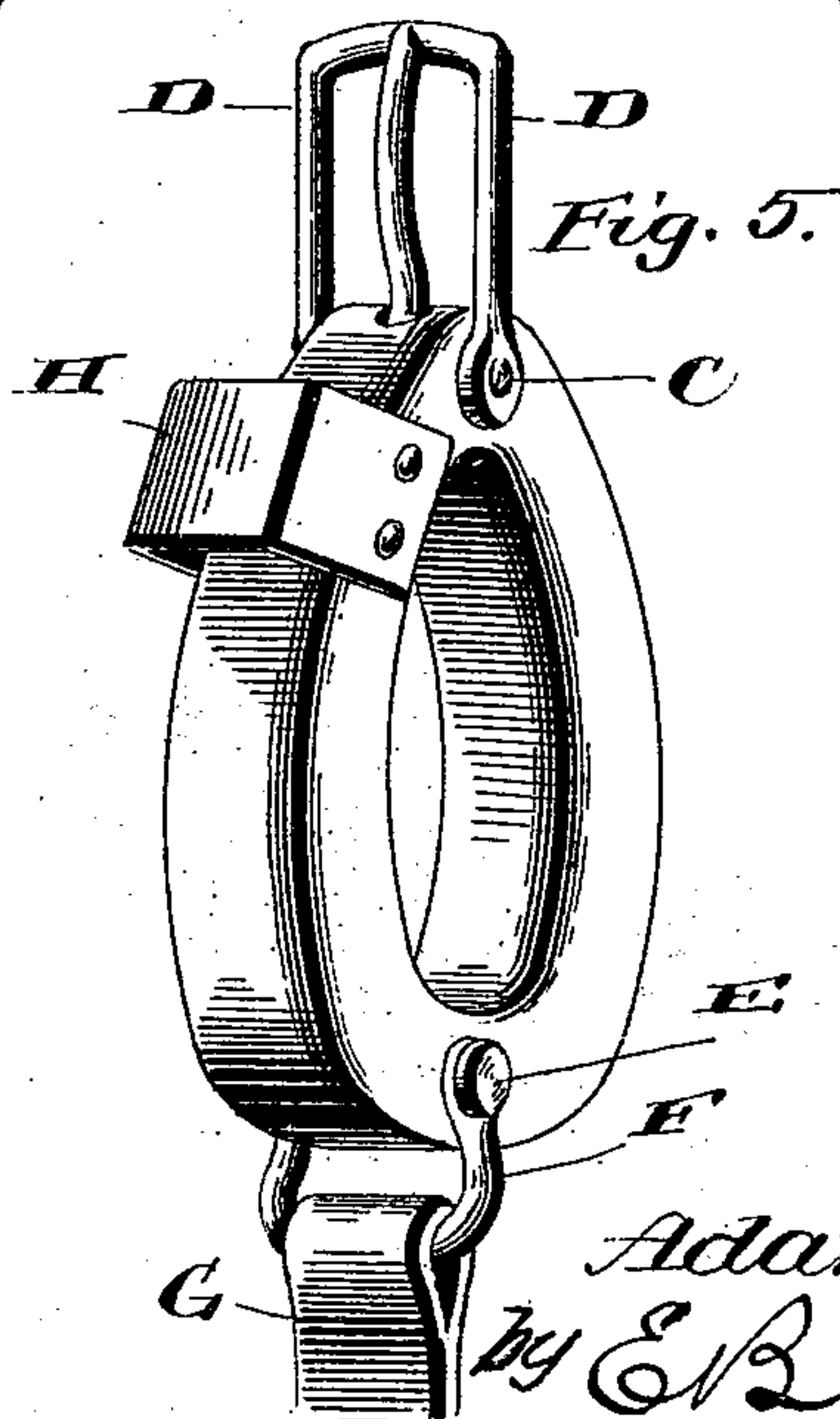
