

## A NEW STREET CLEANER.

In the improved street sweeper shown in the annexed engraving the usual diagonal broom is used, but instead of throwing the sweepings to one side of the street, forming windrows to be taken up by hand, the machine carries an endless belt on which the sweepings are delivered. One of the driving wheels is similar in construction to the paddle wheel of a steamboat, and the endless belt is carried on the edges of the paddles, entirely inclosing the space between the two rims of the wheel. The edges of the paddles are not allowed to come quite to the surface of the rims, so that the belt is protected from actual contact with the ground at the bottom of the wheel. The endless belt passes round a guide wheel in front of the drive wheel, which is arranged in such relation to the drive wheel as to permit the lower portion of the belt lying between these wheels to lie upon the ground, but without dragging; it is simply laid down by one wheel and taken up by the other. The sweepings being received upon this part of the belt are carried up between the paddles to the top of the wheel, where they fall toward the center, and are carried by a chute into bags (Fig. 2), and are delivered by an elevator to a cart drawn along with and behind the machine. This arrangement, which is extremely simple, adds but a trifle to the size of the usual machine, and does not increase the weight more than 250 to 300 pounds. All the parts of the machine are constructed with a view to durability.

The belt is three-ply cotton belting; it is very strong and will last a long time, and when worn out can be replaced at a trifling expense.

The machine is drawn by two horses, and is in striking contrast to the cumbersome devices heretofore proposed for gathering up sweepings from the street. It can be operated with as much ease as the ordinary sweeper, and cleans close to the curbstone. There is absolutely nothing that drags upon the pavement.

In streets in which the traffic is not great the material is received into bags, eight of which, holding three bushels each, can be carried on the machine. When these are filled, they are set off on to the curbstone to be removed by carts. Strong bags suitable for this purpose can be had in unlimited numbers for 7 cents each, and they can be used many times over. In these bags the sweepings have a commercial value.

Where the traffic is greater and the bulk of sweepings larger a narrow carrier is substituted in the place of the bags, and the sweepings falling upon this are conveyed into a cart following the machine.

Unlike the usual sweeper this can be used in the day-time, as there is no windrow of dirt left upon the street to be scattered by passing vehicles.

Apparently this device solves the problem of economical street cleaning.

The manufacturer is George B. Marx, Inventor's Industrial Works, 412 East 13th Street, New York.

## The Aroma of Wine.

At a recent meeting of the Paris Academy of Sciences, M. Rommier read a paper on the yeast of wine—the bouquet, or aroma, of the wine made from grapes of the same species but grown in different districts being quite distinct. The characteristic bouquet seems to be due to the district, and wine from shifted vines or cuttings does not necessarily possess the special flavor of the original when planted in other districts. It is well known that the best wines are produced from grapes raised on volcanic soils.

## COAL HANDLING DEVICES.

In a recent article in the *Railway Review* a description is given of the various devices used in handling coal at the coaling station of the Chicago and West Michigan Railway. We make the following abstract:

The distinctive feature of the plant is the conveyor, and this is of the kind which has become standard

in such a manner as to keep it in shape—a matter of no small importance. The scrapers which are attached to this chain are of steel plate, and are of somewhat peculiar shape, these peculiarities being the result of a long experience, and which have been found essential to the success of this scraper. The curved shape given to the scraper makes it most effective in carrying the coal along and entirely obviates the noise which would occur if the plate was perfectly flat.

The operation of the plant is briefly as follows: The coal is shoveled from the cars in which it arrives directly to the conveyor at the bottom of the incline, which carries it up and deposits into any one of a number of chutes, according to the position of the discharge gates. Each gate serves two chutes, and the coal is directed into one or the other of these two by the deflecting plates, each of which is controlled by a vertical shaft, the end of which is bent to form a lever. The chutes are of the well known Clifton form, and hold varying amounts up to five tons.

