(No Model.)

# C. CAMM.

## MINER'S PICK, &c.

No. 522,966. Patented July 17, 1894.

Fig. 1.

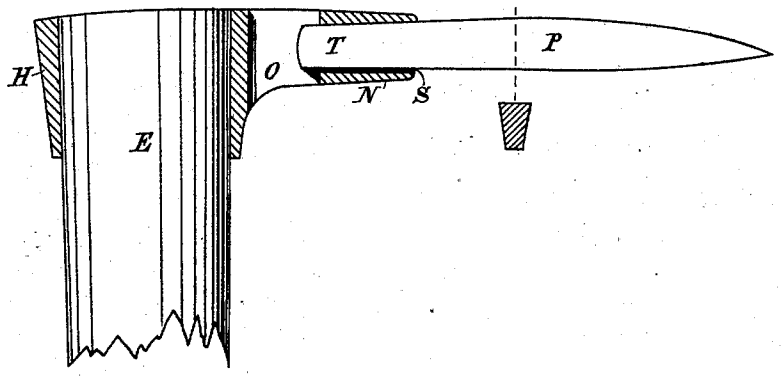



Fig. 2.

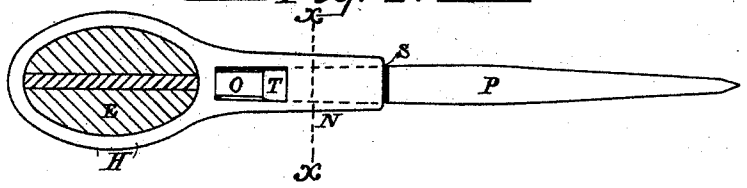
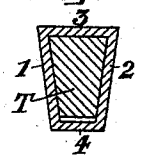



Fig. 3.




Witnesses.
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# UNITED STATES PATENT OFFICE.

CHARLES CAMM, OF SHEFFIELD, ENGLAND.

## MINER'S PICK, &c.

SPECIFICATION forming part of Letters Patent No. 522,966, dated July 17, 1894.

Application filed January 12, 1894. Serial No. 496,659. (No model.) Patented in France July 6, 1893, No. 231,359.

*To all whom it may concern:*

Be it known that I, CHARLES CAMM, a subject of the Queen of Great Britain, and a resident of Sheffield, in the county of York, England, have invented certain new and useful Improvements in Miners' Picks and other Picks having Removable Points and other Tools with Removable Parts; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

My invention was patented in France July 6, 1893, No. 231,359, and relates to improvements in the detachable points or blades of picks and other tools having removable parts or blades, and to the sockets in the head to receive the same, such improved construction rendering them self-fastening and giving them other advantages.

The construction of these improved parts is clearly illustrated in the annexed sheet of drawings which shows the invention as applied to a single end pick for example.

Figure 1, represents the head of a pick, with the socket and point, part being in section; Fig. 2, a plan of head, socket, and point; Fig. 3, an enlarged section of socket and point, on line *x*—*x* of Fig. 2.

In carrying out my invention, the nozzle or nozzles N, of a pick head H, are provided with a cavity or socket S, extending toward the shaft hole or eye E, but not necessarily reaching into it. This socket is made with four sides 1, 2, 3, 4, see Fig. 3, and is of a tapering form both in its length and in its cross-section, and this peculiar form of its cross-section is novel, and in combination with the longitudinal and cross sectional taper of the point P, forms the subject of the invention.

The tang or shank T, of the point or blade P, is of the same configuration as the interior of the socket, so as to fit against the sides 1, 2, 3, Fig. 3, exactly, and this tapered cross section is carried forward the whole length of the blade, preferably, but not of necessity, in all forms of blades or points.

In ordinary miners' picks such form gives the blade a superior cutting power, and a better grip upon the coal or other material for the purpose of detaching it, and permits the blade to clear itself from the coal or other material with greater ease.

I am aware that various forms of shanks of removable points of picks, have been tried for the purpose of obtaining a self-fastening blade and socket, not liable to shake loose; also that set screws, screwed shanks, wedges, hoops and other appliances have been tried from time to time to fasten the blades, but without satisfactorily attaining the desired result.

A perfect fit of a tapered rectangular shank and its socket will hold good for a time, but the slightest variation from a perfect fit on any one side, throws the opposite side also out of bearing, the other two sides then bear all the pressure, and the two loose sides allow the blade to work loose and come out.

Former so called self-fastening blades are defective in the quality claimed for them, the rectangular form is the best of them, but has the serious defect explained, that it is practically impossible to utilize all four sides of the socket. In my invention, I discard one side as valueless for supporting any of the pressure of the shank of the blade, and by means of a wedge or dovetail shape in cross section, I obtain a pressure on three sides of the socket. The mechanical principle underlying the object thus obtained, being that of the three legged stool, and the three legs for lifting shears; Fig. 3, illustrates this, the sides of the socket 1, and 2, being at a slightly acute angle with the side 3, any pressure on the point of the blade (such as caused by using a pick) will force the tapered tang T, against the sides 1, and 2, they being at an acute angle to the side 3, force the blade against that side, and the pressure is divided between the sides 1, 2, 3, and taken away from the side 4.

The side 4, connects and holds the other sides of the socket together to prevent expansion.

The slot or opening O, Figs. 1 and 2 is made for the insertion of a wedge or lever by which the point can be released.

What I therefore claim as my invention, and which is clearly defined from all others,

and which I desire to secure by Letters Patent, is—

1. In combination, the pick having the socket tapered longitudinally inward from its mouth or from the pick point and also tapered in cross section and the removable pick point adapted thereto, substantially as described.

2. A pick or other tool having one or more sockets tapering inwardly from the point of the tool and wedge shaped in cross section, substantially as described.

3. In combination, a removable point for a pick or like tool tapering longitudinally away from the point and tapered in cross section and a pick head having a socket tapered inwardly and of wedge like cross section, substantially as described.

In testimony that I claim the foregoing as my own I have affixed hereto my signature, in presence of two witnesses, this 16th day of December, 1893.

CHARLES CAMM.

Witnesses:
ROBT. F. DRURY,
BERNARD E. DRURY.