No. 614,747. Patented Nov. 22, 1898.

O. OHLSON.

AX.

(Application filed Feb. 21, 1898.)

(No Model.)

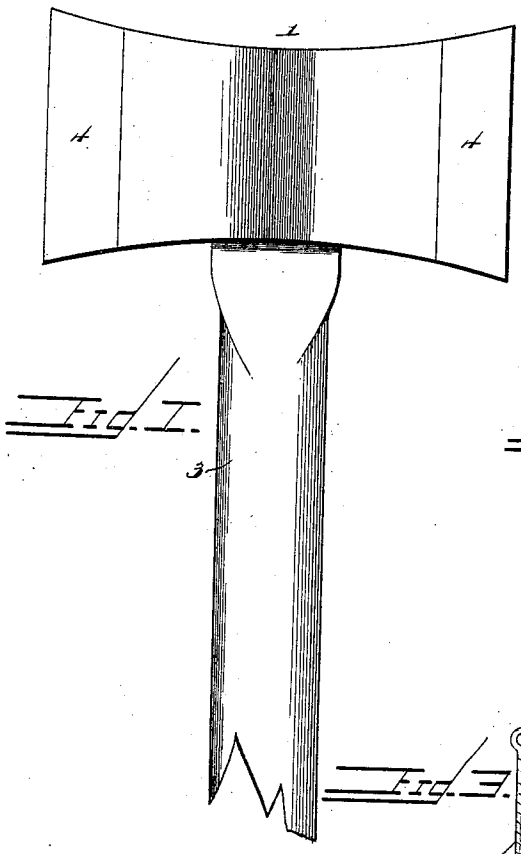


Fig. 1.

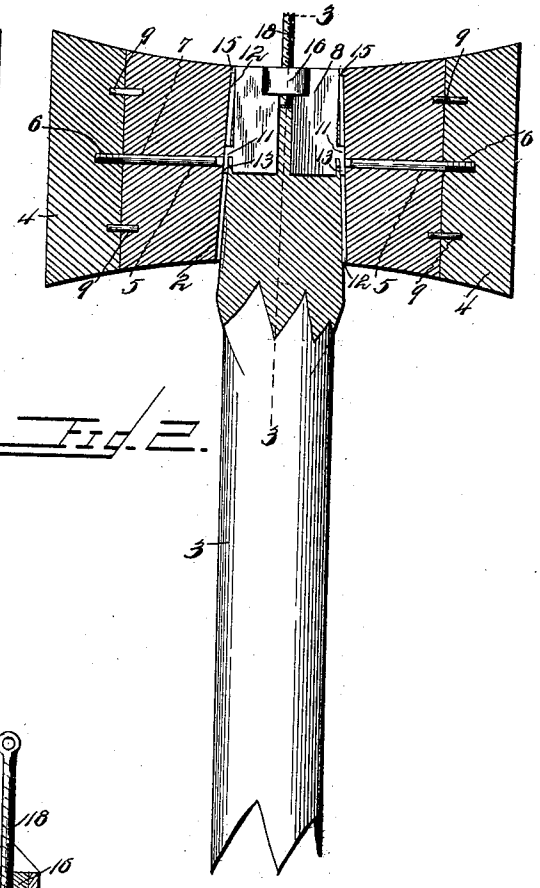


Fig. 2.

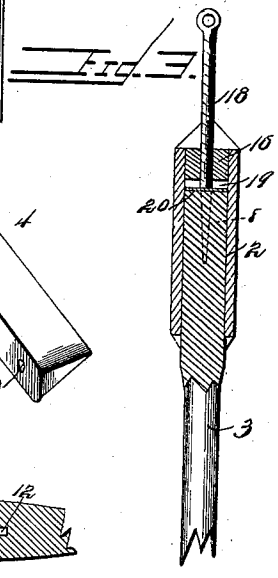


Fig. 3.

