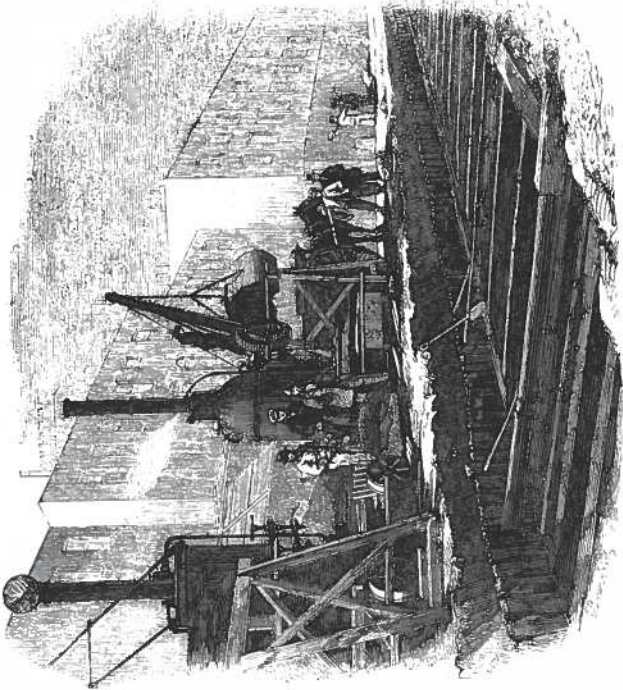


THE STEAM AGE

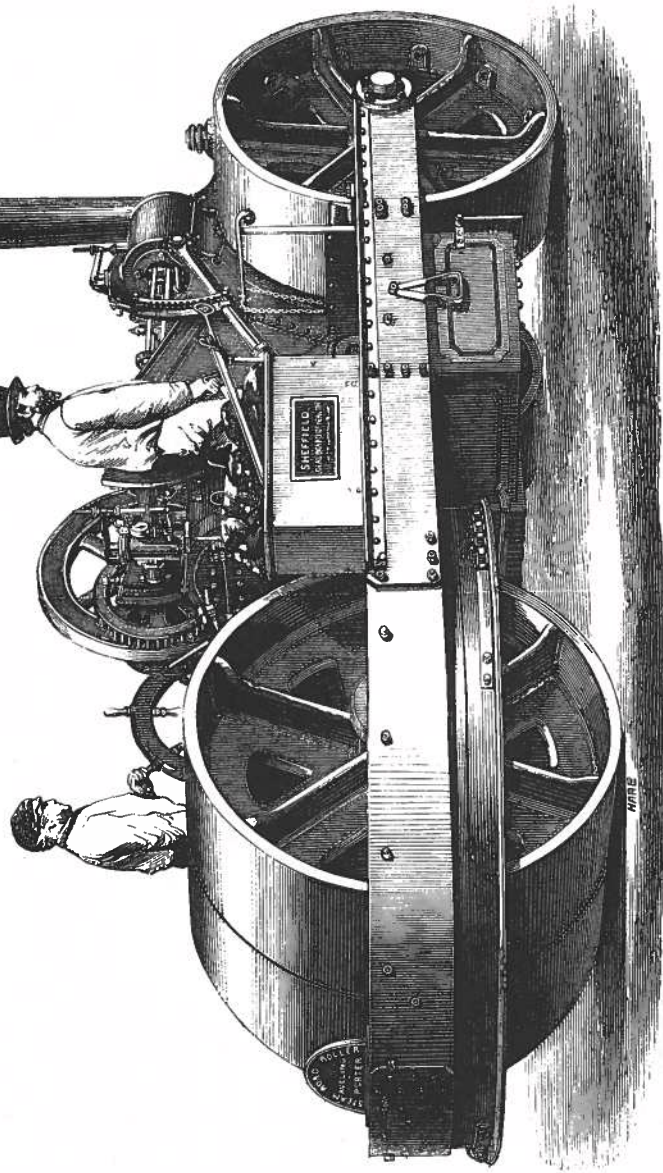
The harnessing of steam by the early Victorians powered the growth of railways across the country. Improvements in iron quality enabled wider arched roofs for stations, longer spans for bridges. But their inventiveness was not limited to trains. *The Builder* chronicled brickmaking machines, hoists, road rolling machines, street cleaning machines, excavators to extract guano, and flying machines - all powered by steam.



PORTABLE STEAM-CRANE.

In our most recent account of the works now being executed by Mr. Furness for the Northern Outfall of the metropolitan drainage works, we mentioned, amongst other appliances used there to economize labour and time, the Steam-Crane. We have engraved a view of it at work. It is known as Taylor's double-cylinder portable steam-crane, and is coming into general use for engineering, and in contractors' and foundry yards.

