

Jan. 3, 1950

J. H. TRINDER

2,493,326

TAMPON FOR CONTROL OF INTRACTABLE NASAL HEMORRHAGES

Filed March 1, 1949

Fig. 1.

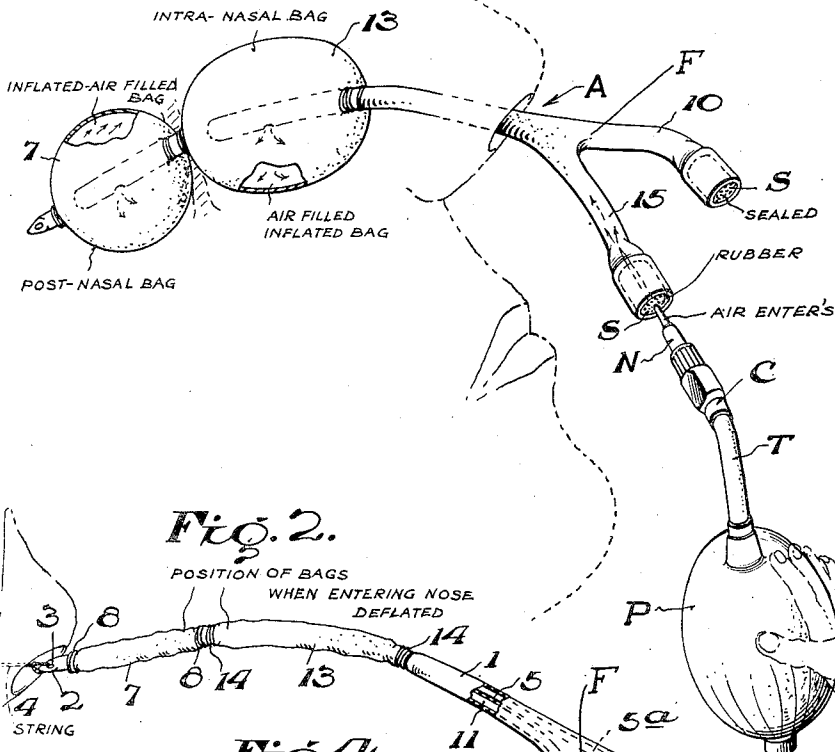


Fig. 2.

POSITION OF BAGS
WHEN ENTERING NOSE
DEFLATED

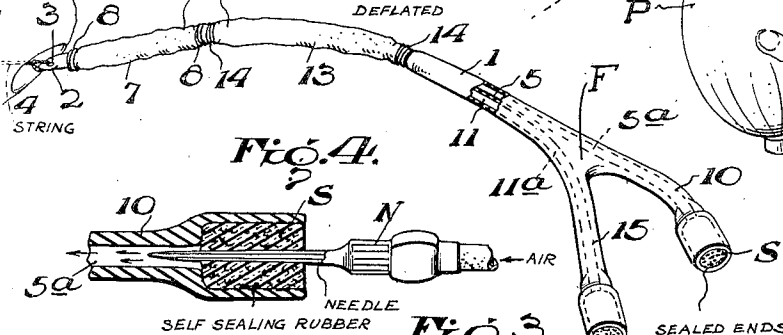


Fig. 4.

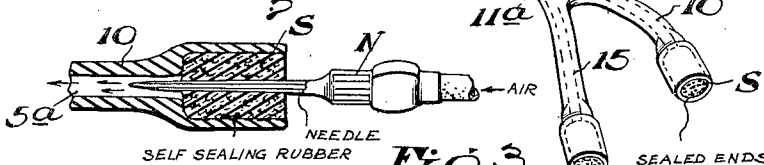


Fig. 3.

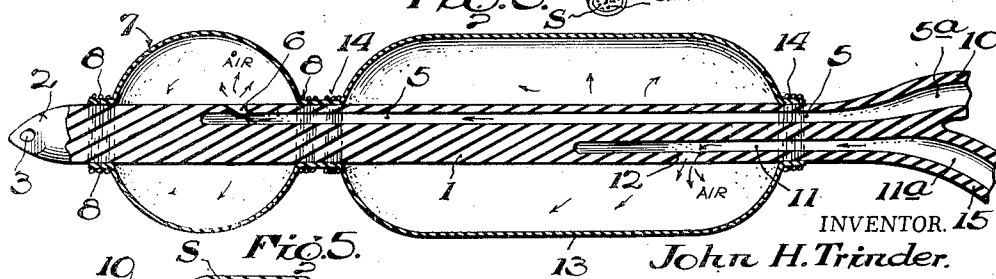
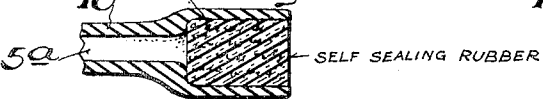


Fig. 5.



