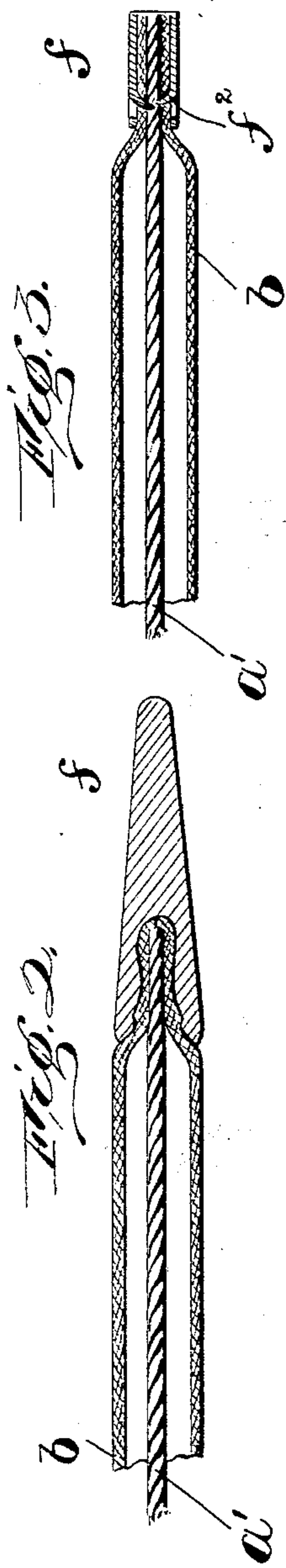
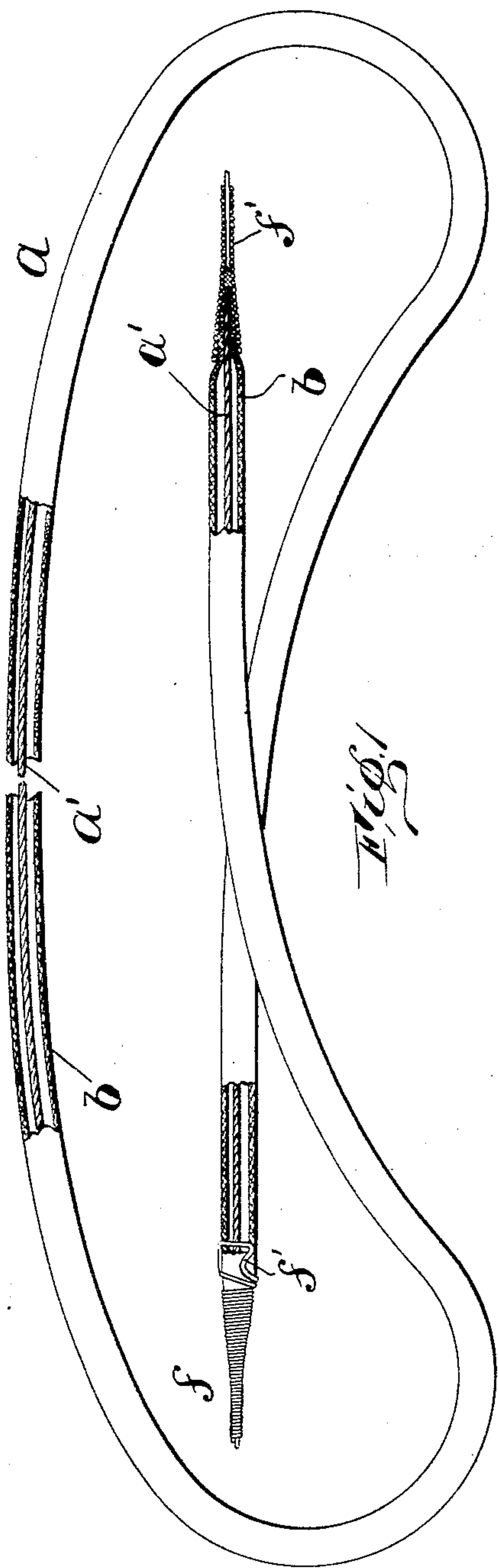


(No Model.)

