

No. 765,879.

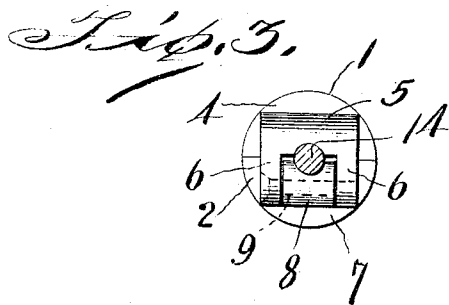
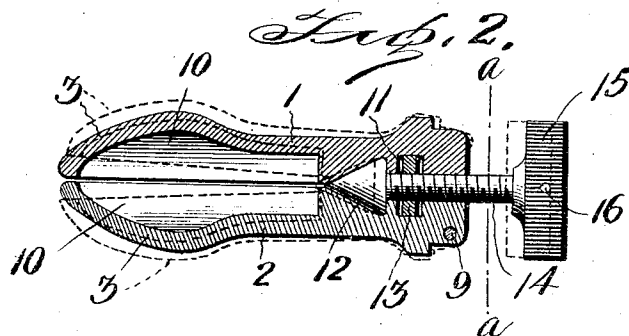
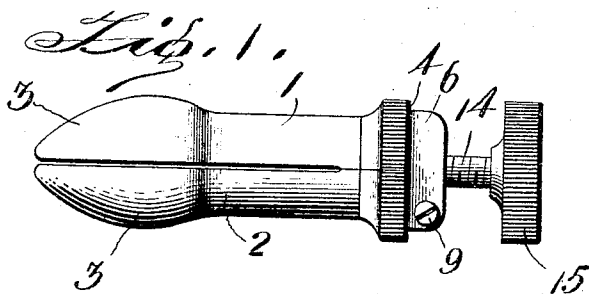
PATENTED JULY 26, 1904.

W. A. K. CAMPBELL.

DILATOR.

APPLICATION FILED MAY 13, 1904.

NO MODEL.



Witnesses

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# UNITED STATES PATENT OFFICE.

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## DILATOR.

SPECIFICATION forming part of Letters Patent No. 765,879, dated July 26, 1904.

Application filed May 13, 1904. Serial No. 207,761. (No model.)

*To all whom it may concern:*

Be it known that I, WILBER A. K. CAMPBELL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Dilators; 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.

My invention relates to improvements in dilators for surgical use; and it consists in the construction, combination, and arrangement of devices hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of a dilator embodying my improvements. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a transverse sectional view of the same, taken on the plane indicated by the line *a a* of Fig. 2.

My improved dilator has a pair of jaws 1 2, each enlarged diametrically at its outer end, as at 3, said enlargements of the jaws forming a head. Each jaw has a shouldered base at its inner end. The base 4 of the jaw 1 has a lug 5, formed integrally therewith, and has integral arms 6, which project from the sides of the said lug. The base 7 of the jaw 2 has a lug 8, which lies between the outer ends of the said arms and is pivoted thereto by a pin or other suitable device 9. Thereby the jaws have their base ends pivotally connected together, and said jaws are adapted to be opened and closed. Each jaw is hollowed on its inner side for a suitable distance from its headed or outer end, as at 10, is provided near its base with a recess 11, and is further provided with a semiconical cam-recess 12. A nut 13 is fitted and is loose in the recesses 11 and is engaged by the threaded stem of a longitudinally-disposed cam-screw 14, said stem of said cam-screw extending outwardly between and beyond the base-lugs 4 7 and having a milled head 15 at its outer end, here shown as secured thereto by a cross-pin 16. At the inner end of the screw 14 is a cam-head 17 of conical form, which operates in the semiconical cam-recesses 12 of the jaws.

It will be understood that by turning the screw in one direction the conical cam-head thereof will be caused to move outwardly in the cam-recesses of the jaws and to coact with the inclined surfaces presented by said recesses to open or distend the headed ends of the jaws to the extent required.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

1. A dilator comprising a pair of jaws pivotally connected together at their inner ends and provided with recesses 11 and cam-recesses 12 on their inner sides, a nut in the recesses 11, and a longitudinally-disposed screw engaging said nut and having a cam-head coacting with the cam-recesses to open or expand the jaws as the screw is turned, substantially as described.

2. A dilator comprising a pair of jaws having lugs at their inner ends, and provided, on their opposing inner sides, with recesses 11 and cam-recesses 12, pivotal connections between the said lugs, a nut in the recesses 11, and a longitudinally-movable screw engaging said nut, extending between and beyond the said lugs, and having a cam-head coacting with the cam-recesses to open or expand the jaws as the screw is turned.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILBER A. K. CAMPBELL

Witnesses:

BENJ. G. CAROL,  
CLAYTON J. BIRCH.