John H. Trinder.

BY

Emory L. Groff

ATTORNEY

UNITED STATES PATENT OFFICE

2,493,326

TAMPON FOR CONTROL OF INTRACTABLE
NASAL HEMORRHAGES

John H. Trinder, Washington, D. C.

Application March 1, 1949, Serial No. 79,073

5 Claims. (Cl. 128—325)

1

This invention relates to surgical apparatus and more particularly to a device for stopping nasal hemorrhages in a practical and efficient manner.

The usual method of stopping a nasal hemorrhage is to pack the nasal passages with fibrous material such as cotton or sterile gauze. Dressings of this type are objectionable for three reasons, first, they must be changed every twenty-four hours or they tend to become rancid; second, they increase the liability of involvement of the middle ear by reason of infection via the Eustachian tubes; and third, the removal of the old dressings and insertion of a fresh dressing frequently breaks the clot and the hemorrhage recurs.

Accordingly, one of the objects of the present invention is to provide an instrument in the form of a flexible rubber tube which may be inserted in the nasal passage, after proper preparation of the nasal membranes, and having spaced inflatable bags which, when the instrument is once in place, may be readily inflated to block off the post-nasal as well as the intra-nasal portions of the nasal passage to form, in effect, a dam in the zone of the bleeding to assist in the formation of a clot and, at the same time, prevent bleeding from the nose and mouth.

A further object of the invention is to provide a surgical instrument of the type set forth which is easy to manipulate in its initial deflated form, and which utilizes no metal valves for closing the inlet to the air passages once the bags are inflated, thereby avoiding discomfort to the patient when the instrument is in place in the respect that the portions extending from the nose are not heavy and therefore do not impose weight when resting on the patient's lips or face. In that connection, it is proposed to provide the air passage inlets leading to the inflatable bags with self-sealing rubber stoppers which may be pierced by an ordinary hypodermic needle connected to a bulb-type air pump, both elements being usually a part of doctors' equipment. On removal of the needle the bags will remain inflated for an indefinite period of time. When it is desired to deflate the bags, it is only necessary to insert a hypodermic needle in each of the stoppers or plugs, the needle being detached from the pump tube, thereby to let the air in the bags escape.

Another object of the invention is to provide an instrument which may be made of surgical rubber throughout and which is adapted to rubber molding techniques thereby to provide economical production.

With the above and other objects in view which will more readily appear as the nature of the invention is better understood, the same consists in the construction hereinafter described and

2

set forth in the following description and claims, and illustrated in the accompanying drawings, in which:

Figure 1 is a diagrammatic view illustrating the application of the invention;

Figure 2 is a perspective view of the instrument in its deflated form prior to insertion in the nasal passage;

Figure 3 is an enlarged detail sectional view illustrating the body of the instrument with air passages formed therein leading to the inflatable bag elements;

Figure 4 is a detail view illustrating the manner of the insertion of a hollow needle in one of the self-sealing plugs to effect inflation of a selected bag element;

Figure 5 is a detail cross section of a self-sealing plug after the needle has been withdrawn.

Similar reference characters designate corresponding parts throughout the several figures of the drawing.

Referring to the drawing, it will be observed that the instrument indicated generally as A includes a tubular body portion 1 preferably formed at its leading end 2 with an eye 3 for receiving a cord or string 4, and at its opposite end with a forked terminal portion F. The interior of the body and the arms of the forked portion are provided with ducts or passages as will presently appear.

For example, the medial portion of the body is provided with a longitudinal air passage or duct 5 having a port 6 at its forward end for communicating with a rubber bag element 7 defined by securing spaced portions of a thin rubber sheath to the outside of the body 1 by flexible means such as thread or the like, as indicated at 8. The inlet end of the passage 5 communicates with the branch 10 of the forked terminal portion through the passage 5a.

The body 1 is also provided with a relatively short longitudinally disposed air passage or duct 11 having a port 12 communicating with a bag element 13 which is secured at spaced points to the outer surface of the body 1 as indicated at 14 by thread or its equivalent. The passage 11 communicates with the branch 15 of the forked terminal portion through a passage 11a. As will be seen from Figures 1 and 2, the inlet ends of the branches 10 and 15 of the forked tail or terminal portion F are provided with valves in the form of stoppers or plugs S made of self-sealing rubber.

The bags 7 and 13 are of different size and capacity. For example, the bag 7 may hold 10 c. c. of fluid while the bag 13 may hold 30 c. c. of fluid. This differential in size is due to the available post-nasal and intra-nasal spaces.

