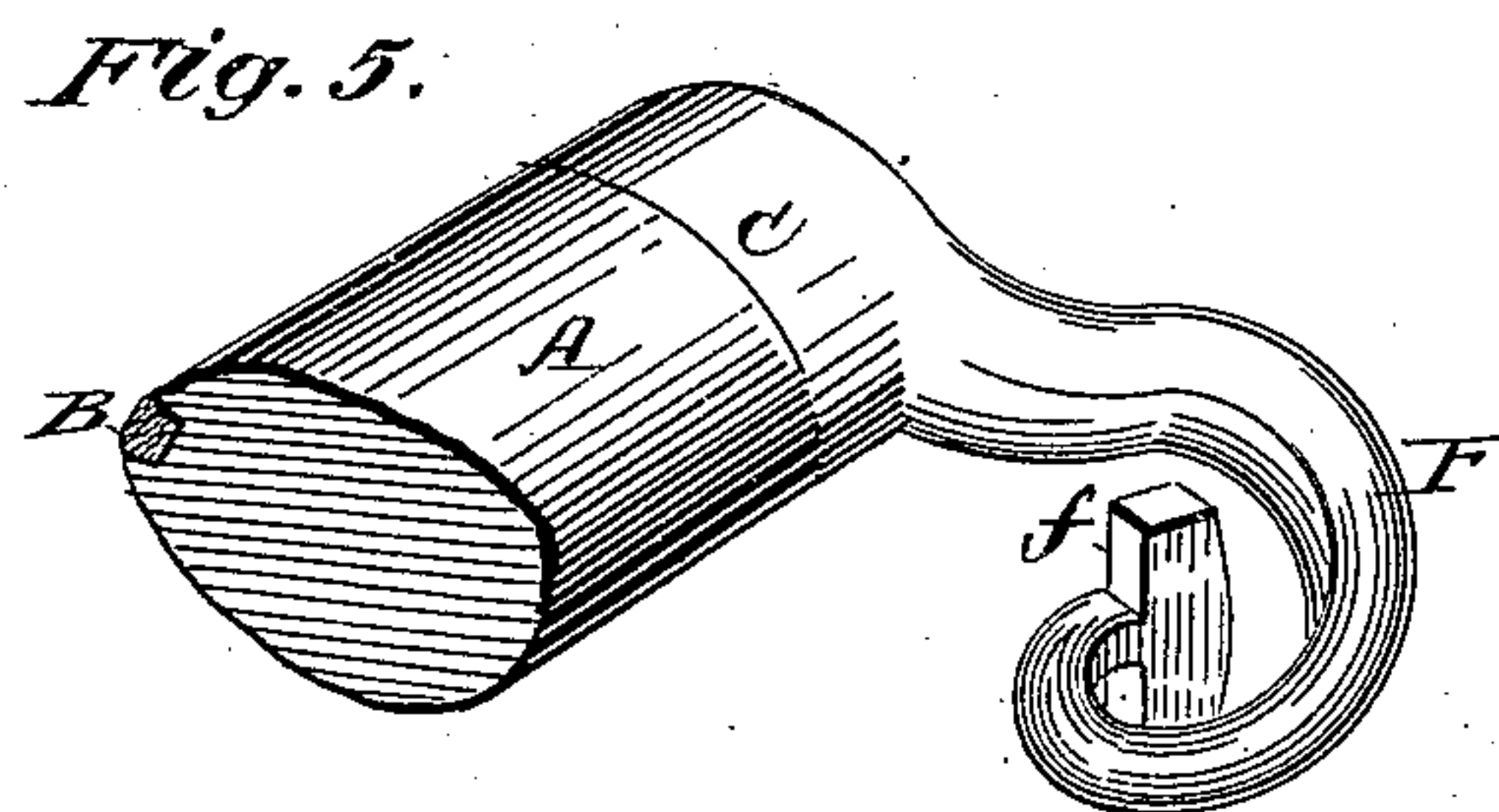
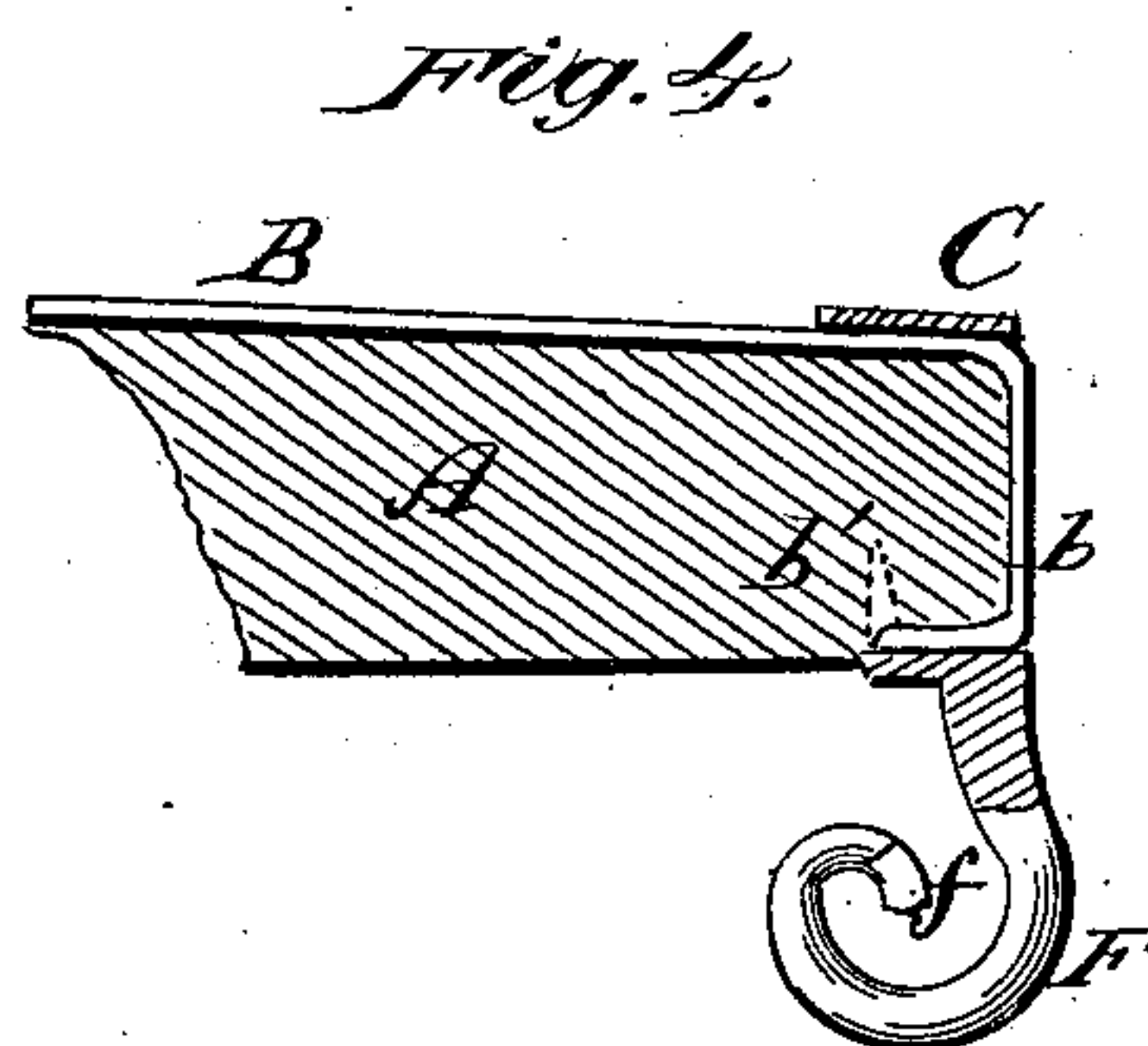
