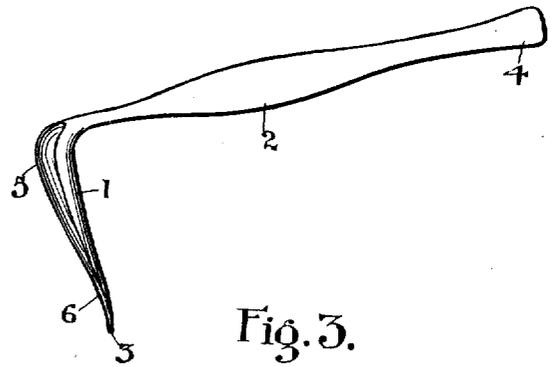
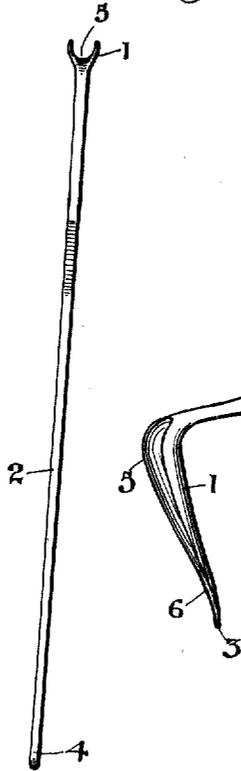
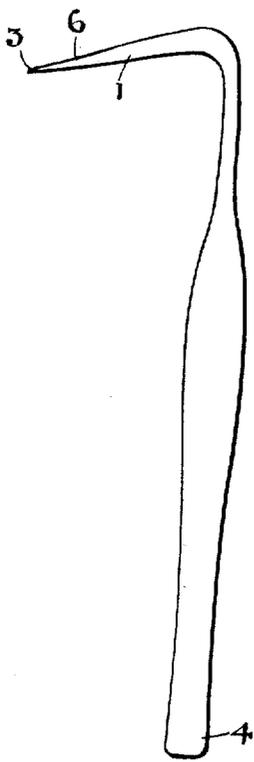
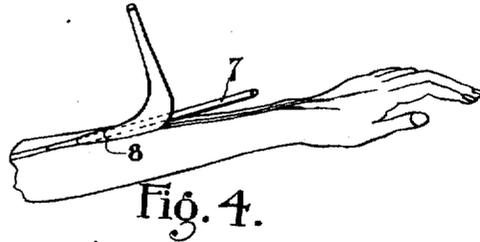


No. 829,409.

PATENTED AUG. 28, 1906.

J. W. MANNING.  
ARTERY AND VEIN EXPANDER.  
APPLICATION FILED AUG. 10, 1905.



Witnesses  
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# UNITED STATES PATENT OFFICE.

JOHN WILLIAM MANNING, OF LOUISVILLE, KENTUCKY.

## ARTERY AND VEIN EXPANDER.

No. 829,409.

Specification of Letters Patent.

Patented Aug. 28, 1906.

Application filed August 10, 1905. Serial No. 273,538.

*To all whom it may concern:*

Be it known that I, JOHN WILLIAM MANNING, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented a new and useful Artery and Vein Expander, of which the following is a specification.

This invention relates to artery and vein expanders used in the art of embalming; and the objects of my improvement are to provide an instrument that may be easily inserted in the severed end of an artery or vein without rupturing the lining or any portion of the wall, that may be easily inserted into the smallest artery or vein, by means of which the artery or vein may be quickly and easily expanded and the embalming-tube readily and easily inserted into the artery or vein, durability, and comparative inexpensiveness of manufacture.

These objects I attain by means of the device illustrated in the accompanying drawings, in which—

Figure 1 is a side view; Fig. 2, an edge view; Fig. 3, a perspective view, and Fig. 4 a perspective view showing the instrument inserted and in use.

Similar reference-numerals refer to similar parts throughout the several views of the drawings.

The instrument is made preferably in one piece, forged from steel, highly polished and nickel-plated to facilitate the insertion of the pointed and tapered portion into the artery or vein and to prevent corrosion.

It consists, essentially, of a tapered portion 1, having a thin wall and a groove at 5 tapering down to a point 3 and slightly curved in the direction of the groove at 6, and a flat handle portion 2, having a spatulate free end 4. The handle 2 is approximately at right angles to the tapered and

pointed portion 1 to facilitate inserting the point into the artery or vein and the insertion of tube 7, as illustrated in Fig. 4. 8 represents the incision by which the artery or vein is exposed for the insertion of the instrument.

The use of my improved artery and vein expander is obvious. An incision is made, as shown at 8 in Fig. 4, across the artery or vein, a severed end of the artery is exposed by pushing the point of the instrument against the opposite end, and the point 3 is caused to enter the artery or vein and pushed into it a suitable distance. Then by tilting the tapered portion 1 outward slightly the artery or vein is expanded sufficiently to insert the embalming-tube 7 without difficulty and without tearing the lining of the artery or vein. It is obvious that the walls of the grooved and tapered portion 1, as well as point 3, may be made quite thin, so as to occupy very little space and stretch the artery or vein a minimum amount. This feature is especially desirable in the embalming of infants, where the arteries and veins are very small and tender.

Having thus described my invention, so that any one skilled in the art pertaining thereto may make or use it, what I claim as new, and desire to secure by Letters Patent of the United States, is—

An artery and vein expander consisting of a strip of material having a solid pointed portion, a tapered portion adjacent to said pointed portion, said tapered portion comprising a thin wall forming a channel, and a handle portion at right angles to said pointed portion and said tapered portion.

JOHN WILLIAM MANNING.

Witnesses:

JOHN A. MARTIN-COOKE,  
ABRAHAM KNOBEL.