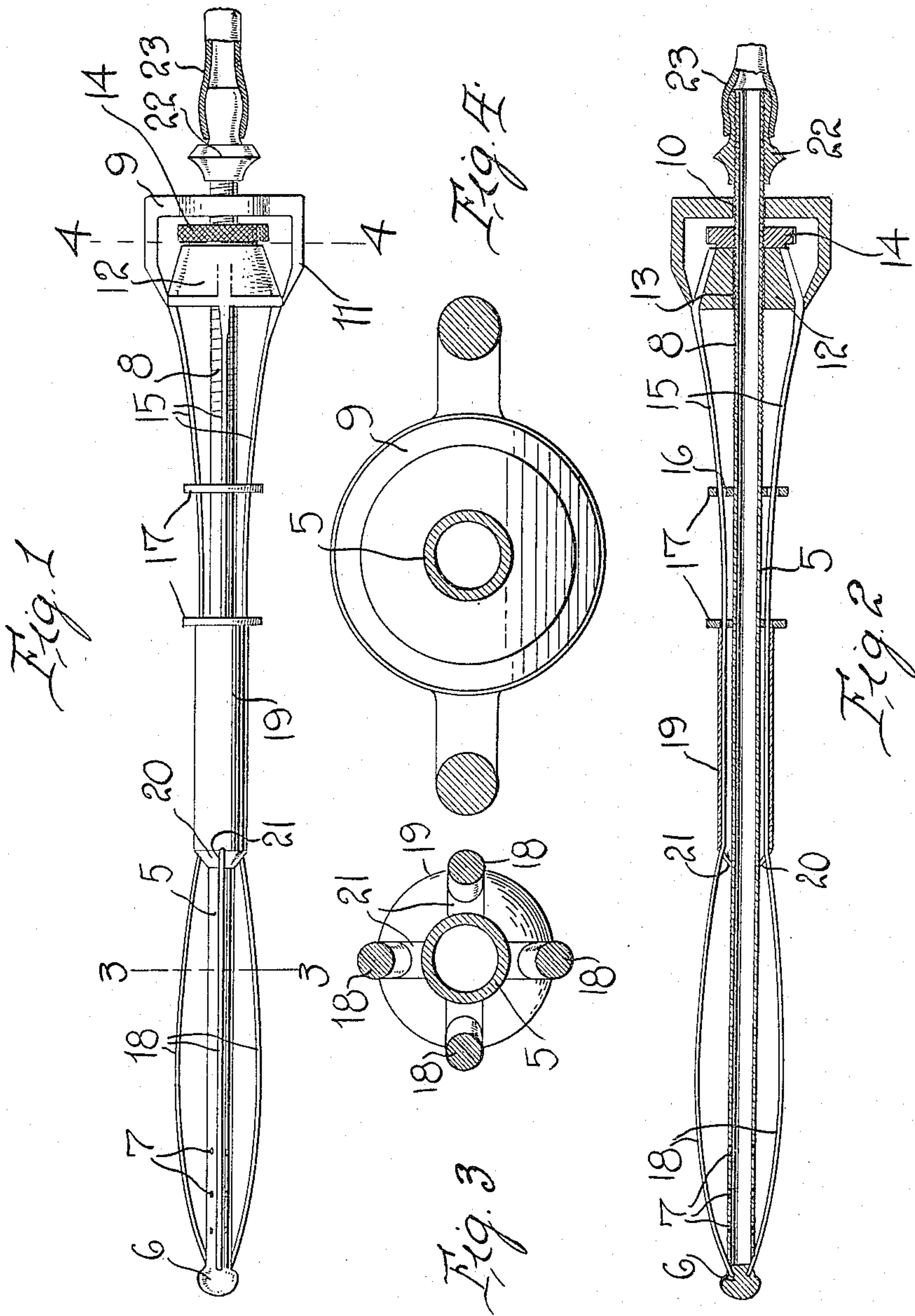


J. STARKWEATHER.
SURGICAL INSTRUMENT.
APPLICATION FILED NOV. 28, 1914.

1,155,169.

Patented Sept. 28, 1915.



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JOHN STARKWEATHER, OF POMONA, KANSAS.

SURGICAL INSTRUMENT.

1,155,169.

Specification of Letters Patent.

Patented Sept. 28, 1915.

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To all whom it may concern:

Be it known that I, JOHN STARKWEATHER, a citizen of the United States, residing at Pomona, in the county of Franklin and State of Kansas, have invented certain new and useful Improvements in Surgical Instruments, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to surgical instruments, and has for its primary object to provide in one instrument, a dilator, curette, and douche which may be employed for dilating the uterus, scraping or cleaning the walls thereof, and injecting a water spray.

15 The invention has for a more particular object to provide resilient scraping members and means for adjusting the same, and a protecting means whereby liability of the flesh at the mouth of the vagina, or the hair being caught by said scraping members and pinched or pulled is overcome.

20 It is a further object of the invention to simplify the construction of such instruments and increase the serviceability and convenience of the same in practical use.

25 With these and other objects in view, the invention consists in the construction, arrangements, and combination of the parts that will be hereinafter described and claimed.

30 For a full understanding of the invention, reference is to be had to the following description and accompanying drawing in which:—

35 Figure 1 is a side elevation of the surgical instrument embodying the present improvements; Fig. 2 is a longitudinal section thereof; and Figs. 3 and 4 are sectional views taken on the lines 3—3 and 4—4 respectively of Fig. 1.

