

**HISTORY OF THE BALDWIN
LOCOMOTIVE
WORKS FROM 1831
TO 1897, PP. 5-83**

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History of the Baldwin Locomotive Works from 1831 to 1897, pp. 5-83 by Various

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VARIOUS

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LOCOMOTIVE
WORKS FROM 1831
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MATTHIAS W. BALDWIN



Baldwin locomotive works.

956

HISTORY

OF THE

BALDWIN LOCOMOTIVE WORKS

FROM

1831 TO 1897.

PHILADELPHIA:

J. B. LIPPINCOTT COMPANY.

1897.

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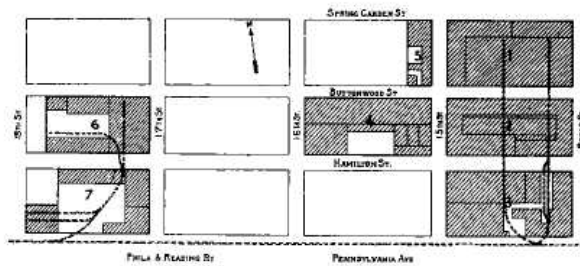
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PLAN.

THE BALDWIN LOCOMOTIVE WORKS is situated with a front on Broad Street, Philadelphia, extending from Pennsylvania Avenue to Spring Garden Street. It also comprises one block bounded by Fifteenth and Sixteenth, Hamilton and Buttonwood Streets, and the greater part of two blocks between Seventeenth and Eighteenth, and from Buttonwood Street to Pennsylvania Avenue. The plan below shows the area occupied, over nine acres in all, of which between six and seven acres are under roof.



1. Main Office, Drawing Room, Erecting Shop, Cylinder Shop, Paint Shop, and Store Room.
2. Boiler Shop, Machine Shop, Brass Machine Shop, Brass Foundry, and Wheel Shop.
3. Machine Shop, Blacksmith Shop, Hammer Shop, and Power Plant.
4. Iron Foundry, Repair Shop, and Flange Shop.
5. Superintendent's Office, Laboratory, Pattern Shop, and Electrical Department.
6. Machine Shop, Tender Shop, and Sheet Iron Shop.
7. Spring Shop, Drop Hammer Shop, Hydraulic Smith Shop, Wood Shop, and Power Plant.

NOTE.—The shaded spaces indicate buildings occupied by the Baldwin Locomotive Works.

HISTORY

OF THE

BALDWIN LOCOMOTIVE WORKS.

THE BALDWIN LOCOMOTIVE WORKS dates its origin from the inception of steam railroads in America. Called into existence by the early requirements of the railroad interests of the country, it has grown with their growth and kept pace with their progress. It has reflected in its career the successive stages of American railroad practice, and has itself contributed largely to the development of the locomotive as it exists to-day. A history of the Baldwin Locomotive Works, therefore, is, in a great measure, a record of the progress of locomotive engineering in this country, and as such cannot fail to be of interest to those who are concerned in this important element of our material progress.

MATTHIAS W. BALDWIN, the founder of the establishment, learned the trade of a jeweler, and entered the service of Fletcher & Gardiner, Jewelers and Silversmiths, Philadelphia, in 1817. Two years later he opened a small shop, in the same line of business, on his own account. The demand for articles of this character falling off, however, he formed a partnership, in 1825, with David Mason, a machinist, in the manufacture of bookbinders' tools and cylinders for calico-printing. Their shop was in a small alley which runs north from Walnut Street, above Fourth. They afterwards removed to Minor Street, below Sixth. The business was so successful that steam-power became necessary in carrying on their manufactures, and an engine was bought for the purpose. This proving unsatisfactory, Mr. Baldwin decided to design and construct one which should be specially

adapted to the requirements of his shop. One of these requirements was that it should occupy the least possible space, and this was met by the construction of an upright engine on a novel and ingenious plan. On a bed-plate about five feet square an



MR. BALDWIN'S FIRST ENGINE.

upright cylinder was placed; the piston-rod connected to a cross-bar having two-legs, turned downward, and sliding in grooves on the sides of the cylinder, which thus formed the guides. To the sides of these legs, at their lower ends, was connected by pivots an inverted U-shaped frame, prolonged at the arch into a single rod, which took hold of the crank of a fly-wheel carried by upright standards on the bed-plate. It will be seen that the length of the ordinary separate guide-bars was thus saved, and the whole engine was brought within the smallest possible compass. The design

of the machine was not only unique, but its workmanship was so excellent, and its efficiency so great, as readily to procure for Mr. Baldwin orders for additional stationary engines. His attention was thus turned to steam engineering, and the way was prepared for his grappling with the problem of the locomotive when the time should arrive.

This original stationary engine, constructed prior to 1830, is still in good order and carefully preserved at the works. It has successively supplied the power in six different departments as they have been opened, from time to time, in the growth of the business.

The manufacture of stationary steam-engines thus took a prominent place in the establishment, and Mr. Mason shortly afterwards withdrew from the partnership.

In 1829-30 the use of steam as a motive power on railroads had begun to engage the attention of American engineers. A few locomotives had been imported from England, and one (which, however, was not successful) had been constructed at the West Point Foundry, in New York City. To gratify the