

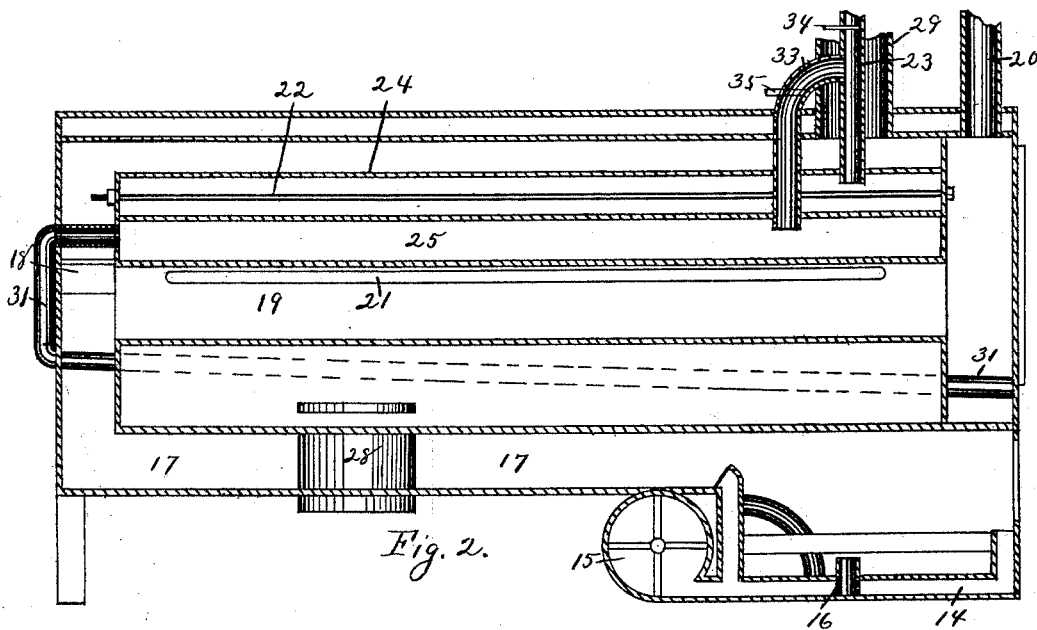
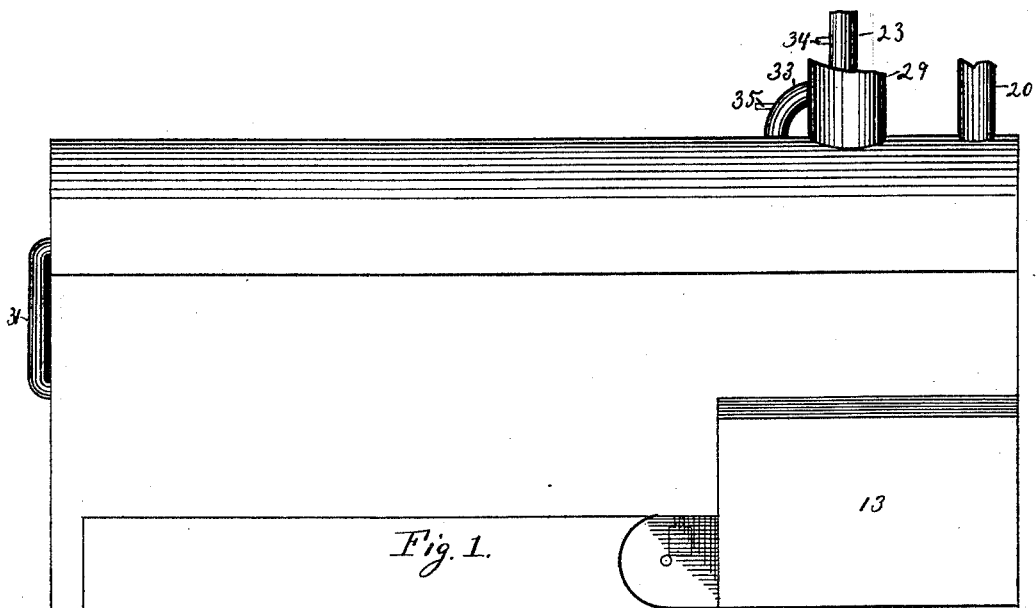
(No Model.)

