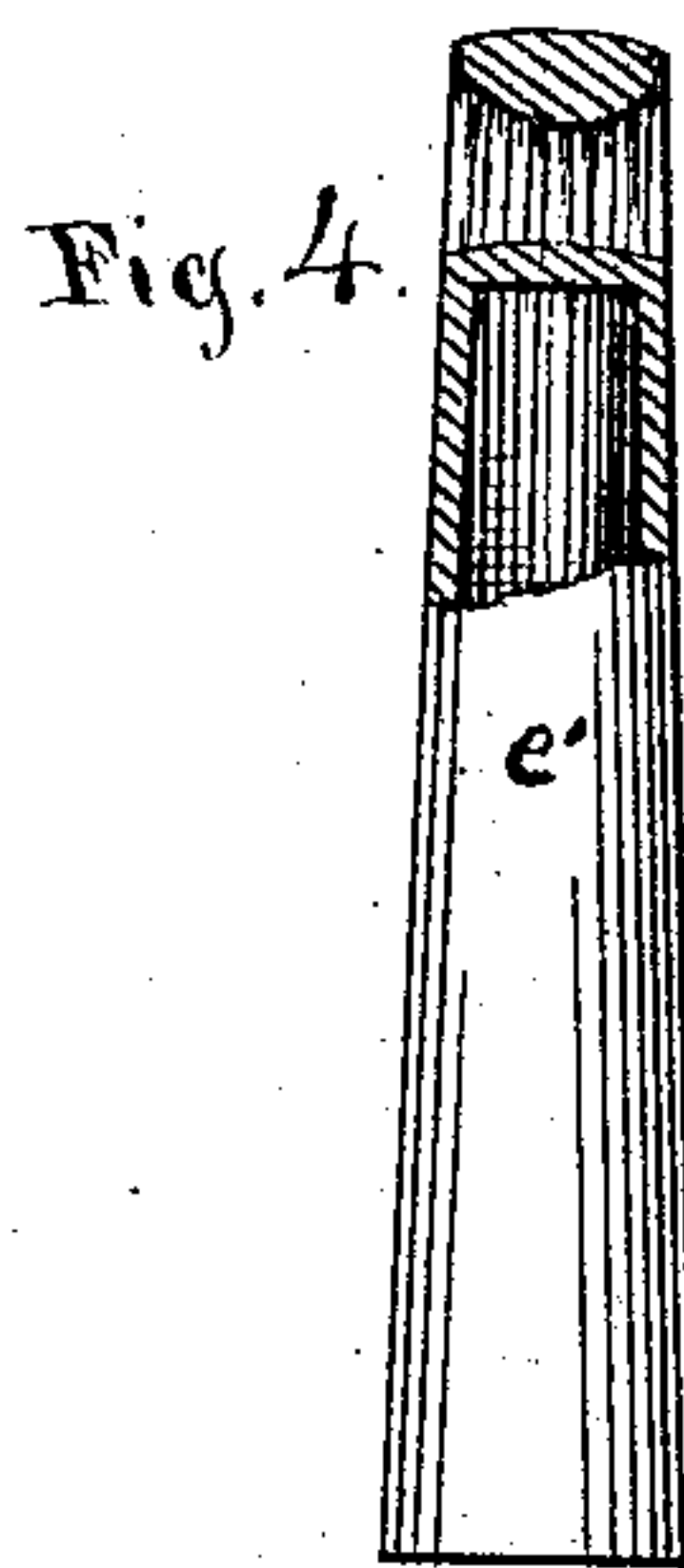
