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PATENTED NOV. 6, 1906.

F. ROBINSON.  
AIR STRAINER.

APPLICATION FILED MAR. 12, 1906.

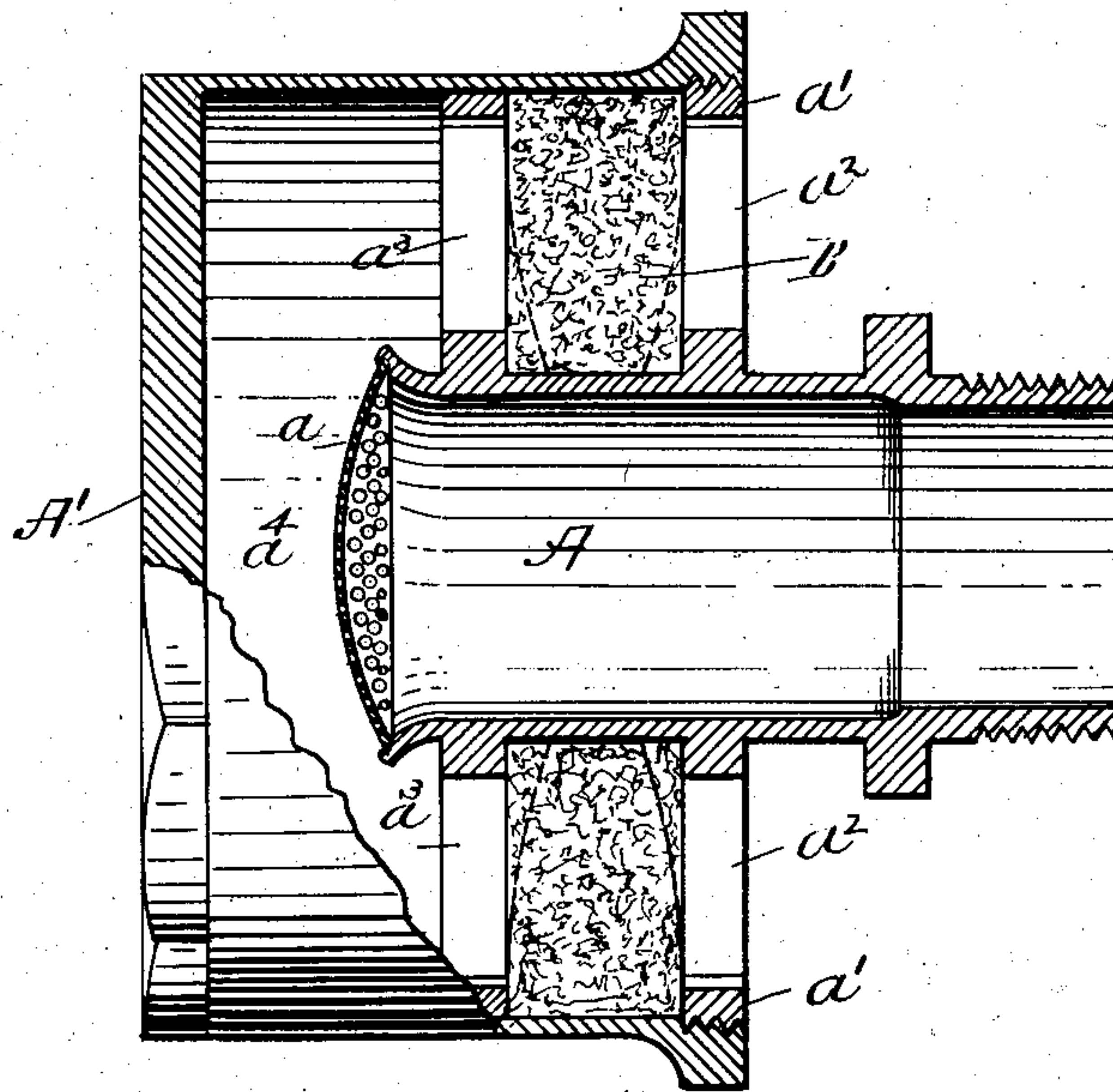


Fig. 1.