2 Sheets—Sheet 1.

R. H. YEOMAN.  
HOT AIR APPARATUS.

No. 491,628.

Patented Feb. 14, 1893.



Witnesses  
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N. Moffett

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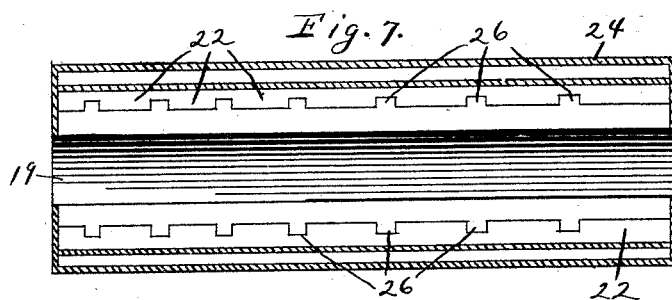
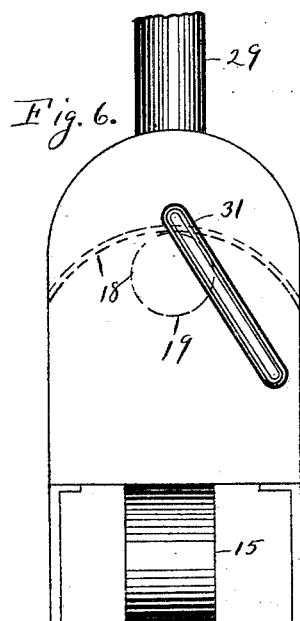
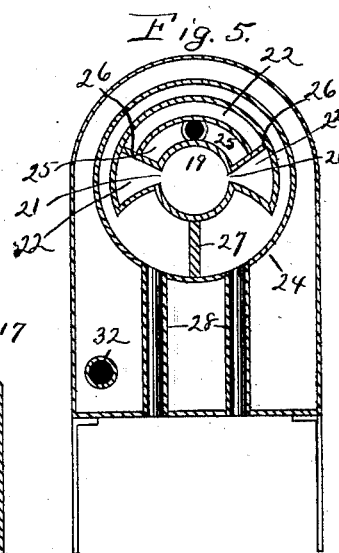
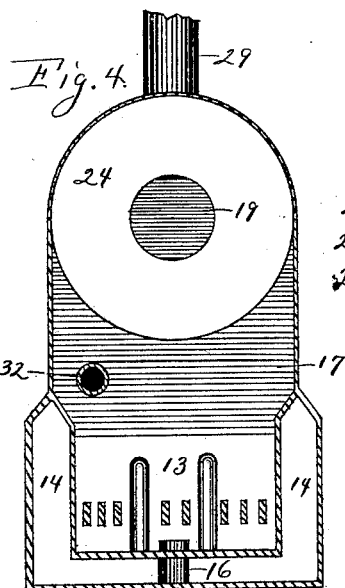
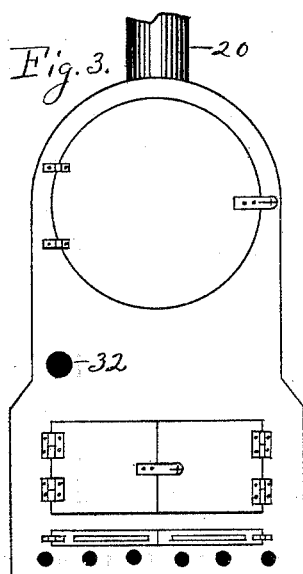
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# UNITED STATES PATENT OFFICE.

ROBERT HENRY YEOMAN, OF OMAHA, NEBRASKA.

## HOT-AIR APPARATUS.

SPECIFICATION forming part of Letters Patent No. 491,628, dated February 14, 1893.

Application filed August 1, 1892. Serial No. 441,831. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT HENRY YEOMAN, a citizen of the United States, residing at Omaha, in the county of Douglas and State of Nebraska, have invented a certain new, useful, and valuable Improvement in Hot-Air Apparatus, of which the following is a full, clear, and exact description.