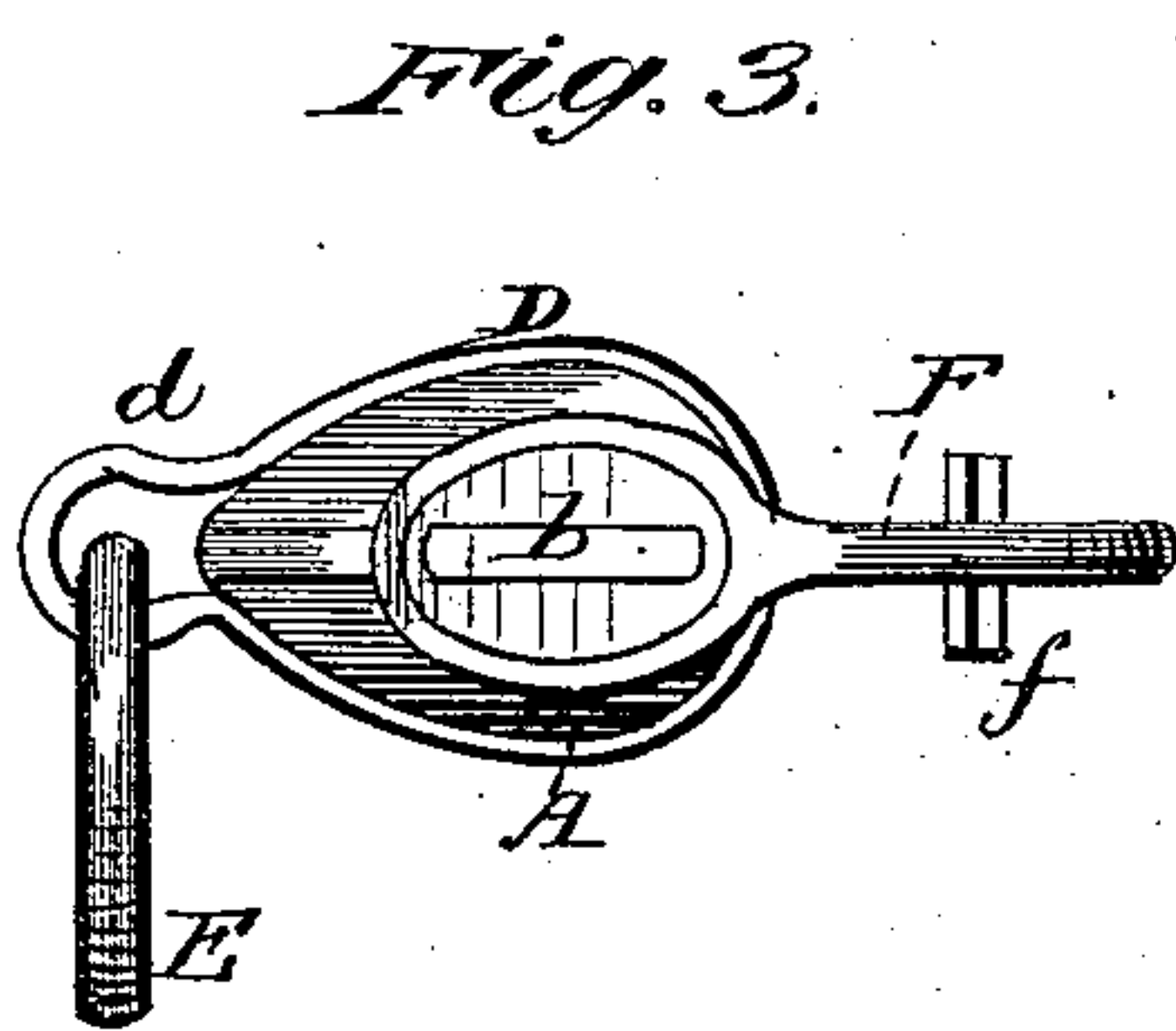
