# United States Patent

**Wobbe**

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## [54] DEVICE FOR PARTIAL VACUUM TREATMENT OF PREGNANT WOMEN


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[30] **Foreign Application Priority Data**

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[52] **U.S. Cl.** ..... **128/361,** 128/298

[51] **Int. Cl.** ..... **A61b 17/42,** A61m 1/00

[58] **Field of Search** ..... 128/30, 31, 298, 361



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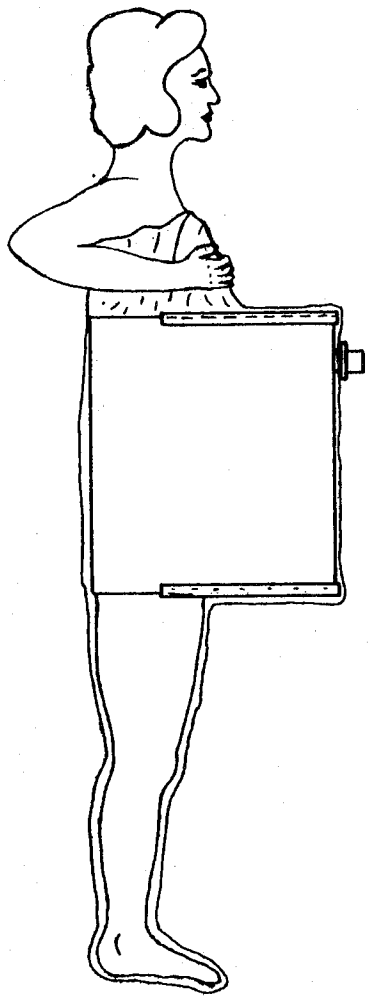
[57] **ABSTRACT**

A device for partial vacuum treatment of pregnant women in which a partial vacuum is induced within an abdomen-surrounding body support. The body support is a cylindrical drum having lids with flanges which fit over the edges of the drum. The lids have crescent-shaped edges to fit over the body of the pregnant woman. A plastic or elastomeric sack is fitted over the woman from the feet up, over the body support, and to the upper part of the body. A connecting pipe fits through the drum and the plastic sack to the vacuum-inducing means, for example, a strong vacuum cleaner.


**3 Claims, 3 Drawing Figures**



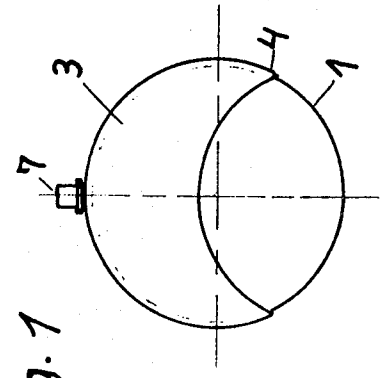



Fig. 1

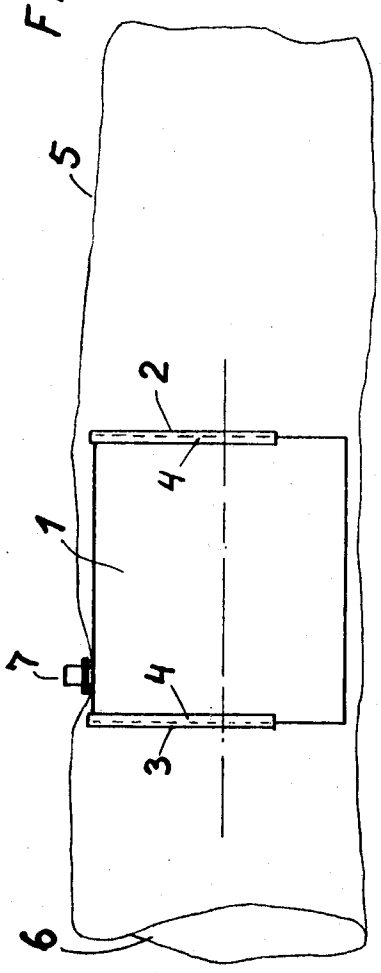



Fig. 2

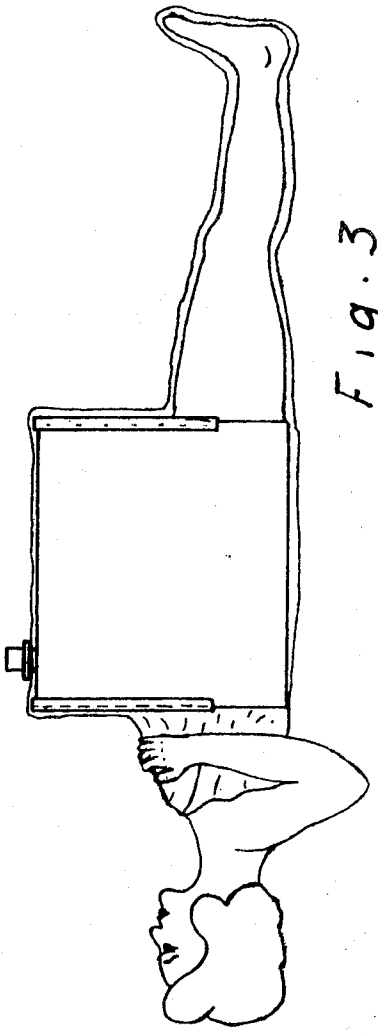


Fig. 3

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# DEVICE FOR PARTIAL VACUUM TREATMENT OF PREGNANT WOMEN

## BACKGROUND OF THE INVENTION

1. Field of the Invention

The disclosed invention concerns a device for partial vacuum (i.e., reduced pressure) treatment of a pregnant woman by means of a body support surrounding the abdomen which is evacuated, the pregnant woman being surrounded as far as to the upper part of the body with a plastic sack.