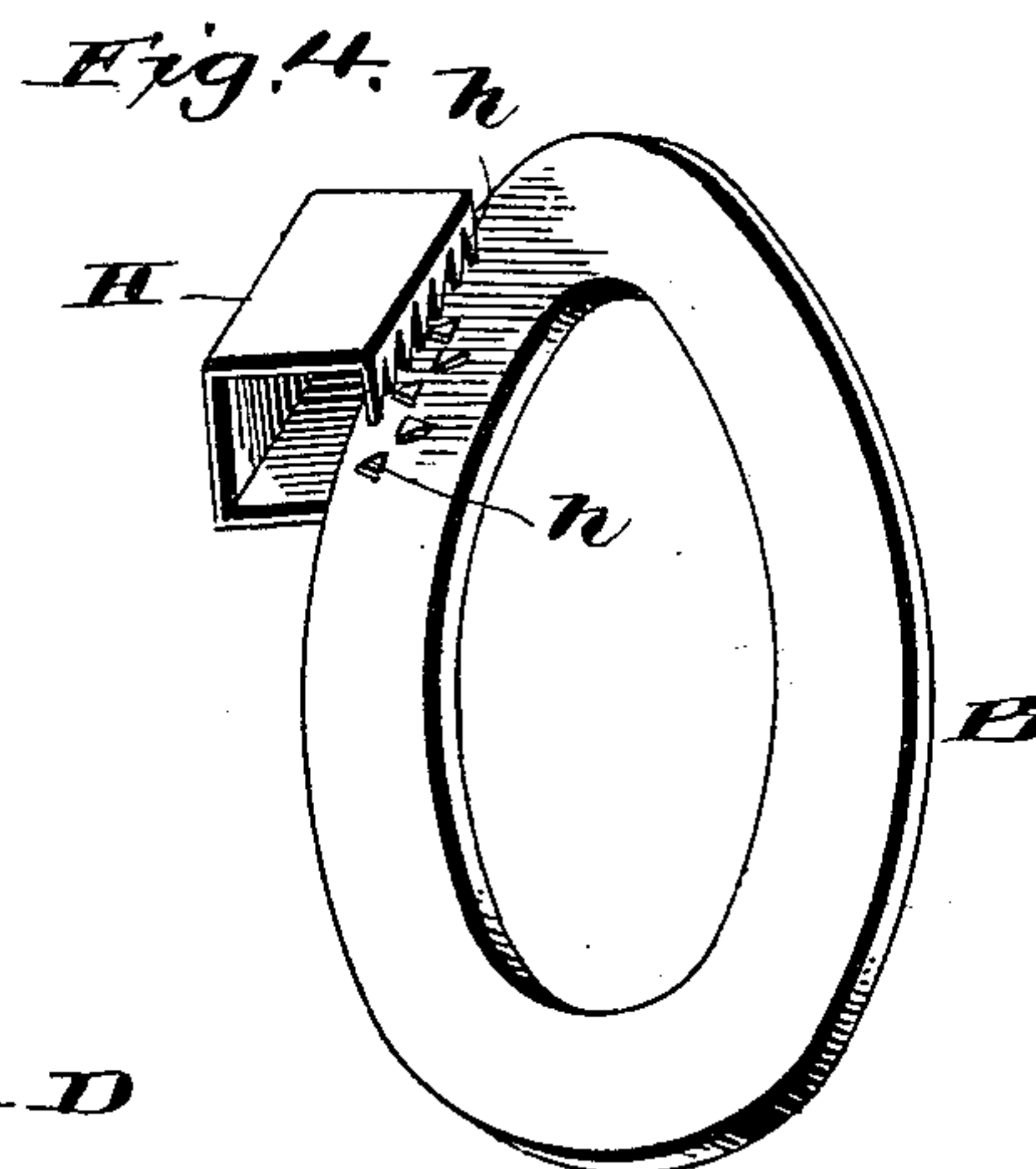
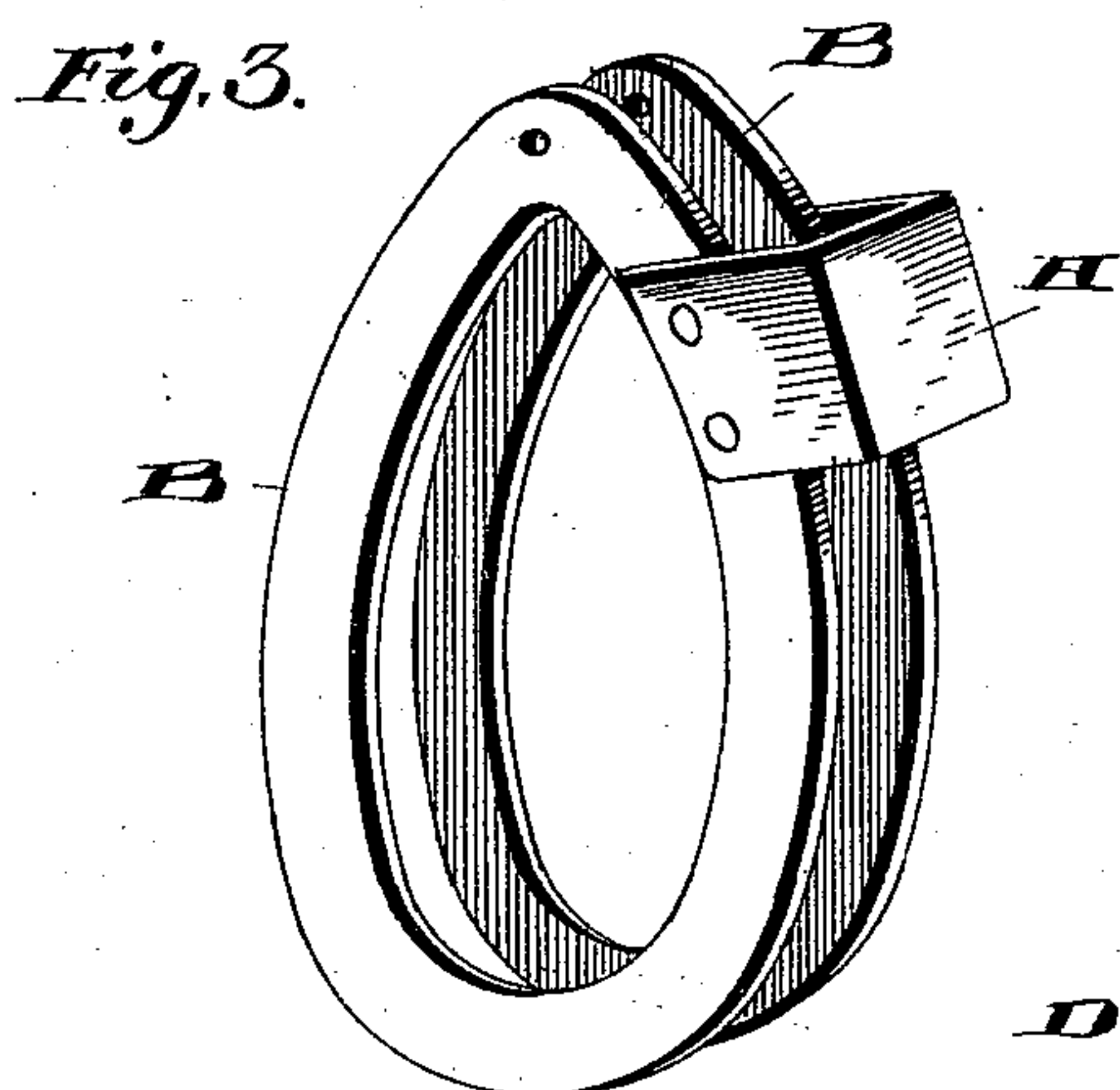