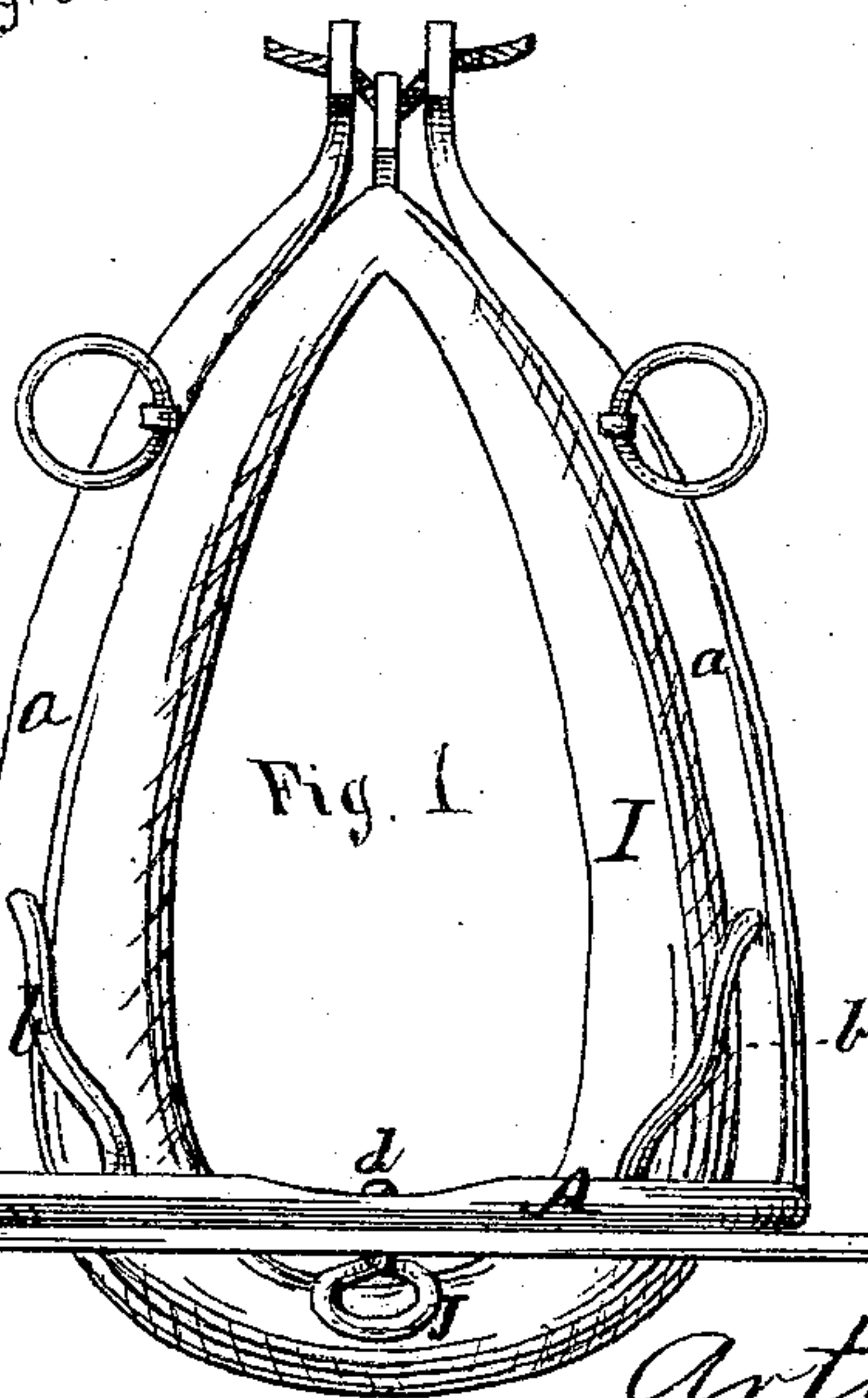
