

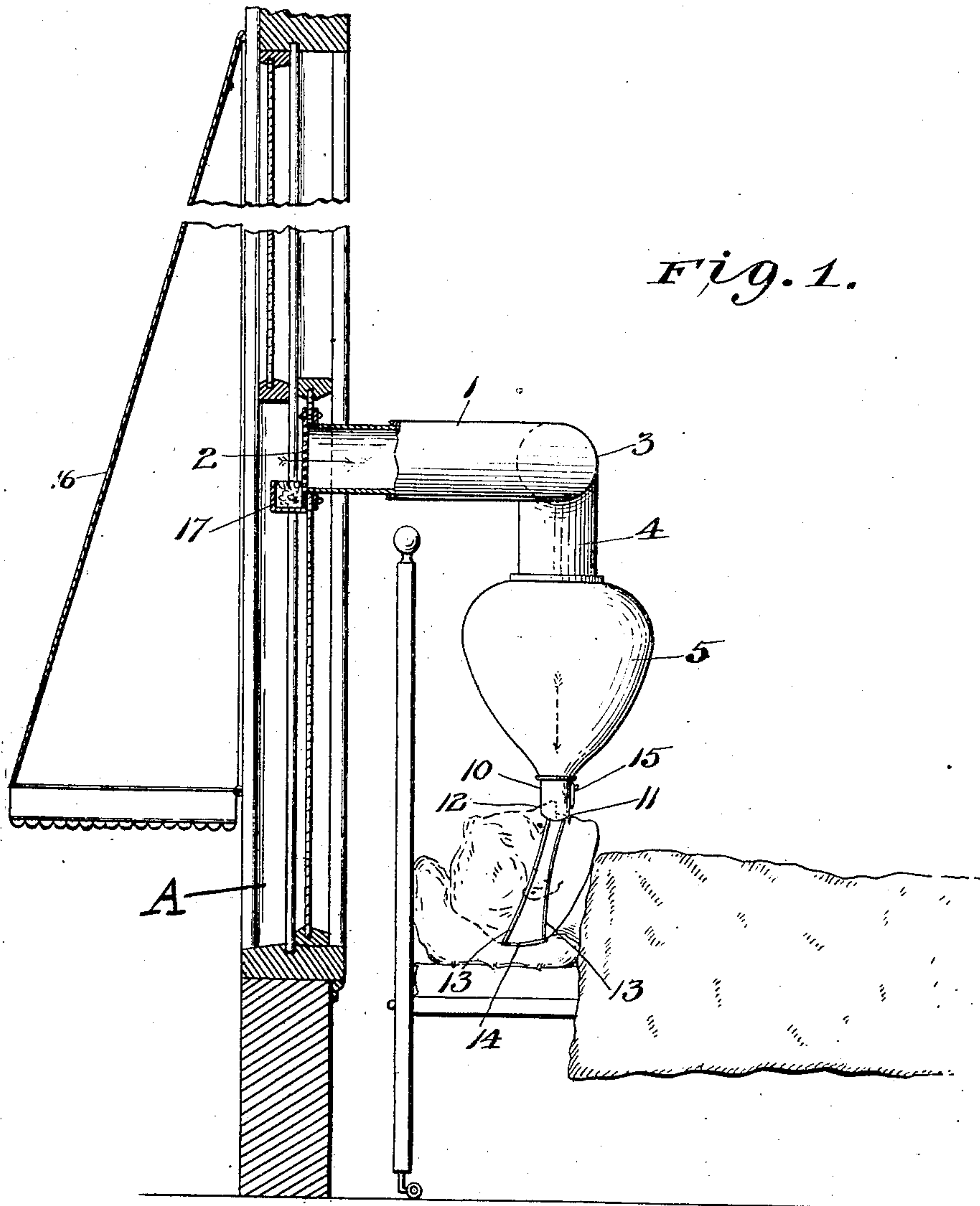
No. 879,391.

PATENTED FEB. 18, 1908.

L. P. LEONARD.  
FRESH AIR TREATMENT APPARATUS.

APPLICATION FILED JUNE 17, 1907.

2 SHEETS—SHEET 1.



Witnesses

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Fig. 2.

