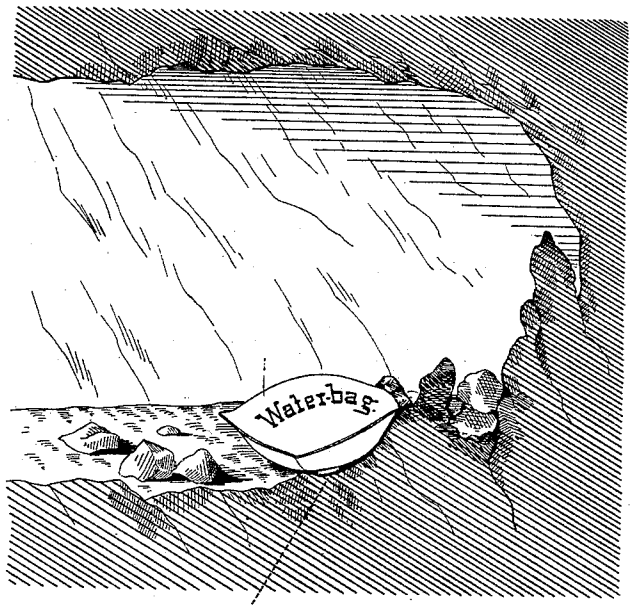
R. F. L. HALLOCK.
Method of Blasting.

No. 232,640. Patented Sept. 28, 1880.



Witnesses:

Edward C. Osborn.

E. Chaquette

Inventor:

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per J. L. Boone

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UNITED STATES PATENT OFFICE.

ROBERT F. L. HALLOCK, OF VALLICETO, CALIFORNIA.

METHOD OF BLASTING.

SPECIFICATION forming part of Letters Patent No. 232,640, dated September 28, 1880.

Application filed February 7, 1880.

To all whom it may concern:

Be it known that I, ROBERT F. L. HALLOCK, of Valliceto, Calaveras county, in the State of California, have invented an Improved Method of Blasting; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing.

My improved method of blasting is especially valuable in mines where nitro-glycerine or other quick-acting explosive is used; but it can also be used in all kinds of land or surface blasting.

Maillefert discovered that by placing a cartridge or charge of powder upon the bed or bottom of a river, lake, or bay, so that the weight of water above it would serve as a tamping, he could produce very satisfactory results in blasting. By a very simple adaptation I employ this process for blasting in mines and on land, and thereby I gain several important advantages over the ordinary method of blasting, especially where a quick-acting explosive is used.

My method of blasting consists in placing the cartridge or charge of powder or other explosive directly upon the surface to be blasted without preparing a drill-holl or other cavity to receive it. I then place a column or body of water over the cartridge or charge and fire the blast. The resistance of the superposed water to the escape of the gases causes a greater portion of the energy of the blast to be exerted downward against the surface on which it is placed, so that the rock is shattered and broken and reduced to a much better condition for removal than rock blasted by the ordinary method, and in mining the rock or ore will be reduced to a better condition for milling or other treatment.

The plan which I have adopted, and which I consider preferable on account of its extreme simplicity and cheapness, is as follows: I take a piece of muslin or other piece of cheap fabric and make it into a bag. The larger this bag is made the better will be the result obtained; but for all practical purposes a bag as large as an ordinary flour-bag is all that is necessary for effective work. This bag I then immerse in coal-tar or other waterproofing substance or compound, after which I squeeze off all surplus tar or compound, leaving the bag practically water-tight. This bag I then fill with water. I then place the cartridge on the face of the rock, or on the spot to be disrupted or broken up, insert the fuse and cap, and then place the bag of water over the cartridge. I then lute or close up all cracks in the rock or ground leading from the place where the cartridge rests, so as to make the ground around the charge practically air-tight. I then fire the charge. The result will be, first, the rock or other surface on which the charge rests will be broken and disrupted by the force of the explosion; and, second, the bag of water will be bursted, and the water will instantly be discharged over the gases and fumes generated by the explosion, so that they are completely allayed and condensed, and no inconvenience will result to the workmen by disagreeable or unhealthy fumes. This latter result is of great importance in mines, especially where nitro-glycerine compounds or dynamite is used for blasting. The fumes of these powders are not only disagreeable and unhealthy, but actually poisonous to some systems, so that several minutes of time are lost after each blast before the workmen can venture near the place of discharge when the charge is exploded in the ordinary way; but by my method no time is lost, as the fumes are completely allayed by the deluge of water that the explosion produces, and work can be resumed immediately. By this means I avoid the trouble and expense of drilling holes to receive the charges, which is one of the greatest expenses and annoyances connected with blasting, and it enables me to keep hoisting ore all the time, as I can fire one blast after another as fast as required, and thus keep a plentiful supply of ore all the time.

I use about one-third more powder than required by the old process to produce the same quantity of ore; but the extra cost of the powder is but a small item compared with the numerous advantages and benefits derived from the method.

I do not confine myself to any particular

vessel or form of vessel for providing and applying a column of water over the charge; but

What I do claim, and desire to secure by Letters Patent, is—

The method of blasting which consists of placing the explosive agent directly on the surface of the rock or land and superposing water confined in a suitable receptacle, substantially such as described, upon the explosive agent.

In witness whereof I have hereunto set my hand and seal.

ROBERT F. L. HALLOCK. [L. S.]

Witnesses:

W. F. CLARK,

E. K. WOOD.