

(No Model.)

G. HOFFMANN.

SCREW KEY FASTENING FOR TOOL HANDLES.

No. 377,257.

Patented Jan. 31, 1888.

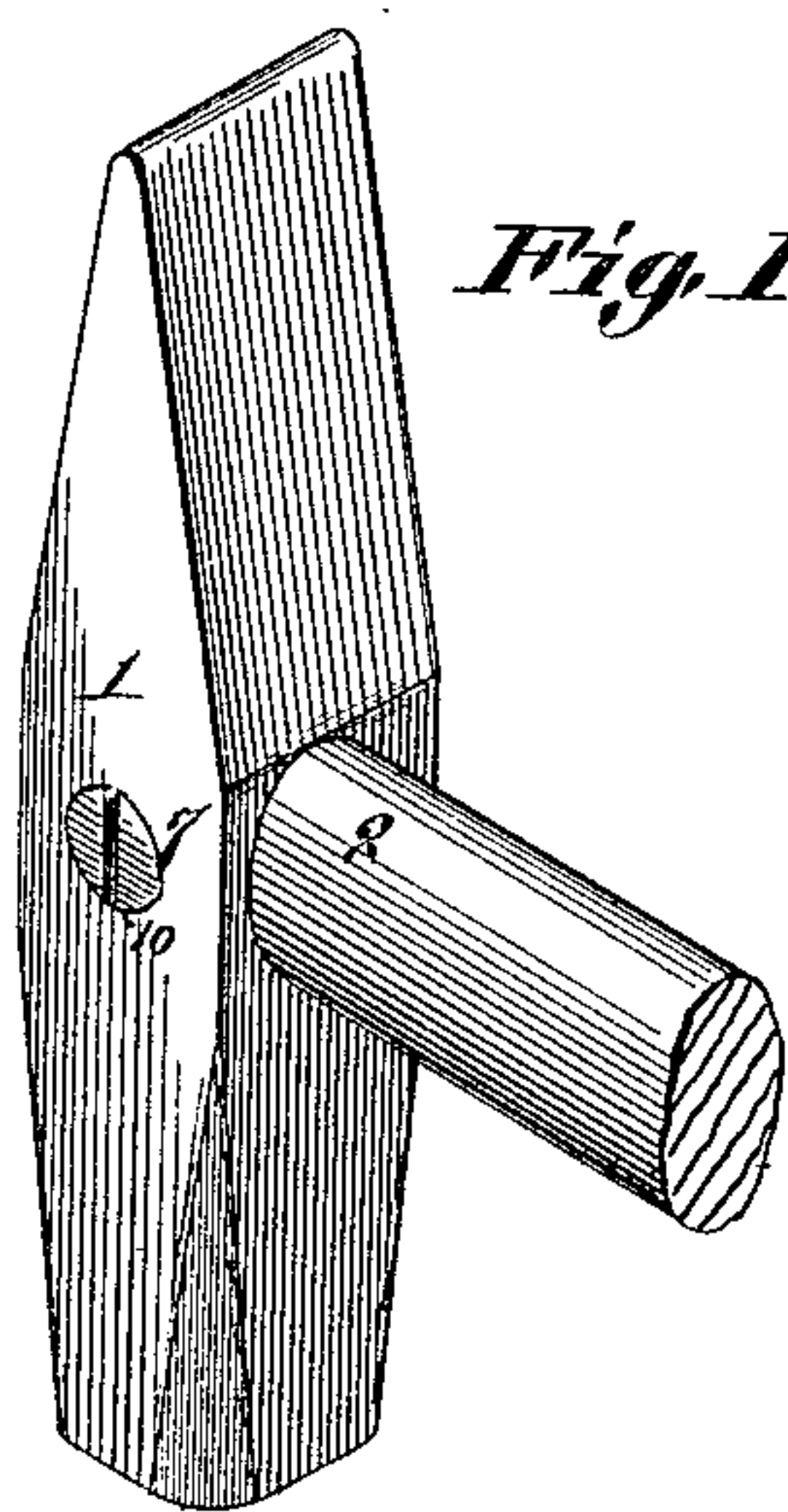


Fig. I.

