

R. KNAFFL.
Surgical Speculums.

No. 151,228.

Patented May 26, 1874.

FIG. 1.

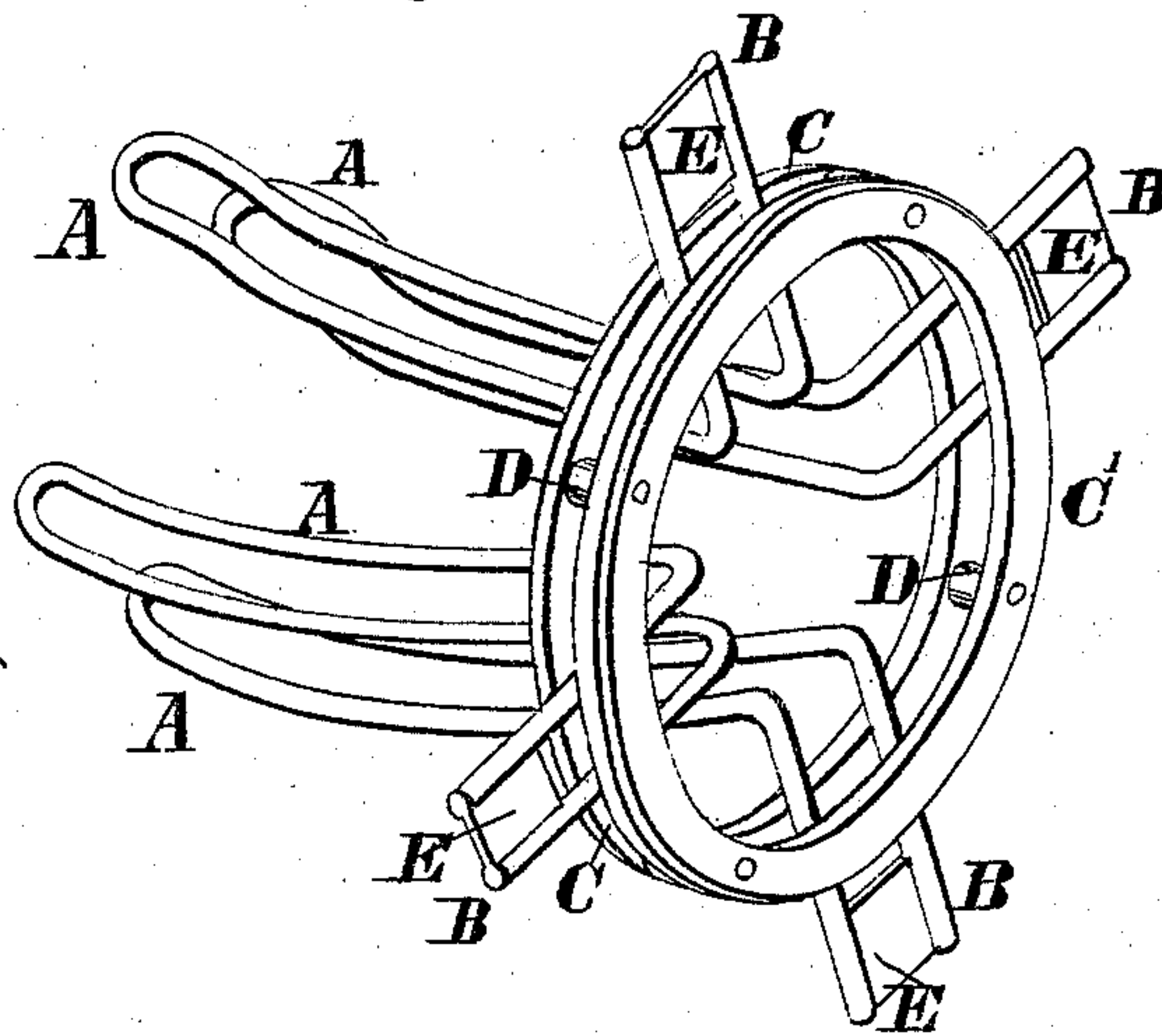
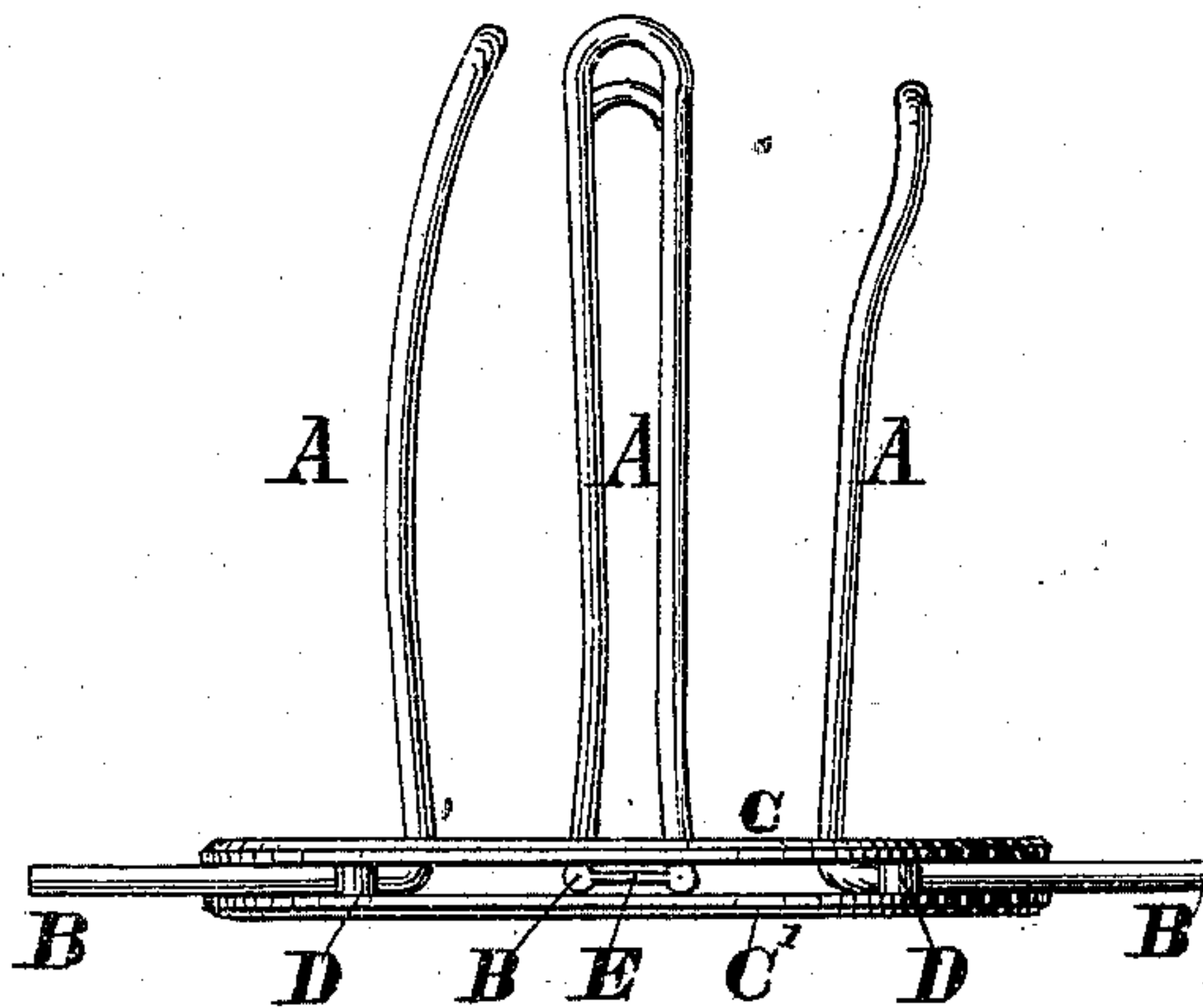


