(No Model.)

J. TRULLINGER.

ARTERY LIGATOR.

No. 354,029. Patented Dec. 7, 1886.

Fig. 1.

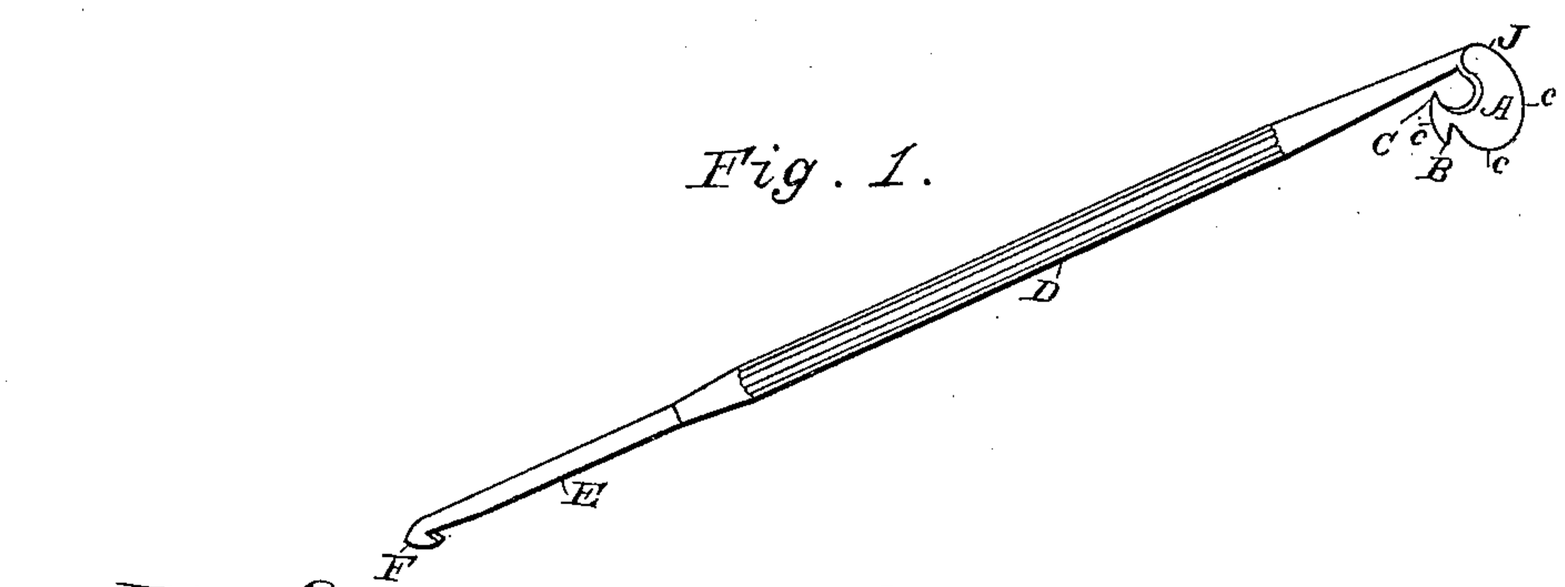


Fig. 2.

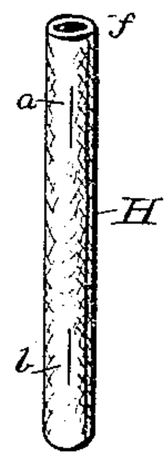


Fig. 3.

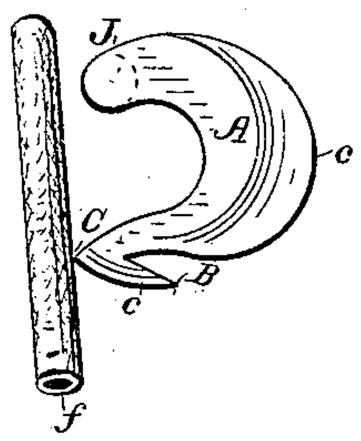


Fig. 4.