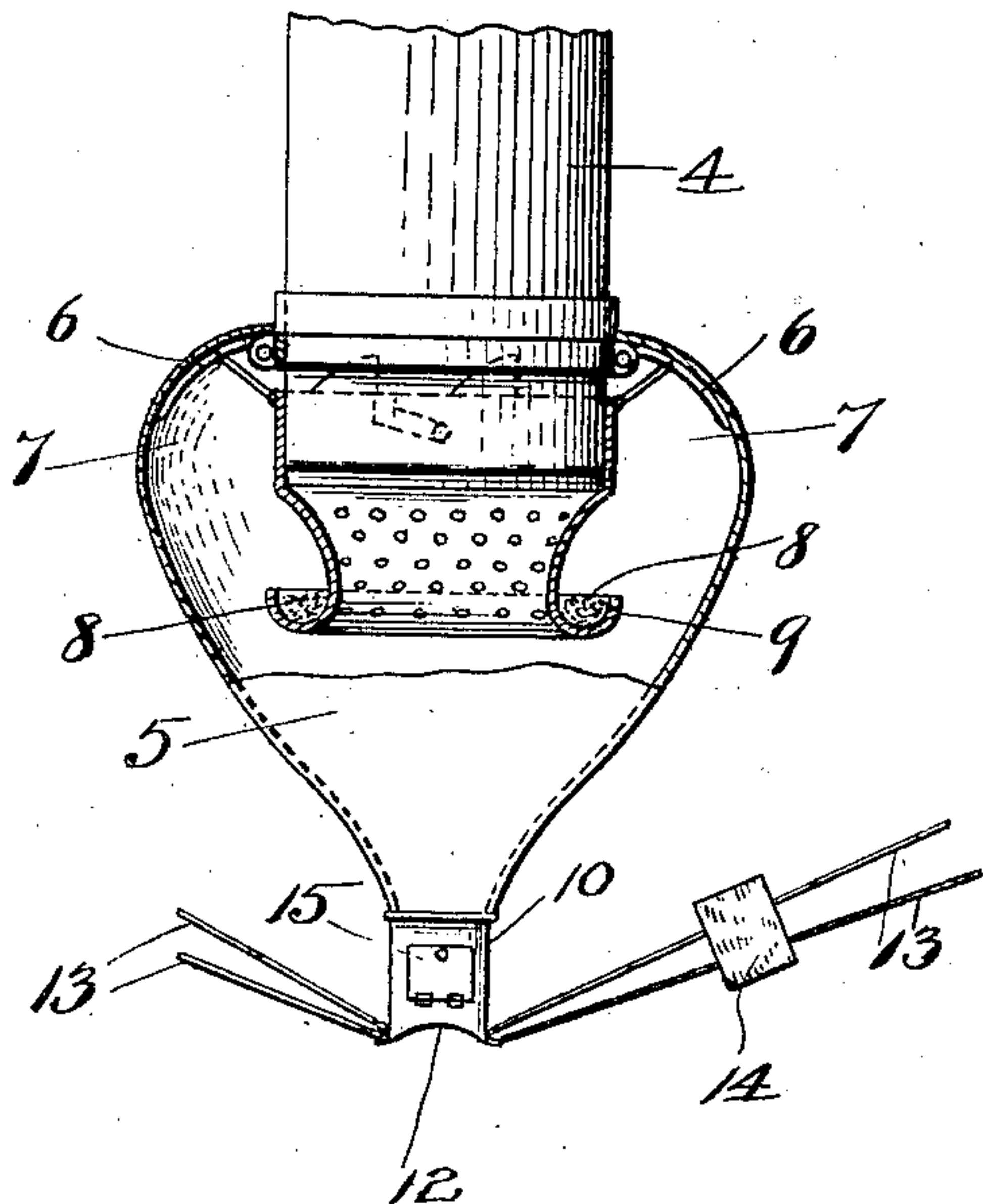


Fig. 3.

