

C. MONSON.

Blasting-Plug.

No. 50,263.

Patented Oct. 3, 1865.

Fig 1.

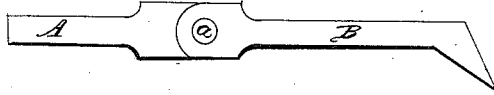


Fig 2.

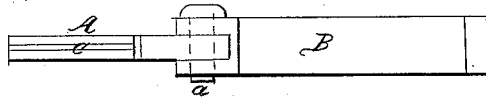


Fig 3.

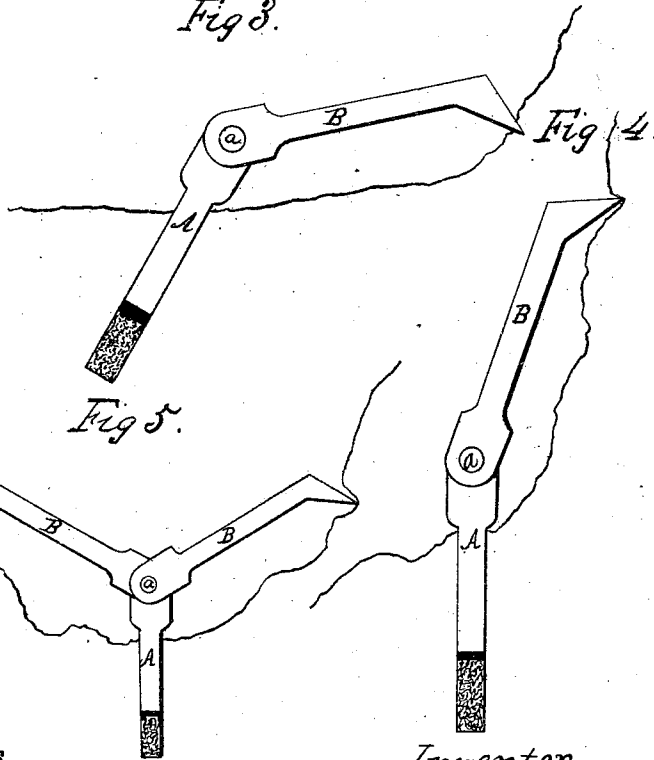
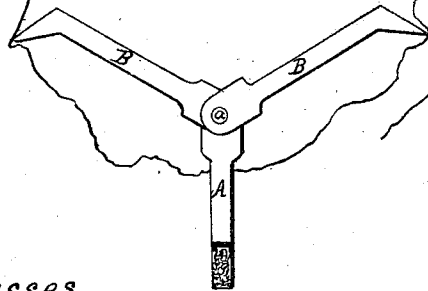


Fig 4.

Fig 5.



Witnesses.

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UNITED STATES PATENT OFFICE.

CHARLES MONSON, OF NEW HAVEN, CONNECTICUT.

IMPROVED BLASTING-PLUG.

Specification forming part of Letters Patent No. 50,263, dated October 3, 1865.

To all whom it may concern:

Be it known that I, CHARLES MONSON, of New Haven, in the county of New Haven and State of Connecticut, have invented a new and Improved Blasting-Plug; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent in—

Figure 1, a side view; Fig. 2, a top view; Figs. 3 and 4, the plug as inserted for use; and in Fig. 5 a different construction.

My invention is designed to avoid tamping and deep-drilling for blasting in ledges, &c.

When the rock is very solid it is necessary to drill deep, in order that the packing above the powder may be sufficient to resist the force of the powder, so that it may be spent upon the rock laterally instead of upward and outward, for if the hole is not drilled sufficiently deep the packing will be blown therefrom with little or no effect upon the rock.

My invention avoids the necessity of deep-drilling and insures the full effect of the powder upon the rock; and my invention consists in the employment of a metal plug hinged to a metal bar, the plug inserted in the hole above the powder and the end of the bar secured to the face of the rock, so that the plug cannot be thrown from the hole, whereby the entire force of the powder is expended laterally upon the rock to a much greater extent, and so as to displace a greater portion of the rock than the same or a much greater quantity of powder could do were the packing not held upon the powder with the firmness of the rock itself at the point where the bar B is secured.

To enable others to construct and use my improved blasting-plug, I will proceed to fully describe the same as illustrated in the accompanying drawings.

A is the plug, formed of iron or steel and of the same diameter of the hole drilled in the rock, its upper end terminating so as to form a hinge with the bar B, as seen in Figs. 1 and 2, secured together by a pivot, *a*, or an equivalent device. The bar B should also be of iron,

steel, or suitable metal, and of such form and proportions as to withstand the force of the blast, its extreme end terminating in any convenient form for securing it to the surface of the rock, as in Figs. 3 and 4, the hinge allowing an adjustment of the bar to any convenient angle to the plug.

Drill the rock in the usual manner, but only to such depth as is necessary for the blast to effect the rock; place the requisite quantity of powder in the hole thus made, inserting the fuse into the hole in the usual manner; place a wad above the powder or not, as may be deemed expedient, then insert the plug *a* above the powder, as seen in Figs. 3 and 4. A groove, *c*, is formed in the plug, as seen in Fig. 2, to allow it to pass the fuse. When thus inserted and resting solidly upon the charge secure the end of the bar B to the surface of the rock, as seen in Figs. 4 and 5, which secures the plug in the hole with the firmness of the rock itself; then ignite the fuse in the usual manner to explode the powder, which explosion, as it cannot throw the plug from the hole, will exert its force much more effectually and laterally to a greater extent upon the surrounding rock than it could do by the same quantity of powder placed deeper in the rock and tamped in the usual manner.

In securing the bar to the face of the rock care should be taken to place the plug and bar at such angles relatively to each other that the plug cannot be thrown from the hole without some displacement of the surrounding rock.

If preferred, and in many places no doubt it would be advisable, to use two bars, instead of one, as seen in Fig. 5, this would give, no doubt, a greater effective force to the charge; yet but one bar is necessary to accomplish the object of my invention.

I have described my invention as for the purpose of blasting rocks, yet it is equally applicable to blasting in other places and substances.

I am aware that iron plugs have been placed above the powder for the purpose of increasing the action of the blast, but when so used have been held by weights or by a head on the rod above and below the powder, or otherwise

than by a jointed bar and plug, in all cases but partially accomplishing the object.

I do not therefore broadly claim the use of an iron plug for blasting purposes; but,

Having fully described my invention, what I claim as new and useful, and desire to secure by Letters Patent, is—

The combination of the plug A and bar or

bars B, constructed and united together by a joint or its equivalent, substantially as and so as to operate in the manner and for the purpose herein set forth.

CHARLES MONSON.

Witnesses:

JOHN E. EARLE,
MARY A. HINE.