

C. S. BAHNEY.
 MEANS FOR PREPARING AND FIXING BLASTING CHARGES.
 APPLICATION FILED SEPT. 2, 1909.

947,289.

Patented Jan. 25, 1910.

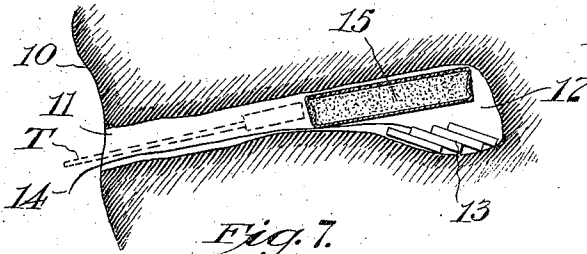


Fig. 1.

Fig. 7.

Fig. 2.

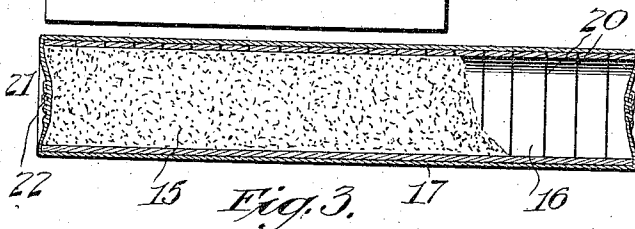
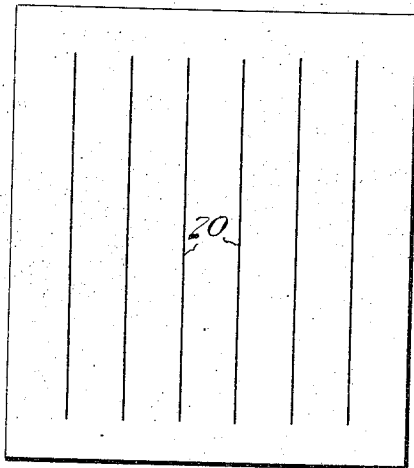
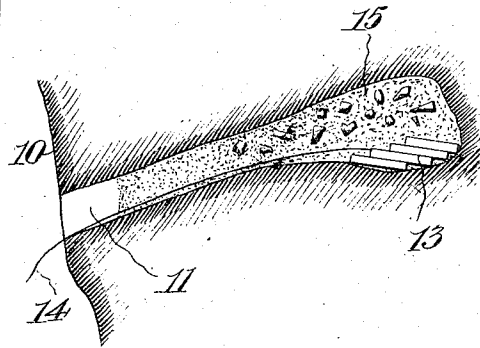


Fig. 3.

Fig. 4.

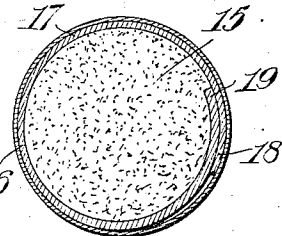


Fig. 6.

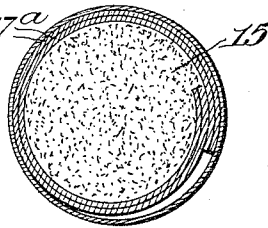
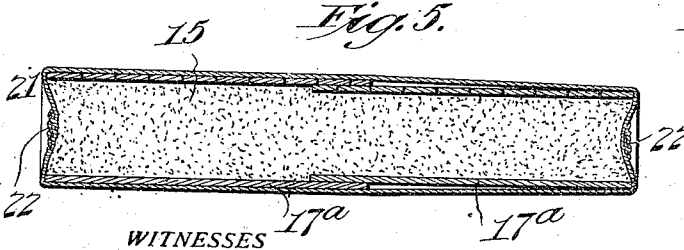


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

CHARLES STEWART BAHNEY, OF CARTHAGE, MISSOURI.

MEANS FOR PREPARING AND FIXING BLASTING CHARGES.

947,289.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES STEWART BAHNEY, a citizen of the United States, residing at Carthage, in the county of Jasper and State of Missouri, have invented certain new and useful Improvements in Means for Preparing and Fixing Blasting Charges, of which the following is a specification.

This invention relates to the subject of mining and quarrying, and has special reference to improved means for preparing and fixing blasting charges at the bottom of the drill hole.

To this end the invention has in view certain novel and practical improvements in the construction of a filling cartridge for blasting purposes, that is a cartridge carrying filling or confining material adapted to be introduced into the drill hole and liberated over and about the blasting charge. In other words, the present invention provides improved means for introducing the blast charge confining-material into the charge receiving pocket in bulk so that when the tamping implement or machine acts upon the same it will be distributed over all parts of the main charge, and also fill all openings and crevices, thereby closely confining the blasting charge so that the maximum of results will be obtained from the explosion thereof.