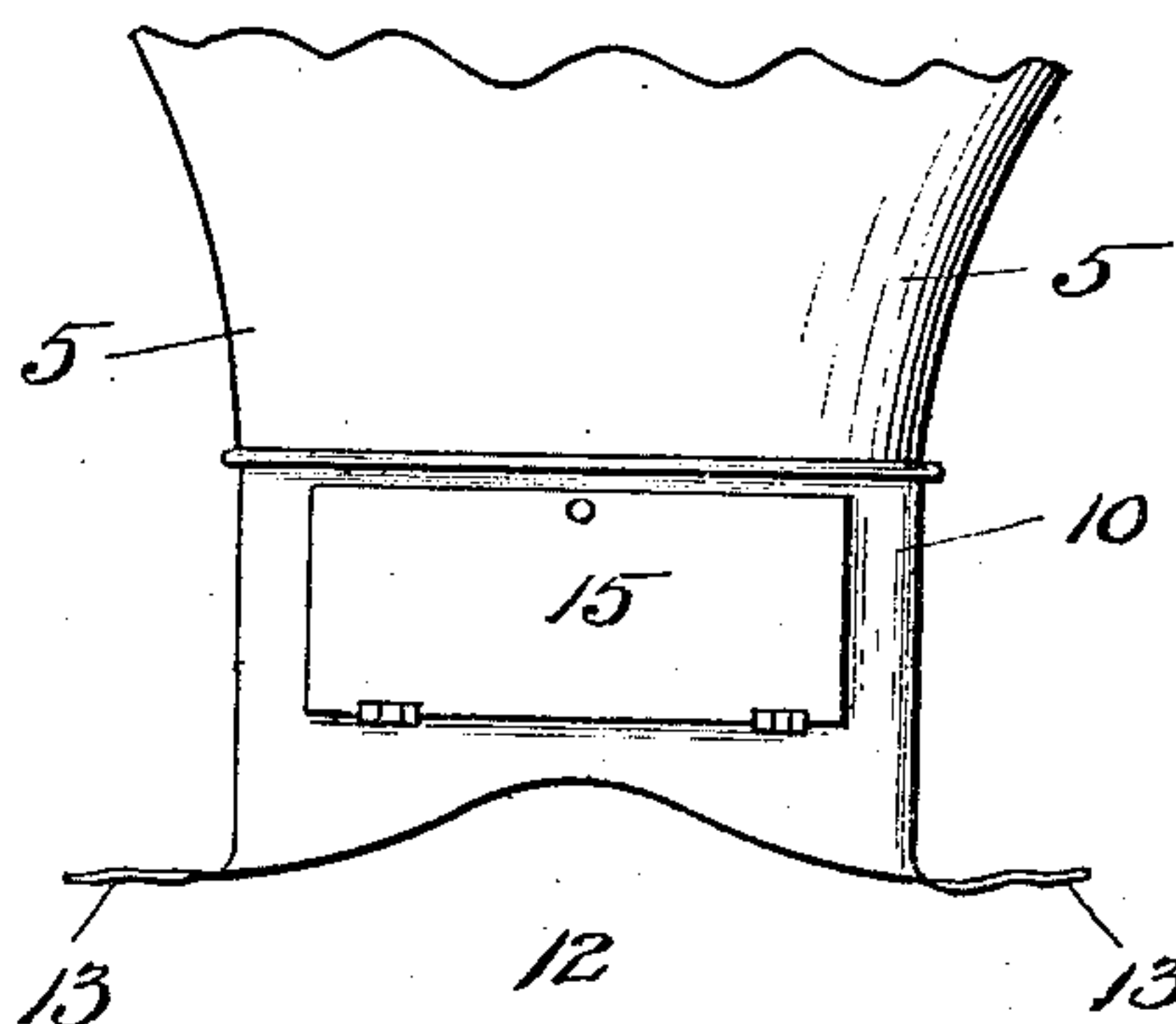


Fig. 4.