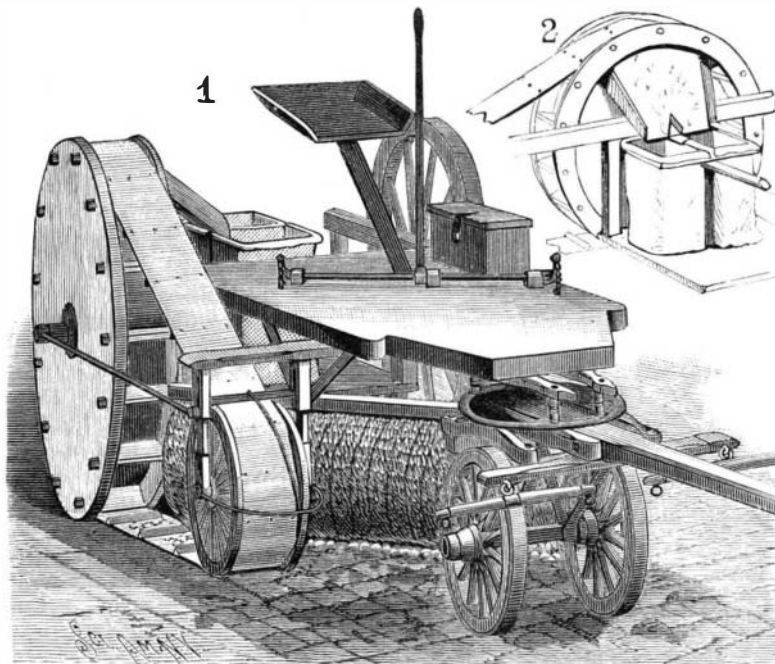
They automatically and instantly deliver their contents to the tender when the balanced apron is pulled down by the fireman on the engine. If, when the coal is being delivered from the cars, the chutes happen to be full, the contents of the cars, instead of being sent to the conveyor, are shoveled into the storage bin, from which they can be drawn by gravity to the conveyor. By extending the conveyor forty or more chutes could be equally well used should the number of locomotives require it. The conveyor

fed to its full capacity will handle about 120 tons per hour. Owing to its practically noiseless operation caused by the peculiar curving of the scrapers it is well fitted for use in cities. The cost of conveying the coal is less than one cent per ton, which makes the total cost of placing it on the locomotive below six cents, about five cents per ton being paid for shoveling it from the car. If the coal could be delivered on the track from cars with hopper bottoms, the total cost of handling the coal would be reduced to about two cents per ton. With the plant at New Buffalo the services of two men working at intervals during the day are required, three men night and day being necessary prior to its installation. The conveyor is driven by a single  $1\frac{1}{2}$  inch manila rope, a form of transmission coming rapidly into use.

The great saving in cost which is effected by the use of a conveyor destined to supplant past methods in the handling of coal at locomotive coaling stations. The crane and buckets are very slow and make the expense of handling the coal from 17 to 20 cents per ton. In addition to this, it may be said in general that the amount of space required for inclined tracks, etc., is generally much more than is required for a conveyor. A number of plants similar to the one here illustrated have been put in by this same company on roads where the locomotives burn anthracite coal. In some cases other conveyors were provided for removing the ashes from the ash pits and supplying sand to the engines.

