the bottom thereof a pipe of a diameter less than that of the hole and forcing steam into and down through such pipe and into the drill-hole and up the latter in and through the space thereof around the pipe, all essentially as set forth.

2. The rock-drill hole clearer, substantially as described, for use with steam, in manner as set forth, it consisting of the tube, the wooden handle, the induct, the rose, and the conical or tapering foot, all arranged as specified.

WALTER S. MOSES.

Witnesses:
CHARLES H. SARGENT,
MARY E. JONES.