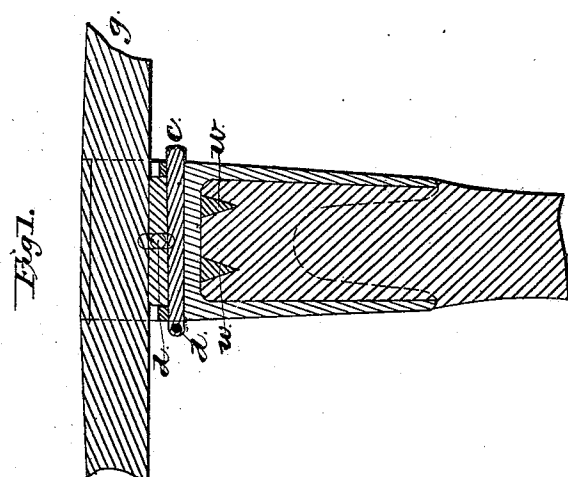
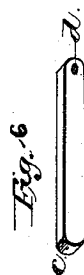
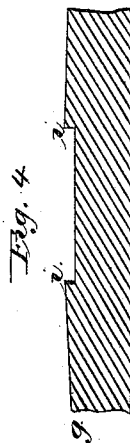
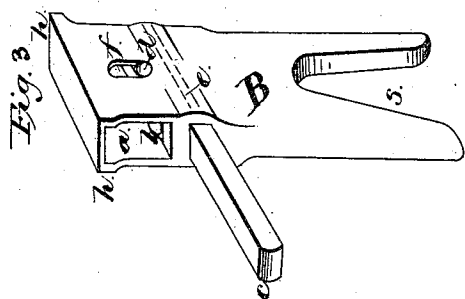
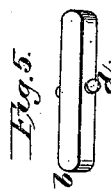
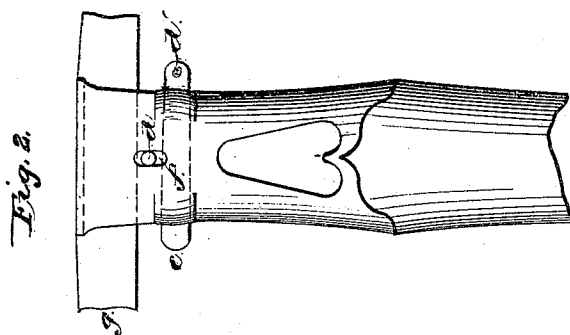


C. A. HARDY & A. E. STAYNER.

TOOL-HANDLE.

No. 179,111.

Patented June 27, 1876.



Witnesses:

W. M. Locke
John Ferguson.

Inventors:

Charles Alwood Hardy.
Augustus Edward Stayner.

UNITED STATES PATENT OFFICE.

CHARLES A. HARDY AND AUGUSTUS E. STAYNER, OF SHEFFIELD, ENGLAND;
SAID STAYNER ASSIGNOR TO SAID HARDY.

IMPROVEMENT IN TOOL-HANDLES.

Specification forming part of Letters Patent No. **179,111**, dated June 27, 1876; application filed March 4, 1876.

To all whom it may concern:

Be it known that we, CHARLES ATWOOD HARDY and AUGUSTUS EDWARD STAYNER, of Sheffield, England, have invented a new and useful Improvement in Tool-Handles, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

The object of our invention is the making of a pick or similar tool detachable from its handle at pleasure, (though firmly held to its handle when so desired,) and whose form shall be so narrow as especially to adapt it for "holing" or undermining.

Figure 1 is a longitudinal section of the socket with the blade inserted and the key driven in place. Fig. 2 is a perspective view of the socket with the handle in position. Fig. 3 represents a metallic socket having chambers for the introduction of the blade-cushion and key, and the handle of the tool. Fig. 4 shows the blade, which has a recess upon its upper surface. Fig. 5 is the cushion, which may be made of copper, soft iron, or any equivalent substance. Fig. 6 is the key, preferably of forged steel, hardened at both ends to prevent battering, and is tapered from end to end.

a is the chamber for the reception of the blade. *d* and *d'* are the pins, which in both key and cushion retain them within the socket. The dotted lines *e* indicate the groove within the socket in each cheek, in which the pin *d'* in the key travels. *f* is a vertical slot in the cheeks, in which the pin *d* in the cushion travels. When desired, these pins can be driven out of the holes containing them, and the key and cushion removed for repairs. As these parts are made to gage, the substitution of new for old or defective ones is easy and

rapid. *ii* are shoulders upon the blade, which engage with upper part of socket B, at *h h*. *S* is the space for the insertion of the handle, and is wider at its upper part, just beneath the keyway, than midway in its length. Room is thus given for the expansion of the handle by the wedges *w w*. These wedges are inserted in the end of the handle before driving it into the socket.

To prepare the tool for use, the blade is inserted in the socket, the upper part of the socket *h h* entering the recess in the blade. Thus a smooth surface is presented, even with the blade. The blade is then fastened by driving in the key *c*, which, being tapered or running upon an inclined plane, as may be preferred, or both, raises the cushion *b*, which presses closely against the under side of the blade.

The office of the cushion is the absorption of the vibration of the blow, preventing it from reaching and loosening the key; also, to furnish a bearing-surface beneath the blade, which shall always be parallel to said blade; also, to keep the key a proper distance from the blade, and thus avoid the jamming which would occur if they were in contact.

We claim as our invention—

1. The socket B for the reception of both handle and pick, provided with slot *f* and groove *e*, substantially as herein specified.
2. The socket B, in combination with blade *g*, cushion *b* provided with pin *d*, and key *c* provided with pin *d'*, substantially as specified.

CHARLES ATWOOD HARDY.
AUGUSTUS EDWARD STAYNER.

Witnesses:

W. MILTON LOCKE,
JOHN FERGUSON.