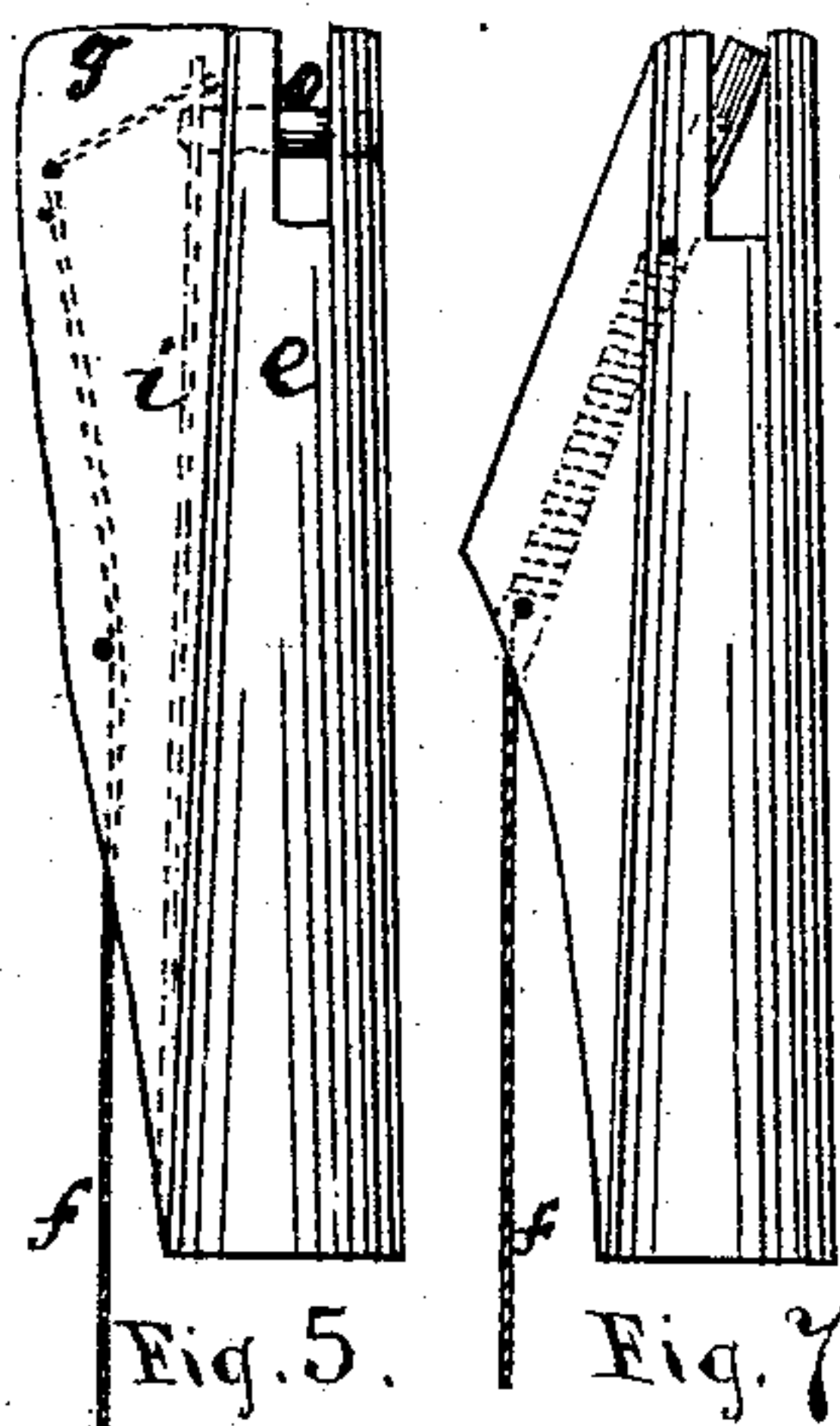