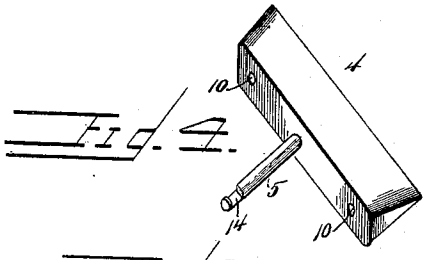


Fig. 4.

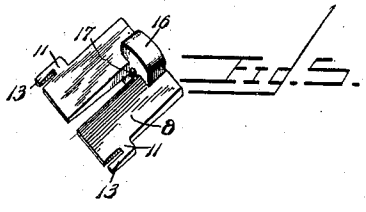


Fig. 5.

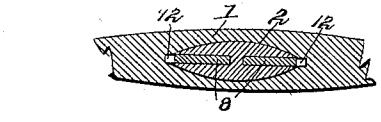


Fig. 6.

Witnesses

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AX.

SPECIFICATION forming part of Letters Patent No. 614,747, dated November 22, 1898.

Application filed February 21, 1898. Serial No. 671,159. (No model.)

To all whom it may concern:

Be it known that I, OLOF OHLSON, a citizen of the United States, residing at Seaside, in the county of Clatsop and State of Oregon, have invented a new and useful Ax, of which the following is a specification.

The invention relates to improvements in axes.

The object of the present invention is to improve the construction of axes, more especially double axes, which are provided at each end of the head with a cutting edge, and to provide a simple, inexpensive, and efficient one in which the cutting edges when worn or broken may be removed and replaced by new ones, thereby obviating the necessity of discarding the whole head or the entire ax.

A further object of the invention is to enable the cutting edges of a double ax to be evenly tempered and to provide a simple device for forcing the handle or helve out of an ax-head or similar tool when the said ax handle or helve has become broken or otherwise injured or when it is desired to remove the same for any other purpose.

The invention consists in the construction and novel combination and arrangement of parts, as hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is an elevation of a portion of an ax constructed in accordance with this invention. Fig. 2 is a sectional view taken longitudinally of the ax head and handle. Fig. 3 is a sectional view on line 3 3 of Fig. 2. Fig. 4 is a detail perspective view of one of the end sections of the ax-head. Fig. 5 is a similar view of the wedge. Fig. 6 is a sectional view of the ax-head, taken transversely of the handle.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates an ax-head having an eye 2 to receive an ax-handle 3 and provided with end sections 4, detachably secured to the body portion of the ax-head and adapted to be removed when worn and replaced by new sections to obviate the necessity of discarding the entire ax-head when the cutting edges become useless.

Another advantage of constructing the end sections separate from the body portion of the ax-head is that they can be tempered separately, and the cutting edges at both ends of an ax may be made of uniform temper, so that one end will be equally as good as the other.

Each end section 4 is provided with a centrally-arranged connecting or anchoring rod or stem 5, threaded at the outer end and screwed in a correspondingly-threaded socket 6 of the end section 4. The stem or rod 5, which is disposed longitudinally of the ax-head, extends through an opening 7 into the eye 2 of the ax-head and is engaged by a wedge 8, which also engages the ax-handle in the usual manner. In order to prevent the end section from turning on its stem or rod 5, the ax-head is provided at its ends with projections or pins 9, located near its upper and lower edges and engaging corresponding sockets of each end section. The sockets 10 and the projections 9 are smooth, and the inner face of the end section 4 fits snugly against the adjacent end of the body portion of the ax-head.

The wedge 8, which is driven into the ax-handle, is provided at its side edges with outwardly-extending lugs 11, arranged in grooves 12 at the front and back of the eye 2, and provided with arms 13, extending inward toward the grip of the ax-handle and engaging notches or recesses 14 of the inner ends of the stems or rods 5. The arms of the lugs lock the rods or stems against outward movement and securely fasten the end sections to the body portion of the ax-head. The grooves which extend longitudinally of the front and back of the eye form guides for the wedge and are closed at their outer ends to form shoulders 15, which limit the outward movement of the wedge. These shoulders may be formed by transverse fastening devices, wedges, or any other suitable means and can be cast integral with the ax-head. The outer portion of the wedge is enlarged at the center at 16 and is provided with a threaded opening 17 to receive the screw 18, and the wedge is slotted or bifurcated below the enlargement to form a passage or opening for the screw. The outer end of the ax-handle is provided with a recess 19, in which is arranged a metal plate 20, adapted to be en-