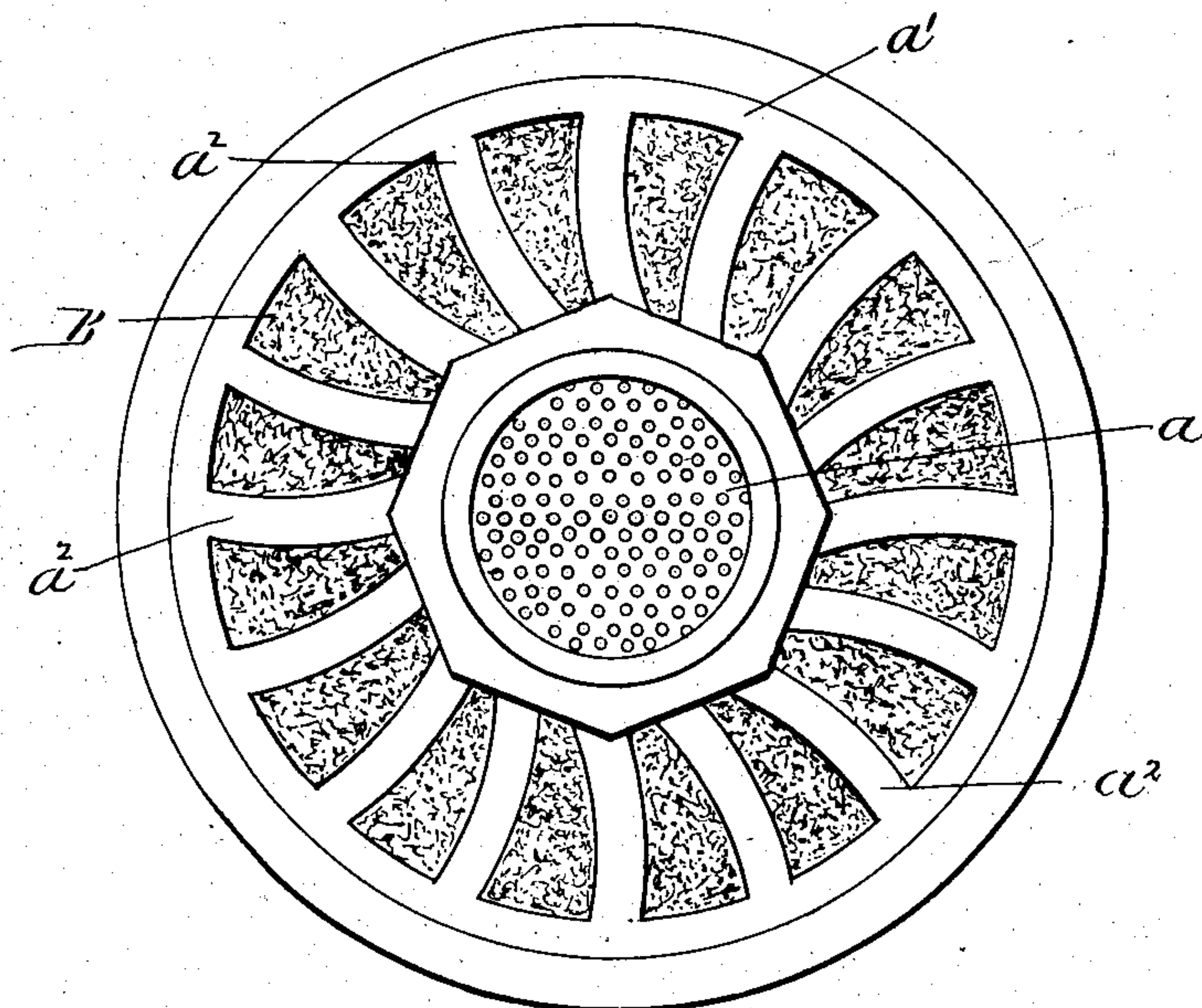


Fig. 2.

WITNESSES.

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# UNITED STATES PATENT OFFICE.

FRANK ROBINSON, OF BANGOR, MAINE, ASSIGNOR TO THE ROBINSON COMPANY, OF BANGOR, MAINE, A CORPORATION OF MAINE.

## AIR-STRAINER.

No. 834,937.

Specification of Letters Patent.

Patented Nov. 6, 1906.

Application filed March 12, 1906. Serial No. 305,520.

*To all whom it may concern:*

Be it known that I, FRANK ROBINSON, a citizen of the United States, residing at Bangor, in the county of Penobscot and State of Maine, have invented a new and useful Improvement in Air-Strainers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

My invention relates to an improvement in air-strainers, and especially to an air-strainer designed for use in connection with a Westinghouse brake.

There are many difficulties encountered in the use of an air-strainer. Prominent among them is the difficulty that the perforations at the mouth of the strainer are very apt to become clogged with snow or ice, so that air cannot enter the strainer, or the amount of air which can enter the strainer is so lessened as to materially affect the working of the machine or device in connection with which the strainer is used. Another fault in the ordinary strainer is that it does not prevent the entry of dust with the air, which, as might be imagined, has a very deleterious effect. Endeavor has been made to rectify this, but in so far as I am aware without success. The trouble has been that the means used to shut out the dust had a tendency also to shut off the air, so that a proper amount of air could not enter the strainer within a given time.

It is accordingly the object of my invention to provide a strainer which will not become clogged with snow or ice and which also will keep out the dust without preventing the entry into the strainer of a normal and proper amount of air at all times.

