(No Model.)

W. STOWE & J. UHL.

COMBINATION TOOL.

No. 418,358. Patented Dec. 31, 1889.

Fig. 1.

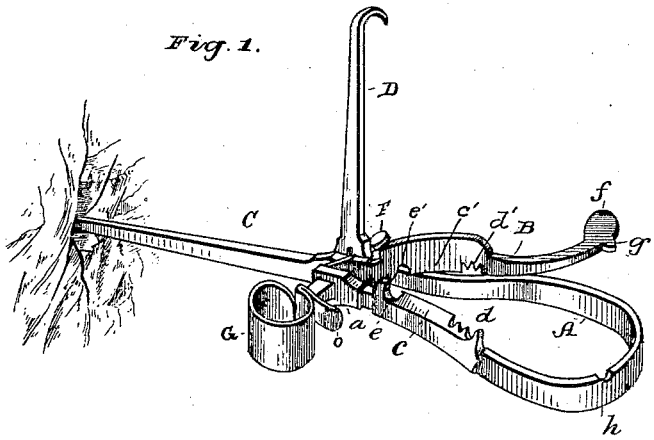


Fig. 2.

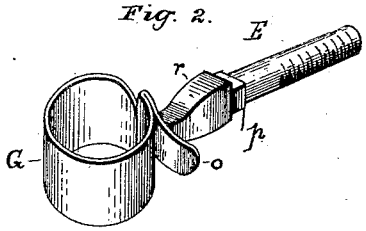


Fig. 3.

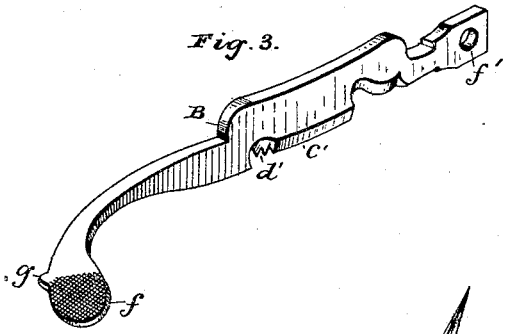


Fig 4.

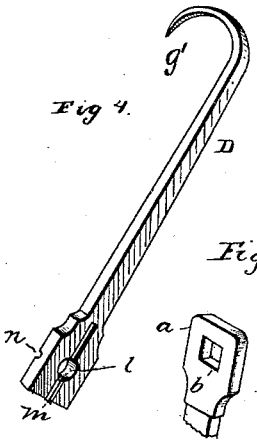


Fig. 8.

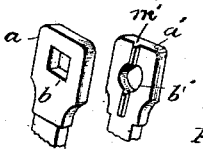


Fig. 6.

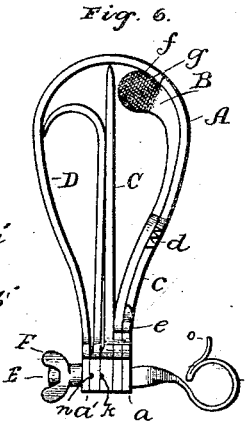


Fig. 5.

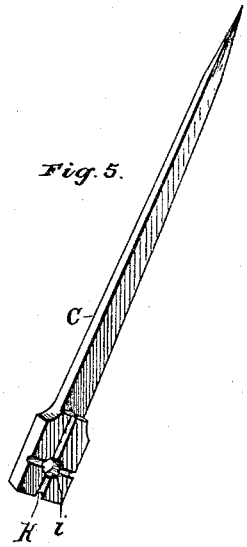
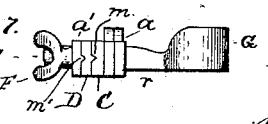


Fig. 7.



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UNITED STATES PATENT OFFICE.

WILLIAM STOWE AND JOSEPH UHL, OF ORO CITY, COLORADO.

COMBINATION-TOOL.

SPECIFICATION forming part of Letters Patent No. 418,358, dated December 31, 1889.