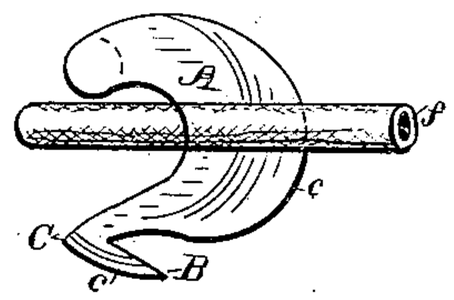


Fig. 5.

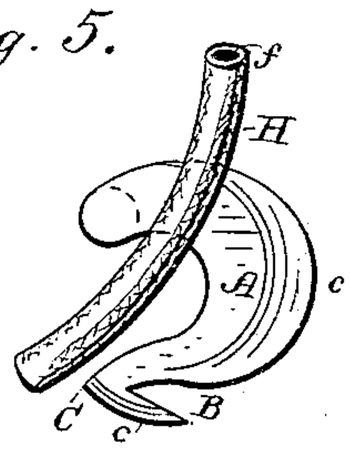


Fig. 6.

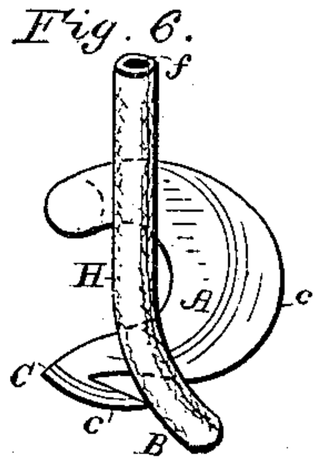


Fig. 7.

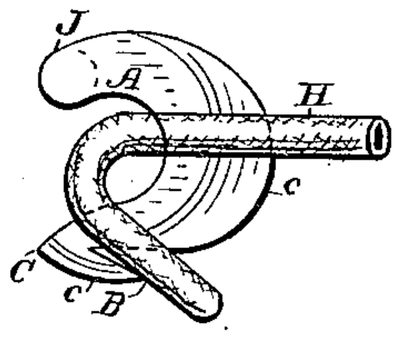


Fig. 8.

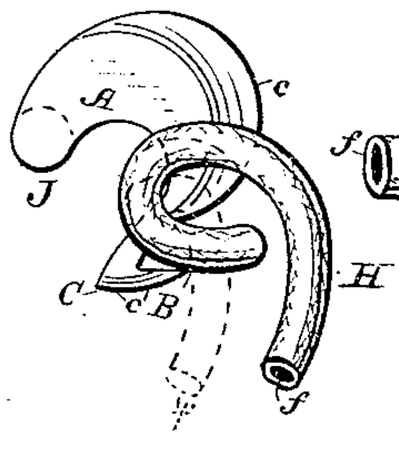


Fig. 9.

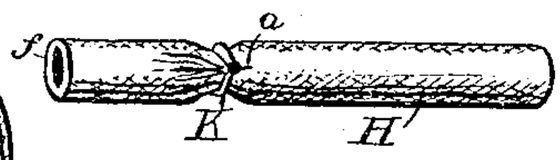
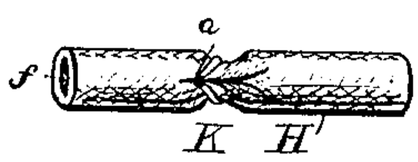


Fig. 10.



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L. T. Nichols.

Inventor
James Trullinger
By his Attorney
L. Deane

UNITED STATES PATENT OFFICE.

JAMES TRULLINGER, OF SILVERTON, OREGON.

ARTERY-LIGATOR.

SPECIFICATION forming part of Letters Patent No. 354,029, dated December 7, 1886.

Application filed February 17, 1886. Serial No. 192,248. (No model.)

To all whom it may concern:

Be it known that I, JAMES TRULLINGER, of Silverton, in the county of Marion and State of Oregon, have invented a new and Improved Ligating Instrument for Ligating Arteries and Veins and Preventing Hemorrhage of Severed Veins and Arteries, of which the following is a specification.