40 Corresponding and like parts are hereinafter referred to and designated in all the views of the accompanying drawing by like reference characters.

45 Referring in detail to the drawing, 5 designates the tube or nozzle which is preferably constructed of sheet brass, and is provided upon one of its ends with a convex head 6 which closes said end of the tube. Adjacent to this closed end of the tube the same is formed with a plurality of jet orifices 7. The opposite end of the tube 5 is open, as clearly shown in Fig. 2 and provided with exterior screw threads indicated at 8.

A yoke member 9 is centrally formed with an opening 10 through which the threaded end of the tube is loosely disposed. The parallel arms 11 of this yoke member are secured to or integrally connected by a hub 12 through the bore 13 of which the tube 5 is movably disposed. Between the inner end of this hub and the opposed body of the yoke 9, a nut 14 is threaded upon the tube 5.

To the periphery of the hub 12 the enlarged ends of a series of flexible or resilient steel wires 15 are suitably secured. These wires extend inwardly from the hub toward the tube 5 and are loosely engaged in openings 16 provided in spaced guides or collars 17. Each of these wires 15 is formed with a curved or bowed end portion 18, the extremity of which is suitably fixed to the head 6 of the tube or nozzle. Upon the several wires 15 an inclosing sleeve 19 is engaged. One end of this sleeve is tapered as at 20, and engaged upon the periphery of the tube 5. This tapered end of the sleeve is provided with notches 21 to receive the respective wires 15 at the inner ends of their bowed portions 18. The other end of the sleeve 19 abuts against one of the collars 17 whereby said sleeve is held against shifting movement.

Upon the threaded end 8 of the tube 5 a nipple 22 is engaged and provides convenient means whereby the end of a flexible hose or tube 23 may be connected to the nozzle, said tube leading from a bag, tank, or other water reservoir.

In the use of my invention, when it is desired to employ the instrument for the purpose of dilating the uterus, the closed end of the tube 5 is inserted into the uterus, the sleeve 20 extending into the mouth or entrance of the vagina. The nut 14 is now turned upon the threaded end 8 of the tube to force the hub 12 inwardly and move the wires 15 through the guiding collars 17. These wires being confined by the sleeve 19 will be spread apart or expanded at their outer curved ends 18. The wires are thus caused to bear against the walls of the uterus and dilate the same. If it is desired to scrape the uterus walls, the instrument, after being inserted and adjusted as above explained, is rotated so that the expanded portions of the wires 15 will thoroughly scrape and clean the walls of the uterus. Water is now admitted to the tube 5 and is

ejected from the orifices 7 into the uterus, whereby the matter may be removed therefrom.

From the foregoing, the construction and manner of using my invention will be clearly and fully understood. The several operations may be easily and quickly performed by the individual without assistance and with a minimum of physical discomfort. The instrument, consisting of very few elements which are all of simple construction, may be manufactured and sold at comparatively small cost.

While I have above described the preferred construction and arrangement of the several elements employed, it will be understood that the instrument is susceptible of many modifications in its construction, and I therefore reserve the privilege of resorting to all such legitimate changes as may be fairly embodied within the spirit and scope of the invention as claimed.

Having thus fully described my invention, what I desire to claim and secure by Letters Patent is:—

1. An instrument of the class described including a nozzle provided with jet orifices, a plurality of longitudinally extending expandible members, an element longitudinally movable upon the nozzle to which said members are fixed at one of their ends, the other end portions of said members being longitudinally curved and fixed at their extremities to the end of the nozzle, a tube inclosing the intermediate portions of said members and engaged with the inner ends of said bowed portions, means for positively preventing longitudinal shifting movement of said tube in one direction with respect to said expandible members, and means adjustable upon the nozzle to move said expandible members longitudinally through the tube and expand or contract the bowed portions thereof.

2. An instrument of the class described including a nozzle provided with jet orifices, a plurality of longitudinally extending expandible members, an element longitudinally

movable upon the nozzle to which said members are fixed at one of their ends, the other end portions of said members being outwardly bowed and fixed at their extremities to the end of the nozzle, a tube inclosing the intermediate portions of said members and having notches in one of its ends to receive the inner ends of the bowed portions of the members whereby said tube is held against rotation independently of the nozzle, spaced guide collars fixed upon the nozzle through which said members are loosely disposed, one of said collars constituting a stop against which the inner end of the tube is adapted to engage to prevent longitudinal shifting movement of said tube in one direction, and means longitudinally adjustable upon the nozzle and engaged with said movable element to move the expandible wires through said tube and the guides and expand or contract the bowed portions thereof.

3. An instrument of the class described including a nozzle provided with jet orifices, a plurality of longitudinally extending expandible members, an element longitudinally movable upon the nozzle to which said members are fixed at one of their ends, the other end portions of said members being outwardly bowed and fixed at their extremities to the end of the nozzle, a tube inclosing the intermediate portions of said members, a guide collar rigidly fixed upon the tube and having openings therein to loosely receive the respective expandible members, said collar also constituting a stop for said sleeve to limit its movement in one direction, and means longitudinally adjustable upon the nozzle and engaged with said movable element to move the expandible members through said tube and the guides to expand or contract the bowed portions thereof.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

JOHN STARKWEATHER.

Witnesses:

FRANK CROW,
J. RALPH HUDELSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."