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D. WHITBURN.

COMBINED KNIFE, CLENCH, AND PUNCH FOR USE IN BLASTING OPERATIONS.

(Application filed Mar. 14, 1899.)

(No Model.)

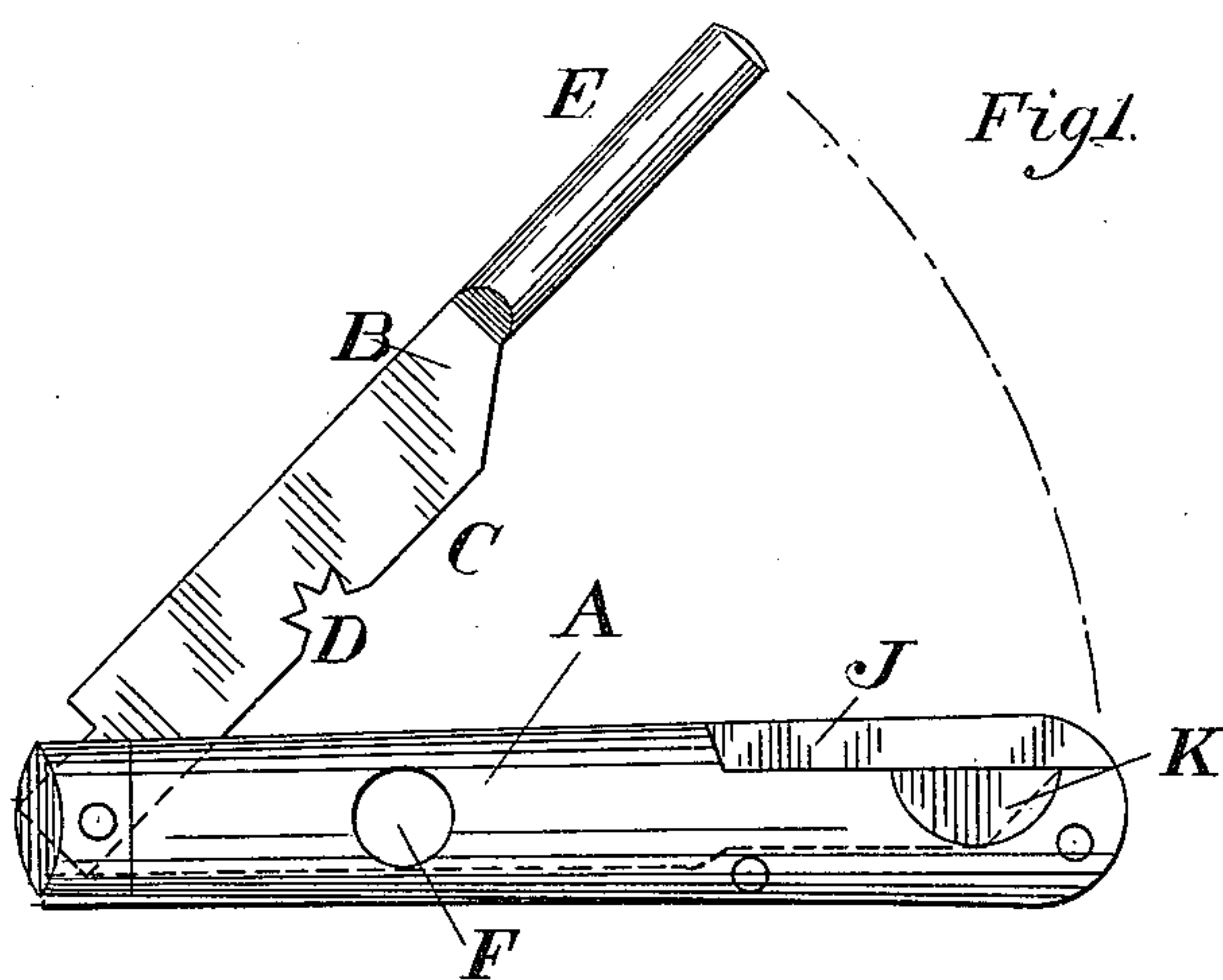
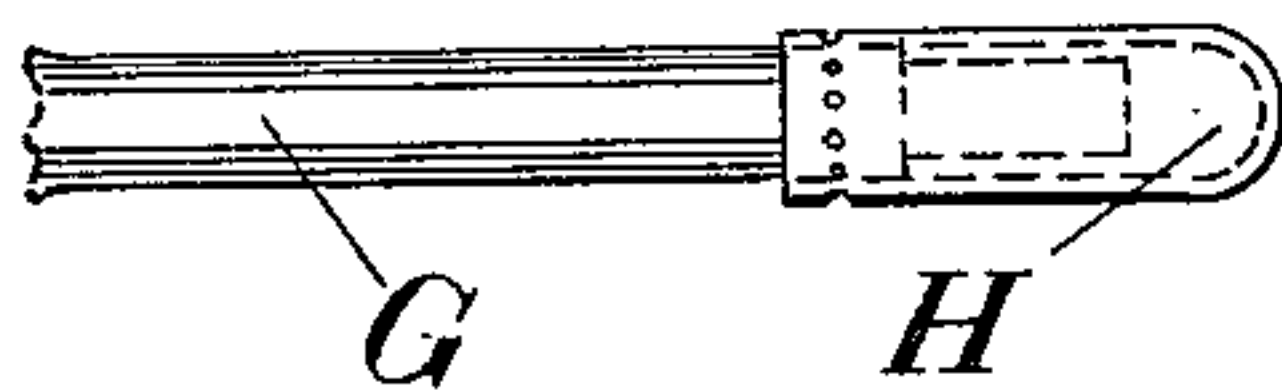


Fig. 2.