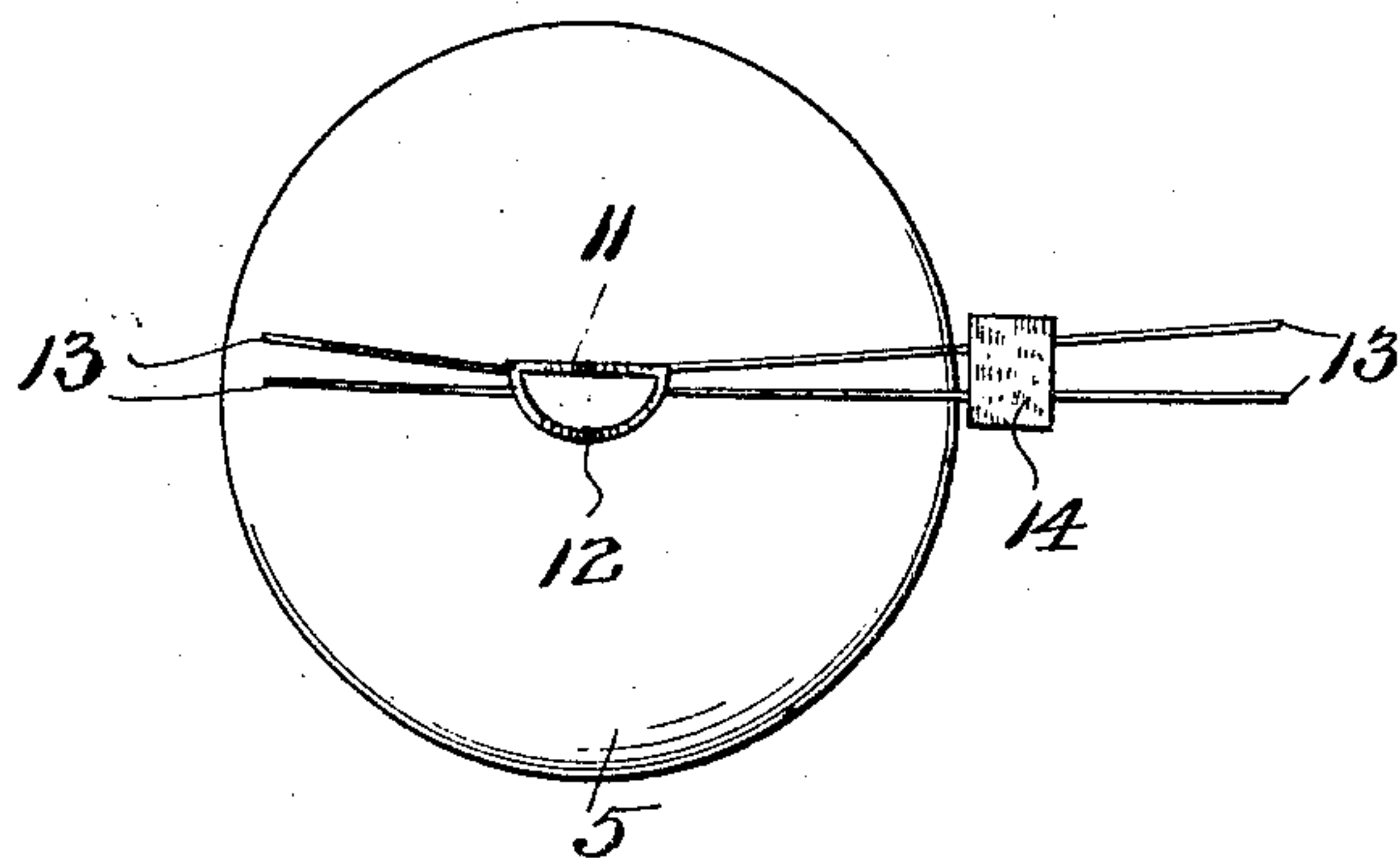
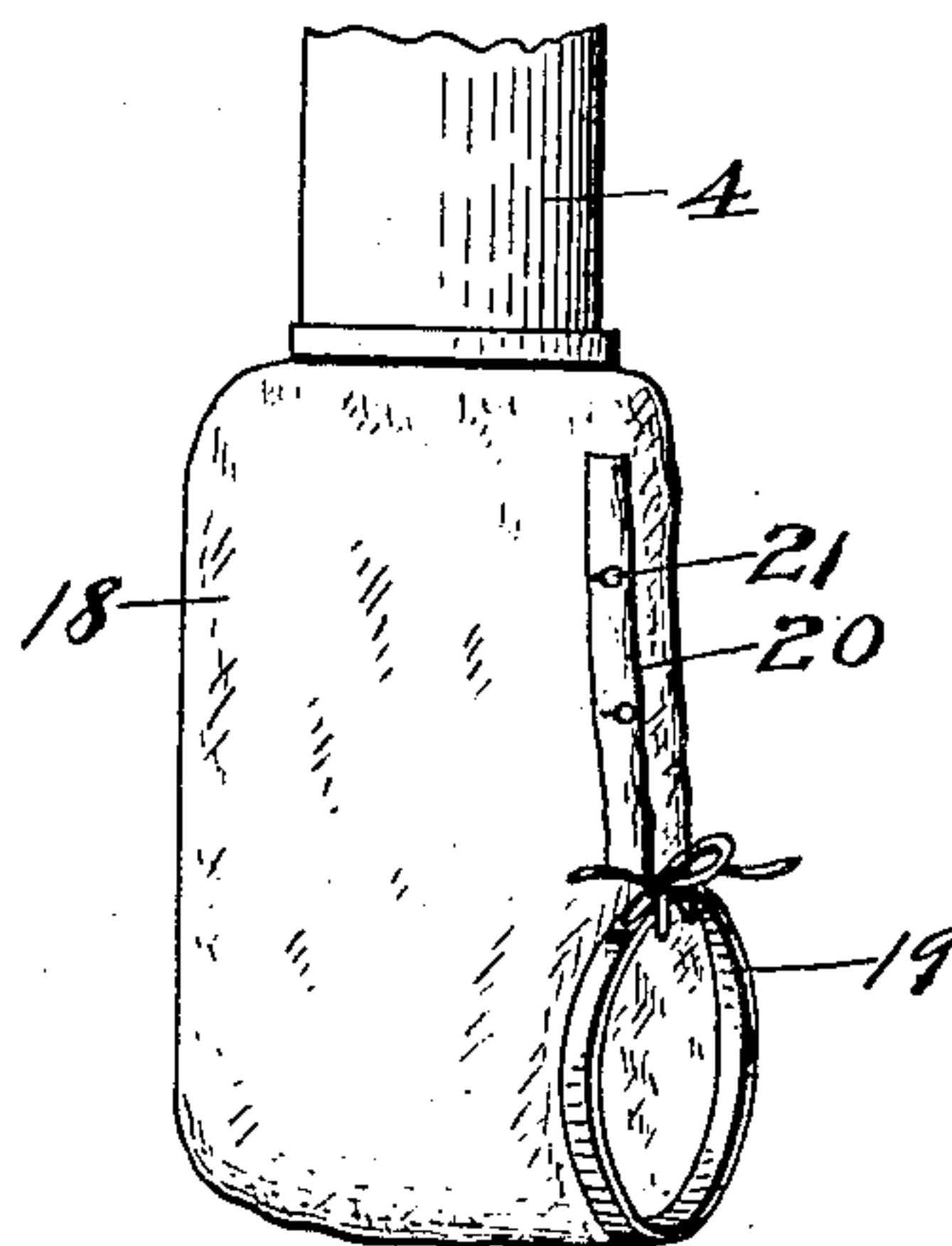


