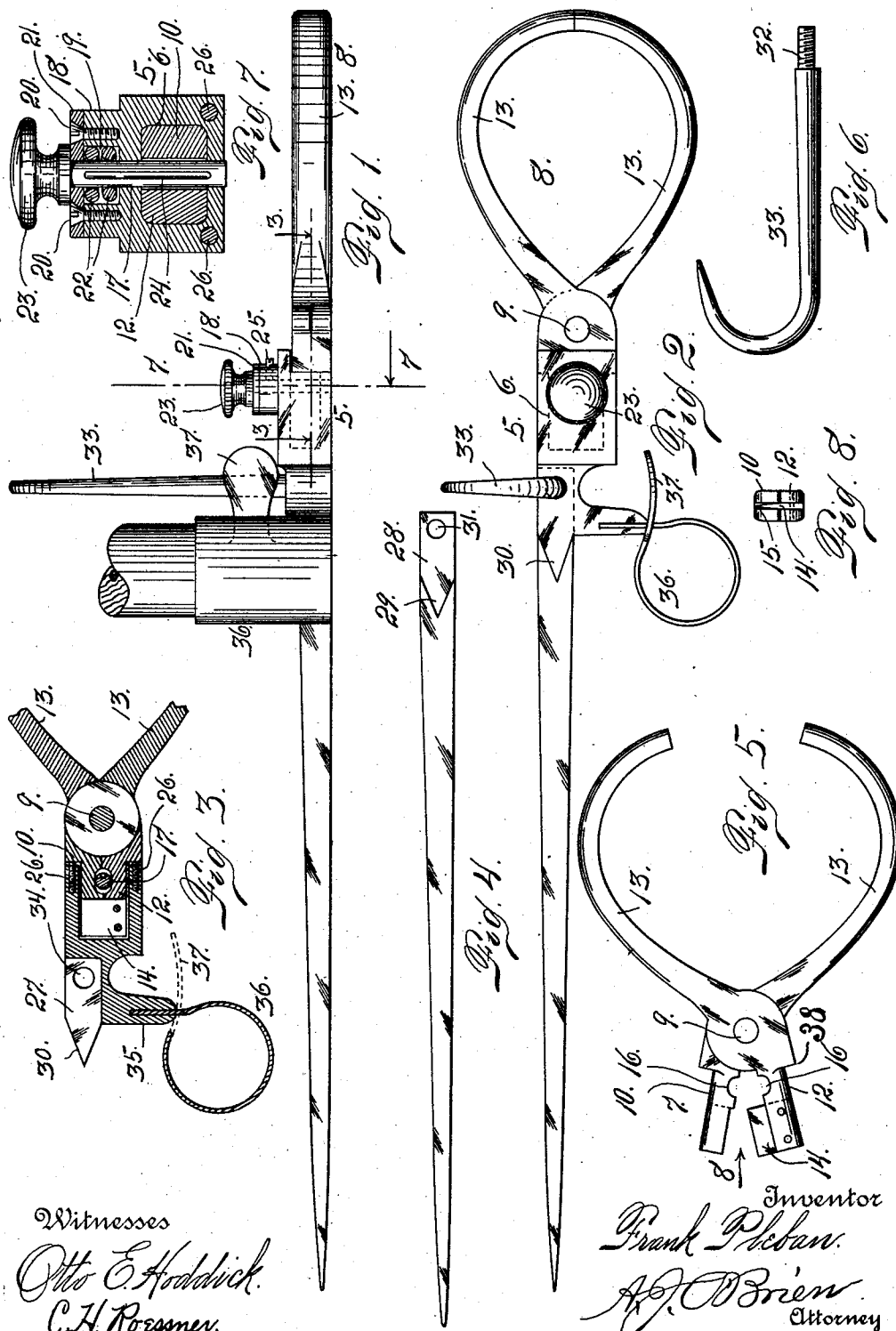


F. PLEBAN.
MINER'S CANDLESTICK.
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MINER'S CANDLESTICK.

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To all whom it may concern:

Be it known that I, FRANK PLEBAN, a citizen of the United States of America, residing in the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Miners' Candlesticks; and I 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, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in miners' candlesticks and while this title indicates the general use of the device, my improved instrument embodies other features whereby I have combined in the same tool means not only for holding the candle used by miners, but also means for cutting the fuse to the proper length, splitting the fuse in order to make it practicable to light the split end and also for crimping the cap upon the fuse. The cap crimping and fuse cutting device constitutes the handle of the candlestick when the parts are assembled. This handle member, however, is readily detachable, whereby it may be employed for fuse cutting and cap crimping purposes.

