Oct. 2, 1928. 1,686,041

J. G. SMITH

OTOSCOPE

Filed April 16, 1927 2 Sheets-Sheet 1

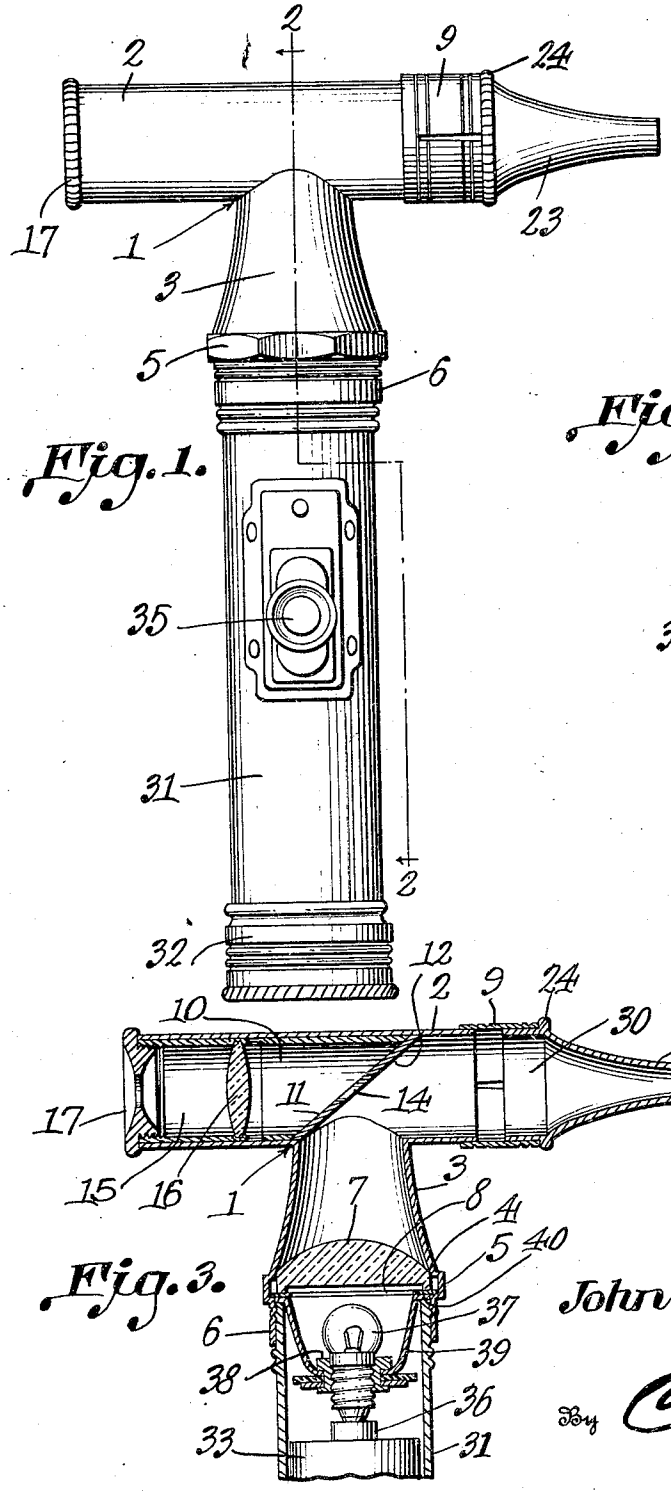

Fig. 1.

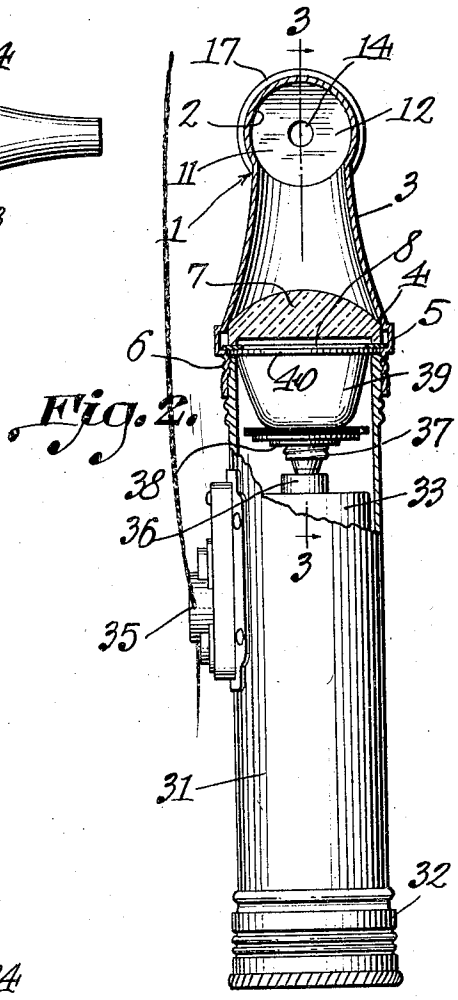

Fig. 2.