Fig. 5.



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# UNITED STATES PATENT OFFICE.

LAWRENCE P. LEONARD, OF ST. CLOUD, MINNESOTA.

## FRESH-AIR-TREATMENT APPARATUS.

No. 879,391.

Specification of Letters Patent.

Patented Feb. 18, 1908.

Application filed June 17, 1907. Serial No. 379,490.

*To all whom it may concern:*

Be it known that I, LAWRENCE P. LEONARD, a citizen of the United States, residing at St. Cloud, in the county of Stearns and State of Minnesota, have invented certain new and useful Improvements in Fresh-Air-Treatment Apparatuses, of which the following is a specification.

My invention relates to devices for treating diseased lungs, throat or other respiratory organs with fresh or medicinally impregnated air and has for its object the provision of an improved apparatus for this purpose that permits the patient remaining within the house while breathing the outside air conveyed to him through a duct.

Heretofore in treating tuberculosis by the fresh air method of treatment it has been customary to have the patient spend his time out-of-doors or if indoors by an open window during the day and at night sleep with his head in an open cabinet out-of-doors while his body remains indoors. These methods have been found objectionable for obvious reasons and especially in the case of invalids confined to their beds and my invention consists in the provision of a device by which during the day the outside air is conveyed directly to the nostrils of the patient through a duct while lying in bed or sitting in a chair, so that he can see and hear what is going on around him and converse and take nourishment and medicine without disturbing the apparatus. At night another device is employed by which the patient's head is inclosed in a flexible casing secured to the duct so as to insure breathing the outside air while asleep.

The construction and operation of my improved device will be explained in detail hereinafter and illustrated in the accompanying drawings in which—

Figure 1 is a view of the apparatus employed for treatment during the day, Fig. 2, a view partly in section of the diffuser, Fig. 3, a side view of the inhaler, Fig. 4, a bottom plan view, and Fig. 5, a view of the diffuser used for night treatment.