In the embodiment of the invention shown in the drawings the preferred way of carrying out the invention is illustrated, though it will be understood that the invention is necessarily susceptible to structural changes or modification.

In the accompanying drawings, Figure 1 is a sectional view of a rock face illustrating the application of the invention and showing the blast opening drilled in the rock and the pocket or cavity which has been squibbed for the reception of the main blast charge. Fig. 2 is a similar view showing the collapsible cartridge shattered to release the confining-material and thus admit of the squibbed pocket or cavity being readily or completely filled with the sand or other confining material. Figs. 3 and 4 are longitudinal and cross-sectional views respectively of one form of collapsible cartridge that may be utilized in carrying out the invention. Figs. 5 and 6 are similar views of a modified form of cartridge that may be employed. Fig. 7 is a detail plan

view of the slitted sheet or board in blank form.

Like references designate corresponding parts in the several figures of the drawings.

Referring to the drawings, the number 10 designates a mining tunnel or rock face having a blast opening 11 drilled therein, at the inner end of which opening a main charge-receiving pocket 12 has been formed by the usual preliminary explosion or squibbing operation. The main charge 13 which consists of sticks of powder is shown in said pocket with its fuse 14 projecting through the opening. This charge 13 is intended to be closely confined in the said pocket by the confining material 15, preferably sand.

It has been found that a practical way to introduce the confining material into the pocket 12 is by inclosing such material in a readily destructible wrapper or tube so that when the same is forcibly acted upon by a tamping implement or machine the said wrapper will be shattered or broken up, thereby liberating the confining material onto and about the main charge in the pocket, after which the said confining material may be readily and compactly tamped in the pocket, around the charge therein, and as far in the drill hole or opening as required. The destructible wrapper referred to may be properly characterized as a filling cartridge, and according to the present invention this cartridge consists of a tubular paper body 16, and the paper or equivalent covering sheet 17 therefor.

In the form of the invention shown in Figs. 3 and 4 the paper body or wrapper 16 is made of a single sheet of paper, preferably cardboard, rolled into the form of a cylindrical tube, with its overlapping edges 18 and 19 left loose and unsealed so as to not interfere with the ready breaking and opening up of the cartridge when the tamping tool is forced against the same. In connection with the formation of the tubular paper body 16 an important and distinctive feature of the invention resides in preliminarily providing the blank or sheet of material from which said body is made with a multiplicity of transverse, or otherwise disposed, slits 20. These slits contribute materially to the ready destructibility of the cartridges or tubes under the pressure of the tamping implement. Furthermore, another impor-

tant feature of the invention is to not only tuck or close in the end portions 21 of the covering sheet 17, at the ends of the cartridge or tube, but also to seal such end portions 21 by means of glue or other adhesive coating 22 upon the inner side of such end. This construction provides in effect a glued or adhesively sealed plug for the ends of the cartridge or tube to hold the sand in position and prevent the bursting out or leaking of the same from ordinary handling of the cartridge.

In the form of the invention shown in Figs. 5 and 6 of the drawings the tubular paper body or wrapper is shown as consisting of two separate tubes 17^a arranged in telescoping relation, but otherwise of the same construction as the tube or body 17 in the one piece form of the invention.

In using the cartridges they are introduced through the drill hole and pressed back into the charge-containing pocket or cavity 12 by means of an ordinary tamping tool such as indicated by T in Fig. 1 of the drawings. When the destructible cartridge reaches the position indicated in Fig. 1 a crushing pressure imposed thereon by the tamping tool will serve to break and open up the cartridge, with the result of scatter-

ing the filling material into the pocket so that it may be as tightly tamped therein as desired. One or more collapsible filling cartridges may be utilized in this manner for the purpose described, according to the size of the charge-containing pocket or cavity.

I claim:—

1. A filling cartridge for blasting purposes consisting of a tubular destructible paper body provided with a multiplicity of slits therein and containing filling material.

2. A filling cartridge for blasting purposes consisting of a destructible paper body provided with a covering sheet adhesively sealed at its ends to the confining material within the body.

3. A filling cartridge for blasting purposes consisting of a slitted paper tube containing filling material and provided with a covering sheet adhesively sealed at its ends to said material.

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

CHARLES STEWART BAHNEY.

Witnesses:

J. D. PERKINS,
J. P. NEWELL.