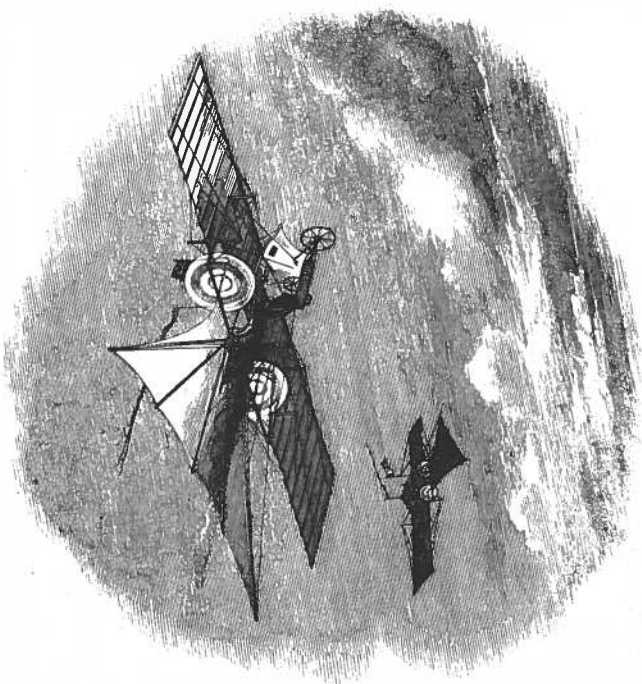
15 FEBRUARY 1862



A STEAM ROAD ROLLER.

The Town Council of Sheffield have recently purchased a steam roller from Messrs. Aveling & Porter, of London and Rochester, at a cost of 900*l.*, delivered in London. The machine arrived in Sheffield last week. The roller was driven through the streets to the bottom end of Bram-

hall-lane, from which point there is a new street called Emlin-street, which emerges on Sheffield Moor, near to the end of Ecclesall-road. There was formerly a reservoir on the site of part of this street, and in comparison with other streets in the town, the ground was soft and shifty.

