

(No Model.)

W. G. MORGAN.  
SURGICAL LAMP.

No. 501,524.

Patented July 18, 1893.

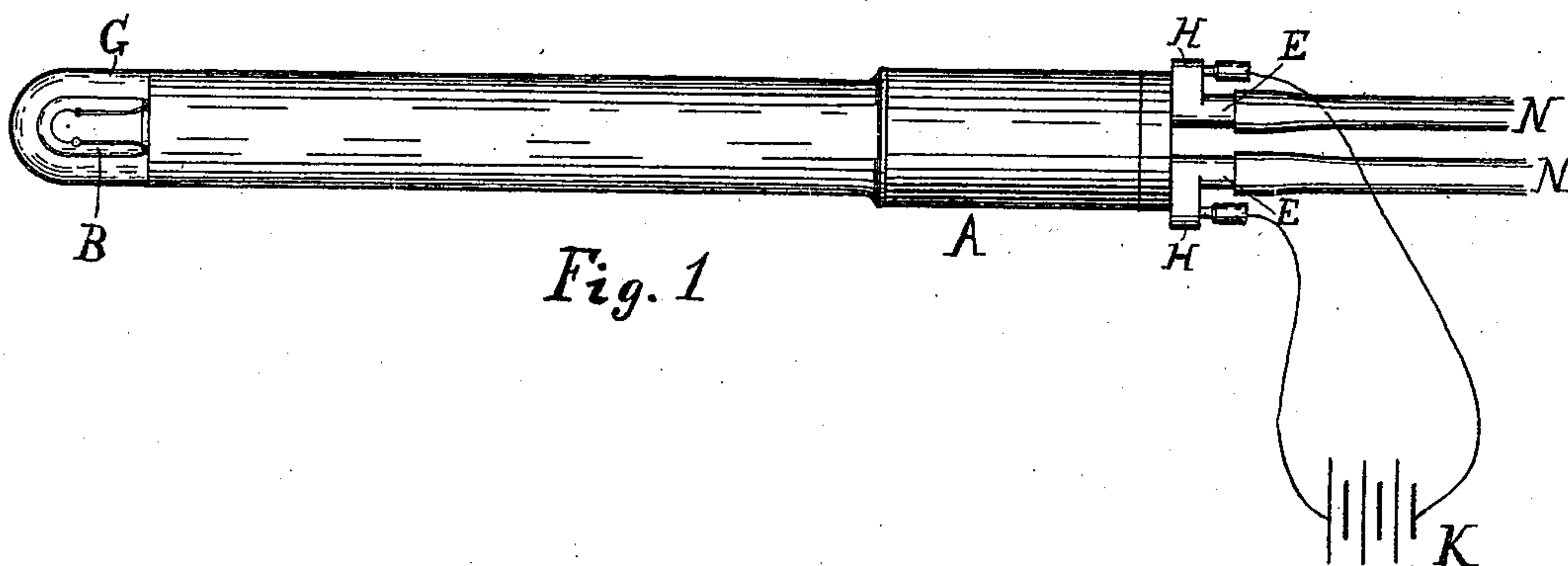


Fig. 1

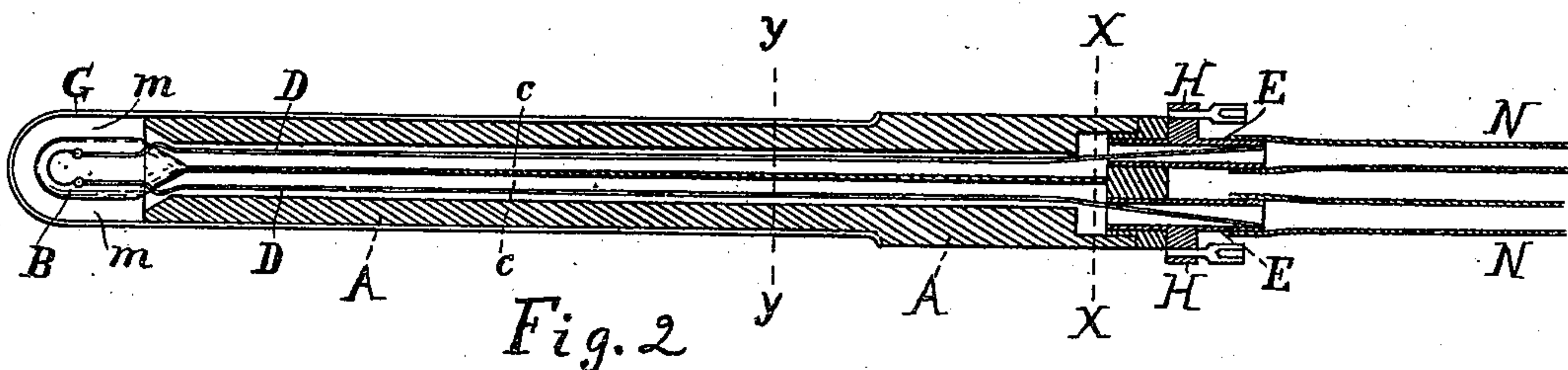


Fig. 2

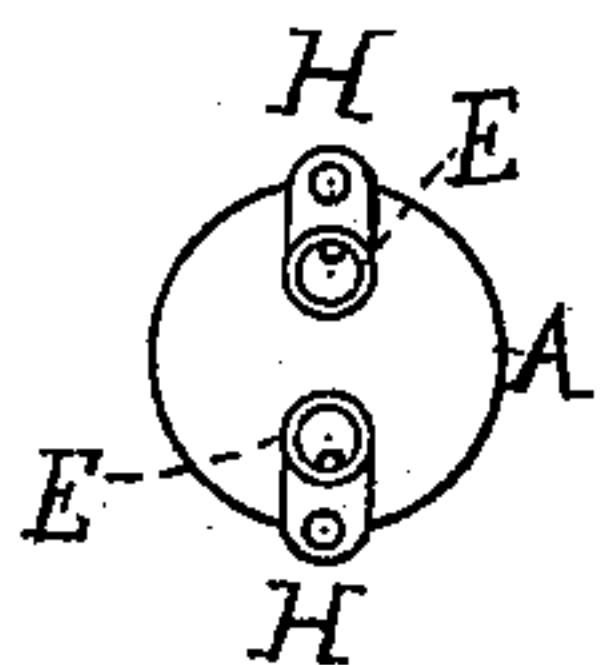


Fig. 5

