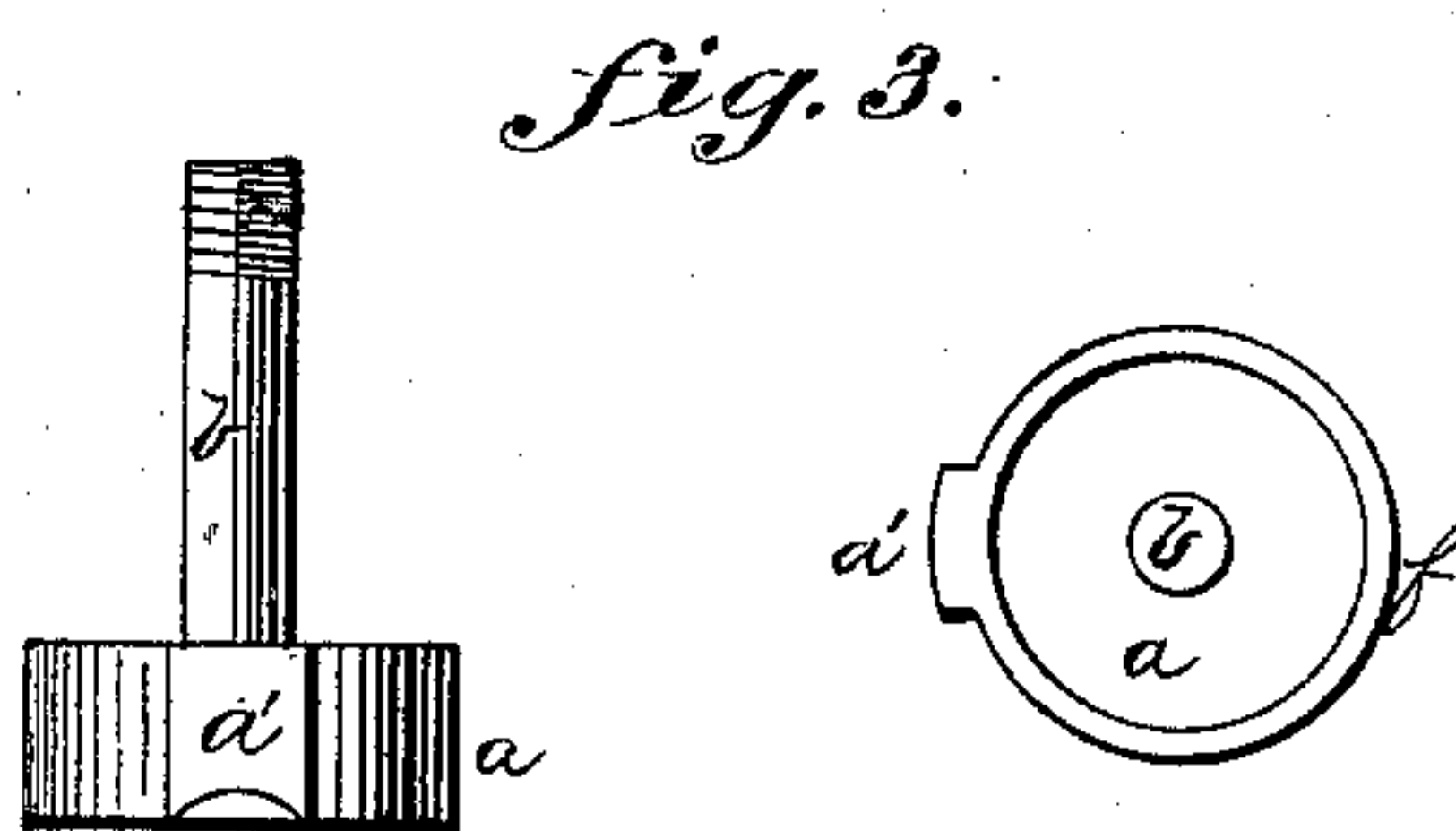
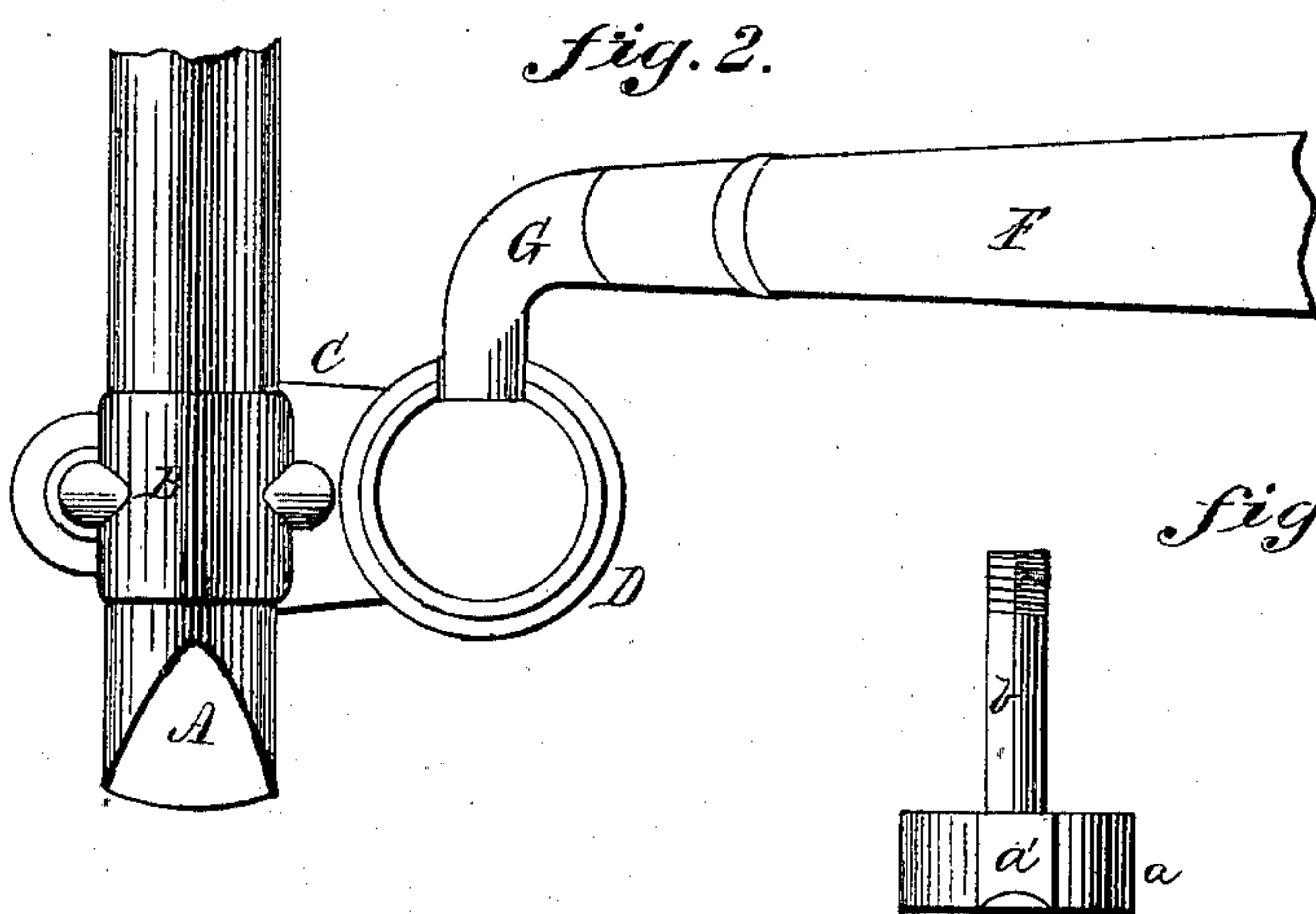
