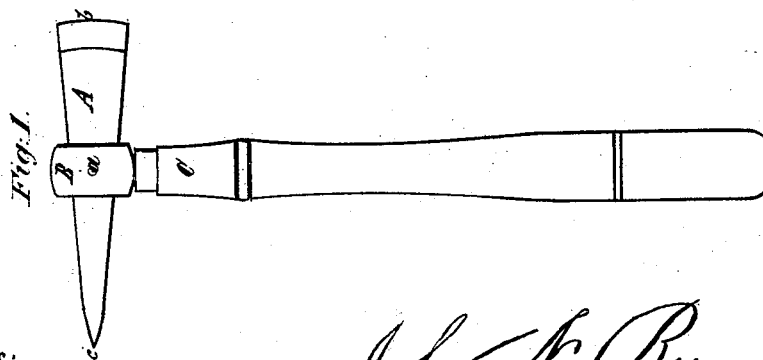
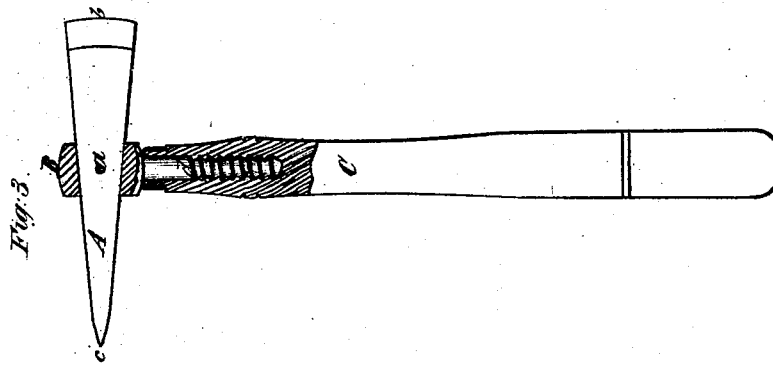
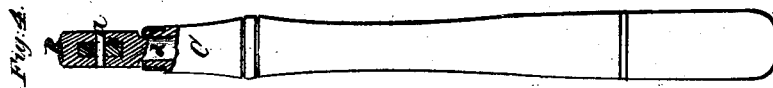


J. N. Bunnell,

Ice Pick & Axe.

No. 109,867.

Patented Dec. 6. 1870.



Witnesses:
Thos. H. Hays
R. H. Hays

John N. Bunnell
per Crown Counsel
Attorney

United States Patent Office.

JOHN N. BUNNELL, OF UNIONVILLE, CONNECTICUT.

Letters Patent No. 109,867, dated December 6, 1870; antedated November 25, 1870.

IMPROVEMENT IN ICE-AXES AND PICKS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, JOHN N. BUNNELL, of Unionville, in the county of Hartford and State of Connecticut, have invented a new and improved Ax and Pick, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing forming part of this specification.

This invention relates to an ax and pick for cutting and breaking up ice, and for other uses; and

It consists in the novel construction of the head or blade, and mode of attaching the same to the handle, whereby a serviceable implement is obtained without forging, and at very small expense.

In the accompanying drawing, which illustrates my invention—

Figure 1 is a side view of an ax and pick;

Figure 2 is a top view of the same;

Figure 3 is a central section taken parallel with the blade; and

Figure 4 is a central section taken at right angles to fig. 3.

Similar letters of reference indicate corresponding parts in the several figures.

A is the blade;

B, the stock; and

C, the handle, into the end of which the stock is secured.

The blade A is made of ordinary steel plate of suitable thickness. The plate is first cut into straight strips of a width equal to the intended length of the blade, and then cut transversely, by shears or other-

wise, in reversely oblique directions, to produce a number of blades.

The simplest way of cutting up the strip will be to feed it obliquely to the shears, turning it over after every cut, so that the broad edge of one blade and the pointed end of another will be alternately cut from the same edge of the strip, and there will be no waste of material. The blade is then ground to an edge at the broad end *b*, and to a point at the other end, *c*.

The stock B is of malleable cast-iron, cast with a screw-threaded shank, *d*, for screwing into the handle, and with a slot in its head of a width and taper corresponding with the thickness and taper of the blade.

The blade A, made of steel plate as before described, is driven into the taper slot in the stock B, and a hole is then drilled transversely through the blade and stock for the reception of a rivet, *a*, by which they are secured firmly together.

The blade A may be hardened and tempered separately, or after having been inserted and riveted into the stock.

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

The ax and pick, composed of the taper blade A, of steel plate, the slotted and shanked stock B, handle C, and the rivet *a*, constructed as herein described.

JOHN N. BUNNELL.

Witnesses:

FRED. HAYNES,
R. E. RABEAU.