

No. 688,935.

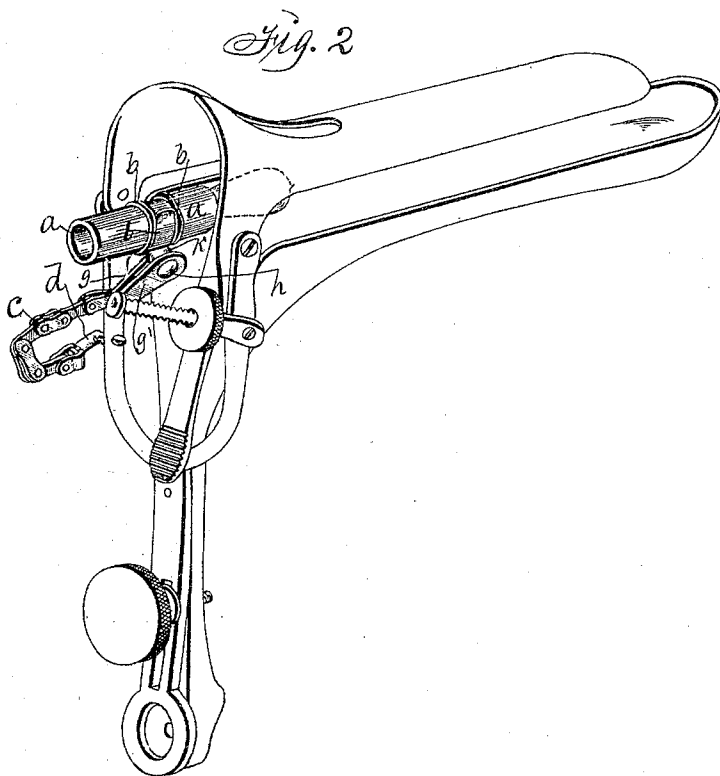
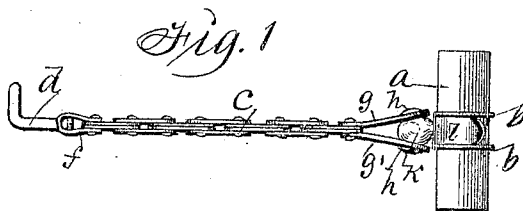
Patented Dec. 17, 1901.

S. B. CRANE.

APPARATUS FOR EXAMINING CAVITIES IN THE HUMAN BODY.

(Application filed Mar. 13, 1899. Renewed May 13, 1901.)

(No Model.)



Witnesses: }
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UNITED STATES PATENT OFFICE.

SYLVANUS B. CRANE, OF PERRY, IOWA.

APPARATUS FOR EXAMINING CAVITIES IN THE HUMAN BODY.

SPECIFICATION forming part of Letters Patent No. 688,935, dated December 17, 1901.

Application filed March 13, 1899. Renewed May 13, 1901. Serial No. 60,053. (No model.)

To all whom it may concern:

Be it known that I, SYLVANUS B. CRANE, a citizen of the United States, residing at Perry, in the county of Dallas and State of Iowa, have invented a new and useful Improvement in Apparatus for Examining Cavities in the Human Body, of which the following is a specification.

My invention relates to an electric apparatus adapted for illuminating cavities in the human body for the purpose of examining the membranes and locations of inflammation and abnormal growths and disorders preparatory to treatment.

Heretofore appliances of different forms have been detachably and interchangeably connected with an electric battery to be successively used for examining different cavities and organs and an electric lamp and lamp-holder required to be adapted in size and form for each speculum.

My object is to provide a flexible support for a lamp-holder and a lamp-holder and lamp that can be readily used on various forms of speculums in different cavities, so that one lamp will be sufficient in the operation of the apparatus for examining the various cavities or wounds and the internal conditions thereof.

My invention consists in the construction, arrangement, and combination of elements and parts of an apparatus, as hereinafter set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a view showing the flexible support detachably connected with the central portion of a straight tubular lamp-holder. Fig. 2 is a perspective view of a speculum, showing my lamp-holder and flexible support therefor detachably and adjustably connected with the speculum, as required for practical use.

The letter *a* designates an open-ended tubular lamp-holder provided with parallel heads *b* on its outside surface and central portion.

c is a chain composed of overlying flat links, as shown, riveted together to produce a flexible stem adapted to be bent and retained in numerous positions as required to support the lamp in various positions relative to the speculum.

d is a rigid elbow-shaped extension of the flexible stem, connected therewith by means of a swivel *f* in such a manner that the flexible portion can be rotated relative to the rigid portion.

g and *g'* are mating plates riveted to the end of the flexible chain and provided with concave bearings *h* to adapt them to serve as parts of a universal joint. *k* is a ball fitted between the free ends of the plates and clasped in the bearings *h*, and *l* and *l'* are the forked branches of a flexible clamp fixed to the ball *k* and adapted to be pressed astride of the lamp-holder *a*, as required, to detachably fasten it to the flexible stem and lamp-holder support, as shown in Fig. 2, by simply inserting the free end of the rigid elbow-shaped portion *d* in a perforation in the frame at the end of the speculum.

Heretofore lamp-holders of different lengths have been used on speculums and tongue depressors, and consequently a plurality of lamps differing in length have been required in the apparatus. It is therefore obvious that only one lamp is required by providing detachable lamp-holders of uniform length and means for supporting them on different speculums, so that the number of parts in the complete apparatus can be reduced without impairing the efficiency thereof for illuminating and examining various cavities in the body.

From the foregoing description of the construction and function of each element and subcombination the novelty and utility of my invention will be readily understood by persons familiar with the art to which it pertains.

It is obvious that the stem *c*, composed of a plurality of links, has such a degree of flexibility as will allow it to be bent at various points and practically doubled, as shown in Fig. 2, and as required for retaining the lamp in various positions relative to a speculum.

What I claim, and desire to secure by Letters Patent therefor, is—

1. In an apparatus for illuminating and examining cavities in the human body, a lamp-holder support comprising a flexible stem having a rigid elbow-shaped extension adapted to be detachably connected with a speculum having a perforation to admit the end of said

extension swiveled to one end and a clamp adapted to clasp a straight tubular lamp-holder connected with the other end by means of a universal joint, to operate in the manner

5 set forth.

2. A support for an electric lamp comprising a flexible stem composed of mating metal plates riveted together, a rigid elbow-shaped extension, a swivel connecting the said extension with one end of the chain of metal links, mating plates pivotally connected with the other end of said chain of links and a clamp, having a ball fixed thereto, connected with the said mating plates at the end of the flexible chain of links to produce a universal joint, a speculum having a perforation to admit the end of the elbow-shaped extension at the end of the chain and a straight open-ended tubular lamp-holder, all arranged and combined

10 to operate in the manner set forth for the purposes stated.

3. The flexible support for an electric lamp

comprising the open-ended lamp-holder *a*, the flexible stem composed of metal plates *c*, a rigid elbow-shaped extension *d* connected therewith by a swivel joint *f* and a clamp *l*, *l*, connected with the other end of the chain of metal plates and flexible portion of the stem by means of mating plates *g* having bearings *h* and a ball *k*, as shown and described for the purposes stated.

4. An electric-lamp holder comprising an open-ended tube adapted to admit an electric lamp, a flexible chain having a swivel connection with the central part of the tube and a device swiveled to the free end of the chain for detachably and adjustably connecting the tube with a speculum for the purposes stated.

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Witnesses:

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