In the drawings similar reference characters indicate corresponding parts throughout the several views.

My improved apparatus is secured to the window A of the room where the patient is lying by securing the end of duct 1 in the window so that one end is open to the outer

air and is covered by a wire gauze screen 2. The duct 1 may be of any length desired though for the most successful operation should not extend too far from window A, the length of the duct being regulated by lengths of pipe telescoping into each other and has preferably one or more right angle joints 3 so as to prevent a direct draft on the patient.

The inner end of the ducts extends downwardly as shown at 4 and has secured thereto a bag 5 which has its upper end held distended by means of springs 6 to form a chamber 7 for diffusing the air entering through duct 1 and allow it to become impregnated with the odor from the finely divided resinous material 8 contained in a compartment 9 around the end of said duct 1.

The bag 5 converges downwardly and has its lower end secured to a casing 10 shaped as shown in Figs. 3 and 4 to snugly fit the patient's face around the nose, having the flat portion 11 to fit over the upper lip and the curved portion 12 to pass over the bridge of the nose.

13 indicates straps or strings for securing the inhaler in place, 14 indicating a flexible plate of fibrous material secured to strings 13 to engage the back of the patient's head.

15 indicates a door in the flat side 11 to permit the patient to reach the nose with a handkerchief when necessary without removing the inhaler from its position.

16 indicates an awning of ordinary construction on the outside of window A to protect the outer end of duct 1 from the weather and 17 a compartment to hold resinous material the odor of which commingles with the air passing into the duct.

For treatment at night I provide a bag which is substituted for bag 5 and is formed to inclose the patient's head with a band 19 to be secured around the neck and an opening 20, closed by buttons 21 springs, etc., to admit of the insertion of a hand to use a handkerchief and to remove sputa without removing the casing or bag.

When in use the exhaled air being warmer than the outside air it flows upwardly through the diffusing chamber 7, the downwardly extending end of duct 1, and then out through duct 1, passing along through its upper portion to the outer air, the fresh outside air passing inwardly along the lower portion of duct 1.



I am aware that fresh air treating apparatuses have been patented having two pipes one for the fresh air and the other for the exhaled air with valves to control the passage of the air, but my invention avoids the danger of asphyxiation from impaired action of the valves and of autoinfection by reason of rebreathing the exhaled air that does not get into the outlet pipe.

10 Having thus described my invention what I claim is—

1. In a fresh air treatment apparatus, a duct opening to the outside air, a diffusing chamber secured to the inner end of the duct, 15 a compartment on the end of the duct within the diffusing chamber containing resinous material, and means to connect said diffusing chamber with the patient's head, substantially as shown and described.

20 2. In a fresh air treatment apparatus, a duct opening to the outside air, a diffusing chamber secured to the inner end of the duct, an inhaler at the lower end of the diffusing chamber, shaped to surround the nose 25 of the patient, a closed opening in said inhaler for inserting the hand, and means to secure the inhaler in position, substantially as shown and described.

3. In a fresh air treatment apparatus, a 30 duct opening to the outside air, a diffusing chamber secured to the inner end of the duct, a compartment at the end of the duct and within the diffusing chamber containing resinous material, an inhaler at the lower end 35 of the diffusing chamber shaped to surround the nose of the patient, and means to secure

the inhaler in position, substantially as shown and described.

4. In a fresh air treatment apparatus, a duct opening to the outside air, a diffusing 40 chamber secured to the inner end of the duct, a compartment at the end of the duct and within the diffusing chamber containing resinous material, an inhaler at the lower end of the diffusing chamber shaped to sur- 45 round the nose of the patient, a closed opening in said inhaler for inserting the hand, and means to secure the inhaler in position, substantially as shown and described.

5. A fresh air treatment apparatus com- 50 prising a duct extending to the outer air, a screen over the exposed end of the duct, a box below said exposed end containing resinous material, an awning covering said ex- 55 posed end and box, a flexible chamber on the inner end of the duct, a compartment on the inner end of the duct inside of said chamber containing resinous material, an inhaler at the lower end of said chamber shaped to sur- 60 round the patient's nose, said inhaler being provided with an opening in its side closed by a door for inserting the hand, and straps secured to said inhaler to secure it to the pa- 65 tient's head, substantially as shown and described.

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

LAWRENCE P. LEONARD.

Witnesses:

J. E. C. ROBINSON,  
J. I. DONOHUE.