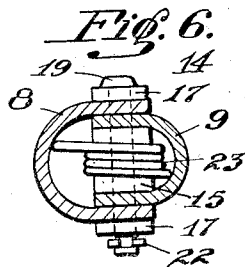
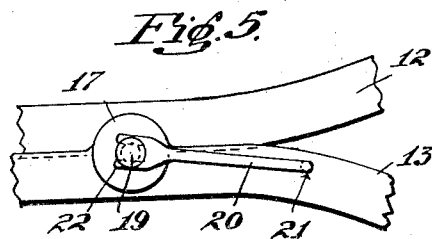
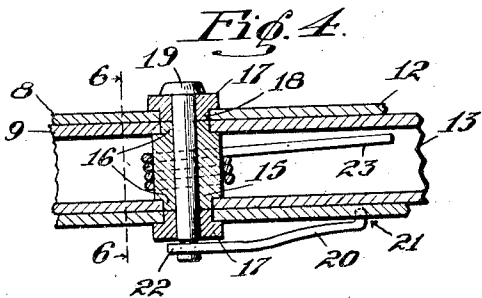
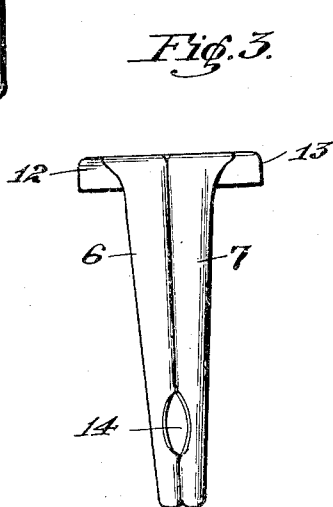
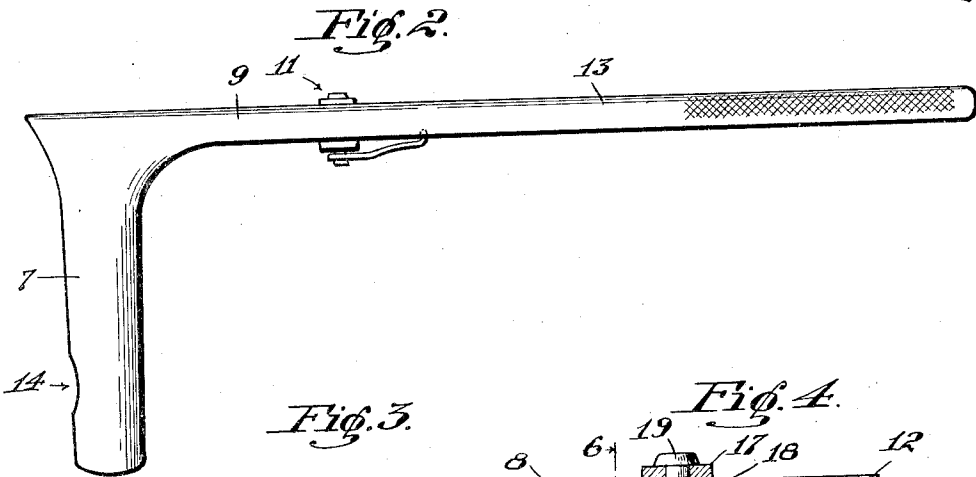
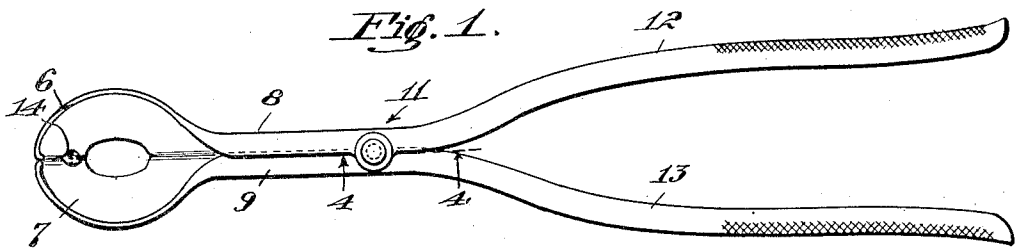


C. E. SMITH.
SPECULUM.
APPLICATION FILED SEPT. 11, 1918.

1,358,473.

Patented Nov. 9, 1920.



INVENTOR,
Charles Edgar Smith
BY *M. J. Randall*
ATTORNEY.

UNITED STATES PATENT OFFICE.

CHARLES EDGAR SMITH, OF REDONDO BEACH, CALIFORNIA.

SPECULUM.

1,358,473.

Specification of Letters Patent.

Patented Nov. 9, 1920.

Application filed September 11, 1918. Serial No. 253,568.

To all whom it may concern:

Be it known that I, CHARLES EDGAR SMITH, a citizen of the United States, residing at Redondo Beach, in the county of Los Angeles and State of California, have invented new and useful Improvements in Specula, of which the following is a specification.

My invention relates to a speculum and particularly pertains to a speculum of the type especially adapted for use as a rectal dilator.

It is the object of my invention to provide a speculum which is particularly applicable for use in self treatment of piles, constipation and kindred disorders, and which is suitable for use in assisting in the function of evacuation.

Another object is to provide a speculum embodying a pair of pivotally connected dilating blades in which the blades may be readily separated for cleansing purposes and the parts forming the pivotal connection removed and replaced so that every portion of the instrument may be thoroughly cleansed and sterilized.

