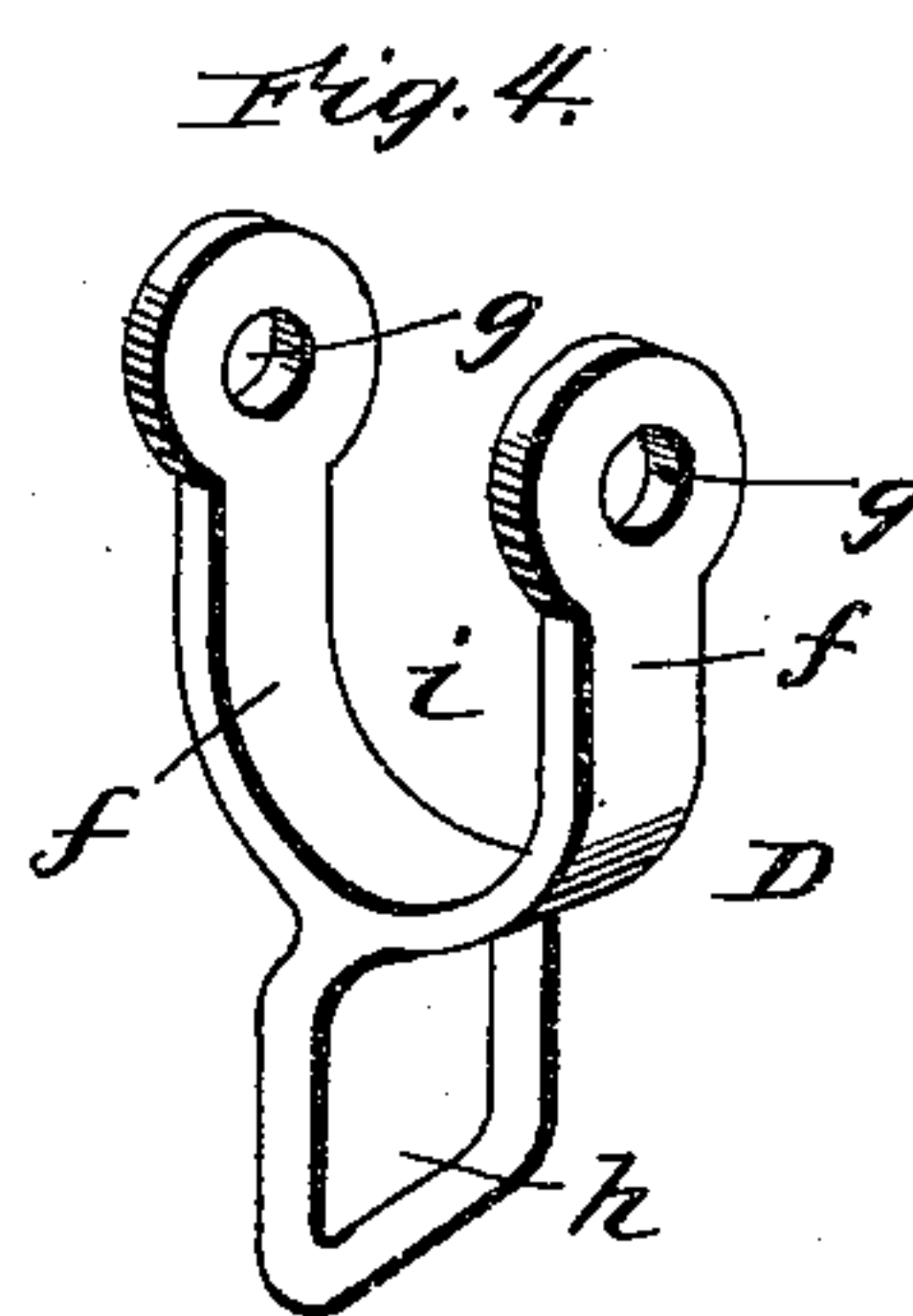