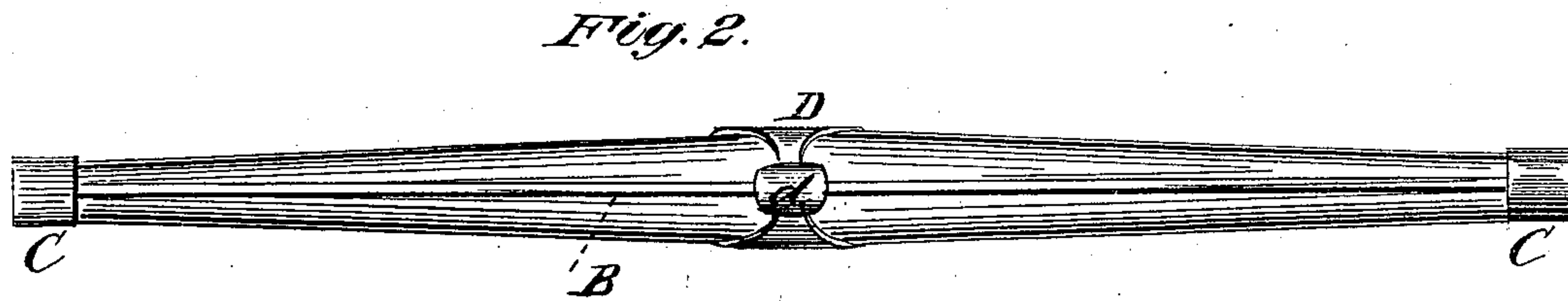
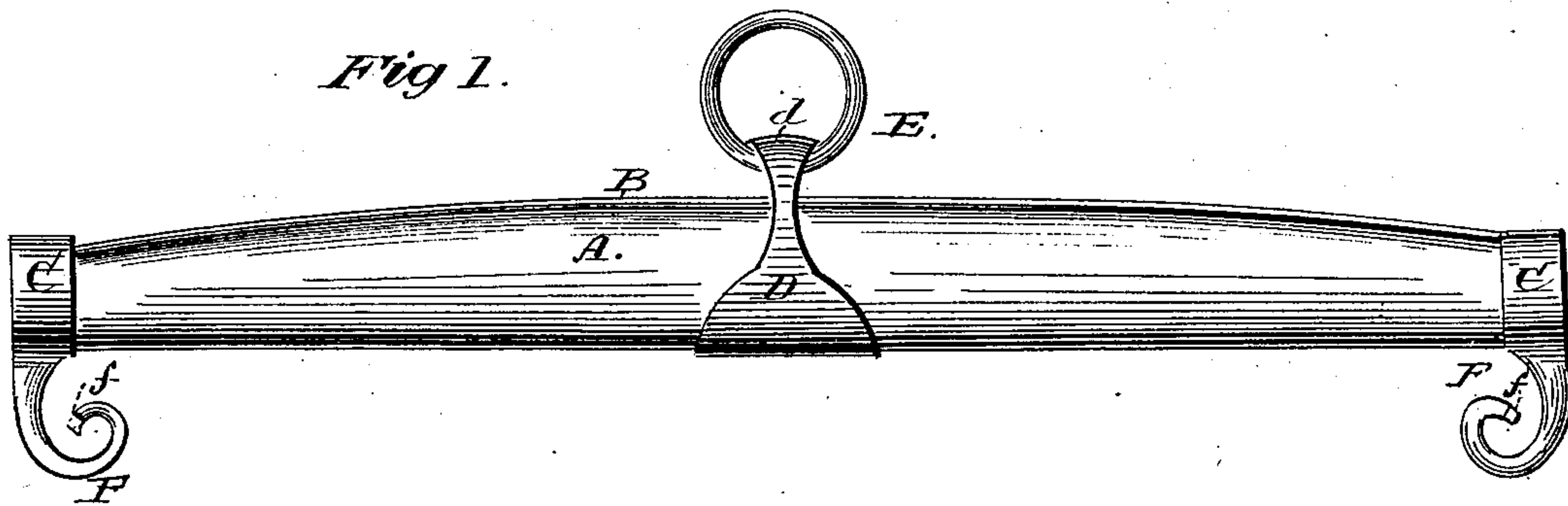