Fig. 3.

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Fig. 4.

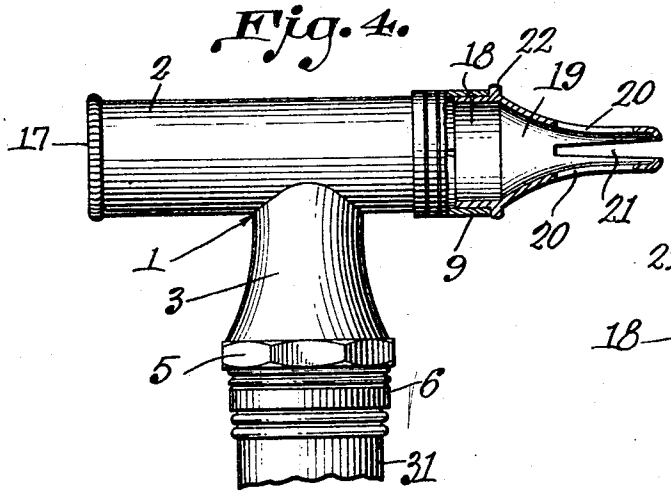


Fig. 5.

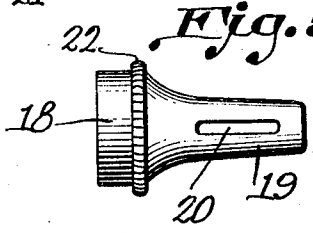


Fig. 6.

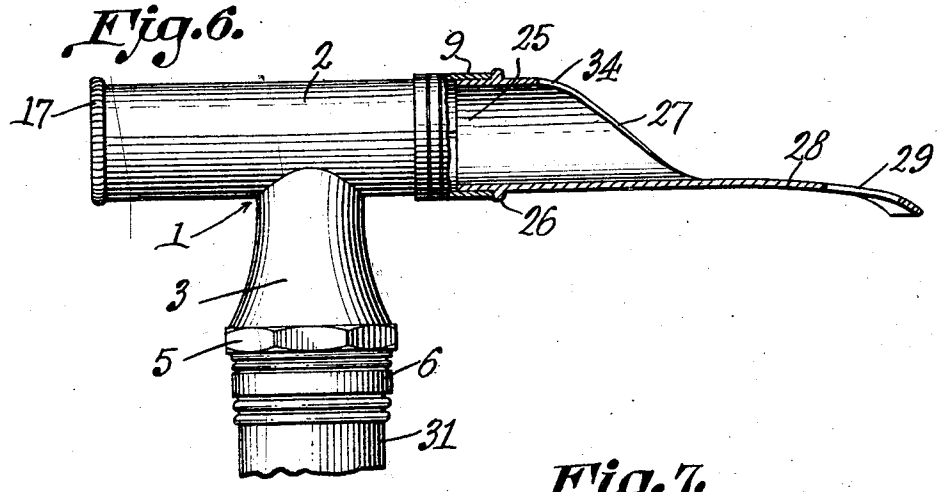
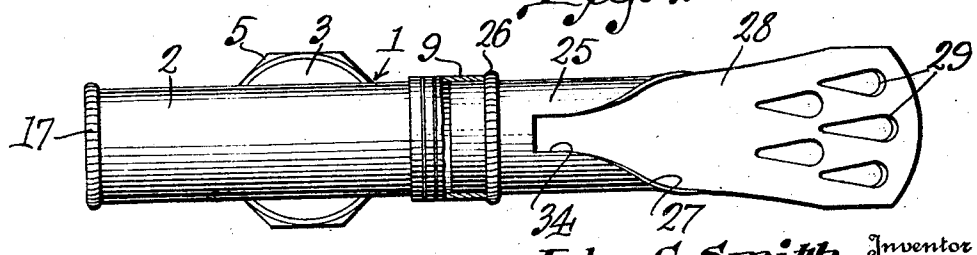


Fig. 7.



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UNITED STATES PATENT OFFICE.

JOHN G. SMITH, OF WAHOO, NEBRASKA.

