June 14, 1949. I. SUWA 2,473,479

LAMP FOR ENDOSCOPIC INSTRUMENTS

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Fig. 1.

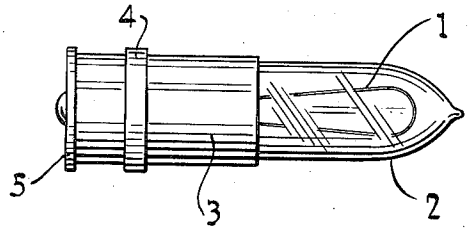
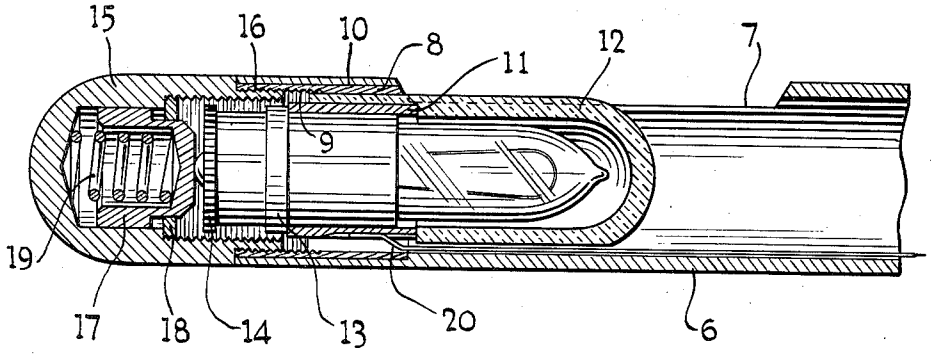


Fig. 2.



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LAMP FOR ENDOSCOPIC INSTRUMENTS

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3 Claims. (Cl. 176—16)

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The present invention relates generally to lamps for endoscopic instruments and more particularly to improvements in lamps for cystoscopes.

The cystoscope comprises, among its other essential elements, a lamp inside a transparent capsule which is mounted inside the tip of a cystoscope tube for illuminating body cavities through a fenestral opening located substantially at the end of the cystoscope tube.

Cystoscope lamps are generally of the cartridge type and include an incandescent filament inside a glass envelope which is secured to a tubular metallic base having a flange at one end.

When the lamp is inserted into the cystoscope tip through a breach provided therefor, the flange portion of the lamp base prohibits further motion through said breach and positions the lamp in proper location for illumination through a fenestral opening. However, after the cystoscope has been used considerably, the lamp base is subjected to corrosion which causes the lamp base to become so fixed to the breach that removal therefrom, for cleaning purposes, etc., is quite difficult. Since the flange portion rests against the breach, it offers no easy means by which it may be grasped to facilitate removal of the lamp. Sometimes, the lamp has to be broken out, which obviously results in the destruction of the lamp and also a considerable waste of time and often injury to the instrument.

It is one object of this invention to provide an improved lamp for cystoscopes and the like instruments. It is another object of this invention to provide a cystoscope lamp adapted for easy removal from a cystoscope. Other objects and advantages of this invention will become apparent from the description hereinafter following and the accompanying drawings forming part hereof, in which:

Figure 1 illustrates an elevational view of the cystoscope lamp of the invention, and

Figure 2 illustrates a longitudinal sectional view of the tip of a cystoscope tube containing a cystoscope lamp shown in elevation.

The present invention deals with an improved cartridge type lamp for use in endoscopic instruments, for example cystoscopes, nasopharyngoscopes, etc., and which comprises the provision of a lamp base having a plurality of flanges, preferably two flanges.

According to Figure 1, the cystoscope lamp of the invention comprises an incandescent filament 1 inside a glass envelope 2 which is secured to a tubular metallic base 3 having flanges 4 and 5.

In Figure 2, the cystoscope lamp, shown in elevation, is positioned inside the tip of a cystoscope tube illustrated in longitudinal section. The cystoscope tube 6, at a location forward of the fenestrum 7, is provided, on its inner circumference, with a metallic tubular structure 8 having a threaded portion 9, said tubular structure being firmly secured to the cystoscope tube by soldering or otherwise, for example by soldering as indicated at 10. The breach for the insertion of a lamp therein comprises a metal ring 11, e. g. a ring of a nickel-silver alloy, insulated from the tubular structure 8 by a transparent protecting insulating capsule 12 of any suitable transparent or translucent insulating material. Upon insertion of the lamp into the breach, the flange 13 contacts the end of the ring 11 and positions the lamp in proper location for illumination through the fenestrum 7. The flange 14 of the lamp base is in such spaced relation with respect to the flange 13 that it may easily be grasped with the fingers for removal of the lamp from the cystoscope. For firmer gripping, the flange 14 may be provided with a milled or knurled periphery.

After replacing the lamp into the cystoscope, the end cap 15, which is provided with a threaded portion 16, is screwed into position by means of the complementary threaded portions 9 and 16.

Proper electrical contact is established by forcing the contact 17 through an aperture in the disc 18, by means of the spring 19. With respect to the provision of electrical current for the lamp, the insulated conductor 20 lies along the inside length of the tube 6 and leads to the contact ring 11 substantially as illustrated.

It is, therefore, apparent that I have provided an improved cystoscope lamp directed primarily for the easy and efficient removal or replacement of the lamp.

However, the invention is not limited to the specific illustrations and description herein set forth as relating to the cystoscope, but may be construed to include, generally, improvements in a lamp for endoscopic instruments falling within the true scope of the invention.

What I claim is:

1. A cartridge type lamp for an endoscopic instrument, comprising an incandescent filament, a glass envelope, and a base having a plurality of flanges in spaced relation to each other, at least one of said flanges being adapted for grasping to remove the lamp from said endoscopic instrument.

2. A cartridge type lamp for a cystoscope, comprising an incandescent filament, a glass envelope, and a lamp base having a plurality of flanges in spaced relation to each other, at least

one of said flanges being adapted for grasping to remove the lamp from said cystoscope, said flange having a milled periphery.

3. A cartridge type lamp for a cystoscope, comprising an incandescent filament, a glass envelope, and a lamp base having two flanges in spaced relation to each other, one of said flanges being adapted for grasping to remove the lamp from said cystoscope, said flange having a knurled periphery.

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