The object of the invention is to provide a ligating-instrument whereby a slit can be made in a severed artery or vein, and by which the end of the artery or vein can be drawn through the slit speedily and in such manner that the artery or vein (as the case may be) will be efficiently and permanently closed, so as to effectually stop and prevent hemorrhage, primary or secondary, without the use of thread, silk, or other foreign substance than the artery or vein itself, and to the end that the wound may heal with the first intention and that the artery or vein may be more quickly secured against bleeding than by any other method; and to this end the invention consists in an instrument of peculiar construction, all as will be hereinafter more fully explained, and specifically pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of the instrument complete, in which D represents the handle of the instrument, having properly fixed at one end the curved or crescent shaped blade A. This blade has a sharp outer edge, *c c c*, a barb, B, and a fine point, C, where the blade comes near to body of the instrument. J is the heel of the blade, and is close to the end of D. At the opposite end there is provided the artery-hook F, on the ferrule or tip E.

In the other figures of the drawings is illustrated the method of using this instrument for the purpose of taking up and ligating the artery as follows:

Fig. 2 is a view of an artery, H H, with its severed end *f*, the slit or incision *a* made first in using the instrument, the slit *b* made by the point and barb only.

Fig. 3 is a view of the position of the blade A with relation to the artery H H when the point of the blade is about being inserted into the artery. The point C is to enter the artery about the width of the blade from the severed end *f*, to make the incision *a*.

Fig. 4 represents the blade as having passed about half its length through the artery at the incision *a*, while the instrument is being rotated.

Fig. 5 represents the point C about to penetrate artery as the instrument is rotated to make the slit or incision *b*.

Fig. 6 represents the barbed point B C as having passed through the artery at incision *b*. At this point the rotary motion must be reversed.

Fig. 7 represents the rotary motion of the instrument as having been reversed, whereby the point of the artery *f* is caught by the barb B, and by the reverse rotary motion is being carried toward the incision *a*.

Fig. 8 shows the end of the artery *f* as being carried through the incision *a* by the barb B, one position of the artery being represented by dotted lines. After the end *f* of the artery H H has been wholly carried through the incision *a* by the reverse rotary motion of the instrument, then by a re-reverse motion of the instrument the barb B is disengaged from the incision *b*, and then the instrument has been withdrawn and the operation is complete.

Fig. 9 represents the reverse side of the knot K at the incision *a;* and Fig. 10 represents the obverse side of the knot K in the artery H H at the incision *a*, and the operation is completed.

In operation, the end *f* of the artery H H is grasped by an ordinary pair of forceps, or by the fingers and thumb of the operator. The blade A is then placed under the artery with the heel J near the end *f*, and the point C at the proposed incision *a*. Then, by a rotary motion of the instrument, the point C of the blade A is passed up through both walls of the artery, making the incision *a*, the rotary motion being continued until the point C passes through the artery from the top down, making the incision *b*, and until the barb B has passed through the artery at the incision *b*, when the rotary motion of the instrument is reversed, causing the barb B to catch and carry the end *f* back through the incision *a*. Then, by a re-reverse motion of the instrument, the barb B is

disengaged from the artery, and the operation is complete, and by it each division of the artery caused by the incision *a* has been twisted in such manner as to force the lining membrane of the artery to retract and plug up the artery immediately above the incision *a*, and to cause it to remain there, thereby effectually preventing hemorrhage.

The hook F on the small shaft E is used for pursuing and taking up the end *f* of the artery H H when the same has retracted from the face of a wound, and drawing the artery out so that it can be grasped by the forceps or fingers.

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

1. A ligature-instrument consisting of the handle D, having at one end the crescent-shaped blade A, provided with a sharp cutting-edge back, *c c c*, a barb, B, point C, and heel J, and at the other end with the artery-hook F, substantially as described.

2. A ligating-instrument consisting of a curved blade having a knife-edge back, a barb, and a sharp point, and a handle attached near its heel, substantially as and for the purposes described.

JAMES TRULLINGER.

Witnesses:
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