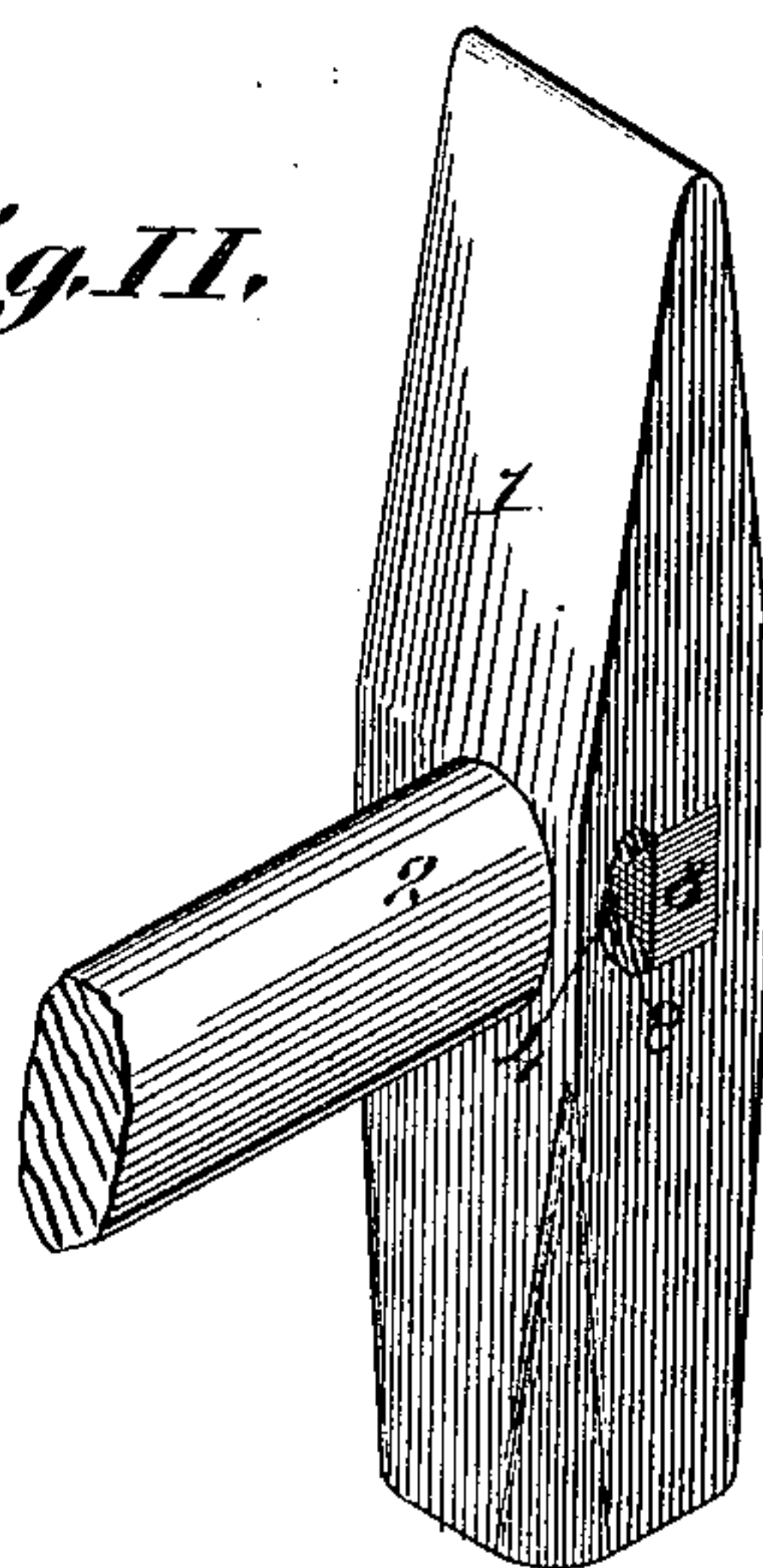


Fig. II.

Fig. III.