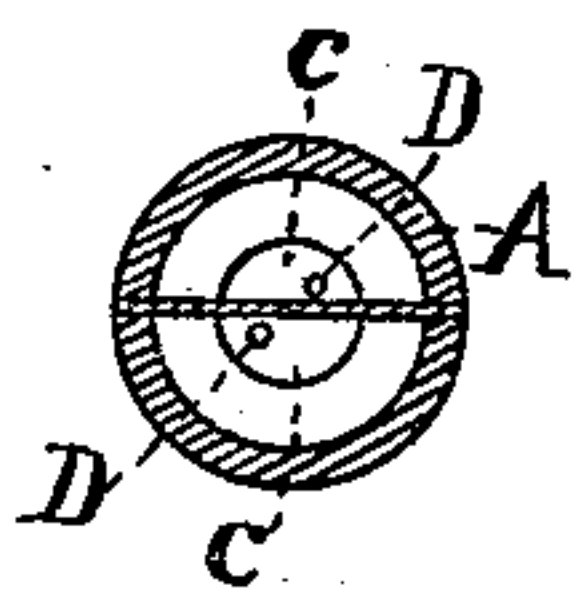


Fig. 3

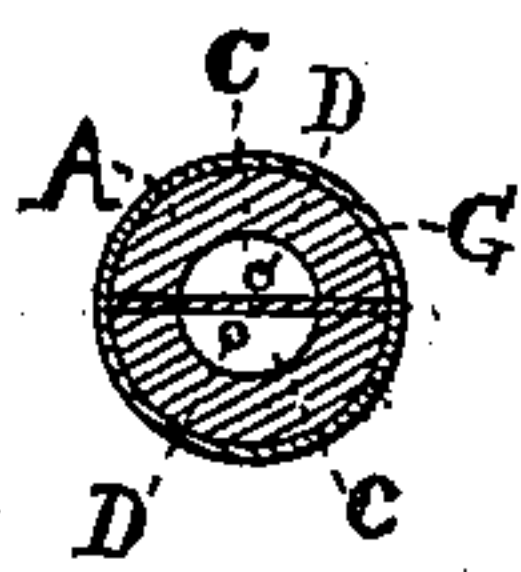


Fig. 4

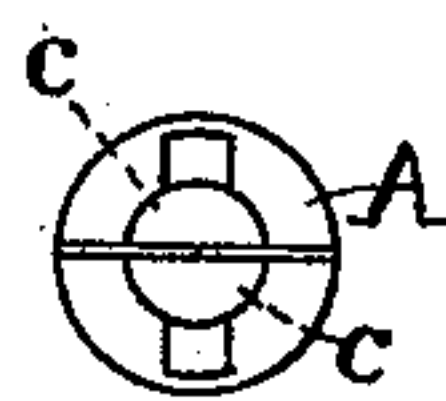


Fig. 6

Witnesses.  
Seth L. Larrabee  
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# UNITED STATES PATENT OFFICE.