Application filed June 19, 1889. Serial No. 314,837. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM STOWE and JOSEPH UHL, citizens of the United States, residing at Oro City, in the county of Lake and State of Colorado, have invented certain new and useful Improvements in Combination-Tools; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in combination-tools, and more particularly to a combined candlestick, fuse-cutter, cap-setter, and fuse-splitter, for the use of miners; and it has for its object to combine these different tools or articles in a handy form or compass which may be carried about the person without inconvenience and each of the parts or tools readily brought into use as needed; and it consists of the parts and combinations of parts hereinafter described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a perspective view of our improved implement or tool applied to one of its uses; Fig. 2, a perspective detail view showing the candle-holder; Fig. 3, a like view of the cutting-lever; Fig. 4, a like view of the hook for hanging or suspending the tool; Fig. 5, a like view of the spike; Fig. 6, a plan view of the combined tool folded; Fig. 7, an end view of the tool, and Fig. 8 a perspective detail of the ends of the handle.

Similar letters refer to similar parts throughout the several views.

A represents the handle, which may be made of a strip or narrow bar of any desired metal having elastic properties—such as steel—which may be bent so as to retain the shape shown—that is, rounded and larger at the rear end than at the front. The end *a* of the handle is formed with a square opening or perforation *b* through it, and the end *a'* with a projecting ridge *m'* on one side and a round opening or perforation *b'* corresponding to the opening *b*. The ends of the handle, normally, stand at a slight distance apart; but, owing to the elasticity of the metal of which the handle is formed, they may be sprung apart sufficiently to receive and hold the tools which are to be placed and secured between them, as will be described. One side of the handle, in rear of its end *a*, is slightly wider than the other, and formed into a shear edge *c*, and at one end of said shear edge two or more teeth *d* are formed, and at the other end a semicircular notch or cutting-recess *e* is formed.

B represents a lever, the handle or free end of which curves laterally to conform to the shape of the handle A, as clearly shown in Figs. 3 and 6, and terminates in a flat thumb-piece *f*, from one side of which extends a projection *g*, which is adapted, when the lever is closed, to fit in a notch or recess *h* formed in the edge of the handle A, to prevent the farther downward movement of the lever.

The lever B is formed widest in rear of its end to correspond to the handle A, and at this point is formed the shear edge *c'*, the teeth *d'*, and the semicircular notch or cutting-recess *e'*, corresponding in size and shape to the like parts formed on the handle. The square end of the lever is formed with a circular opening or perforation *f'*, and in size and shape corresponds to the end *a* of the handle against which it works.

C represents a spike, which tapers to a sharp point at one end and its opposite end having a circular perforation *i* therethrough, and on one side grooves *k* are formed, which intersect each other and the perforation, as clearly shown in Fig. 5.

D represents a tapering rod having its free end bent to form a hook *g'* and its other end having a round perforation *l* therethrough and a narrow ridge *m*, extending lengthwise of the end on one side and crossing the perforation, and grooves *n*, similar to grooves *k*, intersecting each other and the perforation on the opposite side of the end.

The lever B, spike C, and rod D are to be inserted sidewise between the ends of the handles A, with their respective perforations arranged in line or to correspond with each other, so that the ridges *m m'* will enter the grooves *k* and *n*, as clearly shown in Fig. 7, and the free ends of said parts lie within the handle A, as shown in Fig. 6. Owing to the quality of the metal of which the handle is made, the different parts will be securely held in position until the screw-rod E of the candle-holder is inserted in the perforations and the thumb-nut F run thereon. The can-

dle-holder is formed of a flat piece G of spring metal bent to form a ring of slightly less diameter than the candle to be used, and the end of the flat piece G is bent backwardly and curved slightly outwardly to form a thumb-piece *o*, whereby the ring may be forced open in order to receive the candle. The candle-holder is formed in one piece with the screw-rod E, and is bent at right angles thereto. A square shoulder *p* is formed at the end of the round part of the screw-rod, which is slightly smaller than the square portion *r* of the screw-rod.