Another novel feature of my improved instrument consists in employing the hook of the device for connecting the pointed shank with the body of the instrument, the said hook having a threaded portion which enters registering openings formed in the shank and the body portion.

My improved device therefore consists of four members readily detachable.

Having briefly outlined the invention, I will proceed to describe the same in detail, reference being made to the accompanying drawing, in which is illustrated an embodiment thereof.

In this drawing: Figure 1 is a side elevation of the instrument, the same being assembled ready for use and showing the candle in place. Fig. 2 is a top plan view of the same, the candle, however, being removed. Fig. 3 is a section taken through the device on the line 3—3, Fig. 1. Fig. 4 is a detail view of the pointed shank. Fig. 5 is a detail view of the cap crimping and fuse cutting member of the device which constitutes the handle of the latter when the parts are assembled. Fig. 6 is a detail view

of the hook which connects the shank with the body member. Fig. 7 is a section taken on the line 7—7, Fig. 1, the parts being shown on a larger scale. Fig. 8 is an end view of the fuse cutting and cap crimping device, or a view looking in the direction of arrow 8, Fig. 5, with the jaws in the closed position.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate the body member of my improved instrument, the same having a socket 6 adapted to receive a projection 7 formed on the handle 8 of the device. The parts 7 and 8 comprise when detached a fuse cutting and cap crimping member composed of two parts pivoted at 9, the said parts terminating at one extremity in jaws 10 and 12, and at their opposite extremities in curved handle members 13. One of these jaws is provided with a blade 14 adapted to enter a groove 15 of counterpart shape formed in the opposite jaw when the two jaws are in the closed position. In the rear of the knife 14 of one jaw and the groove 15 of the other jaw are formed recesses 16 adapted to receive a cap such as is used by miners in exploding the charge of blasting powder deposited in the drill hole formed in the rock. It is necessary that this cap should be secured to the fuse and this feature of my improved instrument is employed for that purpose. One end of the fuse is split by the use of the knife 14 and the other end inserted in the cap, after which the cap is placed between the recessed portions of the two jaws, when the jaws are closed upon the cap, whereby the extremity of the latter is fastened to the end of the fuse.

When the parts are assembled to form a candlestick, the two jaws 10 and 12 are closed, constituting a projection 7 which enters the socket 6 formed in the body member 5, as heretofore explained. This projection is secured in place within the socket by means of a pin 17 which passes through registering openings formed in the body member and the recesses 16 of the projection 7. When the jaws 10 and 12 are closed these two recesses form an opening through which the pin passes. The body member is reinforced at the top as shown at 18 and within this reinforced portion is formed a cavity 19 in which two spring rings 22 are located. These rings are divided and nor-

5 mally the opening therethrough is slightly smaller than the diameter of the pin 17, so that when the pin is inserted these rings will grip the same with sufficient tension to maintain the pin in the desired position of adjustment. The cavity 19 is closed by a cap 21 which is secured by screws 20. The upper extremity of the pin 17 is provided with a knob 23 for convenience of manipulation. The pin is equipped with a longitudinal groove 24 into which a screw 25 projects, the said screw being inserted in the reinforced part 18. This screw prevents the pin from escaping from the body of the device when drawn outwardly, since it can only be drawn a sufficient distance to allow the screw to reach the lower extremity of the groove in the pin.

