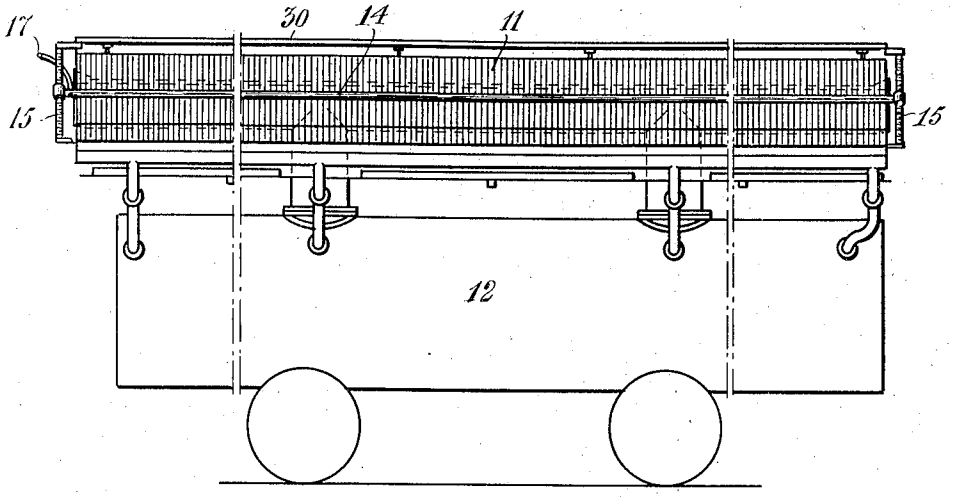
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F. LJUNGSTRÖM

BLOWER FOR CLEANING AIR COOLED CONDENSERS OR THE LIKE

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Fig. 4.



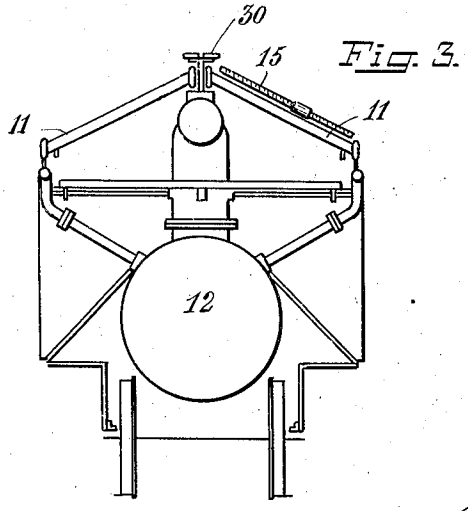
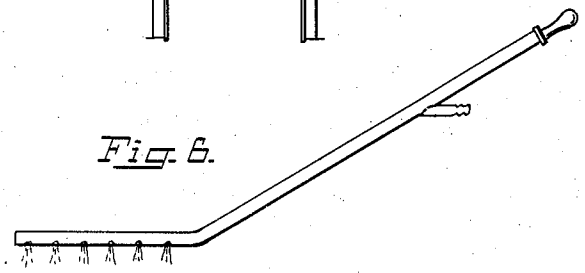


Fig. 3.

Fig. 6.



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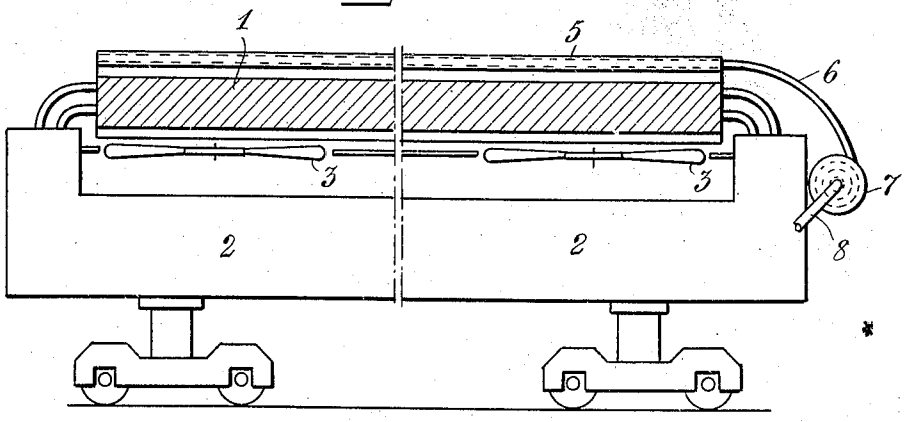
Jan. 26, 1926. 1,571,127