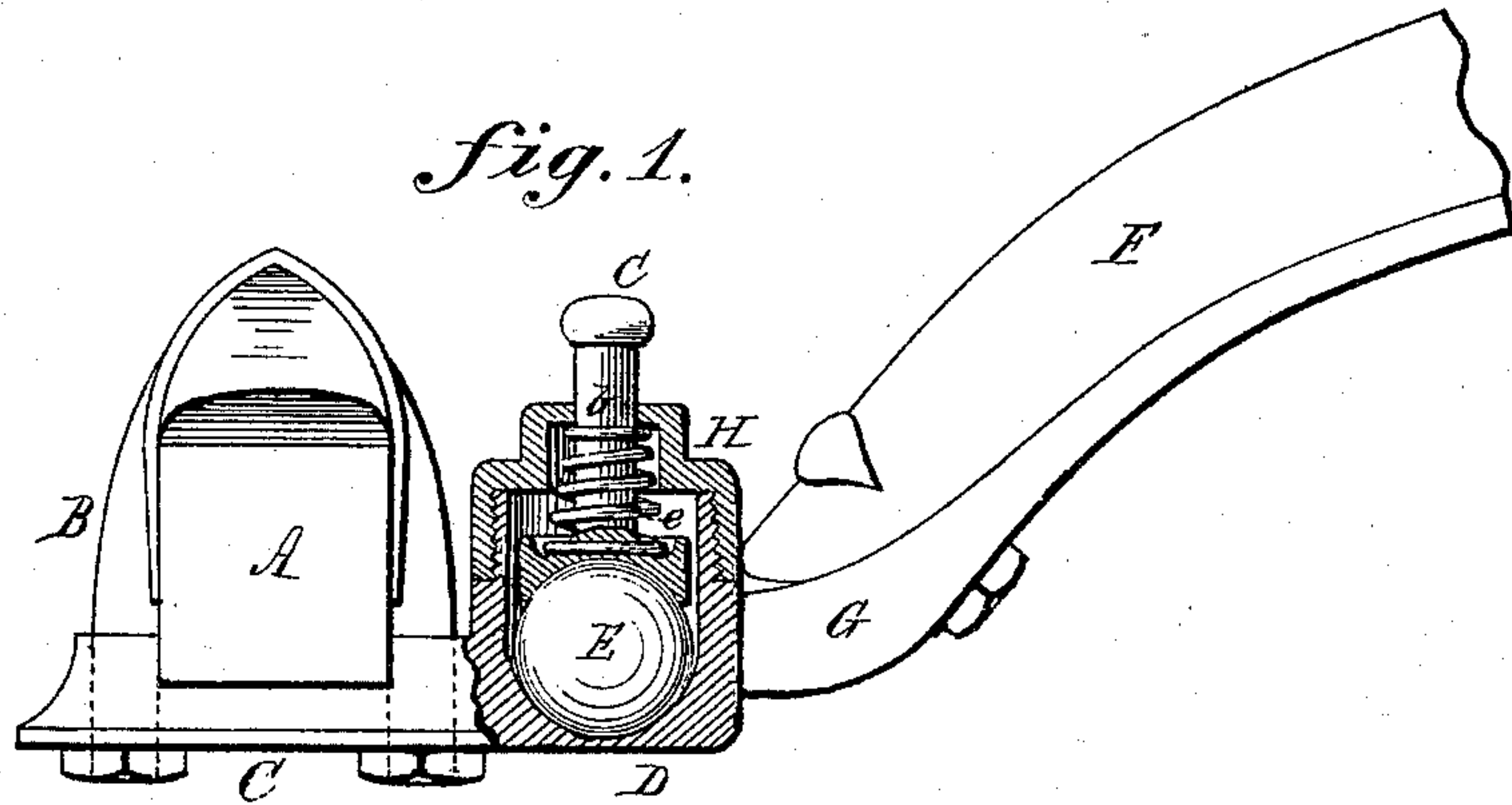