gaged by the screw, whereby the wedge and the ax-handle may be readily separated. The screw is not employed until it is desired to remove the handle of the ax or detach the end sections. By rotating the screw the wedge is forced outward until the lugs engage the shoulders 15 of the ax-head; but this movement is sufficient to disengage the arms from the stems or rods without affecting the handle of the ax. By continuing the rotation of the screw the wedge is forced against the said shoulders, where it stops, and the ax-handle may then be moved outward away from the wedge and forced entirely out of the eye 2. The wedge and its construction for separating it from the handle are applicable to tools other than axes, as will be readily understood.

The invention has the following advantages: The ax, which is simple and comparatively inexpensive in construction, is adapted when its cutting edges become useless to have the same replaced in order to obviate the necessity of discarding the entire ax-head, and by constructing the end sections of the ax-head separate from the body portion they may be tempered separately, thereby enabling both cutting edges of a double ax to be accurately and evenly tempered. The anchoring or connecting stems or rods are securely and detachably held in the openings of the body portion of the ax-head, and the studs or projections which engage the end sections above and below the rods or stems prevent the said end sections from turning thereon. The wedge may be readily operated to release the end sections and to force the handle out of the eye of the ax-head, and such construction is applicable to various other forms of tools.

Changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

What I claim is—

1. In a device of the class described, the combination of an ax-head, a detachable end section mounted on the ax-head and provided with a cutting edge, a handle fitting in the eye of the ax-head, and a wedge engaging the handle and detachably locking the end section in place, and capable of movement longitudinally of the handle to engage and release the end section, substantially as described.

2. In a device of the class described, the combination of an ax-head, a removable end section, a handle arranged in the eye of the ax-head, a wedge engaging the handle and detachably locking the end section in position, means for limiting the outward movement of the wedge, and a screw mounted on the wedge and engaging the handle whereby the wedge is operated to release the end section, and the handle is forced out of the eye, substantially as described.

3. In a device of the class described, the combination of an ax-head, an end section having a cutting edge and provided with a stem extending through the ax-head into the eye thereof, a handle, and a wedge expanding the handle and engaging the stem of the end section, whereby the latter is detachably secured to the ax-head, substantially as described.

4. In a device of the class described, the combination of an ax-head provided with an eye and having grooves at the front and back thereof, said ax-head being provided at the outer ends of the grooves with stops, end sections having stems extending into the ax-head and terminating at the grooves, and a wedge provided with lugs fitting in the grooves and having arms engaging the stems, substantially as described.

5. In a device of the class described, the combination of an ax-head, an end section removably mounted on the ax-head, a handle, a wedge expanding the handle and detachably securing the end sections to the ax-head, said wedge being provided with a longitudinal slot or bifurcation and having a threaded opening or bore at the outer terminus thereof to receive a screw, whereby the wedge is operated and the ax-handle forced out of the eye, and means for limiting the outward movement of the wedge, substantially as described.

6. In a device of the class described, the combination of an ax-head provided with a longitudinal opening and having studs or projections located at its cutting end, an end section provided with a cutting edge and having a threaded socket at its inner face and smooth sockets to receive the studs or projections, a threaded stem screwing in the said socket and extending into the opening of the ax-head, and a wedge engaging the stem, substantially as described.

7. In a device of the class described, the combination of an ax-head, an end section provided with a stem extending through the ax-head into the eye thereof, a wedge adapted to expand a handle and engaging the stem, said wedge being capable of a limited movement longitudinally of the eye to engage and release the stem, and means mounted on the wedge for forcing the handle out of the eye, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

OLOF OHLSON.

Witnesses:
HENRY B. LOVERIDGE,
F. M. RICHARDSON.