A further object is to provide the speculum with dilating blades so formed as to render the instrument particularly serviceable in treating ulcerated or inflamed conditions of the rectum.

Other objects will appear hereinafter.

The invention is illustrated in the accompanying drawings, in which;

Figure 1 is a plan view of the instrument; Fig. 2 is a view of same in side elevation;

Fig. 3 is an end view;

Fig. 4 is an enlarged detail section as seen on the line 4-4 of Fig. 1, illustrating the construction of the separable pivotal connection of the dilating blades;

Fig. 5 is a view in elevation showing the underside of the separable pivot;

Fig. 6 is a view in section and elevation as seen on the line 6-6 of Fig. 4.

More specifically 6 and 7 indicate the rectal dilating blades which extend substantially at right angles to shanks 8 and 9 to which they are respectively integrally connected; the dilating blades being semi-elliptical in cross section and tapered on straight lines from a point adjacent to their intersection with the shanks to their tips. The shanks are pivotally connected together as indicated at 11 and are continued to form

spaced handles 12 and 13 of such length as to enable a person to readily apply the instrument to himself, the dilator blades being arranged at right angles to the shanks and handles so as to facilitate the insertion, dilation action, and removal of the blades by a person operating upon himself. This construction especially adapts the instrument for use in aiding evacuation. Furthermore by forming the blades to extend at right angles to the shanks they will be maintained in parallel relation to each other in either their open or closed positions so that when the blades are separated the tapered form of the speculum will be maintained, that is, the distance between the outer walls adjacent to the tips will be less than between the outer walls adjacent to the shanks. By this construction the outer portions of the cavity will thus be dilated more than the interior portions.

The blades 6 and 7 normally abut against each other and when so positioned form a split tube of substantially elliptic cross section and of gradually decreasing diameters from the intersection of the blades to their tips, as is common in speculum construction. As a means for facilitating the treatment of ulcerated or inflamed parts in the rectum, the outer contiguous edges of the blades are oppositely curved adjacent their tips to form an opening 14 to expose a portion of the rectal walls to the interior of the speculum without spreading the dilator blades. This opening is spaced a short distance from the tips of the blades and the edges of the blades between the opening and tips contact when the blades are in their closed positions to form a curved wall between the tips of the blades and the opening, closing the outer end of the opening when the blades are closed, so as not to interfere with the insertion of the speculum. Medication can be effected by placing a saturated sponge between the blades opposite the opening and inserting the blades in the rectum to bring the sponge into contact with the rectal walls without unnecessary expansion. The inner ends of the blades are flared outwardly at their juncture with the shanks to facilitate the insertion and removal of a medicated sponge or the like when the speculum is in place and in its closed position.

The blades, shanks and handles are formed of sheet metal and each part including a

blade, shank, and handle, is formed of one piece. The shanks are formed with a U-shaped cross section and are arranged with their open sides facing each other, the shank 5 9 being slightly overlapped by the shank 8.

In forming the pivotal connection between the shanks a spacing bushing 15 is inserted between the side members of the shank 9 and has reduced ends 16 which are 10 inserted in openings in the opposite walls of the shank and are rigidly affixed thereto as by brazing.

Mounted on the overlapping walls of the shank 8 opposite the ends of the bushing 15 15 are reinforcing bushings 17 having reduced portions 18 extending through openings in the side members of the shank and permanently attached thereto; the bushings being of a thickness greater than that of the thin 20 sheet metal walls of the shank to form a substantial bearing. Alined bores are formed in the bushings through which a pivot pin 19 is passed, this pin having a head seating on one of the bushings 17 and hav- 25 ing an annular or peripheral groove on its outer end arranged contiguous with the outer face of the other bushing 17. A plate spring 20 having one end inserted in a 30 socket 21 in the shank 8 has a forked outer end 22 which is positioned astride of the pivot pin in engagement with the peripheral groove so as to removably retain the pivot pin in place.

By removing the spring 20 and pivot pin, 35 the blades may be taken apart, which is essential for thorough cleansing of the instrument, particularly around the pivotal connection.

A spring 23 wound around the bushing 40 15 has its terminals bearing against the in-

ner sides of the handles so as to normally maintain them in their spaced position with the dilator blades closed.

The application and operation of the invention is obvious, the instrument being 45 adapted to be used in the well known manner common to devices of this character as well as for the uses herein set forth.

I claim;

1. In a speculum, a pair of shanks U- 50 shaped in cross section arranged with their open sides face to face and one shank overlapping the other, a spacing bushing arranged between the sides of the inner shank, reinforcing bushings on the sides of the 55 outer shank and extending through the walls thereof opposite said bushing, a pivot pin extending through the bushings pivotally connecting the shanks, said pin having a peripheral channel adjacent its end, and 60 a forked plate spring attached to the outer shank having its forked portion engaging the peripheral groove to hold the pin in place.

2. In a speculum, a pair of shanks U-shaped 65 in cross section arranged with their open sides face to face with the side portions of one shank overlapping the side portions of the other, a spacing bushing extending between 70 the side walls of the inner shank having reduced ends extending through openings in said side walls and permanently affixed thereto, a pair of reinforcing bushings on the outer faces of the side walls of the outer 75 shank affixed thereto, in alinement with the spacing bushing, said bushings formed with an alined bore, and a demountable pivot pin connecting said bushings on which the shanks are turnable.

CHARLES EDGAR SMITH.