H. B. KINNEY.  
Thill-Couplings.

No. 143,162.

Patented September 23, 1873.



Witnesses  
John A. Elliot.  
E. E. Ellis

Inventor  
Horace B. Kinney  
Per  
J. H. Alexander & Co  
Attys

# UNITED STATES PATENT OFFICE.

HORACE B. KINNEY, OF LEONARDSVILLE, NEW YORK.

## IMPROVEMENT IN THILL-COUPPLINGS.

Specification forming part of Letters Patent No. **143,162**, dated September 23, 1873; application filed June 21, 1873.

*To all whom it may concern:*

Be it known that I, HORACE B. KINNEY, of Leonardsville, in the county of Madison and State of New York, have invented certain new and useful Improvements in Shackle-Irons for Carriages; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon, which form a part of this specification.

The object of my invention is to furnish an improved shackle-iron for carriages; and it consists in the construction and arrangement of the parts, as hereinafter more fully described and pointed out by the claims.

In order to enable others skilled in the art to which it appertains to make and use the same, I will now proceed to describe it, referring to the annexed drawing, in which—

Figure 1 is, in part, a vertical section. Fig. 2 is a top view with the cap removed; and Fig. 3 are details of the same.

A represents the axle, of any desired construction, to which the seat C D is attached by the clip B. E represents the ball secured to the curved arm G, which, in turn, is bolted or otherwise secured to the thill F. On the lower inside of the seat D the ball E rests. On the top of the ball the cap *a* is placed, the lower part of which is of concave form to fit the ball. The upper portion of the cap *a* is provided with a circular flange, *f*, to furnish a seat for the spring *e*; and a stem, *b*, is rigidly secured to the seat *a*, passing upward through the spiral spring *e*, and through the top cap H, and provided at the top with the screw-knob *c*. The cap *a* is provided with an en-

larged portion, *a'*, corresponding in form, to fit in the opening in the seat D above the arm G, which serves to fill the opening above the arm G, and hold the cap *a* securely in place, and prevent the same from turning. The device is held in position by the cap H, which is provided with a female screw corresponding to the male screw on the seat D.

By this means a convenient method or means is provided for connecting the thills to the carriage, and one not liable to get out of order, and noiseless in operation, as the joint is always kept tight by the tension of the spring, thus dispensing with the rubber packing generally used, while, at the same time, the thills are perfectly free to be moved vertically.

I am aware that the use of a ball-and-socket joint is not new, and I do not therefore claim such device; but,

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The seat *a*, having circular flange *f*, enlarged portion *a'*, and stem *b*, in combination with the ball E, all constructed and arranged as and for the purpose specified.

2. The seat *a*, combined with the spring *e*, stem *b*, knob *c*, seat D, cap H, and ball E, substantially as and for the purpose herein set forth.

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

HORACE B. KINNEY.

Witnesses:

WM. H. BRAND,  
DANIEL HARDIN.