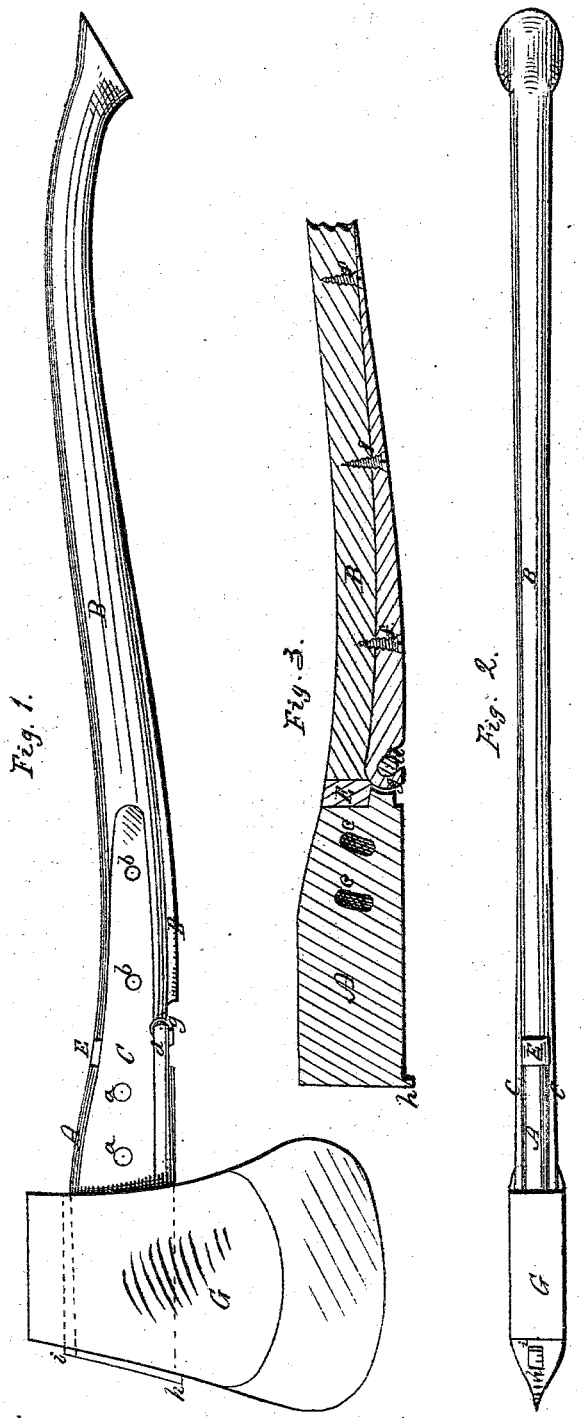
JAMES M. SEARS.

Improvement in Ax-Handles.

No. 115,532. Patented May 30, 1871.



Witnesses,

S. L. Wood

D. J. Brown

James M. Sears,

by his attorney,

J. D. Brown

UNITED STATES PATENT OFFICE.

JAMES M. SEARS, OF VANDALIA, ILLINOIS.

IMPROVEMENT IN AX-HANDLES.

Specification forming part of Letters Patent No. 115,532, dated May 30, 1871.

To all whom it may concern:

Be it known that I, JAMES M. SEARS, of Vandalia, in the county of Fayette and State of Illinois, have invented an Improved Ax-Handle and Mode of Fastening the same to the Ax; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing making a part of this specification—

Figure 1 being a side view of my improved ax-handle fastened in an ax; Fig. 2, a top view of the same; Fig. 3, a longitudinal vertical section of the ax-handle.

Like letters designate corresponding parts in all of the figures.

The main feature of my invention consists in giving an elastic flexibility to the ax-handle by means of a joint and elastic resistance to its bending, the extent of flexibility being only just sufficient to produce the elastic effect, for the purpose herein set forth. My invention further consists in the compound construction of the ax-handle with metal and wood, and in the mode of attaching the same to the ax, both as herein described.

The handle is composed of two principal parts, namely, the tenon-portion A, which enters the eye of the ax, and the portion B, to be grasped by the hands, and forming the greater part of the length of the handle. The part A is properly made of iron, and the part B of wood. These two main parts are connected at the sides by two straps, C C, of steel, so that they may be strong and firm and still be sufficiently thin and slender not to make the handle heavy and thick. The iron part A projects from the ax to a sufficient extent to give the requisite length of bearing between the steel side straps C C, and it is secured therein by two or more rivets or bolts, A A. The straps extend far enough along the sides of the wooden part B to give firmness and strength to the connection, and they are secured thereto by two or more rivets or bolts, *b b*. The iron part A is movable transversely between the straps C C, to a small extent, by having the holes *c c*, Fig. 3, therein, through which the bolts or rivets *a a* pass, slightly oblong or slot-shaped, as represented, to allow a limited flexibility to the joints between the parts A B.

The movable or flexible joint between the said parts is preferably produced by means of a loop or eye, *d*, extending backward from the lower edge of the part A, and of a strap-hook, D, made of iron or steel, the shank of which is let into the lower edge of the part B and secured thereto by screws or rivets *f f f*.

The hook portion *g* fits into the loop or eye *d*, as shown in Fig. 3, and forms the pivot of the joint, and gives strength thereto.

The length of the slots or holes *c c*, which are formed concentric with the hook-pivot, is sufficient to allow the requisite flexible movement to the joint, and no more.

The elasticity of the joint I produce by a block, E, of India rubber, placed in a space or recess between the parts A B, above the pivot-hook D and between the side straps C C, substantially as shown. This elastic block or cushion fulfills important functions. By it all shock and jar upon the hands are entirely prevented, so that the ax is much easier to chop with than with the ordinary handle. It also, by the greater force which choppers are enabled to exert therewith, and by the elastic momentum which it imparts to the blow of the ax, enables them to do more work than with the ordinary wooden handle. It also prevents the splitting and breaking of the handle, so that the same is very much more durable than the common handle. Any practicable equivalent of the India-rubber block may be used instead of it.

The iron part A enables the handle to be firmly secured in the ax G, and at the same time to be easily withdrawn therefrom. For this purpose, laterally, it fits freely but closely in the eye of the ax; but it is made somewhat narrower than the eye, so that a hook projection, *h*, at the extremity of its lower edge, may hold beyond the ax, as shown, and prevent its being drawn out. A metallic wedge, *i*, is driven in over the upper edge of the handle, holding all firmly in place, but easily withdrawn at any time for taking out the handle.

The ends of the straps C C reach forward

nearly to the ax, but do not bear against it so as to prevent the joint movement.

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

1. The elastic, flexible joint in the ax-handle, substantially as and for the purpose herein specified.

2. The elastic, flexible joint formed by the parts A B, straps C C, hook D, loop or eye *d*, and India-rubber block E, arranged substantially as and for the purpose herein specified.

3. The part A, secured to the ax by the projection *h* and wedge *i*, and to the part B or handle proper by the straps C D, substantially as specified.

Specification signed by me this 27th day of March, 1871.

JAMES M. SEARS.

Witnesses:
JOHN BETHARDS,
HEZEKIAH BROWN.