20 It is preferred to make the body part 5 of brass and in this event, in order to prevent undue wear upon the body of the device where the latter is engaged by the shoulder 38 between the handle member and the projection 7, iron screws or pins 26 are inserted in the body of the device where the latter is engaged by the said shoulder 38. As these wearing pins are of harder material than the brass, they have a tendency to protect the latter and prevent undue wear.

30 The forward extremity of the body portion of the device is provided with a socket 27, adapted to receive a tongue 28 formed on the rear extremity of the pointed shank. At the forward extremity of this tongue, V-shaped grooves 29 are formed, the same being adapted to receive tongues 30 of counterpart shape formed on the body member. The rear extremity of the tongue 28 is provided with an opening 31 adapted to receive the threaded extremity 32 of the hook 33. The opening 31 of the shank registers with openings 34 formed in the body member on opposite sides of the socket 27. The threaded part 32 of the hook engages screw threads formed in the registering openings 31 and 34 of the connected parts of the shank and body member.

50 By virtue of the V-shaped tongue and groove connection between the shank and body member the two parts are connected with great rigidity. The body member has a projection 35 from one side thereof and opposite its connection with the pointed shank. To this projection is secured the candle-holding member 36. This consists of a leaf spring fashioned to conform to the general shape of the candle and having one extremity 37 free whereby the spring may be opened sufficiently to insert the candle, after which it will have the necessary tension to retain the latter securely in place.

65 From the foregoing description the use of my improved device will be readily understood.

When the article is used as the ordinary miner's candlestick, the point of the shank may be thrust into any penetrable article or material for the purpose of supporting the candle in place. Or the hook may be employed for the same purpose, according to circumstances.

70 When it is desired to use the handle member of the device for fuse cutting and cap crimping purposes, the pin 17 is raised sufficiently to release the projection 7 from the socket 6 of the body member. The handle member then constitutes a complete tool in itself, the parts 13 constituting the handle of the tool, whereby the jaws 10 and 12 may be opened and closed. In using this feature of the device a piece of fuse of the proper length is then cut from the line of fuse. One end is then inserted in a cap (not shown), after which the extremity of the cap engaging the fuse is placed between the jaws where recesses 16 are located. The jaws are then closed on the cap, whereby the latter is crimped or pressed tightly against the fuse end, the cap in this manner being made fast to the fuse. The free end of the fuse is then split, in order that it may be lighted for the purpose of exploding the cap and discharging the powder placed within the drill hole for blasting purposes. The handle member may then be connected with the body member, or left separate as may be desired, depending upon the next use to which the instrument is to be put. It is evident that by disconnecting the device, its various parts may be assembled in small compass for transporting purposes.

Having thus described my invention, what I claim is:

1. A miner's candlestick composed of a body member, a handle member, a pointed shank and a hook, the body member having a socket to receive a projection formed on the handle member, means for securing the handle member in place within said socket, the body member also having a socket adapted to receive a tongue formed on the shank member, the hook having a threaded extremity and the shank and body members being provided with threaded registering openings adapted to receive the threaded portion of the hook whereby the parts are assembled, for the purpose set forth.

2. A miner's candlestick comprising a body member, a pointed shank, a handle and a hook, means for connecting the shank and hook with the body member, the latter having a socket and the handle member a projection adapted to enter said socket, a pin carried by the body member and adapted to enter registering openings formed in the body member and the projection of the handle member, the pin being movable within the body member and the latter being equipped with means to prevent the pin

from becoming detached from the body member, substantially as described.

3. A miner's candlestick including a body member having a socket, a handle member having a projection adapted to enter said socket, a pin passing through registering openings formed in the body member and the said projection of the handle member, the pin being movable to permit detaching the handle member, the body member having a cavity carrying spring rings through which the pin passes, the said rings being adapted to grip the pin with sufficient tension to retain it securely in its position of adjustment, substantially as described.

4. A device of the class described comprising a body member composed of rela-

tively soft metal and having a socket, a handle member having a projection adapted to enter said socket, the handle member having a shoulder adapted to engage the body member adjacent to the socket, the body member having pins composed of relatively hard metal, the extremities of the pins being exposed where the shoulder of the handle member engages the body member, for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK PLEBAN.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."