A PORTABLE RAILWAY,

We give herewith two illustrations representing a novel portable railway, lately devised in France by M. Corbin. The invention is one having a wide range of applications, since it may be employed in any locality about which it is desirable to transport masses of bulky material. Our engravings, which we extract from the Moniteur Industriel Belge, show the railway in use in a brickyard and also in a harvest field.

The track used is of wood, and consists simply in longitu-

dinal pieces joined by cross bars, and made in lengths of a size to be easily transported. These are laid in position wherever required, and serve as ways for the trucks, which are nothing more than rectangular platforms, having a pair of small wheels at one end and an attaching apparatus at the other. Anumber of these vehicles are joined together to form a train. In brickyards the bricks are piled directly upon the platforms, as shown in the engraving. In the gathering of agricultural products, baskets are employed, which are carried to various pertions of the field, and thence taken to the trucks for transportation.

The inventor says that, with ten trucks and twenty baskets, half of the latter being constantly in use, four workmen can pull and transport, to a distance of 800 feet, 40 tuns of beets or like vegetables in a day. One

man, he adds, can easily draw the ten loaded trucks, with over a tun of contents, along the ways.

The railway is excellently adapted for transporting material over soft or plowed ground, and might be used in all operations requiring the removal of stone and earth. With the aid of a horse, a still larger number of trucks than above mentioned may be moved at once.

--Foundery Charcoal.

The part which the charcoal plays in the molds is to give porosity and facilitate the escape of the gases and steam caused by the molten metal. There are three sorts in use in French founderies, known as mineral charcoal, vegetable charcoal, and stove charcoal. The first of these is made from coal finely pulverized, and is mixed with the sand used for casting pieces of small dimensions and little thickness; these molds are called green sand molds. But all sorts of coal are proximity to the Elgin mine. The side of a hill is all ablaze,

not equally good for the purpose; some kinds give a white appearance to cast iron, and produce on the surface, and chiefly at the extremities of the castings, rough spots which the file will not touch, and which have the appearance of having been run at too low a heat. M. Mailfert has tried many kinds and finds that gras or bituminous coal is the best, and says that, when used in smull quantities and finely sifted, its action is perfect, and it gives to the casting that blaish luster which is highly esteemed.

The vegetable charcoal is made from carefully select. ed wood, burnt in a special manner. The principal quality required in it is that it should not catch fire, and it is used principally for powdering the surface of the mold so as to prevent the contact of the molten metal with the green sand. It is reduced to such impalpable

Scientific American.

a force of ten men, together with a retort, from which they run four flasks per week. They are busily engaged in running tunnels, and ere long we will hear of a big strike for the Elgin. This mine is under the superintendence of J. Mel bourne. While we were present, they ran off a retort of $34\frac{1}{2}$ per cent ore.

The Abbot in richness is undoubted. Ten experienced miners are continually employed in extracting furnace ore, and the work goes on night and day. They are now busily preparing to build a furnace at a cost of \$10,000.

The construction of the station was commenced in Febru ary. 1872, and necessitated the removal of a large area of old buildings that were alike unsightly and unsavory.

The works were designed by Mr. W. Mills, C. E., engineerin-chief of the London, Chatham, and Dover Railway.

The station works commence at Ludgate railway bridge, and extend for the low level through lines to a point on the north side of Holborn Viaduct, on which the low level station is situated, with entrances from the viaduct and from Snow hill. At the end of the Ludgate bridge the four lines

of the Chatham Company diverge, two lines being carried to the high level terminus, at which they spread out to seven lines, and an engine line. Twolines descend by the low level to the Metropolitan underground system. The rails at the bridge are 59 feet above Ordnance datum; at the platform they are 4 feet higher. The ascent is by a gradient of 1 in 100 for 400 feet; thereafter the rails are level for about 900 feet. The descent to the low level is by a gradient of about 1 in 40.

One of the remarkable features of the works is the extraordinary strength of the piers and girders that bear the west end of the superstructure that faces the Via duct. The piers that carry girders have first of all beas of concrete about 7 feet thick resting upon the London clay. The foundations are 19 feet by 16 feet at the base and are built first of beds 2

PORTABLE RAILWAY IN A BRICKYARD. The Buckeye is the best developed mine in this region. | feet thick, of gault brick. diminishing upwards to the di-Seams of the richest cinnabar are plainly visible wherever the eye glances, and from this mine very little waste rock is extracted. The Buckeye runs a force of twenty eight men steadily, and retorts weekly fifteen flasks of quicksilver. A flack is considered worth \$100.