Witnesses

*H. B. Keeler*  
*Almy S. S. S.*

Inventor

*Daniel Whitburn*

By

*James L. Norris*

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# UNITED STATES PATENT OFFICE.

DANIEL WHITBURN, OF AUCKLAND, NEW ZEALAND.

COMBINED KNIFE, CLENCH, AND PUNCH FOR USE IN BLASTING OPERATIONS.

SPECIFICATION forming part of Letters Patent No. 639,121, dated December 12, 1899.

Application filed March 14, 1899. Serial No. 709,048. (No model.)

*To all whom it may concern:*

Be it known that I, DANIEL WHITBURN, miner, a subject of Her Majesty the Queen of the United Kingdom of Great Britain and Ireland, and a resident of the city of Auckland, in the provincial district of Auckland and Colony of New Zealand, have invented a new and useful Combined Knife, Clench, and Punch for use in Blasting Operations, of which the following is a specification.

This combined knife, clench, and punch is intended for use in mining operations; and it consists of a pocket-knife handle with a hole bored therethrough carrying a blade with its inner end having a sharp edge, a portion of which is cut out toothed shape or milled and its outer end formed with an extension punch shaped.

The accompanying drawings show two figures, of which Figure 1 is a side view of the combined parts, disclosing the blade partly lifted or open; and Fig. 2, a view of a part of a piece of fuse with a detonating-cap clenched thereto.

The parts are: A, handle; B, blade; C, cutting edge of blade B; D, cut-out or notched part of edge C; E, punch end of blade B; F, hole bored through handle A; G, fuse; H, detonating-cap fitted to fuse G; J, recess for punch E to rest in, and K incision beneath recess to fit finger when lifting punch E.

This invention comprises a knife-handle A and a blade B, pivotally fitted thereto, so that it will fold into it. The blade B is differently shaped to the ordinary knife-blade, having a notched circular piece cut out of the part of its edge C at D, next to the tang, about an eighth of an inch upward, or more or less, if required. The blade B going outward from this part retains its sharp edge C for about half its length, and the remainder and outer length of the blade B is thickened and rounded into the shape of a punch E. With this construction the round extended portion E of the blade not only forms a punch, but it also serves as a supplemental handle portion for the blade B, that can be readily grasped with one hand while the handle proper, A, is held by the other hand. Thus the combined force of both hands can be employed with this implement to perform work with the cutting edge C of the blade B, and this I consider to be a

very important and desirable feature of the invention.

So far as I am aware I believe myself to be the first one to provide a blade of the character described having a cutting edge C and rounded extension E, forming a combined punch and supplemental handle portion.

The handle A has a round hole F bored through it, about a quarter of an inch in diameter or larger or smaller, if required, the upper part of which hole F corresponds to the notched circular cut-out part D of the blade B, above referred to, so that when the detonating-cap H on the end of the piece of fuse G of nearly the same thickness as the width of the hole is passed through the hole F and the blade B folded into the recess J of the handle A the notched edge D of the circular cut-out part rests on and over it (the inner end of the cap H) with the result that as the blade B is pressed downward and the cap H turned partly around the fuse G and the detonating-cap H are clenched tightly together. The handle A has an incision K made in one of its outer sides, so that the user can easily, by placing his finger beneath the punch E, open or lift the blade B. This is an alternative method of opening the knife, as the ordinary nail-slit on the blade B may be used as well. The edged part C of the blade B being sharp is used to cut the fuse G, which it will do in the ordinary way. The punch E is used to probe the gelignite or other gelatin explosive cartridge, and it should be fully opened out for the purpose.

The knife may have other blades attached to it, and this combination may take the shape of one, two, or three blades, as thought fit, so that one blade may have a sharp edge throughout, being, in fact, the ordinary blade now in use, and a complete punch may take the place of a third blade. The cut-out piece can be taken from any part of the edge of the blade, (and can be made as well with a milled edge as toothed or notched,) so that the hole in the handle is made to correspond to it; but it will be found to be more effective the closer it is to the tang, and as an alternative the handle can be countersunk to receive the cap and fuse instead of having the hole bored through it. A second hole may be made in the handle opposite to where



the sharp edge of the knife folds in, or the handle may be countersunk, so that the fuse can be cut therein by the pressure of the edge of the blade, or the fuse can be cut by the blade in the same way as by an ordinary knife-blade.

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

10 1. A blasting implement, consisting of the knife-handle A, having the transverse hole F, and the pivoted blade B, formed at one end with an extension E, providing a punch and supplemental handle portion, said blade  
15 being further provided with a sharp cutting edge C, constructed with a notch D, having its edge serrated, substantially as described.

2. The herein-described blasting imple-

ment consisting of the knife-handle A, having the transverse hole F, near one end and the recess or cut-out portion J, at the opposite end, and the pivoted blade B, having a sharpened cutting edge C, formed at its end with a rounded extension providing a punch and supplemental handle portion E, arranged to rest in the recess or cut-out portion in the handle when the blade is closed, said blade being further provided with a notch D, having its edge serrated to form teeth which register with the transverse hole in the handle when the blade is closed, substantially as described.

DANIEL WHITBURN.

Witnesses:

GEORGE WILLIAM BASLEY,  
FRANCIS ERNEST BASLEY.