No Model.)

G. M. PETERS.

CLOSING DISK FOR BLASTING CARTRIDGES.

No. 542,101. Patented July 2, 1895.

Fig. 1.

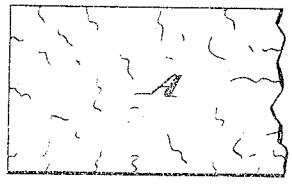


Fig. 2.

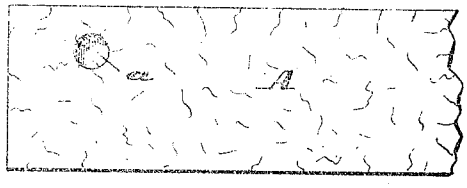


Fig. 3.

Fig. 4.

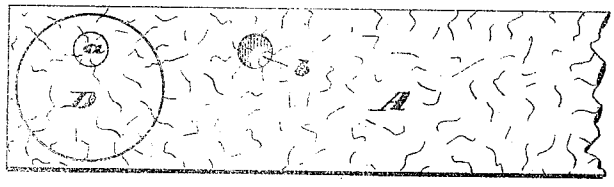


Fig. 5.

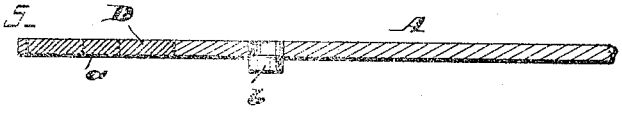


Fig. 6.

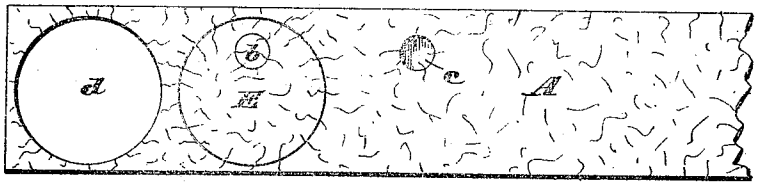
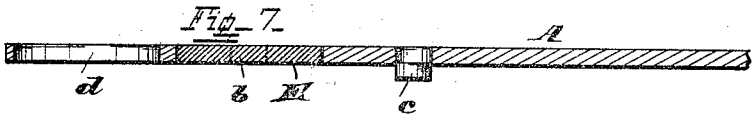


Fig. 7.



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UNITED STATES PATENT OFFICE.

GERSHOM MOORE PETERS, OF CINCINNATI, OHIO.

CLOSING DISK FOR BLASTING-CARTRIDGES.

SPECIFICATION forming part of Letters Patent No. 542,101, dated July 2, 1895.

Application filed August 15, 1890. Serial No. 362,073. (No model.)

To all whom it may concern:

Be it known that I, GERSHOM MOORE PETERS, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Closing-Disks for Blasting-Cartridges, of which the following is a specification.

My invention relates to closing-disks for blasting-cartridges.

The object of the invention is to produce a closing-disk of elastic or expansive material and provided with a plug cut from the disk itself and then reinserted, so as to seal the opening for the insertion of the blasting-tube.

To this end the invention consists in a blank of elastic or expansive material, such as strawboard or board made of paper-pulp, said blank being first punched to cut out a sealing-plug, then reinserting said plug, then cutting or punching out the closing-disk, and discharging same.

The closing-disks for blasting-cartridges have heretofore been made generally of wood or metal. Metal, while being effective for the purpose named, is quite expensive. Wood, even when well seasoned, seems to shrink enough from the walls of the shell to permit moisture to enter and dampen the powder; this more especially after the cartridges have been subjected to the rough handling necessarily done in mining operations.

I have found, after experiments and trials, that strawboard or board made from paper-pulp not only is as effective in excluding water or moisture as wood or metal, but after being inserted within the shell there is an expansion toward the periphery or cut edge, which tends to effectually close the mouth of the shell and thus exclude moisture.

One disk must have an opening for the insertion of the blasting-tube, and this opening must be sealed to prevent loss of powder and to exclude moisture. In an application filed April 17, 1890, this opening has been sealed by caps on the upper or under side of the disk or by a plug partially inserted in the opening. These caps or plugs were of material separate from the disk itself. In my present device the plug is cut from the disk and then reinserted, thus insuring accuracy in closing the opening and economy of material.

In my present device the disks instead of being secured to the shell by wire are fastened to the shell wall by means of a waterproof glue or cement. This, in connection with expansion of the material before mentioned, perfectly closes and seals the cartridge; or if greater security be desired the ends of the shell may be turned in and crimped down upon the disks in addition to the cement.

The accompanying drawings illustrate my invention and the process of manufacture.

Figures 1, 2, 4, and 6 are plan views, and Figs. 3, 5, and 7 sections, showing the blank, the closing-disks, and sealing-plugs, as will be hereinafter explained.

The blank A consists of a strip of the desired material just wide enough to permit a disk D to be cut therefrom with the least loss of material. The strip A is first punched to form the plug *a*, Figs. 2 and 3, which is pressed down against a spring-die. The instant the stroke is completed the die pushes the plug back into the opening formed and the strip is then moved forward and the disk D is formed or punched out, the sealing-plug *a* forming an integral part thereof, as shown in Figs. 4 and 5. While in this position the next sealing-plug *b* for the next disk is punched out and reinserted, the disk first formed now discharged and the blank fed forward with the plug *b* to form the second disk E with its integral plug; then the third plug *c* punched, blank fed forward, disk E discharged, and so on the length of the blank. When the cartridge is to be fired the sealing-plug is pushed out and down into the powder, thus making a clear opening for the blasting-barrel.

Any suitable mechanical means may be used for automatically feeding the blank, punching out and reinserting the sealing-plug, and finally punching and discharging the disk with its integral plug of the same material; or the punching of the disk and the punching and reinserting of the sealing-plug may be done by hand-tools.

Having thus described my invention, what I claim is—

1. A closing disk for blasting cartridges consisting of an expansive material and provided with an integral plug cut therefrom and then reinserted to seal the entrance or opening for the blasting barrel.

2. A closing disk for blasting cartridges consisting of straw board or analogous material as described, said disk having a plug cut therefrom and then reinserted to seal the opening for the blasting barrel as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in presence of two witnesses.

G. MOORE PETERS.

Witnesses:
A. M. BEEKLEY,
F. C. TUTTLE.