

*MODEL RAILROADING'S
DARK UNDERBELLY*

*or..... What Really Is Under All That
Rolling Stock?*

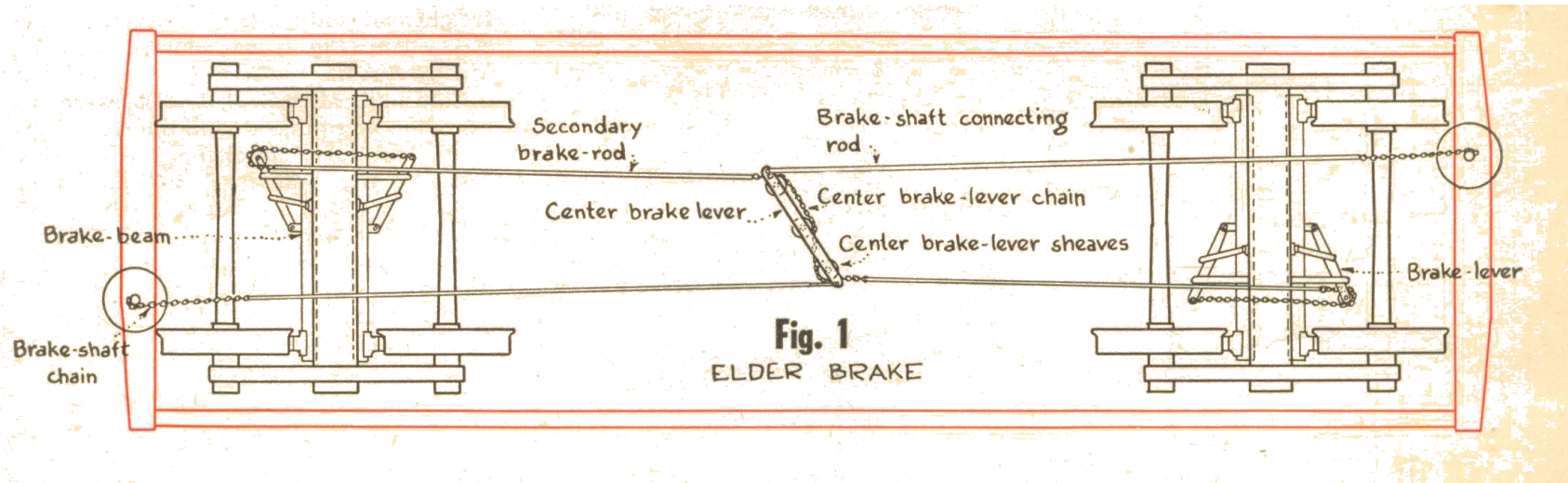
WHY BOTHER?

- The “Good Enough” School of Thought
 - The Operators
 - Does scale matter?
 - Layout height
- Achievement Program/Contest Models
 - Conformity (25 points)
 - Detail (20 points)