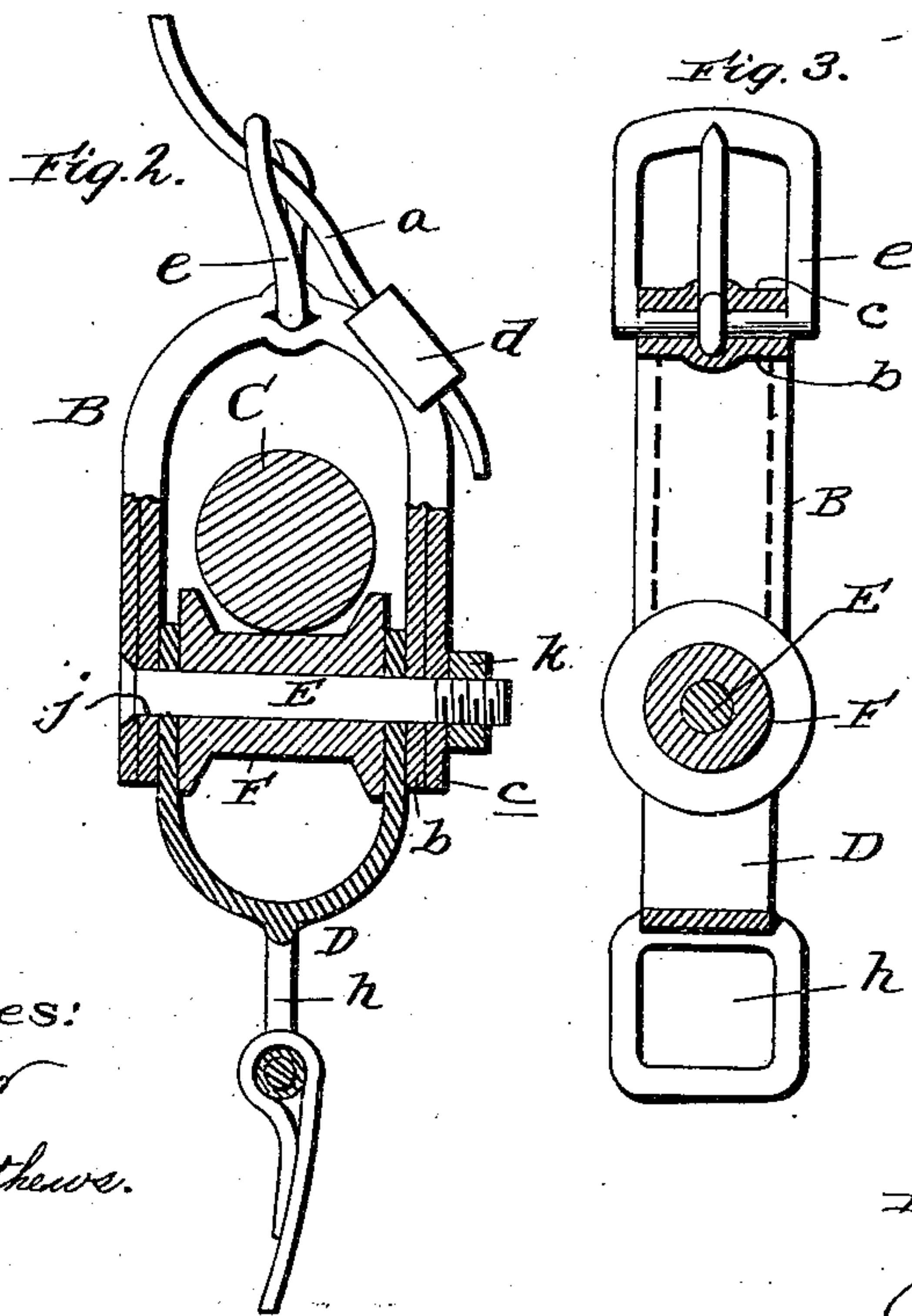
