(No Model.) 2 Sheets—Sheet 1.

J. SCHMITT.

SURGICAL KNIFE.

No. 394,304. Patented Dec. 11, 1888.

Fig. 1.

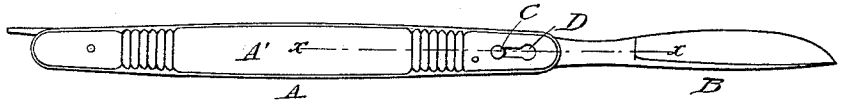
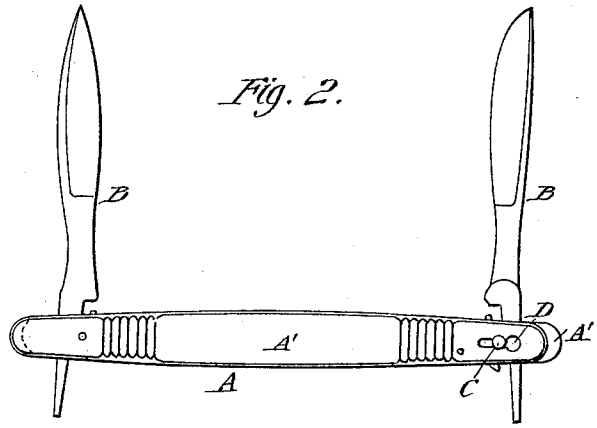


Fig. 2.



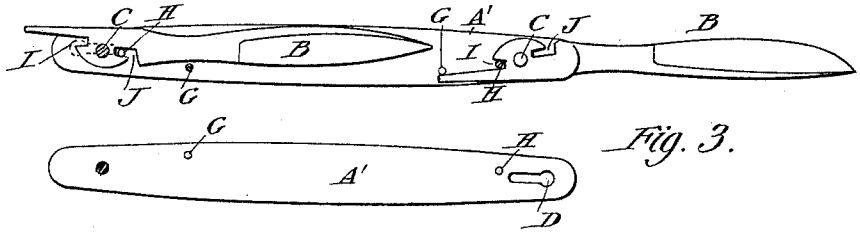


Fig. 3.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

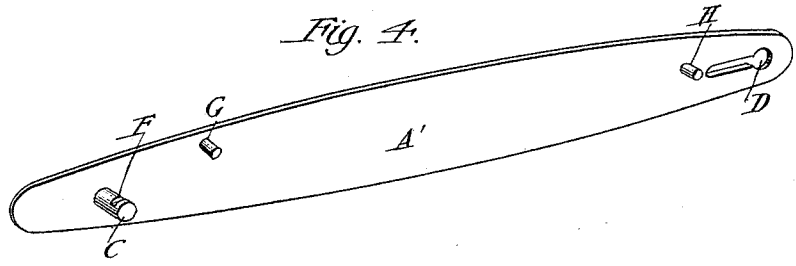


Fig. 5.

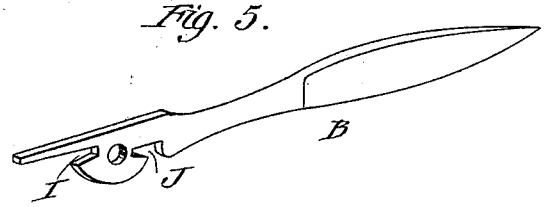
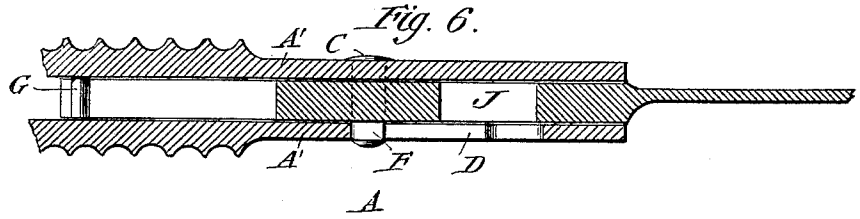


Fig. 6.



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UNITED STATES PATENT OFFICE.

JUSTUS SCHMITT, OF OSNABRÜCK, GERMANY.

SURGICAL KNIFE.

SPECIFICATION forming part of Letters Patent No. 394,304, dated December 11, 1888.

Application filed April 13, 1888. Serial No. 270,527. (No model.) Patented in Germany March 9, 1887, No. 41,739, and in England July 20, 1887, No. 10,181.

