

the machinery is arranged to drive the chain in either direction.

As regards other details, the chains of the trimmers and reloaders are driven by sprocket wheels. This would not answer for the elevators of the type now in use, as they have to be raised and lowered. A short endless chain, driven from a sprocket wheel, lies within the main bucket chain. Teeth are attached to its links which, catching the links of the bucket chain, drive it at whatever level the frame may be set. Tension screws are applied to the bearings to keep the chains stretched. Between each pair of links where they would otherwise come in contact with each other is a bearing block of malleable iron that prevents wear and supplies a more fixed journaling for the end of the link.

The capacity of the yard is placed at 120,000 tons. There are six trimmers. The largest pair, 74 feet high and 260 feet spread, can form a pile of 30,000 tons capacity. There are three reloaders, one for each pair of trimmers. Five elevators are at present in use. In general the conveying machinery can dispose of two or three tons a minute. One important feature is that the coal is never dropped more than a foot, so that the formation of slack is avoided. Two engines, aggregating about 200 horse power, drive the trimmers and reloaders, of course not all at once.

The large capacity of the yard provides an element of security against strikes or other interruptions in the coal supply. It represents the distributing point for anthracite coal by water in all directions, while coal may be sent by barges across the Hudson River to be transferred to other railroads. Improved coal-handling machinery makes such transfer economical.

AN IMPROVED ELEVATOR CAR.

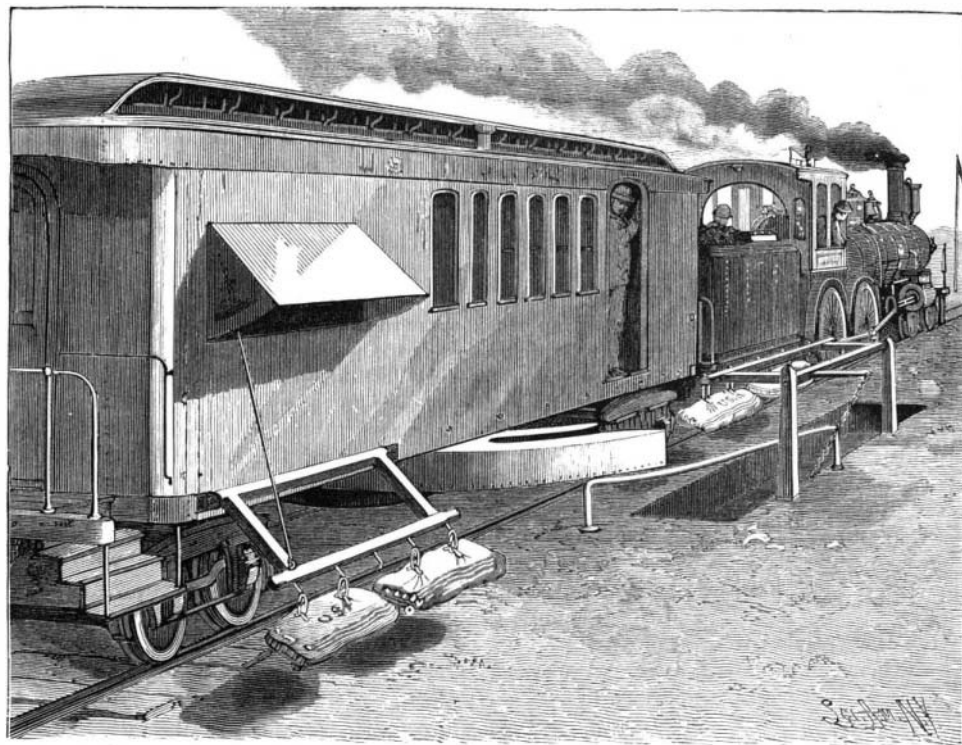
The illustration represents an elevator car designed to facilitate the handling, transferring, and stowage into cars of grain that has been deposited in cribs or granaries along the line of a railway, affording an elevator privilege at every station in the country upon roads employing such cars. It has been patented by Mr. James E. Snevely, of Chetopa, Kansas. The car is divided into three compartments, one of which accommodates a boiler and engine, the smoke stack being hinged to fold down upon the car roof when the car is in transit. In the second compartment is a frame, adapted to be raised by chains and windlasses, or lowered so that its top will be flush with and form a portion of the car roof, the windlasses being located in the third compartment. The framework supports hoppers connected with scale beams so arranged that the weight of the grain may be read by an attendant upon the car roof, and the hoppers have discharge orifices to a conveyor belt that leads to a chute extending outward through the side of the car, where it is connected with such number of conveyers as may be necessary to reach the car that it is desired to load. A bucketed elevator is provided to transfer to the car the grain or corn to be handled, the elevator delivering directly to the receiving trough of a combined sheller and separator, and in connection with this elevator is a conveyor driven by a chain connection and arranged to be passed beneath the flooring of a crib or granary. This elevator is designed to have a capacity of three thousand bushels per day, while requiring the labor of only four men to operate it.