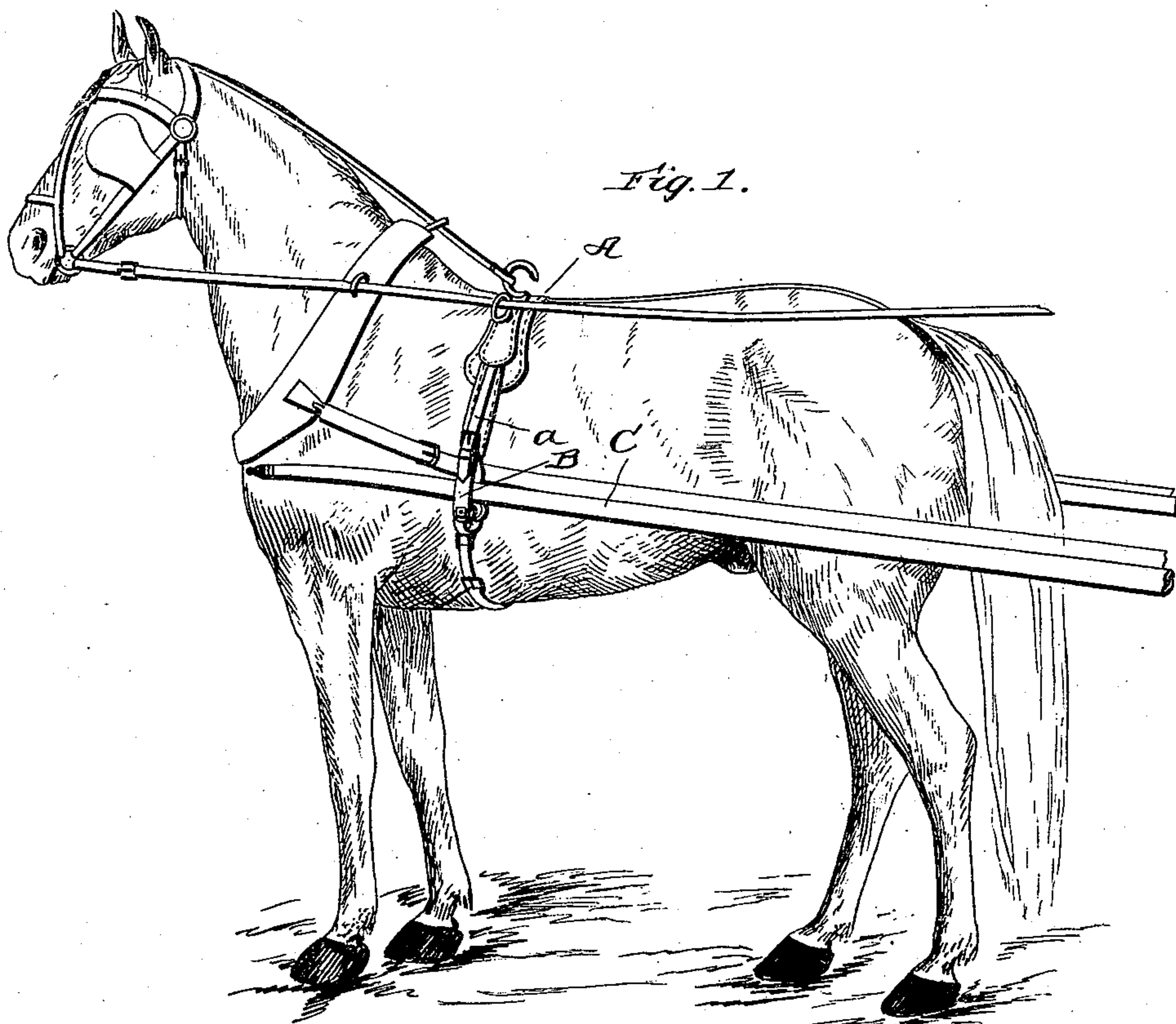