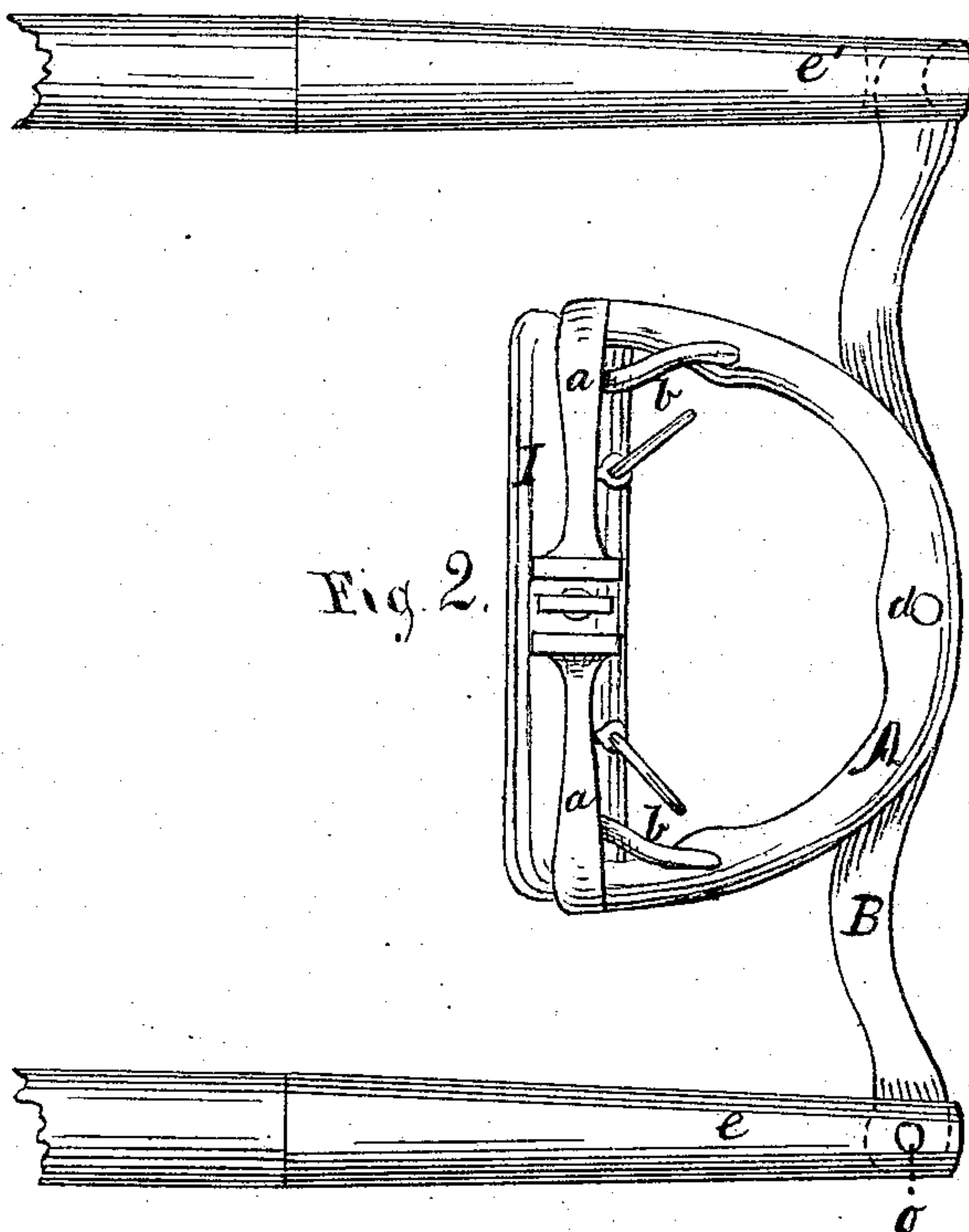