Freight car underbody details - Brake Systems

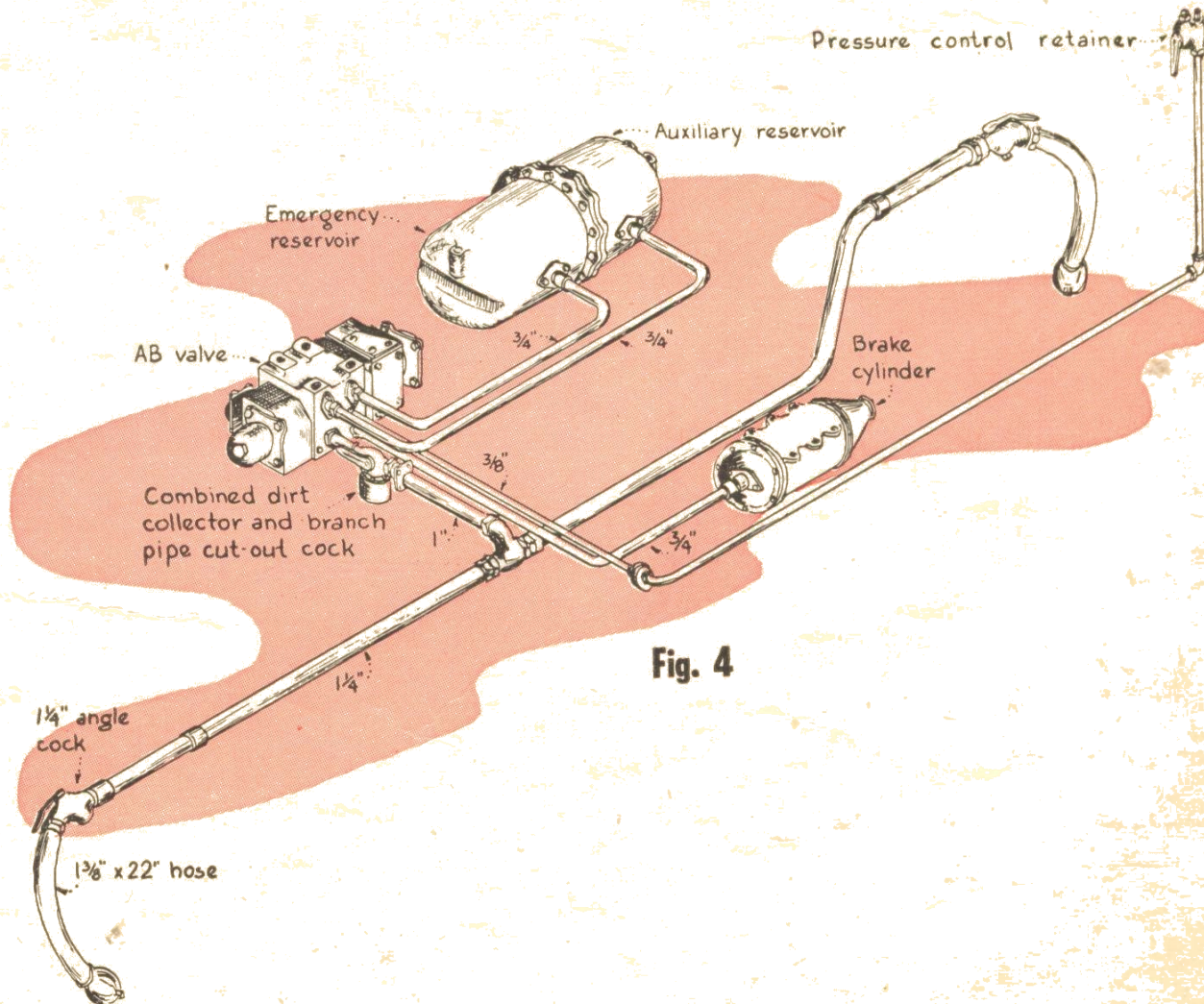
- Hand Brakes – Pretty much as it sounds – brakes were set by hand. The Elder brake system is illustrated on the following slide.
- Straight Air – The train line is charged from the locomotive to set the brakes. Consists of a cylinder connected directly to the train line. If the train breaks in two – NO BRAKES! Not Good!
- Automatic Air – The train line is charged by the locomotive, typically to 90 p.s.i., and the brakes are released. To apply the brakes air is released from the train line by the brake valve on the locomotive and the triple valve releases a proportional amount of air from the service reservoir to the brake cylinder, applying the brakes. If the train breaks in two, the pressure in the train line drops to zero and the air from the service and emergency reservoirs is released to the brake cylinder. Definitely better, but can cause problems such as flat wheels and even derailments. Both the KC/KD and AB systems fall into this category.

