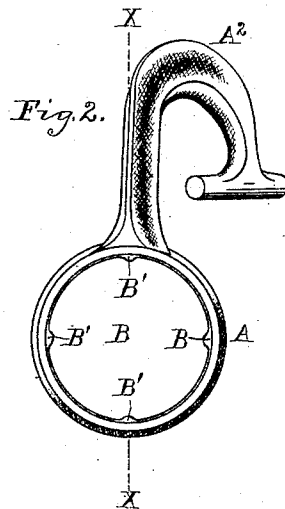
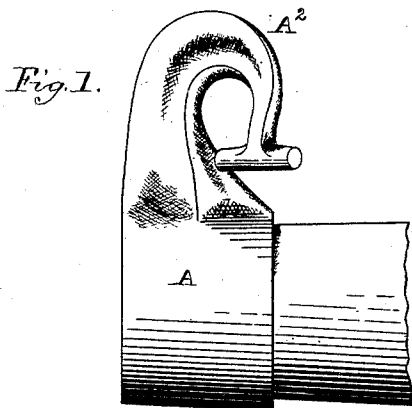
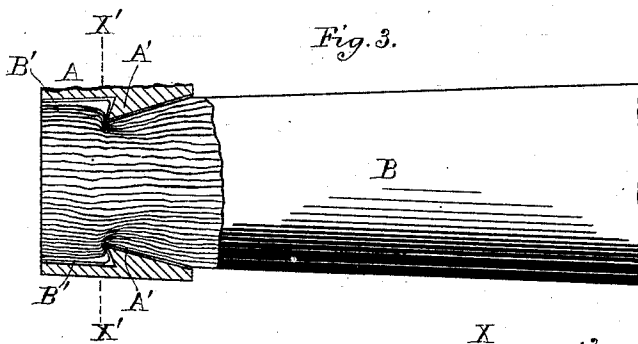
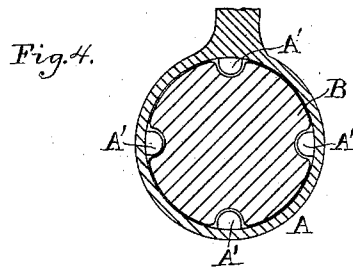


(No Model.)

J. MACPHAIL.
FERRULE.

No. 445,596.

Patented Feb. 3, 1891.



Witnesses:

M. H. Coggeshall.
E. F. Dowling.

Inventor:

James Macphail,
per J. L. Morrison,
Attorney.

UNITED STATES PATENT OFFICE.

JAMES MACPHAIL, OF ROCKFORD, ILLINOIS.

FERRULE.

SPECIFICATION forming part of Letters Patent No. 445,596, dated February 3, 1891.

Application filed November 20, 1889. Serial No. 331,030. (No model.)

To all whom it may concern:

Be it known that I, JAMES MACPHAIL, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented a certain new and useful Improvement in Ferrules, of which the following is a specification.

This invention relates to a means of securing ferrules to singletrees, neck-yokes, and other wooden implements requiring ferrules in their construction.

Referring to the accompanying drawings, which form a part of this specification, Figure 1 is a top view of a ferrule embodying my invention secured to a fragment of a singletree. Fig. 2 is an end view of the same. Fig. 3 is a view of a section through the dotted line X X of Fig. 2 of the ferrule only, the fragment of the singletree not being sectioned. Fig. 4 is a view of a section through the dotted line X' X' of Fig. 3.

Like letters of reference indicate corresponding parts throughout the several views.

A is a ferrule.

A' are semi-conoidal barbs projecting transversely inward from the interior thereof.

A² are singletree-hooks integral with the ferrules A.

The ferrule should preferably taper from the inner to the outer end thereof.

B is an end portion of the singletree. Said ferrule is driven into place on the singletree. The free sides of the barbs A', impinging on, compress the fibers of the wood without breaking them or injuring their elasticity to any considerable extent, thereby producing the longitudinal grooves B' in the singletree B for the passage of said barbs to their destination.

The diminished diameter of the outer end of the ferrule and the elasticity of the compressed fibers of the wood close the grooves B' almost entirely, thereby securing the ferrule so firmly in place on the singletree that it will not come off or wear loose by use.

I claim—

A ferrule having semi-conoidal barbs A' projecting transversely inward from the interior thereof and being provided with a hook located on its exterior, all of said parts being integral, substantially as and for the purpose specified.

JAMES MACPHAIL.

Witnesses:

L. L. MORRISON,
E. F. DOWLING.