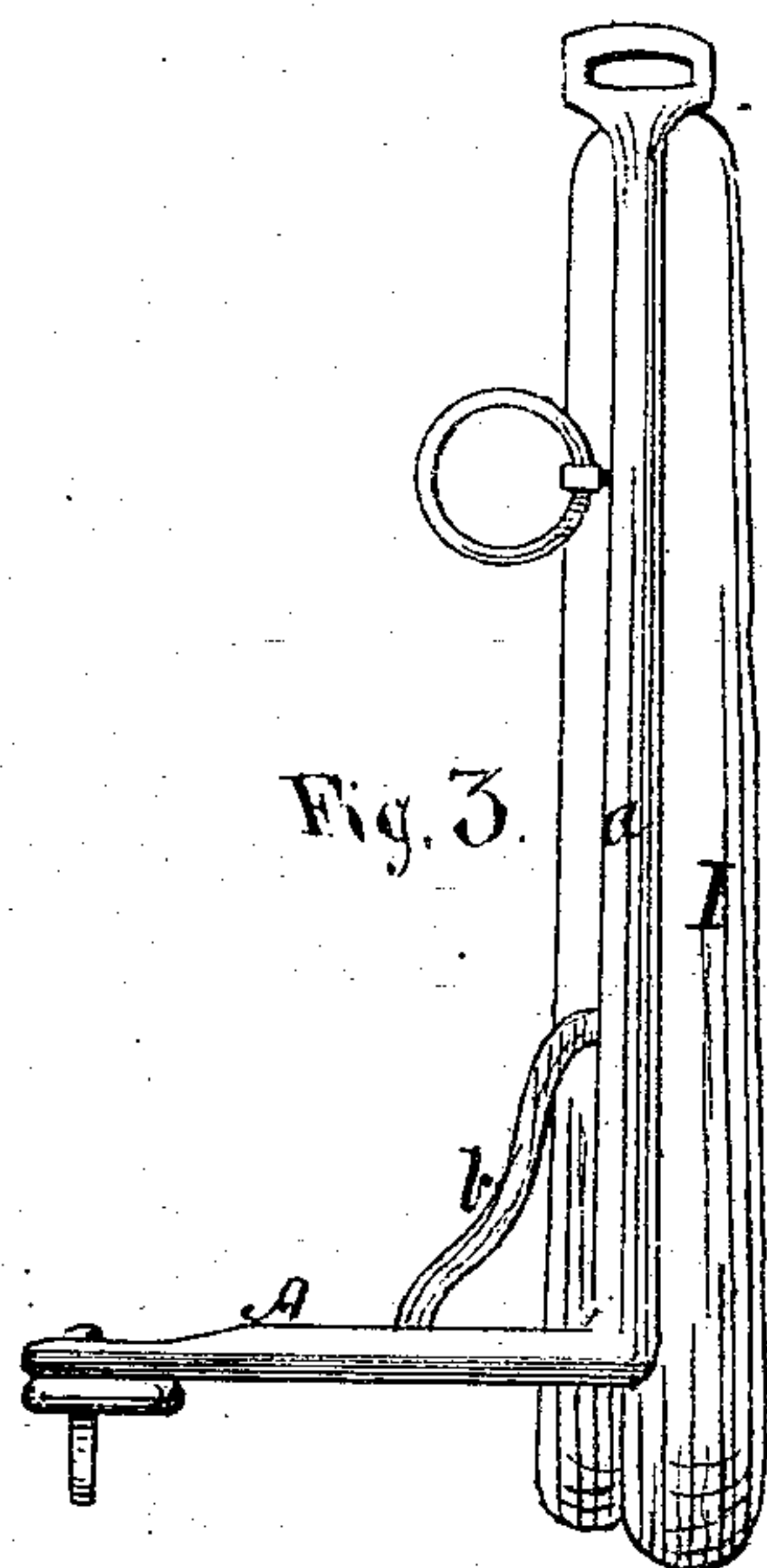