OTOSCOPE.

Application filed April 16, 1927. Serial No. 184,401.

The device forming the subject matter of this application is adapted to be used for inspecting any open place in the human body, such as the nose or throat, and the invention aims to provide novel means for illuminating the part that is being examined.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the invention appertains.

With the above and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

In the drawings:—

Figure 1 shows in elevation, a device constructed in accordance with the invention;

Figure 2 is a section on the line 2—2 of Figure 1;

Figure 3 is a section on the line 3—3 of Figure 2;

Figure 4 is a fragmental elevation showing the device with a modified speculum piece mounted thereon;

Figure 5 is an elevation of the speculum piece depicted in Figure 4;

Figure 6 is a fragmental elevation showing the instrument with a tongue depressor mounted thereon;

Figure 7 is a plan of the structure shown in Figure 6.

The device includes a T-shaped head 1 made up of a main tubular member 2 of cylindrical form, and a tubular arm 3 disposed at right angles to the main member 2. The arm 3 is tapered and forms an internal shoulder 4 located adjacent to a polygonal part 5 by which the head 1 may be rotated conveniently to cause a threaded sleeve on the arm 3 to engage with a tubular handle 31, hereinafter alluded to. A lens 7 is located in the arm 3 and is held against the shoulder 4 by a washer 5 that is lodged in the part 8 of the arm.

On one end of the tubular member 2 of the head 1 there is secured a split cuff 9. A tube 10 is held frictionally but firmly in the main member 2 and has a beveled end 11 to which a reflector 12 is attached, the reflector having a central opening 14, the axis of which coincides with the axis of the main tubular member 2. A cylindrical sleeve 15 is held frictionally in the end of the main member 2, a lens 16 being secured in one end of the sleeve 15, and an eye piece 17 being mounted in the other end of the sleeve.

The split cuff 9 holds securely, but releasably, the cylindrical portion 18 of a speculum piece 19, shown in Figures 4 and 5, the speculum piece 19 having elongated side openings 20 in its tapered portion, and having elongated slots in its outer end, as shown at 21, the speculum piece having a stop piece 22 which limits the insertion of the cylindrical portion 18 into the cuff 9. Such a speculum piece may be replaced by the imperforate speculum piece 23, shown in Figures 1 and 3, the stop rib being shown at 24, and the cylindrical part which engages the cuff being marked by the numeral 30. The operator may desire to use the instrument which characterizes Figures 6 and 7, to wit, a tongue depressor comprising a cylindrical part 25 having a stop rib 26, the cylindrical part 25 of the tongue depressor being notched into, as at 34, and being tapered as at 27, to form an elongated tongue-engaging plate 28 provided with openings 29 and broadened slightly at its free end.

The usual threaded cap 32 is mounted on the handle 31, the handle 31 housing the battery 33, and the battery being under the control of a switch 35, of any desired construction, mounted on the handle 31. The terminal 36 of the battery is pressed against the butt of an electric lamp 37 mounted in a socket 38 carried in the base of a reflector 39 having an outstanding flange 40 which is bound between the end of the handle 31 and the washer 8, as shown in Figure 3.

The rays of light proceeding from the lamp 37 are collected by the lens 7 and directed, through the tubular arm 3, upon the reflector 12, and, thence, are cast through the speculum piece 23, or through any other speculum piece which may be used in the room of the speculum piece 23. The result is a thorough illumination of the part to be inspected, and the operator can view the illuminated part by peering through the eye piece 17 and through the opening 14 of the reflector. Some persons claim that artificial light is not needed

when the tongue depressor of Figures 6 and 7 is used, and such may look over the main tubular member 2, rather than through it.

What is claimed is:—

An otoscope embodying a T-shaped head made up of a tubular arm and a main tubular member arranged at right angles to each other, an eye piece on one end of the main member, mechanism on the opposite end of the main member for cooperating with the part which is to be inspected, a hollow handle, means for connecting the hand detachably to the arm, an inclined reflector located in the main member between the eye piece and said mechanism and so positioned as to receive light from the arm, the reflector being supplied with a peep hole, a lamp in the handle and illuminating the reflector, a battery housed in the handle and constituting means for operating the lamp, and a switch controlling the lighting of the lamp, the switch being movably mounted on the handle at a point spaced from both ends of the handle, the switch being located in a position approximately at right angles to a plane passing through the axes of the handle, the head and the arm, whereby the switch may be worked conveniently by the thumb of an operator whilst the operator is looking through the eye piece, the peep hole, and said mechanism.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

JOHN G. SMITH.