The Empire is a new and rich prospect, struck but a month ago. The value of this mine is in the small amount of labor necessary to work it, it being all clay soil, composed of magnesia, lime, and cionabar.

The mines in this section of our county excel all we have seen in richness. The very best ores, which will average 30 per cent, are found on the surface of the hills.

A WONDERFUL GAS WELL.

We cannot forget, says the Colusa Independent, to make mention of the gas fire which issues from the mountain in close

mension of 11 feet of Staffordshire blue brick for 4 feet in hight; again, to a width of 7 fest 3 inches, and, finally, they are contracted to the massive stine piers of 3 feet 9 inches on the side. There are five of these piers in all; they and the girders are so constructed and placed as to admit of a future widening of the road by the addition of other two lines of rails. The box girders that carry the end of the botel above are 5 feet by 3 feet 9 inches dimensions, and weigh each about 45 tuns. The extreme length, supported in the center, is 74 feet; the maximum span is 30 feet continuous. The girders-which weigh about 400 tuns in all-were placed in their respective positions without any interruption to the traffic.

The high level station is about 750 feet in length by 137 feet in width. The roof, in three bays, is on lattice girders, and supported upon three ranges of columns of twelve each,

21 feet high. There are ornamental iron spandrils at the heads of the columns. The angularities of the station area are covered in with lateral Paxton roofs. The cab approach is by a winding entrance after the manner of Charing Cross station, from Farringdon street and Bear lane; the exit is by the front from the arrival platform to the viaduct. Lifts are provided at convenient points for the interchange of luggage between the high and low level platforms, between which excellent communications are alcoprovided for passengers. The ground floor of the front building is appropriated to booking offices, station mas ter's office, waiting rooms, restaurent, and other accommodation required for the traffic. A communica tion is open with the hotel at the east end of the cross platform. The main front building has a facade 235





gives it a surface almost as brilliant as glass; it is called eres or fat charcoal, a quality derived from the mode of burning, and it will neither roll before the trowel or spatula richness of the Elgin, as they can run their furnace with litnor stick to it.

Stove black is used for the same purpose in the case of large castings, as the other kind will not bear excessive heat. This is simply mixed with water and applied rather thinly. A thick coating is not considered good.

The Remarkable Quicksilver Mines of Colusa County, Cal.

The Elgin mine is as yet undeveloped, but the richness of the prospect is self-evident. Everywhere seams of the richest ore are revealed to view, and ere long it will turn out to be one of the richest mines in that vicinity. The Elgin company opened their mine about six months ago, and have now

PORTABLE RAILWAY IN A HARVEST FIELD.

to the gas which emitted, by M. G. L. Eaton, and has been burning steadily eversince. This accrues enormously to the tleor no expense. Au escapeis now taking place of 125 cubic feet, sufficient to run a dozen furnaces.

This portion of our county abounds in quicksilver wealth, and those owning mines will at first have to encounter diffi culties, but ere long they will overcome the hardships of developing their mines; and in all experience with regard to mineral wealth, Colusa has the richest.

Holborn Viaduct Station, London.

This commodious station is at once an important addition to the railway accommodation of the city of London, and one of the most notable among the many remarkable transformations that have occurred.

powder that the spatula used for spreading it in the mold and has been so for eightyears, when fire was communicated, feet long, of which 182 feet by 29 feet is a covered fore court to the station, with a range of arched openings to the street. It is roofed with transverse arches, filled in with white glazed tiles, and, for the carriage way, paved with Charley Forest 3 inch cubes, with a foot pavement along the inner sides and the ends of the court. A massive trussed cornice is carried along the front over the arched openings, which are closed at the bottom by a balastrade. Gas lights, with an ornamental wrought iron railing, will be fitted on the coping of the balustrade. Ornamental pateras are introduced in the spandrils of the arches.

> The station roofs give abundant light by the broad belts at the ridges that are filled with 21 oz. rolled plate glass. Appliances for ventilation by louvre openings are also very complete.

> The arches beneath the high level station are utilized by the Company for stables,