

UNITED STATES PATENT OFFICE.

ROBIE CROWE, OF GEORGETOWN, COLORADO.

COMPOSITION FOR PREVENTING FUMES IN MINING-POWDERS.

SPECIFICATION forming part of Letters Patent No. 612,707, dated October 18, 1898.

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To all whom it may concern:

Be it known that I, ROBIE CROWE, a citizen of the United States, residing at Georgetown, in the county of Clear Creek and State of Colorado, have invented certain new and useful Improvements in Explosives; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

Heretofore the difficulty in the use of high explosives or giant-powders used for mining purposes, more especially underground mining, has been an injury to the health of the operator by reason of the poisonous gases and parts of the said explosive remaining in the workings unexploded, thereby causing sickness, headache, weakness, and injury to the lungs, and it is believed to be the main cause of a disease known as "miners' consumption."

Another difficulty in the use of high explosives or giant-powders is the amount of time lost after the explosion until the air has become cleared or purified, so that the operator may return to the works where he has been operating. The time so lost is from one to three hours.

The object of my invention is to neutralize and destroy the poison or poisonous gases that are left after the explosion of the high explosives or giant-powder and to enable the operator to at once return to his work and continue at it without any injurious effects, and it has been found by the use of my invention that at least seventy-five per cent. of the injurious effects have been avoided and that very little time, if any, need be wasted after the explosion in the works, subject, however, to the condition of the works; but I claim, whatever the conditions, that an improvement over the old method of not less than seventy-five per cent. as to health and of at least ninety per cent. of an advantage in the amount of time lost is gained by the use of my invention and that the high explosive or giant-powder used in connection with my improvement is not impaired in its effects as a high explosive, but that with the use of my improvement the explosion is more perfect and the strength of the explosion upon the works is increased at least twenty-five per cent.

To carry my invention into effect, I take the

three ingredients, the first of which is fifty per cent. in weight of unbolted wheat-flour, shorts, or coarse flour. Add to that twenty-five per cent. of common salt (sodium chlorid) in a fine-ground form. To these add twenty-five per cent. of bicarbonate of soda in a fine-ground form. These are stirred together dry until thoroughly mixed and kept dry until ready for use. (At the time of using water will not injure.) Place the said ingredients in a common shell (more or less like a giant-powder shell) of any suitable dimension or size. I prefer that the shell shall be three-quarters of an inch in diameter and from two to three inches in length; but any other suitable shape or size must be determined by the character of the work to be accomplished. With this shell I use two equal parts of the same bulk of some standard high explosive or giant-powder, and I place the first part of the high explosive containing the cap in the bottom of the hole prepared for the explosive, then my ingredients, then the second amount of the high explosive, then tamp the powder as is usually done, and the explosive is ready to be exploded. Any other suitable arrangement of the three parts may be made; but this has generally proved the best.

My ingredient cannot be mixed with the high explosive or giant-powder for it destroys the explosive qualities of the powder and must be used as a third part.

My ingredient can be made up with the cartridge by inserting it as a third part independent of the explosive in the center or at either end of the explosive-cartridge; but the mixtures of the explosive and my ingredient must have been made before arranging them in a cartridge form, or my ingredients may be placed lengthwise in the center of a cartridge surrounded by the high explosive or giant-powder, but independent thereof.

The advantages gained by the use of my ingredients in the combination as above described is that the open loose nature of the unbolted wheat-flour allows common salt and the bicarbonate of soda to be equally distributed, and these—to wit, the common salt and the bicarbonate of soda—are in immediate readiness to perform their neutralizing effect on the foul gases.

Having fully described my invention, what

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

5 A mixture for neutralizing the poisonous
gases from explosions of giant-powder con-
sisting of fifty per cent. in weight of unbolted
wheat-flour, twenty-five per cent. in weight
of common salt in a finely-ground form and

twenty-five per cent. of bicarbonate of soda in
a fine-ground form.

ROBIE CROWE.

Witnesses:

W. C. MINGE,

WM. P. HERRICK.