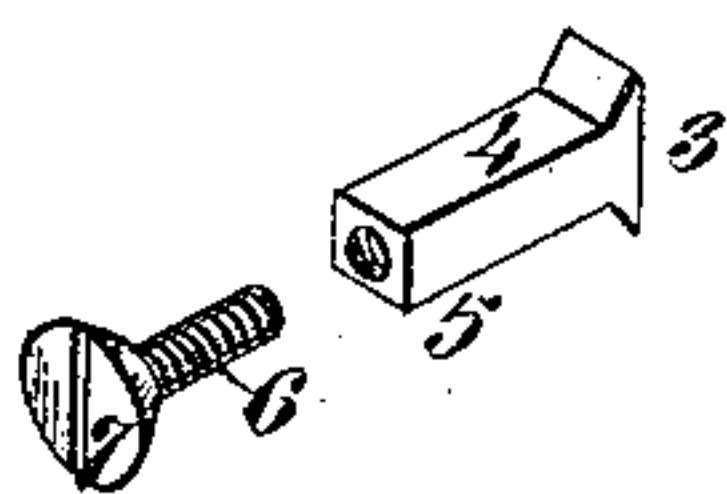
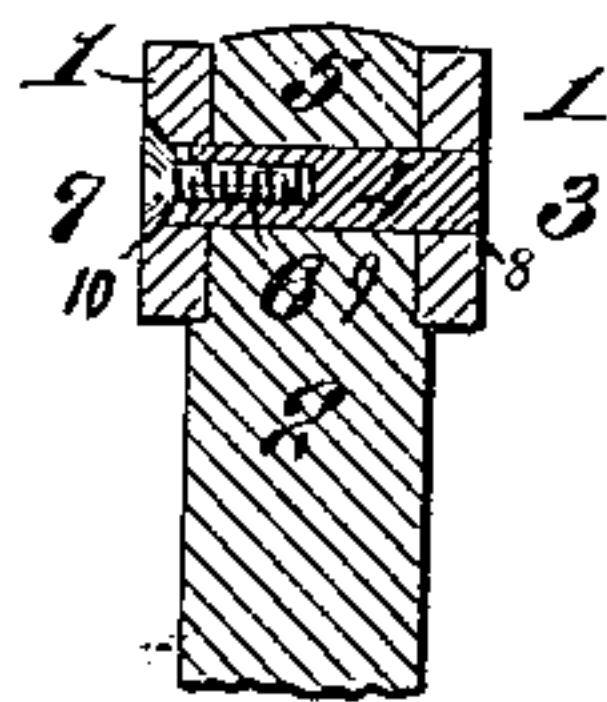


Fig. IV.



Attest;

Charles Pickles

F. A. Hoffmann

Inventor;

Gustavus Hoffmann,

By *Knight Bros.*
attys

UNITED STATES PATENT OFFICE.

GUSTAVUS HOFFMANN, OF LEBANON, ILLINOIS.

SCREW-KEY FASTENING FOR TOOL-HANDLES.

SPECIFICATION forming part of Letters Patent No. 377,257, dated January 31, 1888.

Application filed April 7, 1887. Serial No. 234,031. (No model.)

To all whom it may concern:

Be it known that I, GUSTAVUS HOFFMANN, of Lebanon, in the county of St. Clair and State of Illinois, have invented a certain new and useful Improvement in Screw-Key Fastenings for Tool-Handles, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure I is a perspective view of my fastening as applied to a hammer, showing the side of the hammer-head in which the screw-key engages. Fig. II is a similar view showing the reverse side of the hammer, with part broken away to show the bevel-head of the locking-stem in which the screw-key engages. Fig. III is a perspective view of the screw-key and the lock with its screw-socket, in which the key engages; and Fig. IV is a transverse section through the eye of the hammer, showing the screw-key engaged in the socket of the lock.

It has heretofore been proposed to fasten a tool-head upon its handle by a screw passing transversely through both members and screwing at one end into the head. In such an implement the screw is directly in contact with the handle and is subject to abrasion. It is apt to bend and break when the handle through seasoning becomes loose in its socket. The length of engagement of the screw with the head is inadequate to hold it against any continued strain, and is exposed to the atmosphere, so as to be subject to rust.

My invention has therefore for its object the provision of a means of fastening a tool-head on its handle which will not have these disadvantages; and it consists of a square-sided locking-stem, which alone comes in contact with the handle, which is held from turning and consequent abrasion and accidental detachment, and which has an interior socket for a screw-key, which preferably does not come in contact with the handle at all, so that it will not wear or break. A long engagement of the screw-key in its socket—an impossibility with the old form—prevents the loosening of the screw, and its position entirely within the handle protects it from rust, and therefore the fastening and the head can easily be removed and replaced on the handle at any time—a mat-

ter of great importance, especially with broad-axes, which have frequently to be removed from right to left hand, and vice versa, when hewing logs from both ways.

