W. R. LITTLETON.

HOE-HANDLE.

No. 193,165. Patented July 17, 1877.

Fig. 1.

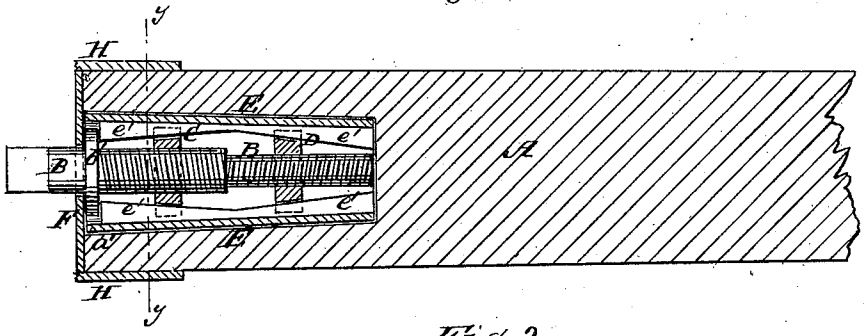


Fig. 2.

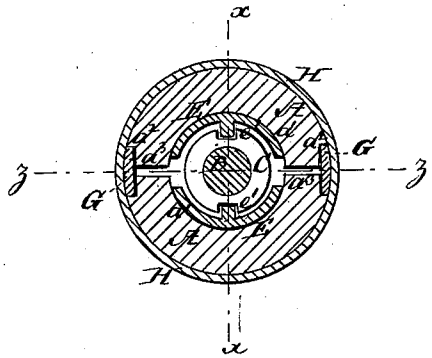
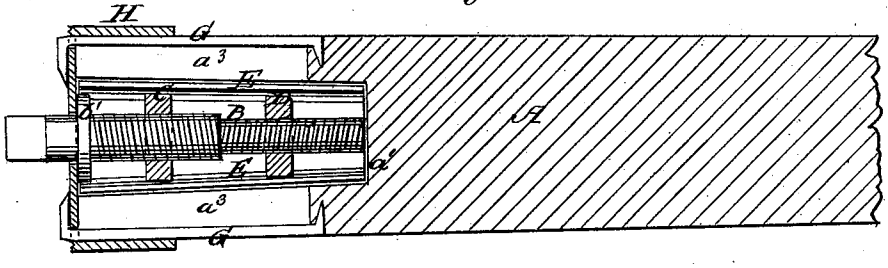


Fig. 3.



WITNESSES:

E. Wolff

J. H. Scarborough.

INVENTOR:

W. R. Littleton.

BY

ATTORNEYS.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM R. LITTLETON, OF VALLEY MILLS, TEXAS.

IMPROVEMENT IN HOE-HANDLES.

Specification forming part of Letters Patent No. **193,165**, dated July 17, 1877; application filed February 17, 1877.

To all whom it may concern:

Be it known that I, WILLIAM R. LITTLETON, of Valley Mills, in the county of Bosque and State of Texas, have invented a new and useful Improvement in Tightener for Hoe-Handles, &c., of which the following is a specification:

Figure 1 is a longitudinal section of the lower part of a hoe-handle, to which my improved tightener has been attached, taken through the line *x x*, Fig. 2. Fig. 2 is a cross-section of the same, taken through the line *y y*, Fig. 1. Fig. 3 is a longitudinal section of the same, taken through the line *z z*, Fig. 2.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved device for tightening handles in the eyes of hoes, axes, &c.; for tightening gudgeons in place, and for various other similar uses, and which shall be simple in construction, easily and quickly operated, and effective and reliable in operation.

The invention will first be described in connection with the drawing, and then pointed out in the claim.

I will describe the device as applied to a hoe-handle; but do not limit myself to that particular application.

A represents a hoe-handle, in the center of the lower end of which is formed a round hole, a^1. In the opposite sides of the lower end of the handle A are formed two longitudinal grooves, a^2, through the centers of which longitudinal slots a^3 are formed, leading into the hole a^1.

B is a screw, the outer half of which has a right-hand screw-thread formed upon it to receive the right-hand nut C. The inner half of the screw B has a left-hand screw-thread formed upon it to receive the left-hand nut D, and is made enough smaller than the outer half to allow the nut C to be slipped over its threads.

The opposite edges of the nuts C D have notches cut in them to receive the flanges e' formed upon the plates E, which are curved to correspond with the circumference of the hole a^1. The flanges e' incline, or increase in height from the center toward each end, and upon their outer ends rests a collar, b', formed upon the screw B in such a position that its outer surface may be flush with the end of the handle A.

Upon the screw B, upon the outer side of the collar b', is placed a disk, F, of the same diameter as the lower end of said handle A, and in the opposite edges of which are formed notches to receive the straps G. The straps G are fitted into the groove a^2, have their outer ends bent inward at right angles to overlap the disk F and keep it in place, and have their inner ends bent inward at right angles to enter the wood and keep the said strap from slipping down. The eye H of the hoe is then placed upon the smaller or upper end of the handle A, and is slipped down to the lower end of the said handle A.

The device is inserted in the handle A with the nuts C D resting against each other at the center or shoulder of the screw B, and at the lowest point of the flanges e'. After the eye or band H has been adjusted in place, the screw B is turned to the right, which causes the nuts C D to move from each other and up the inclines of the flanges e', expanding the lower end of the handle A, and causing it to fit snugly into the eye H.

In the case of gudgeons and other things that require to be centered, as well as held firmly, three or four of the flanged plates E e' may be used, an equal number of slots a^3 being formed in the wood A. In this case, also, the gudgeons may be held from turning by a set-screw.

The screw B may be turned by a wrench applied to its squared outer end.

In the case of hoe-handles and such things the wrench may be carried in a hole in the upper end of the said handles.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The handle A, having hole a^1, grooves a^2, and longitudinal slots a^3, in combination with a collared bolt, B, having thereon two screws of different diameter, and with threads running in different directions, the notched nuts C D, fitting said screws, the plates E, having flanges e', the notched disk F, and the straps G, overlapping said disk, as and for the purpose specified.

W. R. LITTLETON.

Witnesses:
E. P. BOOTH,
J. H. RENTZ.