F. LJUNGSTRÖM

BLOWER FOR CLEANING AIR COOLED CONDENSERS OR THE LIKE

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Fig. 1.



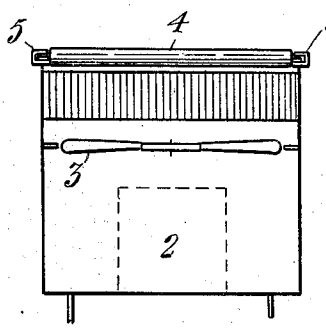
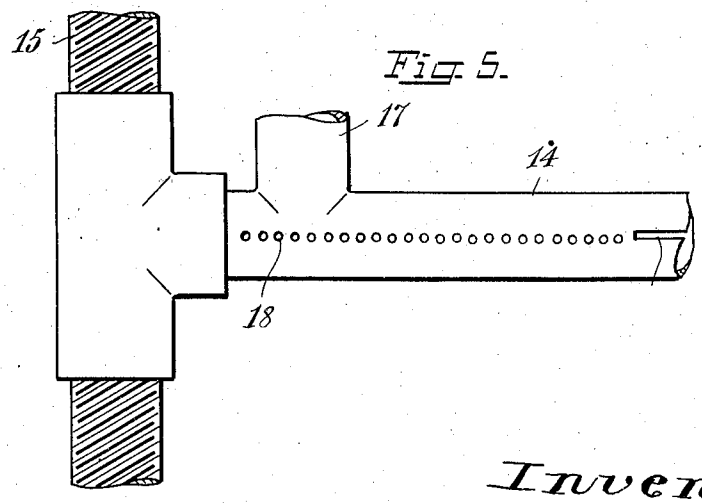


Fig. 2.

Fig. 5.



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Patented Jan. 26, 1926. 1,571,127

UNITED STATES PATENT OFFICE.

FREDRIK LJUNGSTRÖM, OF BREVIK, LIDINGON, SWEDEN, ASSIGNOR TO AKTIEBOLAGET LJUNGSTRÖMS ÅNGTURBIN, OF STOCKHOLM, SWEDEN, A CORPORATION.

BLOWER FOR CLEANING AIR-COOLED CONDENSERS OR THE LIKE.

Application filed March 7, 1922. Serial No. 541,885.

To all whom it may concern:

Be it known that I, FREDRIK LJUNGSTRÖM, a subject of the King of Sweden, residing at Brevik, Lidingon, Sweden, have invented certain new and useful Improvements in Blowers for Cleaning Air-Cooled Condensers or the like, of which the following is a specification.

Air-cooled condensers have previously been proposed and constructed in which the waste steam of the steam engine is conducted through pipes of a certain type, while air is forced for instance by means of fans between the pipes thus cooling the steam in the same. As these pipes which are preferably flattened, particularly in case of air-cooled condensers for locomotives, must be placed close to one another and, in order to increase the efficiency of the condenser, have frequently been provided with flanges, ribs, corrugations or other projections, the interspaces between them have rough walls. Such channels are particularly adapted to whirl up the cooling air flowing through the same in order that it may come into contact with the pipes forming the elements of the condenser. On the other hand, however, such channels are very liable to collect dust and dirt entrained by the air. After long use the efficiency of such a condenser is decreased, because of an insulating layer of dust or dirt which in many cases will clog the interspaces between the pipe elements.

This invention relates to blowers for cleaning air-cooled condensers from dust, dirt and the like and consists in that a nozzle for air or steam is so arranged as to be moved along the interspaces of the condenser element.