2. Description of the Prior Art

Experiments by South African Professor Stephen Heyns of Johannesburg have proved that partial vacuum treatment of pregnant women not only permits alleviation of pregnancy complaints, but also is conducive to a desirable development of the fetus by strengthening the flow of blood through the placenta. In one previously used device to furnish such a partial vacuum treatment, a chair (a so-called balloon chair) was designed on which the pregnant woman sat, her abdomen being surrounded by a dome-shaped bell and a plastic sack being pulled up as far as the upper part of her body. Under the influence of the partial vacuum upon it, the plastic sack is held down tight on the legs and the upper part of the body. Because of the partial vacuum existing below the bell which the desired discharge from the fore-vault of the stomach covering causes, the blood penetration in the abdominal region is strengthened and the placenta is plump with blood and filled with oxygen. Such a balloon chair is nevertheless comparatively expensive and bulky, so that it is not suited for a home treatment device.

Also, a tunnel-shaped body support framed over the abdomen of the pregnant woman has been tried. However, it has been shown that by such means, only a small partial vacuum of merely 30 to 40 mm. of Hg below normal can be obtained and used and not the 80 to 120 mm. of Hg below normal which is necessary for effective treatment. When using a greater partial vacuum the body of the pregnant woman was pressed upward toward the inner face of the tunnel-shaped half section.

## SUMMARY OF THE INVENTION

The disclosed invention basically concerns the problem of a simple device for treatment of pregnant women, whereby the device can be used at home to thereby obtain the best partial vacuum treatment.

A feature of the invention is that the body support is a cylindrical drum having lids in the front which are crescent-shaped, so that, when the lids are closed, a cutout region in each lid is adapted to fit the shape of the woman's body.

Advantageously, each lid has a flange bordering around it, so that the flange section will overlap the cylindrical drum and hold it in place. The drum preferably carries a connecting pipe as a suction orifice to which the plastic sack is fastened in a known manner at atmospheric pressure.

## BRIEF DESCRIPTION OF THE DRAWINGS

The invention is now described in connection with the diagrammatic drawings, which are given by way of example only.

FIG. 1 is a side view of an example of a device according to the invention for treatment by partial vacuum (without illustration of the suction apparatus).

FIG. 2 is an end view of the device illustrated in FIG. 1.

FIG. 3 is a side view of the device as worn by a patient.

## DESCRIPTION OF THE PREFERRED EMBODIMENT

The body-supporting apparatus of the example of the device for partial vacuum treatment includes a cylindrical drum 1 of which the middle front section is blocked by easily removable



lids 2 and 3. These lids show suitable body-shaped crescent-formed edges and a bordering flange 4, the flange sections overlapping the cylindrical drum 1. Over the body support, as FIG. 1 shows, a plastic sack is pulled, the open other end being indicated by the numeral 6. This plastic sack is attached to the cylindrical drum 1 by being pierced by a connecting pipe 7 which is provided with a flange to cause the sack to become airtight to the outside of the drum.

While a plastic sack has been mentioned above, it will be realized any elastomeric material may be used, such as synthetic resins and natural and so-called synthetic rubbers which can be converted into sacks which will be sufficiently impervious to sustain the desired vacuum.

In one method of carrying out the reduced pressure treatment, the pregnant woman places her legs through the cylindrical drum 1, in the front end of which the crescent-shaped cutout lid 2 fits over the body. The lid 3 may then be positioned. The plastic sack 5 is turned down over itself and is pulled first over the legs and then over drum 1, the pipe 7, and the upper part of the body above the drum. After the sack is stretched out, the lower body extends through the crescent-shaped cutout in lid 2 in the bottom of the drum and the plastic sack 5 has been pulled over the outside of the drum and in contact with the upper part of the body above the drum.

The desired arrangement is obtained when the abdomen is located inside the drum, the lids are in place, and the free end 6 of the plastic sack 5 is pulled up around the upper part of the body which the pregnant woman pulls in by hand. When a partial vacuum is to be connected to the connecting pipe 7, a strong vacuum cleaner may be connected. This causes the plastic sack to be tightly arranged against the legs of the pregnant woman, against the cylindrical drum with its lids 2 and 3, and against the upper part of the body. The free end 6 of the plastic sack is drawn up to the pregnant woman by the partial vacuum to form an automatic seal. With a strong vacuum source, the partial vacuum treatment can then go up to a partial vacuum of 80 to 120 mm. of Hg below normal on the strong sides of the lids 2 and 3. This pressure can amount to up to 200 kilograms on each side and is then only made compatible for a person by these lids.

The crescent shape of the lid can be fitted at times to the shape of the human body concerned, acting around the spine from outside in a practical manner to hold back small pressure, which has not been practical with the previously customary apparatus.

With this simple new apparatus for treatment of the pregnant, the inexpensive device for partial vacuum treatment of the pregnant at home becomes practical, by using a strong-sided cylindrical drum with lids.

What is claimed is:

1. Apparatus for partial vacuum treatment of pregnant women comprising a rigid cylindrical drum having partial lids on opposite ends of the drum at one side thereof, the lids having body-shaped openings whereby the drum can be fitted to the body, an elastomeric sack surrounding the drum and having an extension at one end of the drum to enclose legs and feet and a tubular extension at the other end of the drum to embrace a body portion beyond the other end.

2. Apparatus according to claim 1, wherein each of said lids has a flange bordering about it and fitting over edges of said cylindrical drum.

3. Apparatus according to claim 1 further comprising a connecting pipe attached to said drum through said elastomeric sack and adapted to be connected to a suction device, and wherein a flange is provided on said connecting pipe to aid in providing an airtight seal between said elastomeric sack and said drum in the area around said pipe.

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