Presence of Mind in a Parrot.

A dispatch to the *New York World* from St. Louis says: Several days ago a thief entered the house of Dr. D. Morrow, at No. 308 Jefferson Avenue, and, choosing between a sideboard full of silverware and a red-tailed gray parrot in a gilded cage, took the latter. The error of his preference was soon made manifest to him when the burglar reached the street, for the parrot set up vociferous cries of "Stop thief!" and whistled up all the dogs in the neighborhood. The thief stood this as long as there seemed the faintest show of escaping in spite of it, but at last, as men, boys, and dogs closed around him, he threw down the cage and nimbly sped away, but was soon arrested.

AN IMPROVED MAIL CAR.

The illustration represents a novel construction designed to facilitate the delivery of mail bags from a moving train, and also the taking up of mail bags by such a train, which forms the subject of several patents issued to Mr. William H. Elliot, of No. 499 Eighth Street, Brooklyn, N. Y., to whom those desiring fur-



ELLIOT'S MAIL CAR AND DEVICES FOR RECEIVING AND DELIVERING MAIL BAGS.

ther particulars should apply. The receiver consists of a cylindrical chamber located below the car floor between the front and rear trucks, and arranged upon a vertical axis, the chamber having at one side an entrance spout, which, by turning the chamber on its axis, will be swung out at the side of the car. This spout may be joined to the circular chamber by a hinge, if preferred, when it would be swung out independently of the inner chamber. In the top of the spout is a slot, adapted to engage and release the hooks by which the filled mail bags are held upon a properly arranged delivery bar, the bags being then carried into and around the circular chamber until their momentum is lost by friction. The station delivery bar, as shown, is hinged to standards at a short distance from the side

ing ready means for turning outward the spout of the circular chamber, this drum, with the crank or lever by which it is operated, being the only portion of the mail receiving and delivering apparatus which takes up any space within the car proper. The curved bar located at or near the platform of the station releases the bags from the hooks on the car delivery bar, and they fall automatically into the box sunk under the track, where they are in no danger of being carried by momentum under and being crushed beneath the wheels of the cars, as sometimes happens when they are thrown loosely on the platform of the station. The bags may be delivered by the car and collected simultaneously, as the operations of delivery and collection do not in any way interfere with each other.

African Indigo.