Freight car underbody details – Brake Systems – Elder Brake

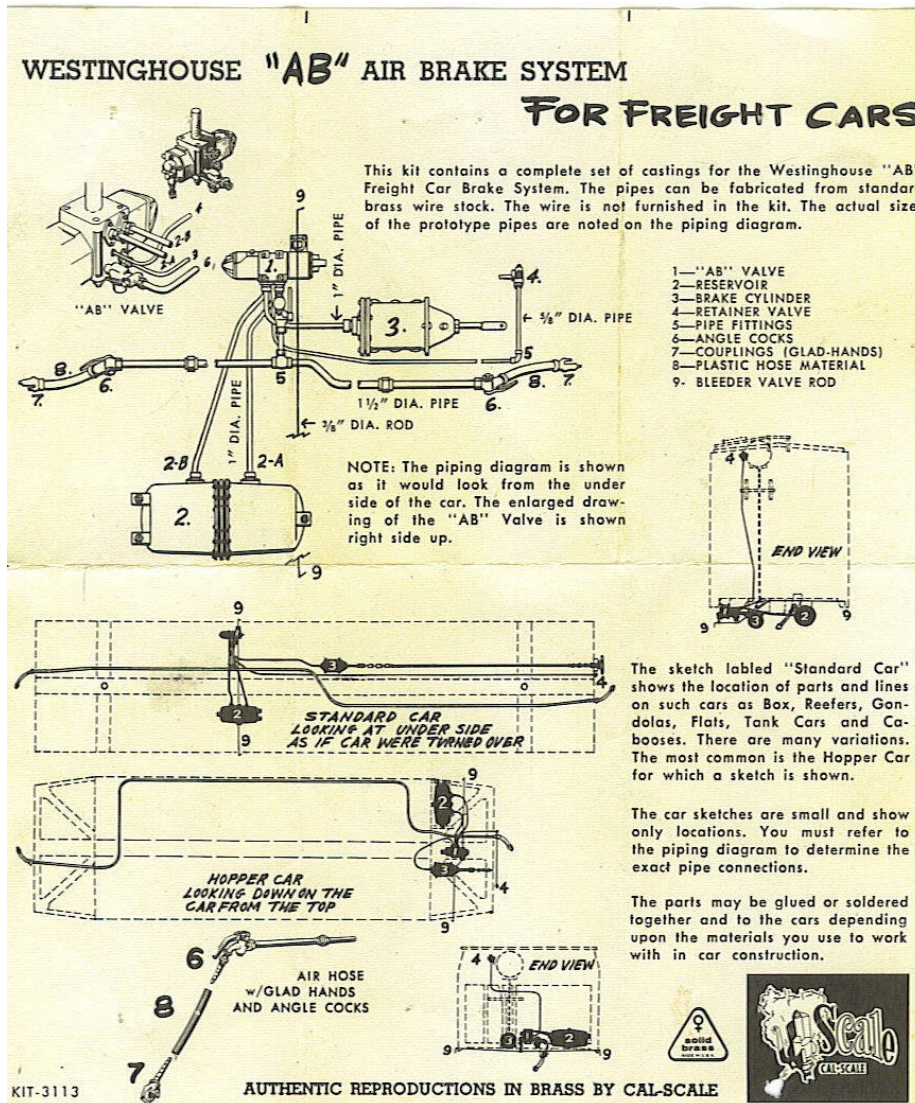


Used from the late 1800's up through the turn of the century (and beyond on non-interchange equipment). This illustration shows the Elder Brake application for passenger cars. Freight cars generally had only a single brake wheel.

