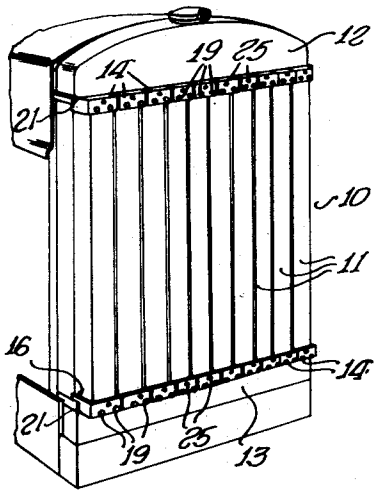
Oct. 7, 1952 T. W. HUFFMAN 2,613,064

PURGING HEAD FOR RADIATOR CORE SECTION

Filed April 29, 1950

Fig. 1



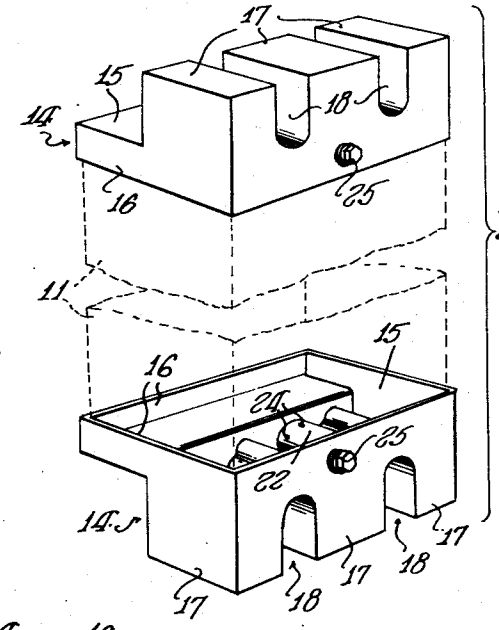


Fig. 2

Fig. 3

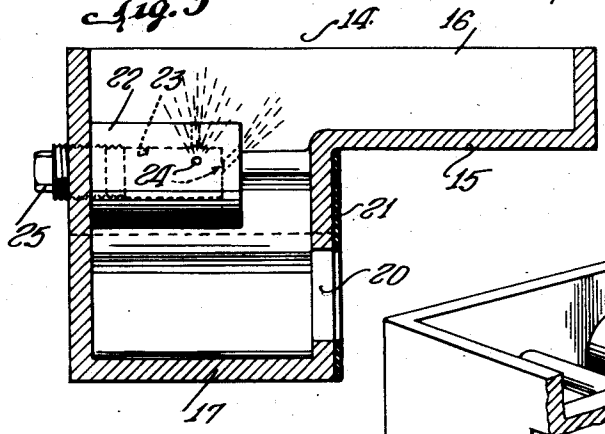
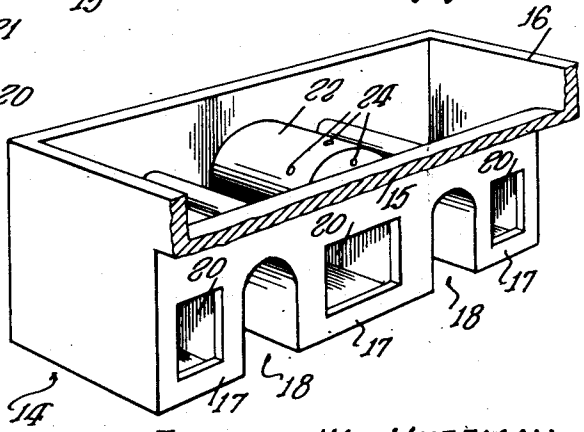


Fig. 4



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PURGING HEAD FOR RADIATOR CORE SECTION

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1 Claim. (Cl. 257—1)

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This invention relates to radiators for internal combustion engines and more particularly to an air jet head for the radiator core sections of heavy duty engines.

The principal object of the invention is to provide, through the medium of a simple casting, an expedient by which each of the several core sections of a heavy duty engine radiator may be periodically purged of accumulated foreign matter which, if permitted to remain in the core, causes the engine to become overheated to the extent that its efficiency is seriously affected. Internal combustion engines, especially of the type used in drilling and operating oil wells, are frequently required to run continually for long periods of time and under various and sometimes unusual conditions. In addition to scale collecting in the tubes from minerals and impurities in water which tend to retard circulation of water, this condition is increased in many cases where the radiator cap is removed to relieve the pressure of steam generated by the overheated radiator and which invites ingress of foreign substances, thus creating further stoppage of water circulation.