WILLIAM GERRY MORGAN, OF FRYEBURG, MAINE, ASSIGNOR OF ONE-HALF  
TO GERRY MORGAN, OF SAME PLACE.

## SURGICAL LAMP.

SPECIFICATION forming part of Letters Patent No. 501,524, dated July 18, 1893.

Application filed July 27, 1892. Serial No. 441,402. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM GERRY MORGAN, a citizen of the United States, residing at Fryeburg, in the county of Oxford, State of Maine, have invented a new and useful Surgical Lamp, of which the following is a specification.

My invention relates to improvements in electric surgical lamps which are used by surgeons and physicians in performing internal surgical operations and in making internal physical examinations; and the object of my improvement is to provide an electric surgical lamp from which there is no radiation of heat. I attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the instrument. Fig. 2 is a longitudinal section of the instrument. Fig. 3 is a cross section on the line *x x*. Fig. 4 is a cross section on the line *y y*, and Figs. 5 and 6 are end elevations respectively.

Similar letters refer to similar parts throughout the several views.

A is a long and slender stock of hard rubber or other suitable material, cylindrical in form and of such length and size as may be desirable for the purpose for which it is designed. Two small separate channels C C traverse longitudinally the stock A from end to end. At one end of the stock A is fixed a small electric incandescent lamp B. The two wires D D from the lamp B pass through the channels C C in the stock A and are connected to the terminals E E which are secured to the other end of the stock A. A transparent thimble G is fitted closely over the end of the stock A which holds the incandescent lamp B, completely incasing the lamp B and being of sufficient size to incase the said lamp without coming in contact with it in any part. A chamber M is thus formed outside and all around the incandescent lamp. The thimble may be extended along the stock to any desired length and may be wholly or partially transparent or translucent and may be secured to the stock by cement. I prefer to use a glass thimble which covers about three-

fourths of the length of the stock. The two terminals E E are tubular in form, having projections H H which serve for the attachment of the wires from the battery K. The tubes of the terminals E E lead into the channels of the stock A so that a clear passage extends from one of the terminals through the stock A into the chamber M around the incandescent lamp in every part and back through the stock to the other terminal. The terminals are connected by other tubes N N with suitable reservoirs or pumps. The chamber M and the channels C C are filled with water or other transparent fluid supplied from suitable reservoirs or pumps. A complete protective jacket is thus formed about the lamp B. Water or fluid of any desired temperature may be used and kept in constant circulation through the chamber M around the incandescent lamp B by force or pressure. The heat generated by the lamp B may be entirely neutralized and overcome by using fluid of sufficiently low temperature. I use water to form the jacket and produce the circulation necessary to neutralize the heat of the lamp, but any transparent fluid or gaseous compound may be used with satisfactory results. I prefer to make the stock of hard rubber molded in two sections, cementing them together with a thin diaphragm between them to form the two separate channels desired as shown in Fig. 4, but any other suitable material may be used and channels may be made by boring or otherwise. I have shown the instrument perfectly straight but it may be curved in any desired form without substantial change of construction.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. An electric lamp having in combination an incandescent lamp B fixed to a suitable stock or support, a transparent thimble incasing said lamp, conduits for fluid leading to and from the chamber M, and an electric circuit leading to and from the lamp, the whole arranged so that a circulation of fluid may be maintained around the lamp and the heat removed.

2. The combination in an electric surgical



lamp of the small electric incandescent lamp B, the transparent thimble G, the channeled stock A and the tubular terminals E E.

3. An electric lamp having in combination  
5 a small incandescent lamp B secured in the chamber M at the end of a suitable channeled stock, a transparent thimble incasing said lamp and extending partly over the stock, a circuit extending to said lamp, and conduits

adapted to conduct fluid to and from the said 10 channeled stock; whereby a circulation of cooling fluid may be maintained around the lamp.

WM. GERRY MORGAN.

Witnesses:

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HARRY C. PEABODY.