My invention can best be seen and understood by reference to the drawings, in which—  
Figure 1 shows a sectional view of the strainer. Fig. 2 shows a plan looking from the under side thereof.

In the drawings, A represents a strainer-head of the usual form and construction, having a perforated mouth  $a$ , through which the air enters. Over the strainer-head and spaced therefrom is placed a cap  $A'$ , enveloping and protecting the mouth  $a$ . The cap fits down over the head and connects therewith, preferably by screwing or fastening onto a ring  $a'$ , arranged on the ends of a set or series of bars  $a^2$ , extending from the strainer-

head in the rear of the mouth thereof, and which bars are preferably cast integral with the head. These bars  $a^2$  are separated from one another, and it is within the openings between them that the initial entrance of the air is made in its passage to the mouth  $a$  of the strainer-head, the air passing up in the space between the head and its enveloping-cap to where it enters the said mouth.

In the space between the head back of the mouth thereof and the cap  $A'$  there is arranged an air-filter B. This filter may be made of any suitable substance admitting of air passing through it, but acting to keep out rain or snow and particularly to keep out or catch dust or other substance carried in the air. Cotton or some other fibrous material is perhaps the best thing to use. The substance forming the filter is held in place between the strainer-head and the cap by means of the series of bars  $a^2$  on the one side and a like series of bars  $a^3$  on the other side, these bars, together with the side of the strainer-head and the cap, forming a cage or receptacle within which the substance forming the filter is held. Of course the filtering material or substance can easily be gotten at by unscrewing the cap  $A'$ . In connection with these bars assisting in the retention of the filtering material and through which the air passes it is to be noted that the openings between the bars are relatively large, the area of these openings collectively for one set or series of bars being preferably much larger than the opening or openings in the mouth  $a$  of the strainer. It is also to be noted that the size and relative disposition of the cap is such as to leave a large air-receiving chamber  $a^4$  within the same about the mouth of the strainer, into which chamber the air enters after its passage through the air-filter, as aforesaid, and before it enters into the mouth of the strainer.

Among the advantages of the above construction may be noted the following: The cap covering the strainer-head, together with the filter, acts to protect it from the weather, so that it is impossible for snow or ice to accumulate on the mouth of the same. Then, again, all dust is kept out. The only way for the air to enter is by the way of the filter, and this acts to catch the dust. By reason of the air entering from the rear of the strainer as distinguished from an entrance made from



the front side thereof is the advantage that the openings where the air first enters are not directly exposed and are protected in a measure by the fitting to which the strainer is secured. Moreover, these openings are so large that if any snow or ice should accumulate within them it will not interfere materially with the proper passage of air through the same. Then, in addition, these openings being made large, in fact of an area larger collectively than that of the mouth of the strainer, a sufficient and normal amount of air can enter to pass to the mouth of the strainer, even though it be impeded by the substance forming the filter, while the chamber around the mouth of the strainer acts as an air-receiving chamber for a relatively large volume of air.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. An air-strainer having a strainer-head and a cap protecting and enveloping the mouth of the head and located in a position spaced therefrom whereby air may enter said mouth from the rear thereof, and an air-filter interposed between said cap and the strainer in the rear of said mouth through which filter the air is adapted to pass before entering said mouth.

2. An air-strainer having a strainer-head and a cap protecting and enveloping the mouth thereof but removed therefrom whereby an air-receiving chamber is formed around said mouth, means connecting said cap with the strainer-head and with openings therein by which air may enter said air-receiving chamber in its passage to said mouth, and an air-filter closing said openings.

3. An air-strainer having a strainer-head and a cap protecting and enveloping the mouth thereof, bars extending from said strainer-head and conjoining with said cap for supporting the same and between the openings of which bars air is adapted to enter and pass to said mouth, and an air-filter between the said bars supported thereby and filling the openings between the same.

4. An air-strainer having an air-receiving mouth and auxiliary thereto an air-filter through which air is adapted to pass before entering said mouth, and a barred receptacle or cage for supporting said filter and making closed connection with the mouth of the strainer, the openings through which bars or members forming the cage being collectively of larger areal size than the areal opening, or collective areal openings, of said mouth.

5. An air-strainer having a strainer-head and a cap protecting and enveloping the mouth thereof and removed therefrom whereby an air-receiving chamber is formed around said mouth of the strainer-head, a double set of bars extending from said strainer-head back of the mouth thereof and with one of which sets of bars said cap is adapted to make closed connection, said bars being separated from one another whereby air may enter the same and pass into said air-receiving chamber, and an air-filter filling the space between said head and said cap and being supported in part thereby and by said bars.

FRANK ROBINSON.

In presence of—

J. HERBERT BOYD,  
LOUISE GALLAGHER.