In order to put the parts together, the lever, spike, and rod are first placed between the ends of the handle with their respective openings in line, the screw-rod is inserted through the square opening *b*, and the thumb-nut F run on the screw-rod, when the tool may be carried in the pocket.

To prepare what is technically known as a "shot," the fuse is measured off the desired length and the lever raised, as shown in Fig. 1, and the fuse inserted in the recess *e*. Then the lever is forced downward, cutting or severing the fuse the desired length. The cap is then placed on one end of the fuse and placed between the teeth *d d'*, and with a slight pressure on the lever the cap is dented into the fuse; and to prepare the fuse for ignition the end of the fuse is laid lengthwise between the shear edges *c c'* and the lever brought down in order to split the fuse. As shown in Fig. 1, the spike C is forced or driven into the wall of the mine, either into a crank or crevice in the rock or stone forming the same, or it may be into the timber supports, in such a position as to hold the candle upright or at any desired angle; or should the wall be so solid that no timber is used and the spike cannot penetrate the wall the candle may be supported by catching the hook over any projection from the wall or in a niche therein.

The spike or hook may be readily brought into use by simply loosening the thumb-screw, when, owing to the elasticity of the metal of the handle permitting the ends to be forced apart, the hook or spike may be easily turned on the screw-rod, and when turned to a position at right angles to the handle the ridges on the ends of the part next to the spike or hook, whichever is being turned, will enter the grooves and hold the part turned firmly. The thumb-screw, being then tightened, will fasten the part rigidly in place. The square shoulder *p*, entering the square opening *b*, prevents the candle-holder turning during the time the screw-rod is loose or being loosened. Thus it will be observed that this device provides the miner with a candle-holder adapted to hold candles of varying size firmly, and which may be readily held or supported in any desired position, and with a cap-setter, fuse-cutter, and fuse-splitter all combined in a handy compass, convenient to be carried about the person, and which may always be depended upon to do the work for which it is intended. As the parts are separable, should one break, its duplicate may be readily substituted, and should any part need repair it may be readily detached for the purpose.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The hereinbefore-described combination-tool, comprising the handle having one end formed with a square opening and the shear edge, teeth and cutting-recess formed thereon, the candle-holder having the screw-rod provided with the square shoulder, the spike pivotally secured to said screw-rod, the thumb-screw, the rod having a hook at one end pivotally secured to said screw-rod, and the lever having a shear edge, teeth, and a cutting-recess pivotally mounted on said screw-rod, substantially as described.

2. The combination of the handle having a shear edge, a cutting-recess, and the teeth formed thereon, the screw-rod having an adjustable candle-holder formed on one end, the thumb-screw, the lever pivotally mounted on said screw-rod and having the shear edge, the teeth, and the cutting-recess, said lever being adapted to fit within said handle, the spike having the grooves formed on one side at the end, and the rod having the ridge on one side and the grooves on the opposite side at the end, substantially as described.

3. In a combination-tool, the combination, with a handle having a square opening in one end and a round opening in the other, of the screw-rod having a square shoulder and an adjustable candle-holder formed on said rod, and a thumb-nut, substantially as described.

4. In a combination-tool, the combination, with a handle having the notch *h*, a shear edge, teeth, and a cutting-recess formed thereon, and a square opening in one end and a round opening in the other, and the ridge on one side of the last-named end, the screw-rod having a square shoulder, and an adjustable candle-holder provided with thumb-piece formed thereon, and the thumb-nut, of the lever having the projection *g*, the shear edge, the teeth, and cutting-recess, the spike having the intersecting grooves on one side of its end, the rod having the hook on one end and the ridge on one side, and the intersecting grooves on the other side of its end, the lever, spike, and rod being pivotally mounted on said screw-rod, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM STOWE.
JOSEPH UHL.

Witnesses:
PETER RANEKE,
FRANK DOUGAN.