Accordingly, the invention provides a head for each end of each core section of an engine radiator which is preferably in the form of a casting and possessed of an internal hollow boss having a plurality of orifices through which air is jetted longitudinally within the core section by way of a pressure orifice accessible exteriorly of the head and to which is attached a pressure line connected to a compressor, thus to divest the core section of accumulated foreign matter.

Other objects will appear as the description proceeds, taken in connection with the accompanying drawing wherein:

Figure 1 is a front perspective view of an engine radiator showing core sections with top and bottom heads constructed according to the invention.

Figure 2 is a perspective view showing top and bottom heads with an intermediate core section fragmentarily shown in dotted lines.

Figure 3 is a view of one of the heads in vertical section, and

Figure 4 is a fragmentary perspective view of a head.

Continuing with a more detained description of the drawing, reference numeral 10 denotes generally an engine radiator in Figure 1 which is made up of a group of parallel and horizontally spaced core sections 11 which are interchangeable and individually replaceable. Water is circulated by means of a pump between upper and lower

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tanks or reservoirs 12 and 13 respectively through tubes in the core sections 11 and through the water jackets of the engine to cool the latter in operation. Should the passage of water through the core sections be restricted as by scale deposits or other foreign substance therein, the engine will overheat and lose its efficiency.

Therefore, the invention provides an air jet head 14, preferably in the form of a casting which is substantially L-shaped in transverse section to define a portion 15 having a flange 16 about its perimeter adapted to embrace an end of a core section 11. The castings 14 are designed for both upper and lower ends of the core sections 11 and, being identical, are interchangeable. The hollow portion of the casting below the flanged portion 15 thereof is separated into segments 17 by recesses 18 which latter are adapted to accommodate bolts 19 (Fig. 1) effective to secure the head or casting to its respective tank 12 or 13.

Each segment 17 of the hollow portion of the head 14 has an opening 20 therein. These openings are in communication with the radiator tank to which the head is secured by the bolts 19, the tank being disposed below the overhang of the upper portion 15 of the lower head and against the inner face of the hollow lower portion thereof but a sealing gasket 21 (Fig. 3) is interposed between the tank and head to obviate leakage when water is circulated through the openings 20 in the head. The identical relationship obtains between the head at the upper end of the core section 11 and the upper tank 12, except, of course, that the head is inverted so that the tank 12 will rest on the portion 15 above the head, as shown in Figure 1.

From the foregoing, it will be seen that water in circulation in the core sections 11 may pass from one tank to the other through the upper and lower heads by way of the openings 20 therein by virtue of the fact that the upper and lower ends of the core sections 11 are each in communication with the hollow portions of their respective heads 14.

Formed on the interior face of the outer wall of the head and as an integral part thereof is a boss or protuberance 22. This boss is disposed midway between the ends of the head and is spaced below the flange 16 thereof. It interferes in no way with free circulation of water through the head and, as shown in dotted lines in Figure 3, is provided with an axial bore 23 which latter extends through the outer wall of the head but terminates short of the inner end of the boss. A plurality of orifices 24 is provided in the inner

end of the boss at a variety of angles to its longitudinal axis but are disposed so that air under pressure expelled therethrough will be directed against the walls of the radiator core section to dislodge foreign matter adhering thereto which has reduced the efficiency of the engine.

The outer end of the bore **23** of the boss **22** is threaded to receive a plug **25** which remains in place until it becomes necessary to purge one or more of the radiator core sections **11**. The plug is removed and replaced by the threaded nozzle of an air pressure line which is connected to a suitable air compressor. As each core section is cleansed of foreign substances by jetting air thereinto in the manner described, the plug **25** is replaced and the operation of the engine resumed with greater efficiency.

Manifestly, the construction as shown and described is capable of some modification and such modification as may be construed to fall within the scope and meaning of the appended claim is also considered to be within the spirit and intent of the invention.

What is claimed is:

In an engine radiator composed of multiple core sections and upper and lower water reservoirs, a purging head for each end of each of said core sections, said heads each comprising a

substantially L-shaped body in vertical cross section having a portion provided with a perimetrical flange receiving an end of a core section and a hollow portion adapted for sealing engagement with a water reservoir, said hollow portion having openings in register with openings in said water reservoir for the circulation of water, means for securing said body to said core section and water reservoir, a hollow boss formed integral with and extending inwardly from the outer wall of said hollow portion having its inner end closed except for a series of orifices disposed at a variety of angles with respect to the longitudinal axis of the boss and means threaded into the outer end of said boss to close the same.

THOMAS W. HUFFMAN.

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