

Book Review Nr 6

This month is a short review of one volume of the four-volume Newnes Complete Engineer encyclopaedia.

Volume 1V runs to 27 chapters and like Volume 1 runs to over 600 pages. This volume covers, amongst other things, the construction of engines and how they work.

There are chapters which will be of particular interest to those involved with steam engines and locomotives. Relevant chapters include 'Operation and Maintenance of Steam Engines and Boilers', 'Injectors, Ejectors and Water Heaters' and 'The Modern Stationary Steam Boiler'.

Each of these chapters has sections under comprehensive sub-headings covering all matters relevant to the subject matter of the chapter.

The chapter on steam engines covers limited performance data, components, operating the plant, lubrication, running repairs and attention. Although the book covers commercial machines, the diagrams and techniques would undoubtedly be of use to a modeller.

The chapter on injectors begins "The modern injector is a most reliable and compact apparatus...." This chapter is more specific to the piece of apparatus and is therefore more detailed; there is a fault-finder section. As one would expect, the diagrams are clear and labelled.

The chapter on stationary steam boilers has a few pages on principles and then moves on to cover some twenty proprietary boilers. There are diagrams but no dimensions or details of component parts, albeit the methods of construction are covered in the text. The sub-sections cover the benefits, the particular design and the patented aspects.

Chapters which members may find of interest include 'Hydraulic Machinery', 'Pumps and Pumping' and 'The Refrigerating Machine'. Other chapters cover processes, material and machines less common with modellers eg, cold start engines, power hammers, turbines and hydraulic presses.

If you want to borrow this, or any book in the library, please contact me.

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Remember we would welcome members' views on any books they borrow.

Clive Reynolds. Sept 2021

Injector Difficulties

If, when steam is turned on, the injector will not pick up water, it may be due to :

- (a) It is not getting its full supply of steam.
 - (b) Leakage of steam has made the water pipe hot, which prevents the injector from lifting.
 - (c) The inlet water is too hot.
 - (d) Steam nozzle or lifting tube blocked or choked with sediment (see note (c) below).
 - (e) Air leakage in water cock or water pipe.
 - (f) End of water pipe or strainer clogged or not covered by water in feed water tank.
- If injector gets water, but forces it through the overflow :
- (a) Defective steam supply.
 - (b) Inlet water too hot.
 - (c) Combining or delivery cones choked. (To remove sediment, wash out with a solution of one part muriatic acid and ten parts water.)
 - (d) Boiler feed valve sticking.

CALORIFIERS

The term "calorifier" is applied to all types of tubular water-heating apparatus in which the heating medium, usually steam, but occasionally hot water, is admitted to a series of tubes and transmits heat to water surrounding the tubes. Two different types

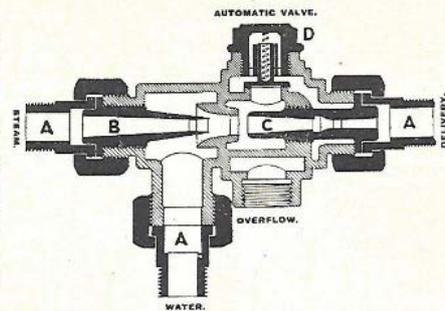


Fig. 5.—WHITE'S AUTOMATIC INJECTOR

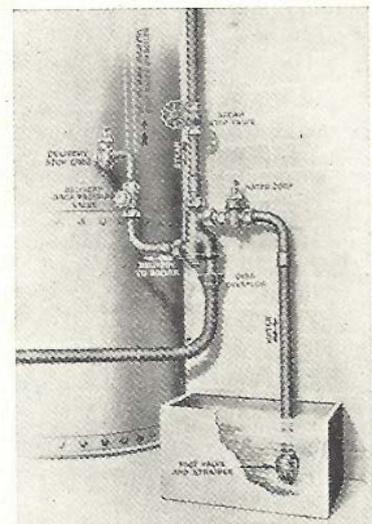


Fig. 6.—INJECTOR FEEDING A VERTICAL BOILER