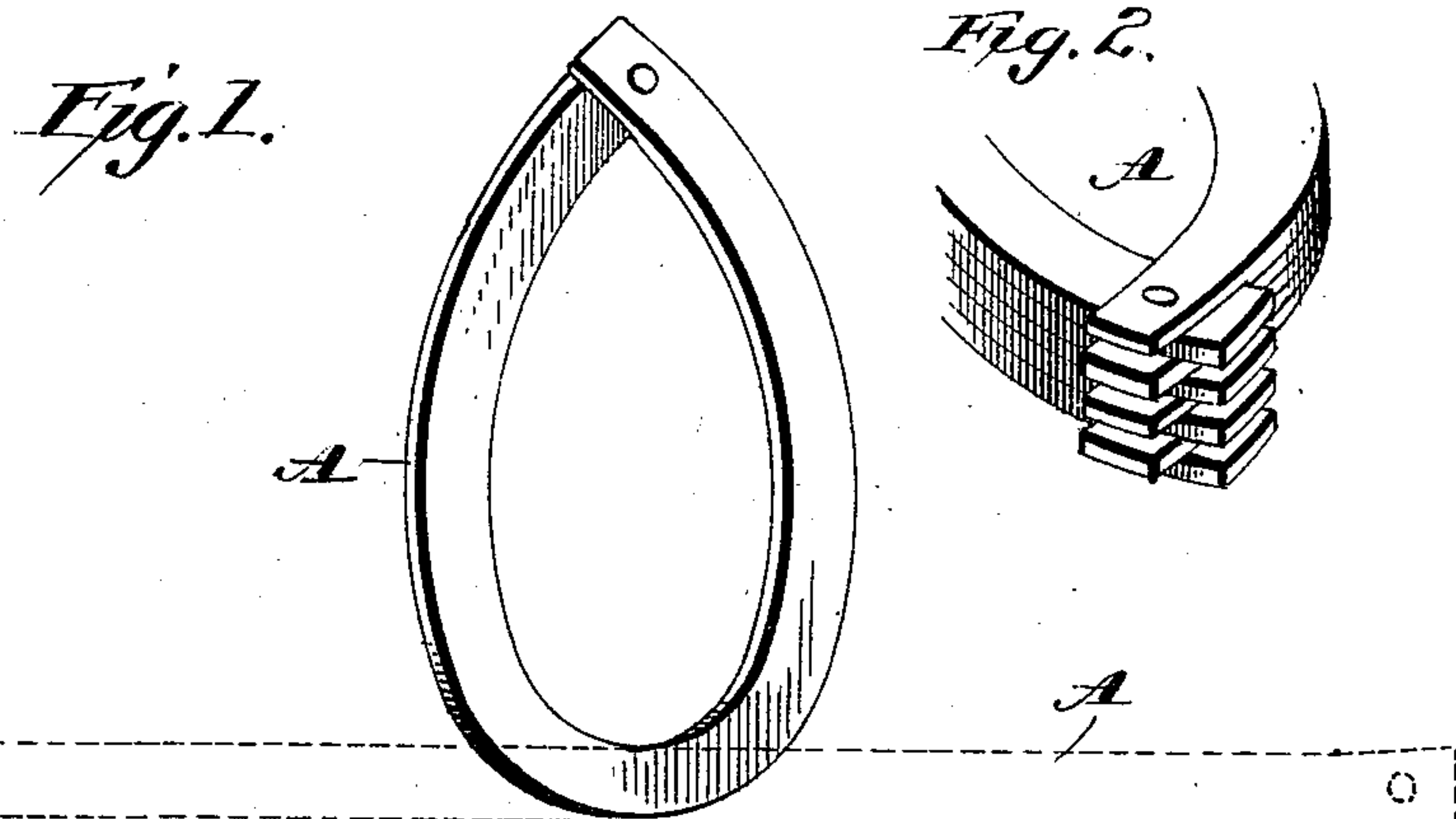


