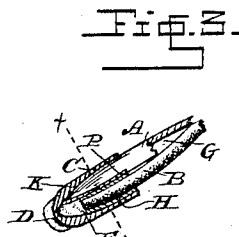
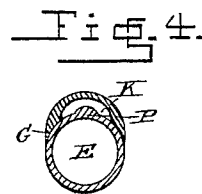
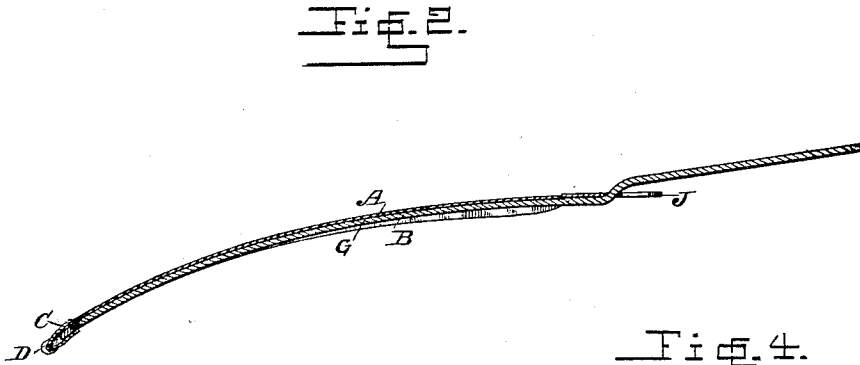
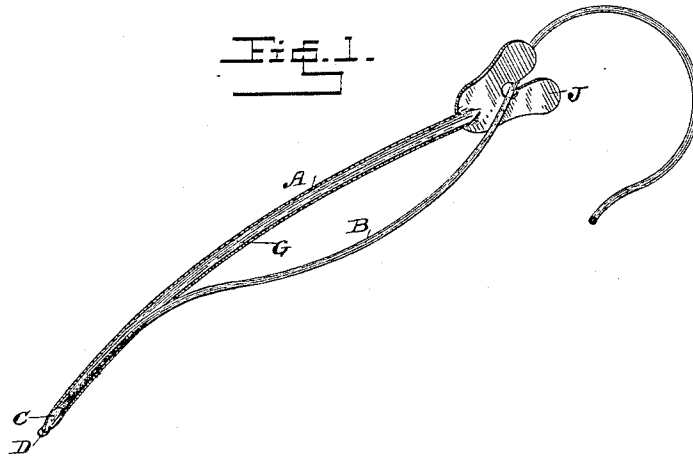


(No Model.)

M. M. BROWN.  
DEVICE FOR APPLYING FISTULA LIGATURES.

No. 454,327.

Patented June 16, 1891.



WITNESSES

Joseph H. Blackwood  
Albert B. Blackwood

INVENTOR

Mahlon M. Brown  
per Geo. V. Meyer  
Attorney

# UNITED STATES PATENT OFFICE.

MAHLON M. BROWN, OF ELMIRA, NEW YORK, ASSIGNOR OF ONE-HALF TO  
GEO. V. MYER, OF TOWANDA, PENNSYLVANIA.

## DEVICE FOR APPLYING FISTULA-LIGATURES.

SPECIFICATION forming part of Letters Patent No. 454,327, dated June 16, 1891.

Application filed September 25, 1890. Serial No. 366,171. (No model.)

*To all whom it may concern:*

Be it known that I, MAHLON M. BROWN, a citizen of the United States, residing at Elmira, in the county of Chemung and State of New York, have invented certain new and useful Improvements in Fistula-Ligature Applicators; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention consists of a flexible grooved director provided with a suitable handle on one end and detachable head at the other end adapted to carry a ligature, the head being provided with a cutting extremity, as will more fully appear in the following description.

The object of this instrument is to pass a ligature from the exterior end or opening of anal fistulas through the channel of the same into the rectum and out through the orifice of the anus, for the purpose of curing the fistula, as hereinafter described.

In the accompanying drawings, in which like letters represent like parts in each, Figure 1 is a view of my instrument complete. Fig. 2 is a longitudinal section of the same. Fig. 3 is an enlarged longitudinal section of the head of the same. Fig. 4 is an enlarged cross-section of the head on the line  $x y$  of Fig. 3.

A is a director, formed by a strip of thin flexible metal or equivalent material bent so as to form a groove G, and is slightly tapered toward its point, where it is made thinner, so that it can be shoved tightly in the aperture K, which is adapted to fit and receive it.

J is a suitable handle on one end of the grooved director A.

B is a ligature provided with a metal head C on one end.

D is a circular blade or cutter, firmly fixed in the extreme end of the head C.

For the ligature B, I use the ordinary soft rubber, on one end of which I fasten a small

metal band or cylinder H, which is adapted to fit tightly in the recess E of the head-piece C, alongside of the point of the director. Within the head-piece C there is a very thin partition P between the portion made to receive the point of the director and that made to receive the cylinder or band H on end of the ligature, so that either the point of the director or the band H, carrying the end of the ligature, may be separately inserted or removed, as may be desired. The director is made of flexible material, so that it may be bent to various curves, as may be required in different cases.

To operate with my instrument I fasten one end of the ligature within the band H, and insert it in the recess E of the head C, and insert the point of the director A within the recess K of the head C alongside of the band H, and place the ligature along the groove G of the director A the length thereof and extending beyond the handle thereof a sufficient length, as may be required. I then insert the head C into the exterior opening of the fistula, and with the director pass it gently along the channel of the fistula and into the rectum. The blade D is made with its diameter a little less than that of the head C, and in complete fistula acts merely as a probe; but in external incomplete fistula it serves to cut through and into the rectum, so that the end of the ligature is carried therein.

In ordinary cases, when the fistula opens between the upper and lower sphincter, the index-finger of the left hand of the operator, may be inserted at the anus into the rectum, before the head of the director enters it and as soon as the head passes through the wall of the rectum it can be detached by the nail of the finger and held fast while the director is removed. The head, with the ligature attached, is then drawn out of the anus, the head removed, and ligature tied. In some cases it will be necessary to introduce a slotted speculum into the rectum and pass the head of the director through the slot into the speculum and detach it with forceps. After the ligature is tied it begins to cut its way out. It is repeatedly tightened, and in a few days

will cut its way completely out, and the wound  
heals and closes after it, so that when it is  
out and the tissues healed the fistula is cured.

5 What I claim, and desire to secure by Let-  
ters Patent, is—

1. A fistula-ligature applicator consisting  
of a grooved director provided with a detach-  
able head with a circular blade at its extreme  
end adapted to carry a ligature through a fis-  
10 tula, substantially as shown and described.

2. In a surgical instrument, the combina-  
tion, with a grooved director and ligature, of

a detachable head provided with a blade in  
one end and double recess in its other end  
adapted to receive both the point of the di- 15  
rector and one end of the ligature, substan-  
tially as and for the purpose shown and de-  
scribed.

In testimony whereof I affix my signature in  
presence of two witnesses.

MAHLON M. BROWN.

Witnesses:

W. T. CAMPBELL,

E. H. MURPHY.