(No Model.)

J. P. CREWS.  
SHAFT TUG.

No. 555,484.

Patented Feb. 25, 1896.



witnesses:  
*H. Rauber*  
*R. P. Matthews.*

Inventor  
*J. P. Crews.*  
By *James J. Sheehy*  
Attorney



# UNITED STATES PATENT OFFICE.

JEFFERSON PAINE CREWS, OF DENVER, ASSIGNOR OF ONE-HALF TO A. H. CRAWFORD, OF LITTLETON, COLORADO.

## SHAFT-TUG.

SPECIFICATION forming part of Letters Patent No. 555,484, dated February 25, 1896.

Application filed May 27, 1895. Serial No. 550,732. (No model.)

*To all whom it may concern:*

Be it known that I, JEFFERSON PAINE CREWS, a citizen of the United States, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Shaft-Tugs; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in that class of shaft-loops which are provided with rollers, so as to permit the thills or shafts to move freely without undue friction and without chafing the animal; and its novelty and advantages will be fully understood from the following description and claim, when taken in connection with the annexed drawings, in which—

Figure 1 is a view of a horse with harness and my improvements applied, showing a pair of shafts in position. Fig. 2 is an edge view of my improved device with parts in section and showing a shaft in the loop. Fig. 3 is a vertical sectional view taken in a plane at right angles to Fig. 2 with the shaft removed, and Fig. 4 is a perspective view of the casting which receives the belly-band billet.

Referring by letter to said drawings, A indicates a gig-saddle, which may be of any ordinary or approved construction, and which forms no part of my invention, but is here shown for the purpose of illustrating the application of my improvements, and *a* indicates a strap depending from the gig-saddle or pad-skirt for the attachment of the tug or shaft loop.

B indicates the shaft-loop. This loop is composed of an inner piece, *b*, of leather, and an outer piece, *c*, of similar material, secured together and looped, as shown, to receive the shaft C. This loop is provided with a keeper *d* to receive the end of a strap *a*, and said loop also carries a buckle *e* for the attachment of said strap in connecting the shaft-loop to the saddle.

D indicates a casting, which is of a form substantially as shown and comprises two branches *f*, which are disposed in a forked manner and provided at their ends with

aligned holes *g*. This casting is also provided with a central depending loop *h*, which is disposed in a plane at right angles to the loop *i* formed by the two branches *f*. The branches *f* are placed on the inner side of the strap *b*, and the straps *b* and *c* are perforated, as shown at *j*, which, together with the casting D, receives a transverse bolt E, on which is journaled a roller F, which may be composed of wood, metal, glass, or other suitable material. The roller is designed to furnish a bearing for the shaft C within the loop B, and it will be seen that by the construction described the casting D, which receives the belly-band billet, also serves very effectively in strengthening the bearings in the loop B for the roller, and that the bolt E serves as a shaft for the roller and also serves to effect a strong and durable pivotal connection between the loop B and the casting D. As will be readily observed, this pivotal connection of the loop B and casting D is highly desirable, inasmuch as it enables the spool or roller, loop B, and casting D to readily accommodate themselves to the position and movements of the shaft or thill, and enables the saddle and belly-band to move with respect to the spool and independent of each other, and also prevents movement of the saddle from being transmitted to the belly-band or vice versa, and the friction and chafing consequent upon such movements.

It will be observed that it is not necessary to make any special provision for attaching my improvements to a harness, as the loop can be attached to a new harness or such harness as is at present in use at a very small expense.

The bolt E is headed at one end and threaded at its opposite end where it receives a nut *k* or the like. By reason of this it will be seen that when the loop B, of leather, is worn out the parts may be readily disconnected by removing the nut *k* and withdrawing the bolt and the casting D. Roller F and bolt E, which are generally formed of metal, may then be readily connected to a new loop B without the employment of skilled labor, and may be used in conjunction with the new loop B in the manner described. In this way the usefulness of the greater portion of my improved



tug may be prolonged for an indefinite period of time. It will be further observed that with the construction described the shaft-bolt E and the roller F may be readily re-  
5 moved to permit of them being thoroughly lubricated, which is frequently necessary.

Having described my invention, what I claim is—

The herein-described shaft-loop adapted to  
10 be connected with a saddle-strap and belly-band of a harness and consisting essentially of the following instrumentalities in combination viz: the leather loop B, having the aligned apertures *j*, in its branches and  
15 adapted to be connected with a saddle-strap, the casting D, having the approximately U-shaped loop portion arranged between the branches of the loop B, and provided with aligned apertures in its branches and also

having the depending loop *h*, for the connection of a belly-band, the bolt E, taking through the apertures of the loop B, and casting D, and pivotally connecting the said loop and casting so as to permit them to move independent of each other and having a head at  
25 one end and threads at its opposite end, a removable nut mounted on the threaded portion of the bolt so as to secure the same in position and the roller F, loosely mounted on the bolt and adapted to form an antifriction-  
30 bearing for a shaft passed through the loop B, substantially as specified.

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

JEFFERSON PAINE CREWS.

Witnesses:

HARRY C. RIDDLE,  
JOS. L. BOBB.