(No Model.)

A. D. GOETZ.  
SHAFT TUG.

No. 561,049.

Patented May 26, 1896.



Witnesses:  
L. C. Hills.  
E. A. Bond

Inventor:  
Adam D. Goetz.  
by E. B. Stocking Atty.



# UNITED STATES PATENT OFFICE.

ADAM D. GOETZ, OF CHARLESTOWN, WEST VIRGINIA.

## SHAFT-TUG.

SPECIFICATION forming part of Letters Patent No. 561,049, dated May 26, 1896.

Application filed November 16, 1895. Serial No. 569,211. (No model.)

*To all whom it may concern:*

Be it known that I, ADAM D. GOETZ, a citizen of the United States, residing at Charlestown, in the county of Jefferson, State of West Virginia, have invented certain new and useful Improvements in Shaft-Tugs, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to that class of devices known as "shaft" or "thill" tugs; and it has for its object, among others, to provide a simple and cheaply-constructed tug in which waste pieces of leather may be utilized without adding materially to the labor involved, but adding to the strength of the tug when completed. I construct the tug in sections, arranged so that the edge of the leather instead of the flat surfaces thereof is presented to the shaft, whereby liability to wear is reduced and the life of the tug thereby increased.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 shows in perspective one of the layers or rings of which the tug is built up. Fig. 2 shows in perspective a portion of the central part of the tug composed of several of these rings with their ends overlapped and all united together. Fig. 3 is a perspective view of the outer facing or rings of the tug with a loop attached thereto. Fig. 4 is a perspective view of one of the outer rings, showing a tug applied thereto in a different manner. Fig. 5 is a perspective view of the tug completed.

