Black Blasting Powder

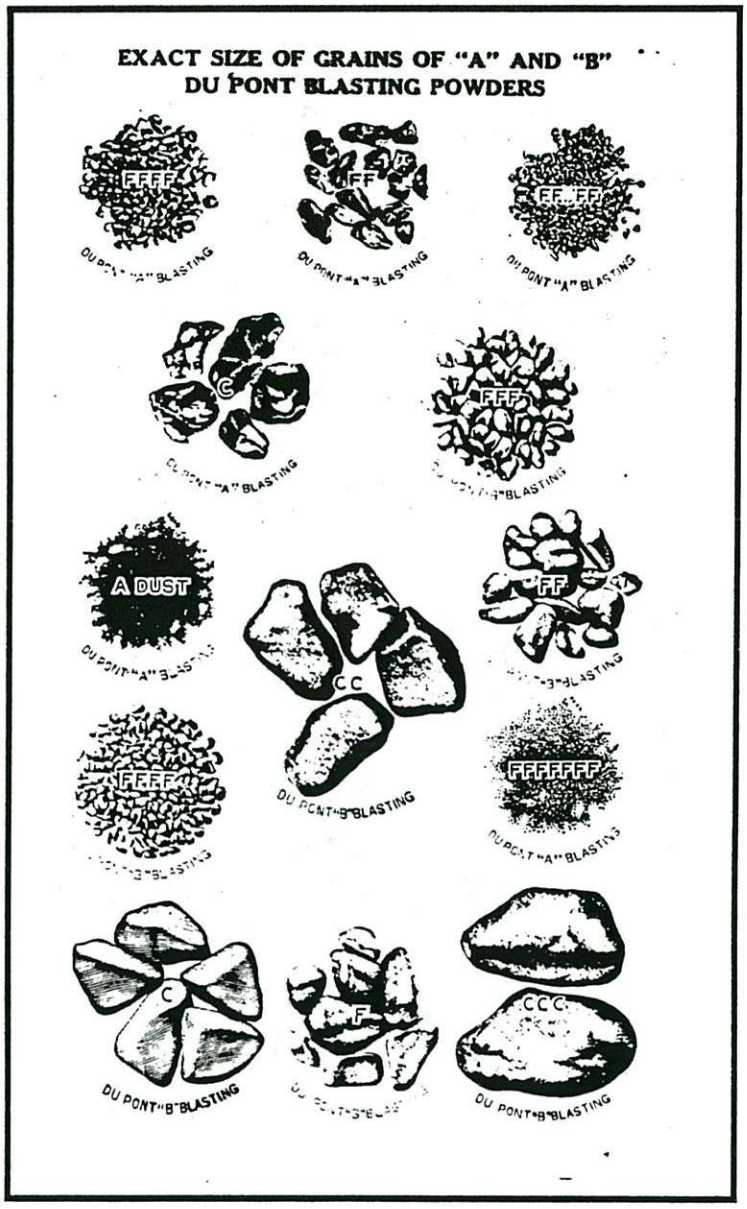
by Mark Bohannan

Black blasting powder is a slow-acting black granular explosive that does not freeze. Blasting powder is manufactured in two grades, 'A' and 'B'. The 'A' powder contains potassium nitrate and is slightly more water resistant, stronger, and quicker than 'B' powder, which contains nitrate of soda instead of potassium nitrate. In both powders, the other ingredients are sulfur and charcoal. Blasting powder is not water resistant and cannot be used in moist or wet work.

Blasting powder is manufactured either glazed (polished) or unglazed. The glazed powder is generally used more than the unglazed powder. Glazing is done by using a very small amount of graphite to polish the outside of the grains. This makes the grains more free-running so that it will pack tighter in the bore hole.

Black powder is not made in different strengths or grades like dynamite, but is manufactured in only one strength. In order to adapt to different kinds of work conditions, both 'A' and 'B' blasting powders are manufactured in grains of different sizes (Fig.1). The finer grained powders are quicker than the coarser grained powders. The quicker powders have more of a breaking and shattering effect on the material blasted, while the slower ones have more of a tendency to lift and heave the material out in large lumps. But it should be noted that even the finest grained blasting powders do not have the highly pulverizing effect that dynamite has.

Black blasting powder was extensively used in quarrying stone, stripping, road and railroad grading, clay mining, coal mining, and general excavating. In underground hardrock mining, black blasting powder was usually only used to stope out large bodies of waste rock or used in soft ores such as copper ore which did not require a great deal of shattering action to break the ore loose.



Right: *Exact size of grains of "A" and "B" DuPont blasting powders. (From 1925 DuPont Blasters Handbook)*

Wooden Kegs

Prior to 1874, black blasting powder was packed in wooden kegs containing 25 pounds. These wooden kegs are very hard to find, especially in good condition and still having the paper label intact.