A. W. LAWTON.  
Harness.

No. 157,074.

Patented Nov. 24, 1874.



Witnesses  
H. P. K. Peck  
James A. Curran

Arthur W. Lawton  
Inventor



# UNITED STATES PATENT OFFICE.

ARTHUR W. LAWTON, OF ROCHESTER, NEW YORK.

## IMPROVEMENT IN HARNESS.

Specification forming part of Letters Patent No. 157,074, dated November 24, 1874; application filed February 7, 1872.

*To all whom it may concern:*

Be it known that I, ARTHUR W. LAWTON, of the city of Rochester, in the county of Monroe and State of New York, have invented a new and useful Improvement in Harness; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to the combination of the harness-collar and hames with the draft-bar and shafts of a carriage, as an improvement of the harness for which a patent was granted to me October 21, A. D. 1871.

Figure 1 represents a front view of my improvement in harness. Fig. 2 represents a plan or top view of the same as connected with the carriage-shafts. Fig. 3 represents a side elevation of the collar and hames, with the bow and braces as made with the hames in one piece. Figs. 4, 5, and 7 represent the tubular metal shaft-tips. Fig. 8 represents a transverse section of the end of the draft-bar, exhibiting a depression therein corresponding with the angular relation of the spring-bolt shown in Fig. 7.

The metal bow A is rigidly connected to the lower ends of the hames *a a*, and this connection is strengthened by the braces *b*. The bow A and hames *a* are constructed of a single piece of metal, either cast or wrought. The bow A is pivoted at *d* to the center of the draft-bar B, which is the only point of connection of the harness with the carriage to be propelled.

The form of the draft-bar may be varied; but one of its ends must be provided with a suitable hole to receive the spring-bolt *o*, which is fastened to the spring *i*. (Represented in dotted lines in Fig. 5.)

The curved or hooked end of draft-bar B fits into the slot formed in the proper shape in the shaft-tip *e'*, and the perforated end is inserted in the open slot in the end of shaft-tip *e*. On the under side of the tip *e* there are two flanges, *g*, between which the spring *i* is secured, to which spring-bolt *o* is attached, and the cord *f* is connected to the front end of said spring, and may extend rearward to a carriage, so that a person seated in

the carriage may, by pulling the cord *f*, withdraw the bolt *o*, and thus detach a horse from the carriage-shafts. The metal tip and spring-bolt shown in Fig. 7 may be used as a substitute for the devices represented in Fig. 5. In the former figure, a spiral spring is represented as a substitute for the spring *i* in Fig. 5.

The top of the collar I is provided with a metal loop, by which it and the hames may be adjusted with a hame-strap in any desired relation to each other, so as to suit for the use and draft of different horses.

My harness will be provided with a suitable saddle and girth, and with a holdback-strap connecting the girth and the loop J under the bar B. (Represented in Fig. 1.) The tubular shaft-tips *e e'* serve to connect the draft-bar B with the carriage. By depressing spring *i*, the stud or bolt *o*, will be withdrawn, and release the perforated end of the bar B, which will then detach itself from the shaft-tip *e* as the horse moves forward.

It is apparent that the point of draft may be varied in respect to the animal's shoulders by adjusting the hames in relation to the collar. The bow A may be made sufficiently elastic, so as to yield to fit upon and adhere to collars of different sizes. This kind of harness may be used for two-horse carriages by simply applying the center of a draft-bar or neck-yoke to the end of the carriage-tongue, which is provided with the tip *e*. In this case the hames and bow A would be pivoted to the two ends of the draft-bar or neck-yoke.

Having fully described my improvement in harness, I claim and desire to secure by Letters Patent—

The hames *a* and bow A, formed of a single piece of metal, and having braces *b* attached, in combination with the slotted shaft-tips *e e'*, bar B, spring-bolt *o*, spring *i*, and cord *f*, when arranged for the purposes substantially as herein shown and described.

In testimony hereof I have hereunto set my hand this 29th day of January, A. D. 1872.

ARTHUR W. LAWTON.

Witnesses:

H. P. K. PECK,  
JAMES H. CURRAN.