FIG. 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

RUDOLPH KNAFFL, OF KNOXVILLE, TENNESSEE.

IMPROVEMENT IN SURGICAL SPECULUMS.

Specification forming part of Letters Patent No. 151,228, dated May 26, 1874; application filed January 12, 1874.

To all whom it may concern:

Be it known that I, Dr. RUDOLPH KNAFFL, of Knoxville, in the county of Knox and State of Tennessee, have invented a new and useful Surgical Speculum, of which the following is a specification:

The instrument forming the subject of my invention is constructed with any desirable number of longitudinal fingers, each formed at its rear end with an elbow, from which an arm projects radially outward between the two parts of a double or slotted ring. The inward pressure of the walls of the canal on the extremities of the longitudinal fingers causes them to act as levers on the radial arms, which are thus made to bind between the parallel rings, so that the pressure is firmly resisted; but by an opposing outward pressure either finger is released, and may then be adjusted, inward or outward, through the medium of its radial arm, as hereinafter described.

In the accompanying drawing, Figure 1 is a perspective view of an instrument illustrating the invention. Fig. 2 is an elevation thereof.

A A A represent a series of fingers, preferably made of bent wire, in about the form represented, so as to have smooth bowed ends. At the base the said fingers are bent at about right angles, so as to form arms B B B, which pass radially outward between two rings, C C', connected by screws or rivets D, leaving just sufficient space for the said arms to slide freely. The two parts or wires of each arm are preferably connected by a bar or plate, E, to render them mutually supporting, and increase their strength and rigidity.

The instrument is applicable to either vaginal or anal examination, and to all analogous purposes.

It is used in the following manner: The fingers A may be introduced into the canal one at a time; or if slid close together, and then introduced collectively, the application causes no pain or inconvenience. The operator then introduces his finger on the inside of each of the fingers A in succession, and by pressing outward against the inward pressure of the canal the arm B is relieved from binding,

and may be slid freely outward between the rings C C'. The fingers A, being thus adjusted, are automatically and securely held in their expanded position by the elastic pressure of the canal on their extremities, causing the arms or radial portions B to bind between the parallel rings C C'. Any desired dilation can thus be produced, and retained as long as necessary. When the fingers are to be retracted they are released by a similar outward pressure of the operator's finger on the extremity of either finger he desires to move, and a slight pressure on the end of the radial arm will then slide it inward.

From the above description it will be seen that the instrument can be applied with perfect facility by a single operator without the aid of an assistant. It is easy and painless in use, and performs all the functions of many more complicated instruments in a superior manner.

The fingers may be bent in any preferred shape, and in use may be changed, as required, or a larger or smaller number of them may be used. The instrument permits and affords perfect facility for introducing a reflector through the center of the rings while the fingers remain in position.

The fingers may be made, as here represented, of wire or any desirable metal; or they may be made in flat form, of metal, rubber, wood, ivory, or other material.

It is manifest that the double ring C C', which in the present illustration is represented as consisting of two connected parallel rings, may, if preferred, be made in a single piece of material with radial slots or openings for the arms to pass through.

I claim as new—

The surgical speculum herein described, constructed with fingers of any preferred form, connected to arms passed radially between the two parts of a double or slotted ring, and retained in position by pressure on the extremities of the fingers, substantially as set forth.

DR. RUDOLPH KNAFFL.

Witnesses:

M. OCHS,

L. A. GRATZ.