9 1/4 " Dia. wood black powder keg lid from the California Powder Works. Ca. pre-1874 (Mark Bohannan collection)

Metal Kegs

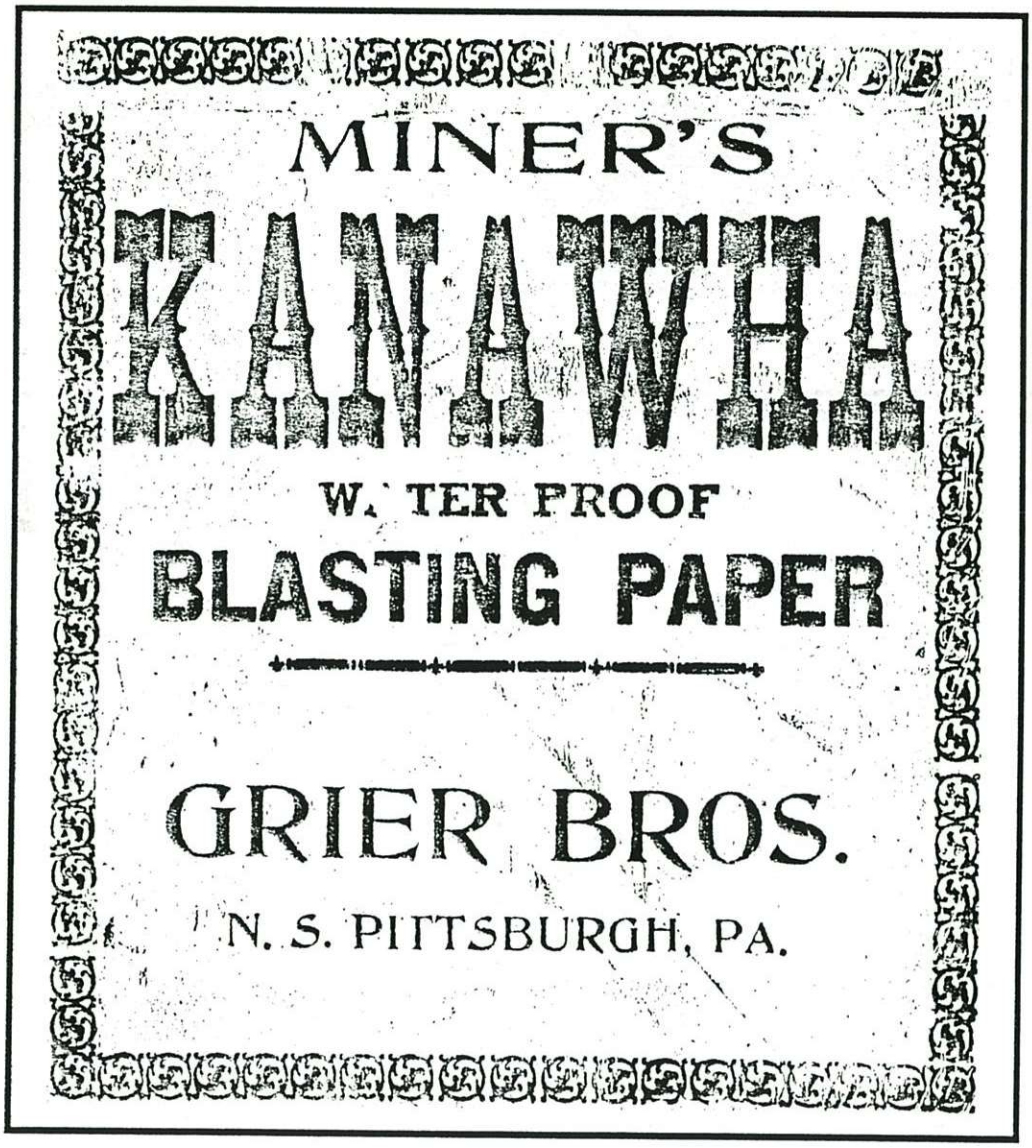
After 1874, all black blasting powder was packaged in metal kegs of 25 pounds. On the wooden kegs, a paper label usually covered the bung (pouring hole), while on the metal kegs, a metal slide with a clip covered the bung. Even the metal kegs are hard to find in mint condition. Most metal kegs were painted a flat black and some had other markings painted on the side of the keg.

Shown below, are kegs from some of these powder companies.

Blasting Paper and Blasting Soap

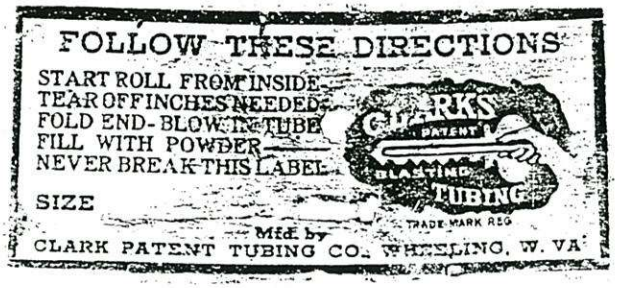
When blasting powder is used in underground mining, the most common method used is to make up a cartridge shell from blasting paper and fill it with the powder. The blasting paper is wrapped around a wooden pin called a cartridge pin, and one end is crimped on the pin and sealed with blasting soap. The removal of the pin leaves a cylindrical cartridge open at one end. The proper quantity of powder is poured in, and the top folded and sealed with blasting soap. The cartridge pin is made just a little smaller in diameter than the bore hole so that the cartridge will fit snugly into the hole.

