

G. FRISBEE.
Blasting-Plugs.

No. 147,253.

Patented Feb. 10, 1874.

Fig. 1.

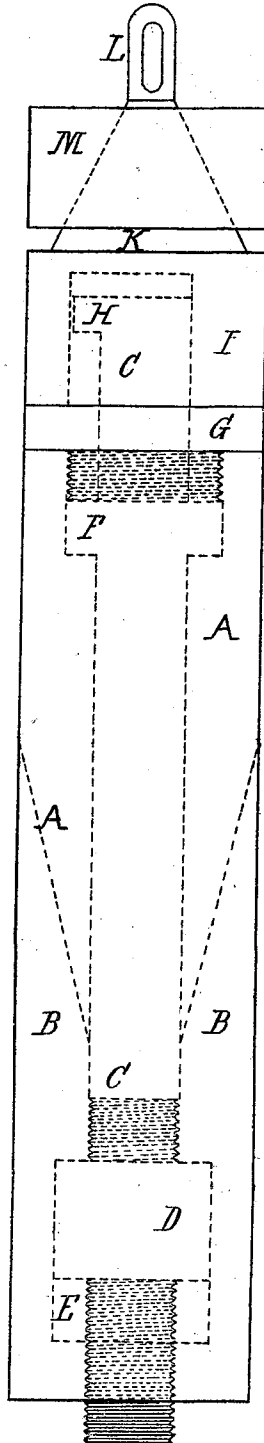
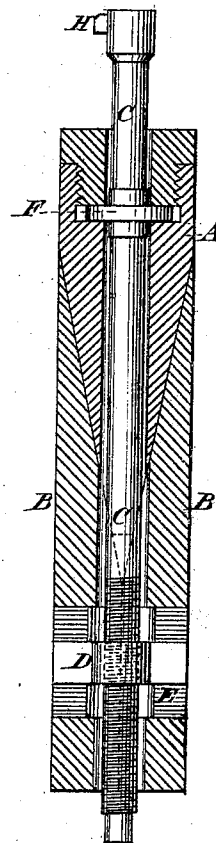


Fig. 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

GIDEON FRISBEE, OF READING, PENNSYLVANIA.

IMPROVEMENT IN BLASTING-PLUGS.

Specification forming part of Letters Patent No. 147,253, dated February 10, 1874; application filed December 4, 1873.

To all whom it may concern:

Be it known that I, GIDEON FRISBEE, of Reading, in the county of Berks and State of Pennsylvania, have invented a new and useful Plug for Blasting in Long Holes; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the said invention, reference being had to the accompanying drawing, which forms a part of this specification.

Figure 1 of the drawing is an elevation of the plug; and Fig. 2, a section thereof, taken through its axis.

This invention consists in a plug of such construction that it may be easily wedged into a drill-hole to form a bed or recoil-block for the charge, and more firmly wedged against the walls of the hole by the explosion of said charge, as hereinafter described.

A is a metal cylinder, whose diameter is slightly less than that of the hole, and whose lower end is wedge-shaped. C is a bolt passing through a hole in the middle of A, and made with a screw-thread on its lower end, a lug, H, on one side of its upper end, and a collar, F, fitting into a recess in the upper part of A. B B are two pieces of metal, through which bolt C also passes, made with inclined inner surfaces at their upper ends to receive the lower end of A. E is a recess made in B B, to receive the nut D, which is screwed on C. G is a cap screwed into A to keep the collar F in place. I is a cap fitting on top of A, and covering the upper end of bolt C, and made with a conical top, K, and a projecting knob, L, which assist in removing it from the hole. M is a packing-ring, of lead or other soft metal, leather, or other suitable substance, which fits over cone K, and is forced downward and outward by the explosion of the charge, so as to fill the hole and prevent gas from escaping into it.

In operation, a hole having been bored to a

sufficient depth for the insertion and explosion of several charges, the plug, without the cap I, is inserted into the hole, at the proper depth, by means of a socket-wrench, which is placed on the upper end of the bolt C and then turned, so as to force B B upward by the action of the screw and nut, thereby forcing B B apart and against the walls of the hole, and wedging the plug firmly therein. The wrench is then removed and cap I and packing-ring M put on. The plug having been thus fixed in position, the charge is then inserted, tamped, and fired in the usual manner. The charges in all the holes should be fired simultaneously. The force of the explosion is received on the packing-ring M, cap I, and cylinder A, wedging the latter in farther between B B, and thereby forcing the plug more firmly against the sides of the hole.

After firing, the plug may be removed or inserted deeper into the hole, by first withdrawing the cap I and packing-ring by means of a suitable hook applied to knob L, and then loosening the plug by means of the socket-wrench, which is now turned in the reverse direction. This wrench should have a lateral recess on each side of the groove, which receives the lug H, so as to raise and lower the plug in vertical or adjust it in horizontal holes. The plug having been again fixed in the hole at the proper distance to support the charge, as above described, the charging, tamping, and firing are again repeated, and the operation continued as long as may be necessary.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

The above-described plug, consisting of cylinder A, pieces B B, screw-bolt C, nut D, cap I, and packing-ring M, all constructed and arranged substantially as described.

Witnesses: GIDEON FRISBEE.

DANIEL C. WIELAND,
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