To all whom it may concern:

Be it known that I, JUSTUS SCHMITT, a subject of the Emperor of Germany, and a resident of Osnabrück, Germany, have invented new and useful Improvements in Knives for Chirurgical Purposes, (which has been patented in England, numbered 10,181, and dated July 20, 1887, and in Germany, numbered 41,739, and dated March 9, 1887,) of which the following is a specification.

This invention relates to an improvement in knives of the kind generally used by surgeons, in which the blades are usually adapted to be locked in either their extended or closed position with respect to the handle.

The main object of my improvement is to provide for readily taking apart knives of this character, in order that they may be conveniently and thoroughly cleaned after use; and the invention consists of a knife constructed and arranged for use substantially as hereinafter set forth, and as pointed out in its different features in the claims.

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

Figure 1 is a side view of a knife embodying my improvement having two blades, one of which is locked open and the other closed. Fig. 2 is a similar view of the said knife, both blades being partly open and free to be further opened or closed. Fig. 3 is a view of the knife adjusted as in Fig. 1, one part of the handle being shown detached and turned over to exhibit its inside. Fig. 4 is a detail perspective view of one part of the handle. Fig. 5 is a detail perspective view of one of the blades; and Fig. 6 is an enlarged longitudinal sectional view of one end part of the knife, taken on the line *x x*, Fig. 1.

The knife here represented is composed of a handle, A, formed of two similar opposite side plates, A′, and of two end blades, B, having cutting-edges of different form, but corresponding shanks.

Each plate A′ of the handle A is provided with a stud, C, fixed to and projecting from its inner face a short distance from one end, and each with a longitudinal button-hole-shaped slot, D, a short distance from its other end, and each stud C is passed as a pivot through a hole formed in the shank of the respective blade B and through the wider portion of the button-hole slot D in the respective opposite plate A′, and is formed near its outer end with notches F on opposite sides, parallel with the length of the handle, to receive and guide the opposite edges of the narrower portion of the button-hole slot D in the said opposite plate A′, so that the two plates A′ of the handle will be connected together, while permitted to be moved lengthwise upon each other, but may be readily disconnected and the blades removed for cleaning on moving the plates relatively to bring the studs C into the wider portions of the button-hole slots D and separating the plates laterally.

Each plate A′ is provided also with a stop-pin, G, projecting from its inner face a short distance from the respective stud C thereon, in position to strike and check the shank of the blade B, pivoted on the said stud, when closed, and each blade B is formed with a tail-piece adapted to strike the respective stop-pin G and check the blade when fully opened. Each plate A′ is further provided with a locking-pin, H, projecting from its inner face and a short distance from the slot D, and the shank of the respective blade B, pivoted on the said stud C, is formed with inward-tapering slots I J, adapted to receive the respective opposite locking-pin, H, and arranged on opposite sides of the stud C, of which the slot I opens straight outward and the slot J at its side.

The construction and arrangement is such that when the two parts of the handle are moved slightly past each other, as before described, the locking-pins H are both free from engagement with either of the respective slots I J, and both or either of the blades thus free to be opened or closed at will, and when both or either of the blades are fully opened or closed and the two handle-plates moved into coincidence with each other the pins H will enter the slots I or J of the respective blades, according as the same are opened or closed, and securely lock them in such position.

When either blade is closed, as shown in Fig. 3, the ends of its laterally-opening slots J are adapted while receiving to limit the pin

H on the opposite handle-plate, so that the same cannot be moved sufficiently to bring the connecting-studs C into the wider portions of the respective button-hole slots D, whereby the knife is prevented from coming apart either when in use or when closed.

On opening both blades, so as to bring the locking-pins H out of the lateral openings of the respective slots J, the plates A′ are free to be moved relatively to the greatest extent permitted by the slots D, so that the knife can be readily taken apart and put together again, as before stated.

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

1. A surgical knife having its handle formed of two detachable and interlocking parts, substantially as described, whereby provision is made for taking the knife apart for cleaning the same, as set forth.

2. A surgical knife having its handle formed of two detachable and interlocking parts and provided with blades pivoted between the same, the parts of the handle being locked together when the blades are closed, but free to be separated when the blades are open, substantially as herein shown and described.

3. A surgical knife consisting of a handle formed of two separable plates provided with interlocking devices, and stops and blades pivoted between the said plates and each provided with a tail-piece and slots, substantially as herein shown and described.

4. In a knife, the combination of similar plates forming a handle and provided with button-hole-shaped slots, connecting-studs adapted to the said slots and notched near their ends to receive the edges of the slots, blades, and blade limiting and locking pins carried by the plates, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JUSTUS SCHMITT.

Witnesses:
C. H. F. KAUNE,
C. L. HOBELMANN.