Freight car underbody details – Brake Systems - AB Brake System

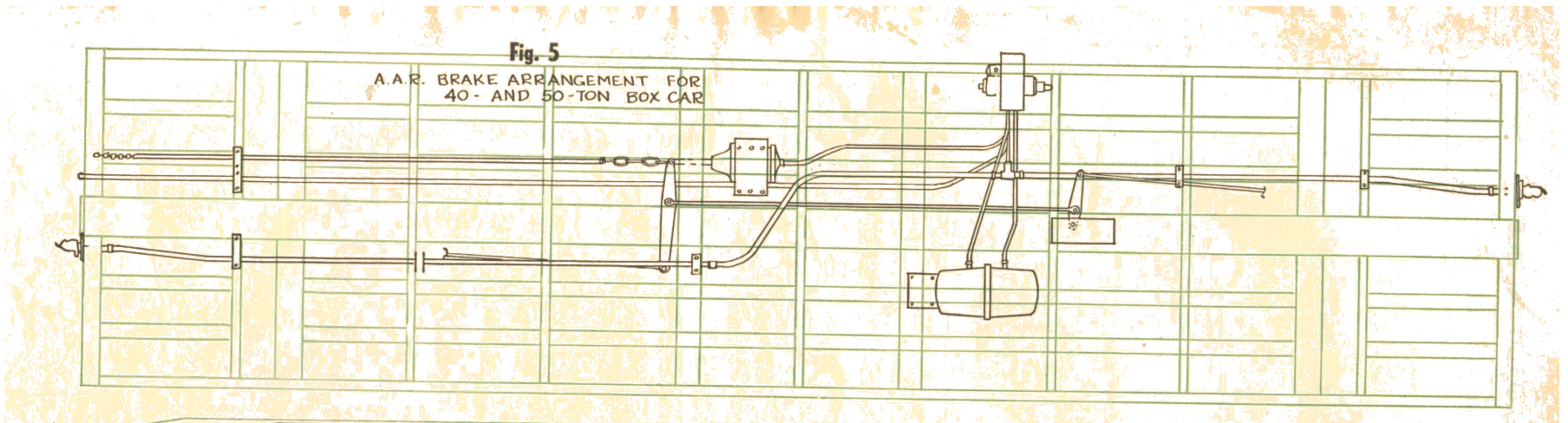


Freight car underbody details – Brake Systems - AB Brake System (continued)



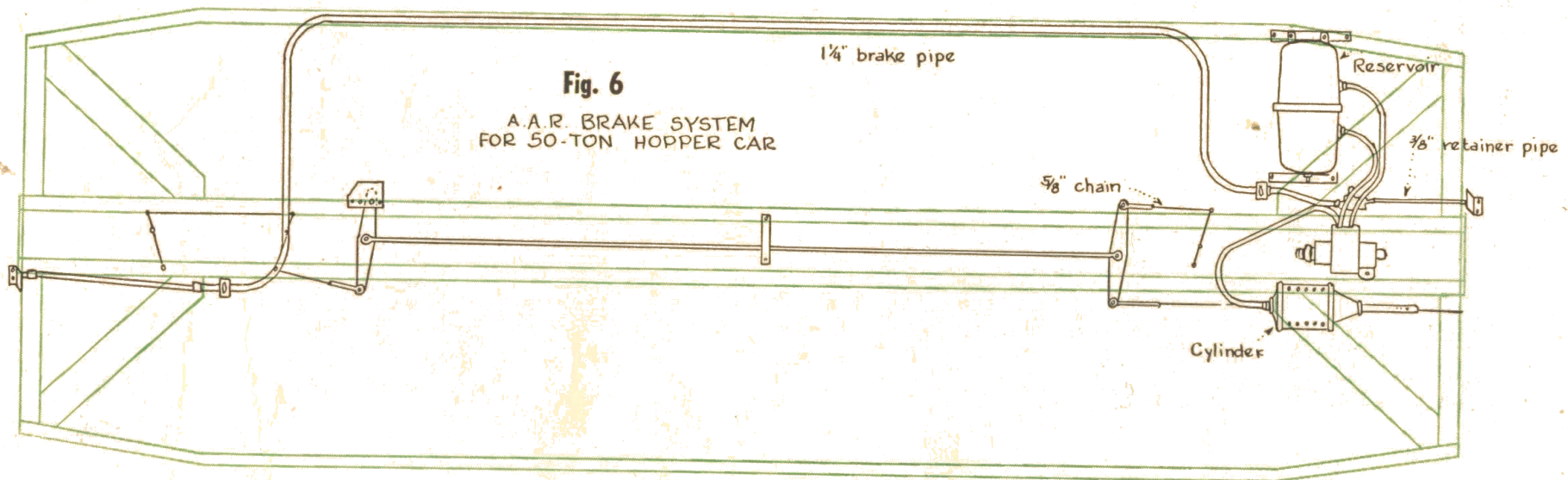
This excellent set of drawings accompanies the Cal-Scale kit containing lost wax brass castings for all the AB brake components including the angle cocks, glad hands and air hoses. Note that the pipe sizes are called out on the drawing as well as the seldom modeled bleeder valve rod.