My invention has relation to a heating apparatus for supplying heat to hollow coats or jackets, which are to be worn by persons exposed to the cold, and my invention also relates to furnaces adapted to supply warm oxygen or warm air which has not passed through fire, and it is described as follows:

In the accompanying drawings: Figure 1, is a longitudinal plan view of the heating apparatus. Fig. 2, is a longitudinal sectional view of the heating apparatus; and, Figs. 3, 4, 5, 6, and 7, are detail views of the heating apparatus and will be described hereinafter.

The heating apparatus consists of a furnace 13, in which may be burned any kind of fuel, or a large oil lamp may be placed in the furnace and it will answer the same purpose. This furnace is surrounded by an air chamber 14, and immediately behind the said furnace is a rotary blower 15. This blower is adapted to supply through the tube 16, a draft to the fire in the furnace and also to force the heat through the apparatus as hereinafter described. The blower may be operated by a treadle, or by a spring, electric motor, or other motive power may be used.

The heat and smoke from the fire in the furnace 13, passes through passage 17, to the rear part of the apparatus; then it ascends and is forced by the diaphragm 18, which extends in an arch all the way across the apparatus (see dotted lines Fig. 9.) The heat is forced by said diaphragm into the passage 19. When in this passage the smoke will pass on through to the front end of the apparatus and is discharged from the apparatus through the stack 20. The heat however being lighter than the smoke will pass through the narrow slot 21, cut in the sides of the said passage 19, into the chambers 22, on each side of the said passage. From these chambers the said heat will pass on toward the front end of the apparatus and is led into the pipe 23.

In the middle of the heating apparatus and

running nearly its entire length is the cylinder 24, and in the middle of this said cylinder is the passage 19, both of the heads of the said cylinder are closed except at the two ends of the said passage 19. Immediately over the passage 19, is a chamber 25, and over the chamber 25, is the chamber 22, (see Fig. 8.) 26, represent lugs placed at intervals along the length of the said chamber 22, and are adapted to brace the parts. Under the passage 19, is a partition 27, which runs the entire length of the cylinder 24, and on each side of the said partition the chamber 22 is formed in the eccentric shape as shown in Fig. 8. to form wings.

In the rear part of the heating apparatus are the cold air inlets 28, which conduct cold air from the under part of the apparatus into the cylinder 24, and discharges this air under the wings of the chamber 22. The partition 27, prevents the cold air from entering one inlet and going out at the other. The said cold air will roll around the chamber 22, and will become warmed and will pass to the forward part of the apparatus, from whence it enters the pipe 29, which surrounds the pipe 23, before mentioned. Said pipe 29, is connected by the hose 30, with the belt 1. The pipe 31, is open at the front of the apparatus at the point 32. The said pipe runs along the side to the rear of the apparatus, then it ascends in a diagonal direction the upper middle of the apparatus and its inner end enters the chamber 25 (see Fig. 5). This pipe is also adapted to convey cold air into the apparatus. When the air enters the said chamber 25, it becomes heated and passes to the fore part of the apparatus and is conducted through the pipe 33, into the pipe 23, and from thence by means of the hose connections into the belt, as above described. The pipes 23, and 33, are provided with the dampers 34, and 35, respectively, and by this means the passage of either kind of air can be regulated.

In operation in a vehicle the heating apparatus can be placed under the seat and the coat or jacket can be worn by the driver or traveler.

There are any number of ways in which the apparatus may be fixed to protect persons exposed to the cold weather, and it is not necessary here to state the many different ways. The object of the invention is to supply warm

oxygen to the body in preference to air which had passed through fire and had the oxygen taken out.

Having described my invention what I  
5 claim as new and desire to secure by Letters Patent is:

10 A heating apparatus adapted to supply heat to a suitable coat or jacket, said heating apparatus consisting of a furnace 13, surrounded by an air chamber, heat passage 17, having a diaphragm 18, cylinder 24, having passage 19,

chambers 22, and 25, smoke stack 20, heat outlets 23, 29 and 33 and cold air inlets 28, and 31, all substantially as shown and described and for the purpose set forth.

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

ROBERT HENRY YEOMAN.

Witnesses:

J. D. THOMPSON,  
MARY N. RANDALL.