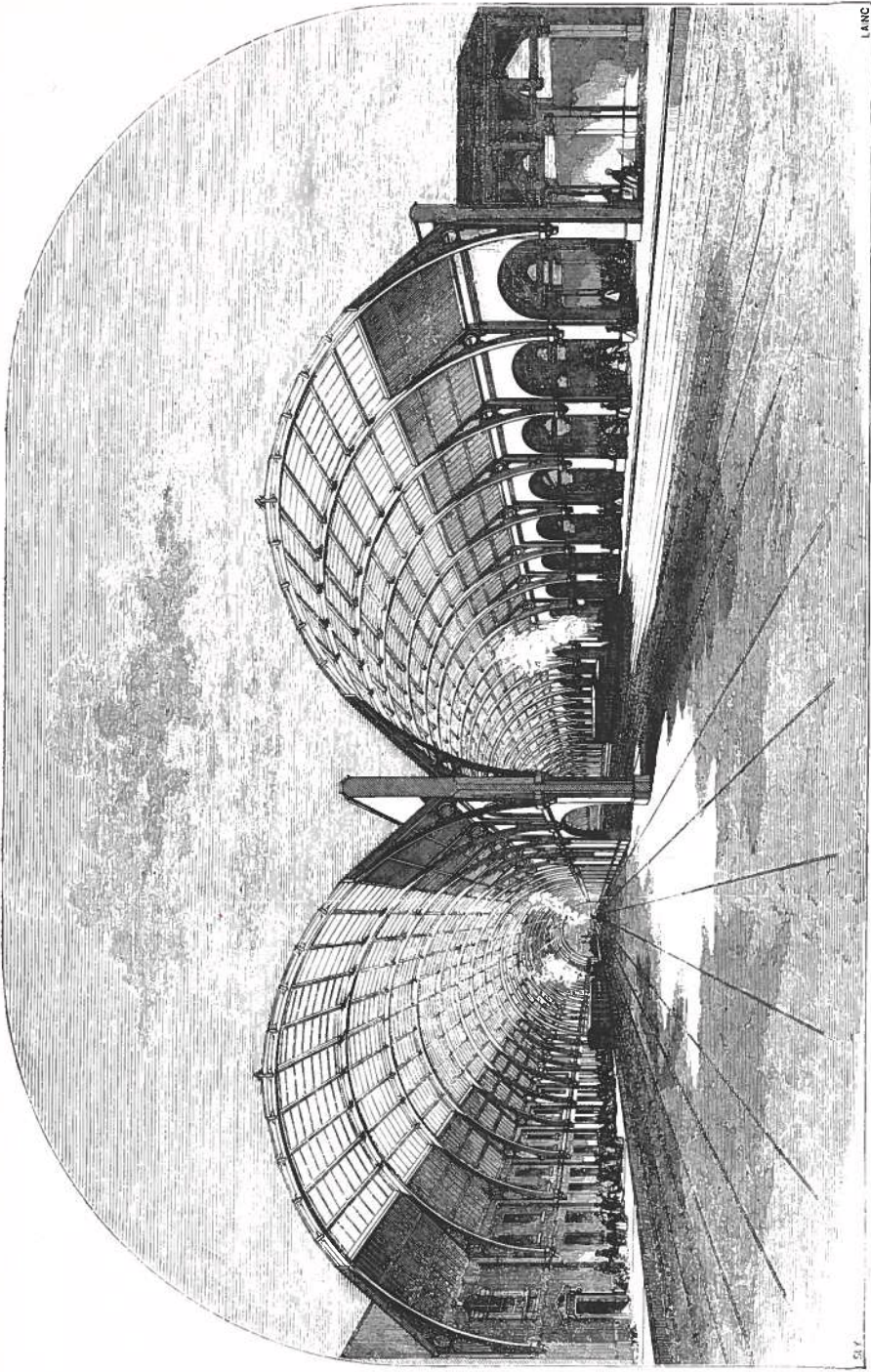


THE AERIAL STEAM CARRIAGE.

The Machine represented by the accompanying Wood Engraving attempts, with the strongest probability of success, the accomplishment of an object which has been long and often desired, but has hitherto baffled the skill of man.

The weight of the machine, when loaded and prepared for flight, is estimated at 3,000*lbs.*; the area of the wings amounts to 4,500 square feet. The load is therefore two-thirds of a pound to each square foot, which is less than that of many birds.

1 APRIL 1843



KING'S CROSS TERMINUS, GREAT NORTHERN RAILWAY.—Mr. Lewis Cubitt, Architect.

Built in the same year as the Crystal Palace, Lewis Cubitt's King's Cross station imitated the techniques of the exhibition building for his two train sheds, each spanning 105 ft.

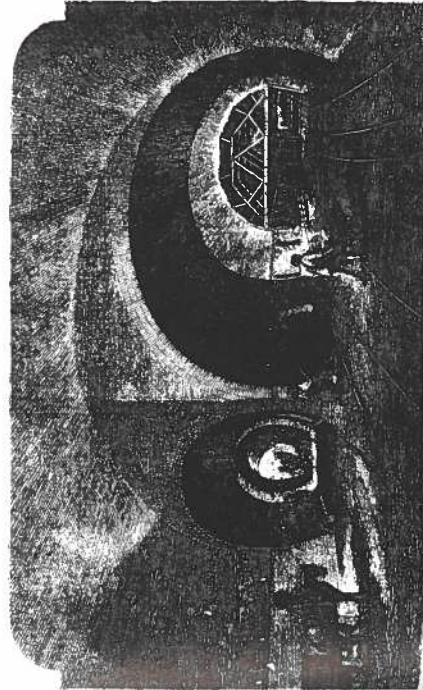
THE KING'S CROSS TERMINUS.—GREAT NORTHERN RAILWAY.

This fine station is now completed, and will be opened for use in a few days.

It is a very extraordinary work, and reflects honour on its designer, Mr. Lewis Cubitt. Each "shed" is 800 feet long, 105 feet wide, and 71 feet high to the crown of the semi-circular roof, without a tie.

20 OCTOBER 1852

Underground the earth began to move.



Metropolitan (Underground) Railway: Central Railway Station in the City.

The view shows the double bell-mouth and groin-ing at King's-cross, which are formed to allow the junction of two branch lines by which this railway is connected with the Great Northern Railway. The whole of this bell-mouth is executed in brick-work,—the greatest span being about 45 feet. The road on the left shows the line to the east side of the Great Northern, and is completed.

19 JANUARY 1861

But travelling on steam trains underground was found to have its disadvantages. *The Builder* recommended the use of Dr Neale's Chemical Lung.

THE VENTILATION OF UNDERGROUND RAILWAYS.

THE ventilation of the Metropolitan Underground Railway still requires improvement. At the King's-cross station, the sulphurous fumes which escape from the tunnel are both unpleasant and unwholesome; and some of the other stations are even much worse. This condition of the atmosphere cannot be good for passengers, particularly those who are in delicate health; but on the numerous men who are employed, we are told that the effect of remaining for many hours in the bad air which is to be met at several points is highly injurious, and "more," some say, "than a man can long stand."

We have been in many mines, but do not remember meeting with anything so suffocating as the air is here.

9 MAY 1863

Nearly 40 years before work was to start at Brooklyn, Brunel was detailing Britain's most famous bridge of the age.



THE SUSPENSION BRIDGE, CLIFTON.

We publish this week a view, and a page of details, of the Suspension Bridge, Clifton, Bristol, commenced many years ago, and at length in course of completion with some important structural modifications. The bridge was commenced under an Act of Parliament in the year 1830. The original estimate was made by Telford, and amounted to 52,000*l.* The design on which the work was begun was furnished by the late Mr. Brunel, the estimated cost being about the same as Telford's.

8 AUGUST 1863