Referring to the drawings forming part of this specification, and in which similar figures indicate like parts in all the views, 1 represents a hammer-head, and 2 the attachment end of its handle, to which my screw-key fastener is applied.

3 is the rectangular bevel-head, 4 the stem, and 5 the screw-socket, of the locking-stem, in which the thread 6 of the screw-key 7 engages. 8 is the countersink for the bevel-head of the locking-stem; 9, the socket for the stem, extending through from countersink to countersink in the head of the hammer and crosswise of the grain through the handle, and 10 the countersink for the head of the screw-key in the head of the hammer.

My screw-key fastening for tool-handles is designed to overcome the difficulty arising from the loosening of wooden handles in the eyes or sockets of the tools in which they are seated.

I have shown my invention as applied to a hammer, and so describe it; but I do not confine myself to such application, for it can be, and is intended to be, applied to securing handles in any tools in which the handle engages in the eye or socket of the tool, such as hammers and axes of all kinds, hoes, picks, chisels, screw-drivers, &c.

I have made the locking-stem of copper; but it may be made of any other suitable metal. It has a rectangular bevel-shaped head and a square-cornered stem. The bevel-head fits in a countersink on one side of the head of the tool, and the stem passes through from said countersink to that of the screw-key and crosswise through the intervening head of the handle. The screw-key, made preferably of steel, but may be of any other suitable metal, engages in the screw-socket in the stem of the lock, and when turned home therein its bevel-head fits in the countersink prepared for it in the head of the tool. It will thus be seen that by my fastener a locking device is prepared for the securing of handles to tools that passes crosswise of the grain through the wood and crosswise of the withdrawal strain in the use of

the tool contrary to the usual wedges and keys that are seated parallel with the grain of the timber and on the line of withdrawal of the handle. When, as is usual in the attachment
 5 of handles to tools, the wedges and fastenings for said handles have their entrance in the same eye in which the handle engages, and consequently are seated longitudinally parallel with the grain of the handle, as the timber seasons it shrinks away from the wedge or key,
 10 and thereby has a tendency to loosen from the fastenings of the handle in its seat.

To obviate the above difficulty I seat my screw-locking fastener crosswise of the grain
 15 in the handle, so that in the seasoning of the same, instead of the timber shrinking from the key or locking-stem of my device, its socket-seat contracts around it and clamps it more firmly, and the cross-grain has a much firmer
 20 and more enduring hold, which hold, being across the line of withdrawal of the handle, instead of, as is usual, with it, is much more advantageously placed to maintain its hold.

My device is also especially adapted by the
 25 ease with which it can be unfastened and re-fastened for use with tools whose handles have frequently to be changed or reversed—as, for instance, with broad-axes for hewing timber, in which the crooked handle must be removed
 30 and changed around at each change of hewing from right to left, or vice versa.

With the broad-ax I prefer to use two screw-key fastenings, although a single one is more reliable than the usual loose wedges, from
 35 which many accidents have arisen, as the hewer sometimes neglects to sufficiently secure it in its seat, from the difficulty that it entails, if the wedge is driven well home, in the frequent removal and change of the handle.

When the handles are required to be re- 40
 moved or changed with my device, it is very easily effected by simply unscrewing the screw-key and punching the locking-stem out of its seat.

As shown and described, the stem reaches 45
 clear from countersink to countersink in the tool-head, so that it has its bearings both through the wooden head of the handle and the metal head of the tool on both sides of the eye, and consequently the screw-key is shielded 50
 from lateral strain.

The locking-stem and its head and the socket in which it fits are of square or rectangular form, so that together they may command a
 55 firmer hold of both the tool and its handle.

I claim as my invention—

1. In combination with a tool-head having a transverse socket, 9, and countersinks 8 10, a locking-stem adapted to engage in said socket, having a head at one end and a screw- 60
 threaded socket at the other, and a screw-key having a head and adapted to occupy said socket, substantially as and for the purpose set forth.

2. In combination with a tool-head having 65
 a transverse socket, 9, and countersinks 8 10, a locking-stem, 4, having rectangular beveled head 3 and screw-threaded socket 5, and a screw-key, 6, having head 7, and adapted to occupy said socket 5, substantially as and for 70
 the purpose set forth.

GUSTAVUS HOFFMANN.

In presence of—

C. WILLI,

E. DUNAVANT.