While it is within the scope of the invention to make the bag portions 7 and 13 of separate

pieces or sections of tubular rubber secured to the outer side of the body 1 by a flexible tie or by vulcanizing the ends of the bags to the body, nevertheless, it is preferred to use a suitable length of surgical rubber in the form of a one-piece tubular sheath and slip it over the body 1, or roll it on, and then secure it as indicated at 8-8 and 14-14 to define the bags. Using a tubular sheath in this manner enables ready replacement by the physician if one of the bags burst. That is to say, spare sheaths may be furnished for use with the body 1 so that a physician or his attendant may readily cut the threads 8 and 14 of a damaged sheath, remove it, and put on a new one and again replace the threads at proper points to define the limits of the inflatable bags.

Assuming that the device is in its deflated condition as shown in Figure 2, it will be understood that the same may be inserted in the nose of the patient with the leading end having a string 4 attached, if desired, as in cases of narrow or tortuous nasal passages. The use of the string or cord is optional depending on the type of passages in the patient's nose. The string may be inserted in the nasal passage by an appropriate instrument until it can be picked up at the back of the throat, through the mouth, by the same or another instrument thereby to assist in placing the device in position under the conditions stated. When installed, the forked terminal portion F' lies outside of the nose with the rubber plugs S exposed. The physician may then select the bag elements 1 and 13 to be inflated. This is accomplished by piercing the plug S in the branch 10, for example, leading to the air passage 5 with a hypodermic needle connected with a tube T by its usual coupling C, said tube in turn communicating with a rubber bulb type hand pump P. Preferably, though not necessarily, a 20 gauge needle is desirable since it is easier to insert in and pull out, and also less apt to break or bend, while, at the same time, permitting quicker inflation and deflation. The pump P preferably is an air pump but a liquid pump may be used since any desired fluid medium may be used to inflate the bags. Upon manipulation of the pump P, the post-nasal bag 7 may be inflated to the desired extent by the physician who is usually skilled in knowing how much fluid is to be placed in the bag. After the post-nasal bag 7 has been inflated, the physician will grip the branch 10 of the fork F to temporarily seal the passage 5a while the needle N is removed from the plug S and the fluid will then be automatically trapped in the bag 7, and its communicating passage 5 and 5a, by the self-sealing plug S.

The intra-nasal bag 13 may be inflated, and left inflated, by the physician following the same procedure just described in connection with the bag 7, so that when both bags are inflated as shown in Figure 1, they will block off the area of the hemorrhage.

The branches 10 and 15 may be made of contrasting color to indicate which bag the branch leads to or they may be otherwise identified.

When the instrument is to be removed from the patient's nose, deflation of the bag is accomplished by successively puncturing each self-sealing plug S with a hollow needle of the hypodermic type which is detached from the pump, thereby to let out the inflating fluid.

From the foregoing, it is believed that it will now be apparent that the present invention provides a simple and practical form of instrument for controlling intractable nasal hemorrhages which may be readily manipulated by the physician and cause the patient a minimum amount of discomfort.

I claim:

1. A tampon for the control of intractable nasal hemorrhages, comprising, an elongated flexible body, a pair of juxtaposed inflatable bag elements mounted on the outside of the body, said body having a forked terminal portion including separate air passages leading respectively from each branch of the forked terminal portion to the interior of each bag, and valve means in the end of each branch of the forked terminal portion.

2. A tampon for the control of intractable nasal hemorrhages, comprising, an elongated flexible body having an eye at one end and a forked terminal portion at the other end, said body having separate longitudinal air passages each having an outlet port at the exterior of the body, said ports being spaced from each other longitudinally of the body, inflatable bag elements carried by the body and communicating with said outlets, and self-sealing plugs in the ends of the forked terminal portions.

3. A tampon for the control of intractable nasal hemorrhages, comprising, an elongated flexible body of surgical rubber having a leading end and a forked tail portion, said body and tail portion provided with separate air ducts having ports at their forward ends, a sheath of thin tubular rubber telescoped over the body, means for securing the tubular sheath to the body at a plurality of pairs of spaced points at opposite sides of said ports to define inflatable bag elements, and valve means for the ends of said tail portion.

4. A tampon for the control of intractable nasal hemorrhages, comprising, a body having a plurality of longitudinally disposed interior ducts each having an outlet port in the side of the body, and inflatable bag elements carried by the body in longitudinally juxtaposed relation and adapted to receive fluid under pressure from its related outlet port, and means for holding inflating fluid in the bag elements.

5. A tampon for the control of intractable nasal hemorrhages, comprising, a body having a plurality of longitudinally disposed interior ducts each having an outlet port in the side of the body, and inflatable bag elements carried by the body in longitudinally juxtaposed relation and adapted to receive fluid under pressure from its related outlet port, and means for holding inflating fluid in the bag elements, said means comprising self-sealing plugs for each duct, and said plugs being adapted to be pierced by a hollow needle to inflate or deflate the bag element.

JOHN H. TRINDER.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,235,095	Beck	July 31, 1917
2,481,488	Auzin	Sept. 13, 1949