The invention is illustrated in the accompanying drawings showing a suitable condenser for locomotives provided with a cleaning blower according to the principle of the invention.

Figs. 1 and 2 show a side view and an end view respectively of a locomotive condenser to which an embodiment of the invention is applied. Figs. 3 and 4 show an end view and a side view respectively of a locomotive condenser provided with another embodiment of the invention. Figs. 5 and 6 illustrate detail views.

Referring to Figs. 1 and 2, 1 denotes the air-cooled condenser, 2 the corresponding liquid receptacle, 3 fans for forcing the cooling air flowing from below. In this case a cleaning blower is shown consisting of a pipe 4 extending across the top of the condenser and provided with openings preferably adjusted to the interspaces between the pipe elements of the condenser so that the cleaning medium may be forced in a direction opposite that of the air flow. The ends of said blower pipe are journalled in U-shaped iron pieces 5, which extend from end to end of the condenser, as shown in Figures 1 and 2. The air or steam used for the cleaning operation is supplied to the blower pipe 4 through a hose conduit 6 adapted to be wound on a drum 7 and connected with the interior of said drum to which air or steam may be supplied through a pipe 8. The blower pipe may be moved by the hand or by means of a wire or in any other manner along the condenser. In this manner the condenser may be cleaned also during the running of the locomotive.

Figs. 3 and 4 illustrate another embodiment in which the blower pipe is moved transversely instead of longitudinally of the condenser and on account thereof is of about the same length as the condenser. 11 denotes the air-cooled condenser and 12 the corresponding liquid receptacle. Extending in the direction of length of the condenser 11 is the blower pipe 14 connected at the ends with threaded rods 15 in such a manner that upon turning of said rods 15 the blower pipe 14 is moved across the condenser, for instance along the pipe elements located across the condenser. To the blower pipe 14 air or cleaning gas is supplied through a hose conduit in the manner described above.

Fig. 5 illustrates a detail of the connection of the blower pipe 14 with the threaded rods 15. Air or steam is supplied to the blower pipe 14 through a pipe 17 and is discharged through openings 18 in the part of the pipe 14 facing the pipe elements of the condenser. Said openings may be located in various manners and may consist for instance of round openings 18 placed in a single row or round openings disposed in zigzag. The openings may also have the form of nozzles or have oblong form. The pipe may also be provided with a single extended slit.

The cleaning of the elements of the condenser may also be effected by hand by

means of a nozzle adapted to be moved near the parts to be cleaned. This may be realized in the condenser according to Figs. 3 or 4 for instance by means of a nozzle according to Fig. 6. In its simplest form said nozzle may consist of a pipe suitably bent and provided at the top with a handle and in any suitable place with a nozzle for a hose coupled to the same, cleaning openings being provided at the lower side of the pipe. While passing along the running board 30 above the condenser one may clean by hand the whole condenser or parts thereof by means of this apparatus while observing the result.

Other embodiments according to the principle of the invention may be imagined for instance such ones in which the nozzle is moved in zigzag or swung, and the devices described above may on the whole be used in all cases in which air is to be forced between parts located close to one another.

What I claim as new and desire to secure by Letters Patent of the United States is:—

1. In an air-cooled condenser consisting of cooling elements arranged side by side and separated by air passages, said elements forming together a box-like structure, a blower for cleaning said passages consisting of a pipe extending in the one direction of said condenser structure close to the same and provided with holes directed against the same, means to connect said pipe to a source for a cleaning fluid and means to move said pipe in the other direction of said condenser structure to permit said fluid to act on the cooling elements during the movement of said pipe.

2. In an air-cooled condenser consisting of cooling elements arranged side by side and separated by air passages, said elements forming together a box-like structure, a blower for cleaning said passages consisting of a pipe extending longitudinally of said condenser structure close to and above same and provided with holes directed against the air passages between the elements, means to connect said pipe to a source for a cleaning fluid and means to move said pipe transversely of said condenser structure to permit said fluid to act on the cooling elements during the movement of said pipe.

In testimony whereof I affix my signature.

FREDRIK LJUNGSTRÖM.