Freight car underbody details – AB Brake System for House Cars



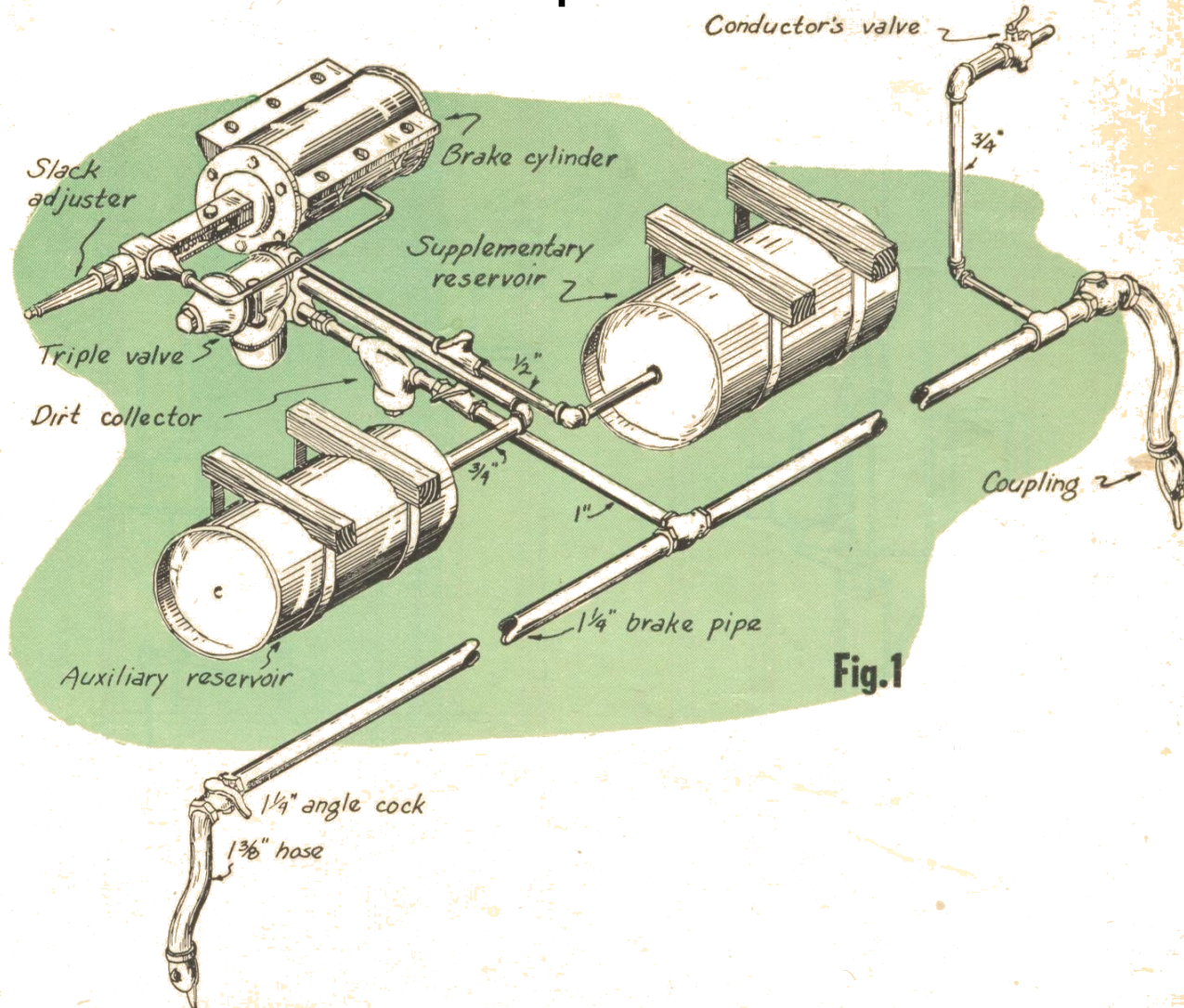
View from the Top

Freight car underbody details – AB Brake System for Hopper Cars

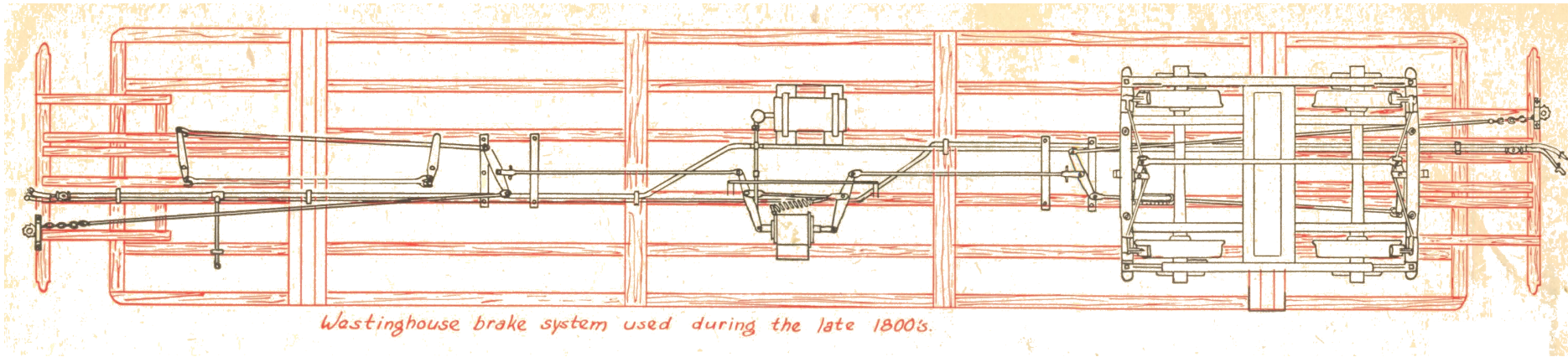


View from the Top

Passenger car brake equipment components

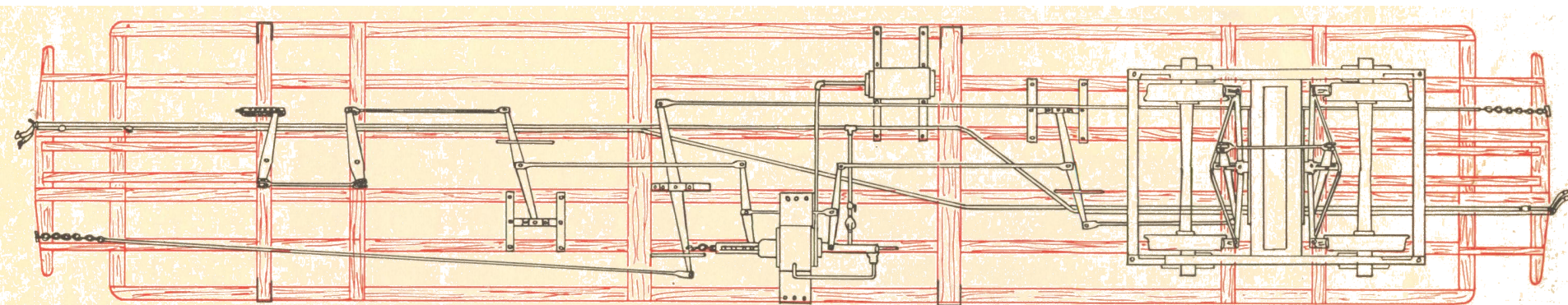


Passenger car brake equipment – Early Application



View from the Top

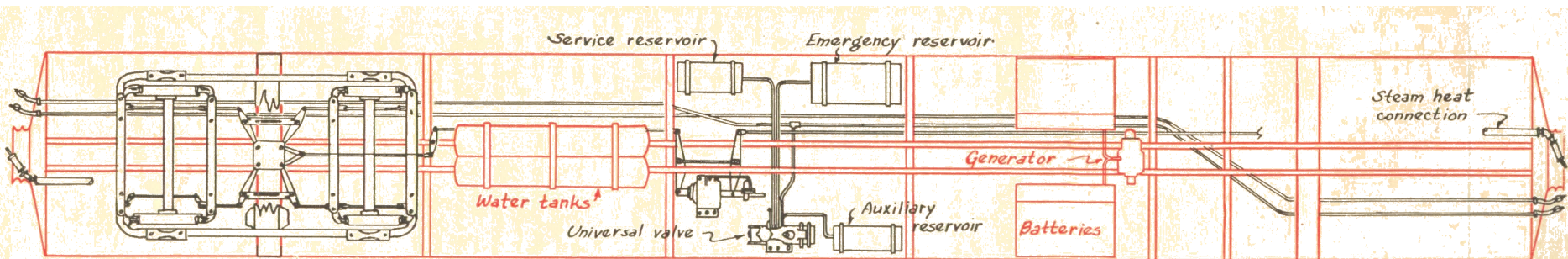
Passenger car brake equipment – Turn of the 20th Century



Westinghouse brake system used during the early 1900s.

View from the Bottom

Passenger car brake equipment – 1930's – 1960's



Some of the brake equipment as applied to a Pullman-Standard Co. passenger car. This is one of the more recent applications used from the '30's to the present. A few of the outstanding underbody details in addition to the brake system are shown in color.

View from the Bottom

Acknowledgements

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