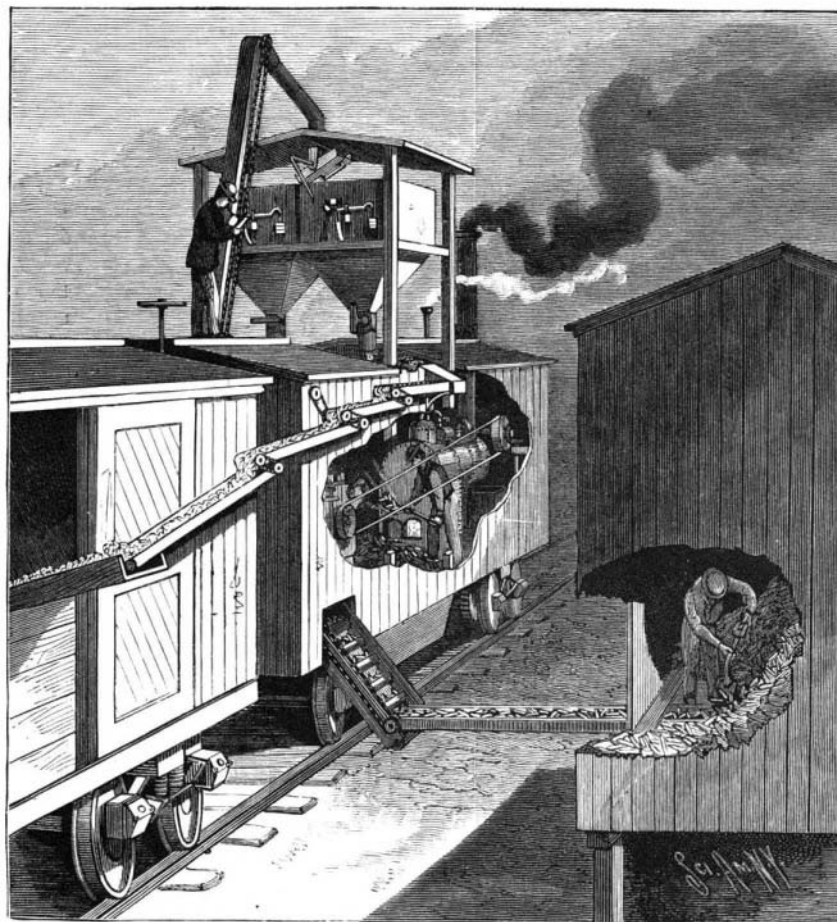
The production of indigo in West Africa, says the *Deutsche Wollen Gewerbe*, is almost entirely in the charge of women, and its extent depends upon the manufacture of cotton goods by the natives. How important this industry is can be judged from the fact that millions of meters of cotton fabrics are annually manufactured, upon the primitive hand looms of the country, for the domestic consumption and for export. Especially extensive is the export of these goods to Brazil, where they have become very fashionable and are particularly used for decorative purposes. The most popular color for these fabrics is the blue derived from indigo. A commission which, in 1886, was sent by the government from Lagos to Yoruba, to report on the culture of indigo, stated that in the city of Ibadan, with a population of about 150,000, nearly everybody is clothed in blue stuffs. Upon the banks of the Gambia River this industry is carried on very extensively. The indigo is there known under various names, as "Carro" in Mandingo, "N'Gangha" in Volof, "Elu" in Yoruba, "Suini" or "Luai" in Hausa, while the plant is called "Baba." In the valley of the Niger River the pure precipitate is produced, in which form alone the indigo has a market value. In Gambia and Yoruba it is found in the form of balls of rotten leaves, mostly mixed with cowdung, and without commercial value outside the country. The process of extracting the indigo is as follows: In an earthen vessel of about 60 quarts capacity the leaves are steeped and thereby an extract produced, which is fermented; then the liquid is poured off and exposed to the action of the air. When the precipitation takes place and all the dyestuff has settled to the bottom of the vessel, the supernatant liquor is poured off, the pulverulent precipitate mixed with a little gum and formed into small balls, etc. The materials to be dyed are steeped in the extract before exposing it to the air, and dried in the open air, which operation is repeated until the desired shade is obtained. For the production of stripes or of patterns in different shades of color, the material is sewed together where a lighter shade is desired, whereby the intensity of the blue is diminished.

Paper Matrices.

Paper matrices for making stereotype plates from type forms, used in newspaper offices, are prepared as follows: Make a jelly paste of flour, starch and whiting. Dampen a sheet of soft blotting paper, cover its surface with the paste, lay thereon a sheet of fine tissue paper, cover the surface with paste, and so on until four to six sheets of the tissue paper have been laid on.

The combined sheet thus made is then placed, tissue face down, upon the form of types, which are previously dusted with whiting, and with a brush driven down upon the types and thereon allowed to dry. The operation of drying is facilitated by having the types warmed by placing them upon a steam-heated table. A blanket is placed over the paper during the drying operation.

A WEAK galvanic current, which will sometimes cure a toothache, may be generated by placing a silver coin on one side of the gum and a piece of zinc on the other. Rinsing the mouth with acidulated water will increase the effect.



SNEVELY'S ELEVATOR CAR.

of the track, and a chain or cord extends outward from the bar to a fixed support, whereby the bar may be readily held at the desired height. The station receiver is shown in the form of a rectangular box sunk at the side of the track, and extending partly over it is a curved rail adapted to engage the hooks of the mail bags held upon a delivery bar swung out from the side of the car. This car delivery bar is adapted to be swung out and in by means of a cord passing to a drum inside, simple connections with such drum also afford-