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

In constructing my tug I take strips A, of leather, rawhide, or other suitable material of the required length, and which may be cut from waste pieces which can thus be utilized, and these strips are then bent into the required form, as seen in Fig. 1, their ends being compressed so that in their overlapped condition they are substantially of the same thickness as the remaining portion of the strip

or loop thus formed. As many of these strips as are required for the thickness of the loop or tug when completed are bent into form and placed one upon the other, as seen in Fig. 2. For the outer layer or facing of the tug I preferably employ loops B, as seen in Fig. 3, which are each cut out in a single piece and placed one upon each side of the central portion formed by the loops or strips A. The whole is then compressed and a single rivet passed through the same at the point where the ends of the loops A are overlapped. This rivet C (shown in Fig. 5) may be employed for holding in position the buckle D on the tug, and at the diametrically opposite point the outer and intermediate loops may be held together by the bolt or rivet E, which serves to hold into position the loop F, to which is connected the strap G, employed for holding the tug in position.

H is the loop or keeper, which may be formed of leather or metal and sewed or riveted to the outer portions B B of the tug. In Fig. 4 I have shown the keeper H as of sheet metal and provided with serrated edges h, forming prongs or teeth, which are driven through the outer portions B of the tug and clenched upon the inner faces thereof, as seen in Fig. 4. A tug thus constructed can be manufactured for much less than the prior forms, and as the leather is presented to the shaft edgewise it will stand the wear much better, and hence will last a greater length of time. I have also found that a tug constructed in the manner above described is stronger than when made of a single piece or when made with a number of pieces so arranged that the leather shall be presented to the shaft flatwise, in which latter case it soon becomes worn, so as not only to present an uncomely appearance, but to weaken the tug. The tug when completed should be dressed and polished, so as to practically cover and eliminate the joints between the several sections or loops at the edge, so that in general appearance it will look as if formed of a single piece, as illustrated in Fig. 5. The several layers constituting the tug may be cemented, pasted, nailed, riveted, or otherwise secured together before being placed between the outer layers, and cement may be placed between these outer layers and the outer



faces of the intermediate portion, so that when compressed they will form practically a homogeneous mass.

5 A tug constructed in accordance with my invention, as above outlined, can be constructed for at least one-third less than the old forms; and when it is considered that it is much stronger, and consequently more durable, and will last for a greater length of time,  
10 the advantages thereof will be manifest. I may sometimes construct the inner loops of a single piece stamped out the same as the loops B, instead of forming them of strips A and overlapping their ends, as hereinbefore described, these loops being cemented or otherwise secured together and held between the  
15 outer loops B B in the same manner as the loops formed by the strips A.

What I claim as new is—

20 1. A shaft-tug composed of a plurality of layers of leather each of a single piece with its ends overlapped, and outer loops each of a single endless piece between which the intermediate pieces are secured and the whole  
25 adapted for use with the edges of said pieces presented to the shaft, substantially as specified.

2. A shaft-tug composed of a plurality of

layers of leather each of a single piece with its ends overlapped, and outer loops each of  
30 a single endless piece between which the intermediate pieces are secured and the whole adapted for use with the edges of said pieces presented to the shaft, and a buckle mounted  
35 on the bolt that secures all of said pieces together, substantially as specified.

3. A shaft-tug composed of strips of leather arranged in loop form with their ends overlapped and compressed, said loops being secured together, and outer facing-loops riveted  
40 to the intermediate strip-loops, substantially as specified.

4. A shaft-tug composed of strips of leather arranged in loop form with their ends overlapped and compressed, said loops being secured together, outer facing-loops riveted to  
45 the intermediate strip-loops, and a keeper secured to the outer loops of the tug, substantially as specified.

In testimony whereof I affix my signature  
50 in presence of two witnesses.

ADAM D. GOETZ.

Witnesses:

THOMAS PERRY LIPPITT,  
HITE WATSON.