E. WARREN.  
Whiffletree.

No. 226,642.

Patented April 20, 1880.



Witnesses:  
Fred. G. Dietrich  
Isaac L. Newton

Inventor:  
Edward Warren  
by Louis Bagger & Co.  
- Attorneys -

# UNITED STATES PATENT OFFICE.

EDWARD WARREN, OF JACKSON, MICHIGAN.

## WHIFFLETREE.

SPECIFICATION forming part of Letters Patent No. 226,642, dated April 20, 1880.

Application filed September 22, 1879.

*To all whom it may concern:*

Be it known that I, EDWARD WARREN, of Jackson, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Whiffletrees; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a plan or top view of a whiffletree embodying my improvement. Fig. 2 is a rear view of the same. Fig. 3 is an end view. Fig. 4 is a sectional view of one end of the tree, showing the manner of securing the brace rod or strap upon the ends of the tree; and Fig. 5 is a perspective view of the trace-hook or fastening which forms a part of my improved whiffletree.

Similar letters of reference indicate corresponding parts in all the figures.

The object of this invention is to construct a whiffletree (double or single) that shall combine great strength and rigidity with light weight; and it consists, essentially, in the combination, with the tree, of a strengthening rod or brace-strap of greater length than the tree itself, so that it may be secured upon this by doubling the ends of the brace over the ends of the tree, and then clamping the doubled ends of the brace strap or rod upon the tree by the end collars, upon which the trace-hooks are secured, substantially as hereinafter more fully set forth.

In the drawings, A is the whiffletree proper, and B is the brace, which consists of a strap or rod of iron or any other suitable metal, which is placed close up against the curved back of the tree, which may be grooved or recessed longitudinally to receive it.

The projecting ends of the brace B are dou-

bled around each end of the tree, so as to overlap each end a short distance in front, as shown more clearly in Fig. 4 of the drawings, after which the collars C C are forced in over the ends, so as to clamp the curved ends of the brace firmly upon the tree and hold the brace in place without the use of any other fastening devices.

D is the central clip, into which is inserted the ring E for the attachment of the tree to the vehicle. The rearwardly-extending tongue, *d*, of the clip, through which the ring is inserted, is made broad or wide, so as to prevent wearing out or cutting out of the ring.

The end collars, C C, are made with hooks F F, each of which is provided with a T-shaped cross-head, *f*, at its inner end, to prevent the slipping-off of the rings or links at the ends of the traces which are inserted upon the hooks.

If desired, the overlapping ends *b* of the brace B may be turned down to form points, which are sharpened by filing, and will readily penetrate into the wood of the tree when the collar is forced over it, as shown in dotted lines at *b'* in Fig. 4.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

The combination, with a double or single whiffletree, A, of a brace, B, consisting of a metal rod or strap of greater length than the tree, impinging upon the back edge of the tree and doubled to overlap the ends of the same, and secured thereupon by the end collars, C C, substantially as and for the purpose herein shown and set forth.

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

EDWARD WARREN.

Witnesses:

M. F. COOK,  
WM. H. POTTS.