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HEAT EXCHANGER

Filed April 30, 1935

Fig. 1.

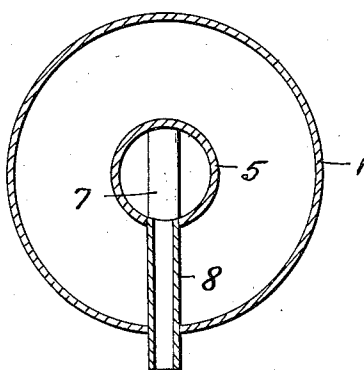
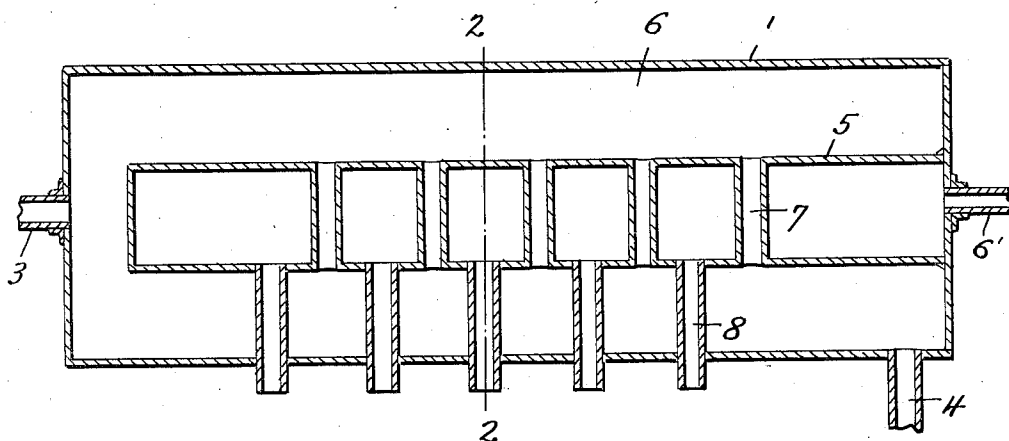


Fig. 2.

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HEAT EXCHANGER

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1 Claim. (Cl. 257—235)

This invention relates to means for heating the oil saturated steam of a "Mallet" type of engine by the superheated steam flowing to the low pressure part of the engine, so that the oil saturated steam is expanded, which results in a more thorough lubrication of the parts of the engine.

This invention also consists in certain other features of construction and in the combination and arrangement of several parts, to be hereinafter fully described, illustrated in the accompanying drawing and specifically pointed out in the appended claim.

In describing the invention in detail, reference will be had to the accompanying drawing wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is a longitudinal vertical sectional view through the device.

Figure 2 is a section on the line 2—2 of Figure 1.

In this drawing the numeral 1 indicates a cylinder into which superheated steam is introduced through the pipe 3 which enters one end of the cylinder, an outlet pipe 4 being connected to the opposite end of the cylinder and this outlet pipe then leads to the atomizer pipe which extends to the low pressure entrance of the "Mallet" type locomotive. A smaller cylinder 5 is located in the cylinder 1, the two cylinders forming an annular space 6 and this cylinder 5 has one end connected to that end of the cylinder 1 which is opposite the end into which the pipe 3 leads and the steam saturated with oil is introduced into this end of the cylinder 5 by a pipe 6'. A plurality of vertically arranged tubes 7 pass through the cylinder 5 in spaced relation so that the superheated steam passes through the said tubes, and tubes 8 lead from the lower part of the cylinder 5 through the lower part of the cylinder 1 for leading the saturated steam to the valves and cylinders of the locomotive.

As shown in Figure 1 I prefer to place a tube 8 in communication with the cylinder 5 between two of the tubes 7 which pass through the cylinder 5.

It will thus be seen that the superheated steam in the cylinder 1 and the tubes 7 will raise the temperature of the saturated steam in the cylinder 5 which results in the expansion of the saturated steam so that the parts lubricated by this oil saturated steam will be more efficiently lubricated.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction of the several parts, provided that such changes fall within the scope of the appended claim.

What is claimed is:—

Means for heating the oil saturated steam of a "Mallet" type of engine by the superheated steam of the engine, comprising a cylinder, into one end of which the superheated steam is introduced, a pipe connected with the bottom part of the cylinder adjacent the other end and leading the superheated steam to the low pressure part of the engine, said cylinder being horizontally arranged, a smaller cylinder horizontally arranged in the first cylinder and having one end spaced from the inlet end of the first cylinder and its other end abutting the opposite end, the two cylinders forming an annular space, spaced vertically arranged tubes passing through the small cylinder and having their ends in communication with said annular space, means for introducing the oil saturated steam into the last mentioned end of the small cylinder, and a plurality of tubes connected with the bottom part of the small cylinder between the first mentioned tubes and passing through the bottom part of the first cylinder, for leading the oil saturated steam to the parts to be lubricated.

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