E. KEMPSHALL.  
LACING.

No. 579,943.

Patented Mar. 30, 1897.



Witnesses:  
J. M. Fowler Jr.  
John B. Peyton Jr.

Inventor  
E. Kempsall  
Wright Brown + Lurby  
Attorney

# UNITED STATES PATENT OFFICE.

ELEAZER KEMPSHALL, OF NEWTON, MASSACHUSETTS.

## LACING.

SPECIFICATION forming part of Letters Patent No. 579,943, dated March 30, 1897.

Application filed January 22, 1897. Serial No. 620,220. (No model.)

*To all whom it may concern:*

Be it known that I, ELEAZER KEMPSHALL, of Newton, in the county of Middlesex and State of Massachusetts, have invented certain  
5 new and useful Improvements in Lacings, of which the following is a specification.

This invention has for its object the production of a new lacing; and it consists of the novel features of construction and relative arrangement of parts hereinafter fully described in the specification, clearly illustrated in the drawings, and particularly pointed out in the claim.

Reference is to be had to the accompanying  
15 sheet of drawings, forming a part of this application, in which like characters are used to indicate like parts wherever they occur.

Figure 1 represents in front elevation a lacing constructed in accordance with my invention, a portion thereof being shown in section in order to illustrate the relative arrangement of the several parts. Figs. 2 and 3 represent in detail sectional view other forms of tips from that shown in Fig 1.

25 Referring to the drawings in the embodiment of my invention therein shown and selected by me for the purpose of illustrating the same, *a* represents a lacing comprising a core *a'*, arranged within a sheath *b*, and tips  
30 *f*, arranged upon the ends of the lacing and interlocked with the ends of the core and sheath. The core *a'* is preferably a cord of hemp, linen, or other tough non-metallic material and of a diameter less than the inner  
35 diameter of the sheath, so that it does not contact at all points with the walls of the latter. The sheath *b* is a tubular covering of lacing fabric woven or formed in the usual way and inclosing core *a'*. In weaving the  
40 sheath about the core or inserting the core in the sheath any desired mechanism or process may be employed. The tips *f* may be affixed to the ends of the lacing in any desired way. They may be made of plastic or other material molded or formed about each end of the  
45 lacing and anchored to the sheath and core. The tips may be composed of a piece of wire *f'*, as shown in Fig. 1, formed helically around the end of the lacing, the core being extended  
50 into or through the parts of the sheath en-

veloped by the tips, so that both the core and the sheath are firmly secured to the tips, it being important in all cases to have the tips firmly anchored to the sheath and the core, this anchorage being effected in Fig. 2 by 55 the interlocking of the material with the core and the sheath, in Fig. 1 by the grip of the wire upon the core and sheath and the passing of the wire through these parts, and in Fig. 3 by prongs *f*<sup>2</sup>, stamped out of the sheet- 60 metal tip.

As already stated, the core *a'* is relatively of less diameter than the hole in the sheath. By this construction the strain brought upon the lacing is borne by the core, the lacing 65 itself suffering no stretch even when bent at a sharp angle, as through a hook or eyelet, as would be the case if the core completely filled the sheath, in which latter construction, if the lacing were bent, the outside of the lacing 70 would necessarily receive an undue stretch or strain.

By my invention a lacing is produced in which the longitudinal strain is borne in large part or entirely by the core, and the sheath 75 or part of the lacing that is visible protected from strain and breakage.

Having thus explained the nature of my invention and described a way of constructing and using the same, though without attempting to set forth all of the forms in which it may be made or all of the modes of its use, what I claim, and desire to secure by Letters Patent, is—

As an article of manufacture, a lacing comprising a tubular woven body or sheath, a non-metallic, flexible core within said sheath and of less diameter than the hole in the sheath, and tips arranged about the ends of the lacing, and anchored to the ends of the 85 core and sheath.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 20th day of January, A. D. 1897.

ELEAZER KEMPSHALL.

Witnesses:

D. CARROLL DIGGES,  
WILLIAM QUINBY.