Blasting paper is sold in rolls and also in "tubing" form. Shown below are the labels from rolls of blasting paper and also the directions for the use of blasting tubing from an Atlas Powder Company Catalogue.

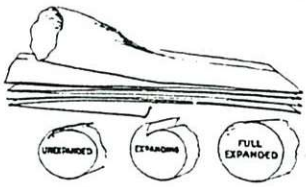


6 1/2" X 8" paper label around a roll of blasting paper. (Brad Ross collection)

Label from another roll of blasting paper. Roll is 9 " long and 2 1/4 " in diameter. (Mark Bohannan collection)



Label from roll of blasting tubing. (Leo Stambaugh collection)



Sureshot Blasting Shells

For Black Powder—For Tamping Material

Fig. 1

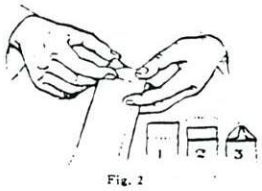


Fig. 2

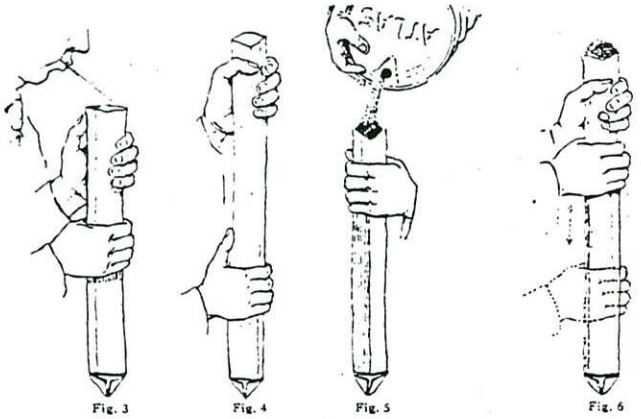
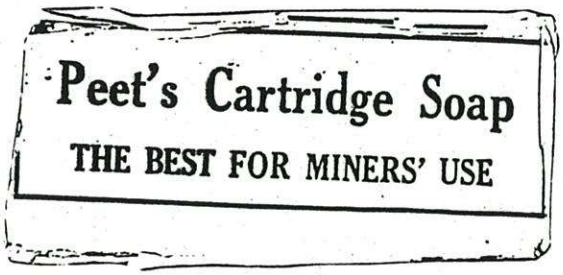


Fig. 3 Fig. 4 Fig. 5 Fig. 6

How to Use Sureshot Shells

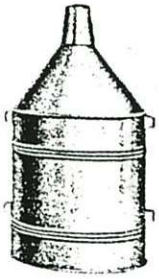
1. Tear off enough shell for the length of shot you wish to make.
2. Crimp the End—One flat fold, then turn over the corners. (Twist it if you want to.)
3. Open the Shell—Blow in it. (Using your thumb will take twice as long.)
4. Slide your hand to the bottom pressing the creased edges together. It will stand open.
5. Fill with powder.
6. Work down the powder with stripping motion. It will pack tight.

Instruction for using blasting tubing. (from a 1923 Atlas catalog)



Blasting Soap

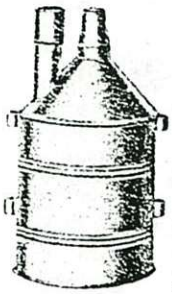
The top (above) and sides (right) of a bar of blasting soap. Bar is 1 3/4" X 1 3/4" X 3 1/2 ". The soap is a blackish brown color and has a very nasty odor. It is wrapped in lead foil and then covered with the paper wrapper shown here. Lettering is in dark blue. (Dave Johnson collection)



Powder Cans

Oval

IX tin with slip top and side lugs
No. 05. Capacity 5 lbs..per dozen, **$3.75**



Oval

IX tin with soldered in squib box, slip tops and side lugs.
No. 050. Capacity 5 lbs...per dozen, **$5.00**

Round, Tall Style

IC tin with slip top, side handle and wire bail.
No. 04. Capacity 5 lbs...per dozen, **$4.00**
No. 040. Same as No. 04 except has squib box attached.....per dozen, **$5.25**

Powder Cans

To avoid carrying around the 25 pound kegs throughout the mine, powder cans like those shown to the left were used. The narrow spout helped eliminate spillage when filling blasting cartridges. Special thanks to Brad Ross and Dave Johnson for sending me items from their collections for this article.

Note: In the Blasting Cap Tin Survey Results, No. 46 was omitted. It should have read: Dupont, XXXX, round.