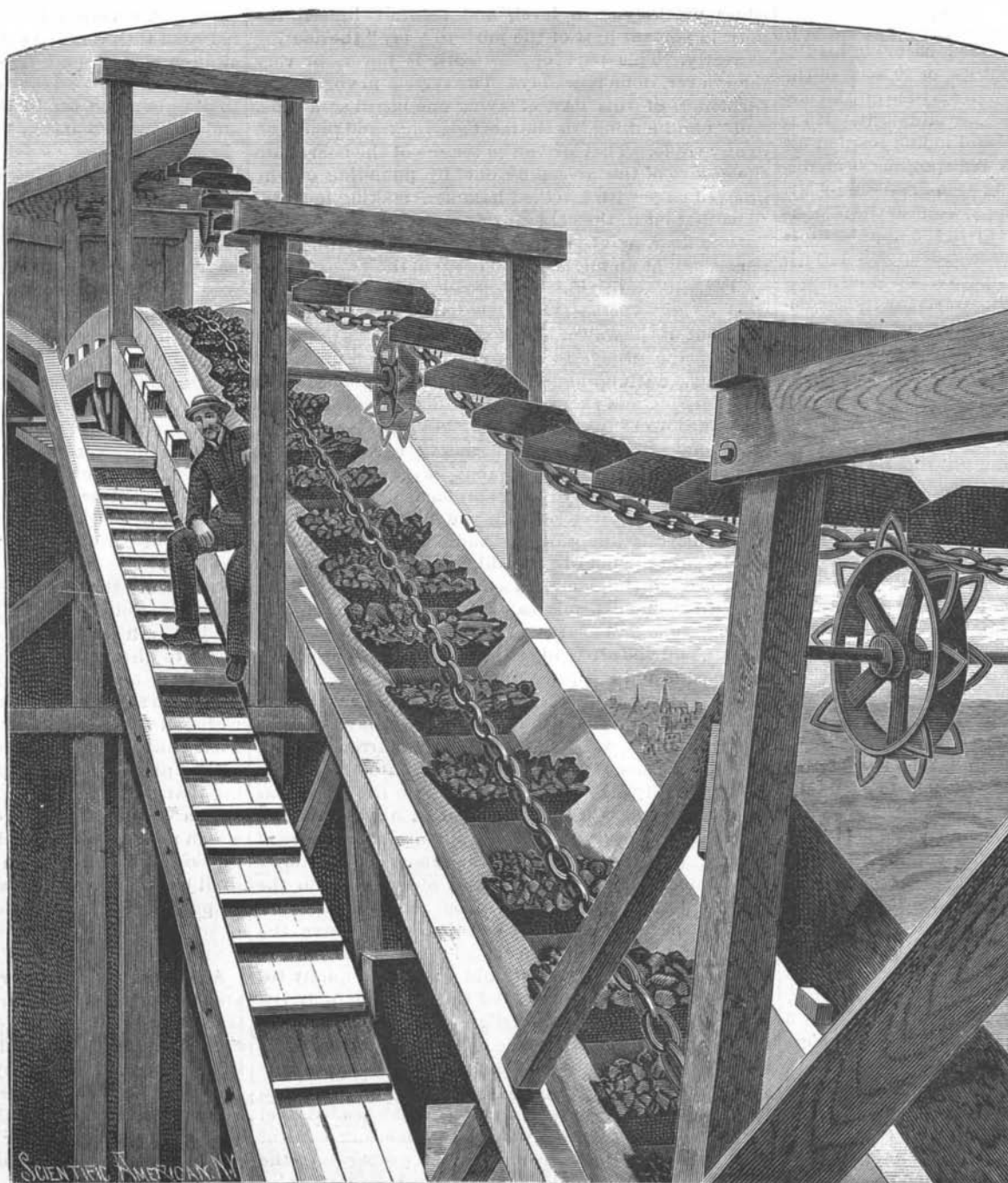
## Vaccination for the Relief of Whooping-cough.

Dr. Emile Müller reports in the *Gazette Médicale de Strasbourg*, No. 7, 1891, the case of a young child suffering from pertussis, in whom a cure was made by means of vaccination. Dr. Cachazo (*Wiener Medizinische Blätter*, October 15, 1890) had previously noted the favorable influence of inoculation with vaccine material in a case of whooping-cough under his care, and subsequently employed the method in four other cases with great success.



THE CHARLTON STREET CLEANER.

throughout Pennsylvania and forms the basis of the immense coal storage plants, whose capacities range from 100,000 to 1,000,000 tons each, recently built for some of those Eastern roads which handle coal in such large quantities. The coal in this form of conveyor is drawn along in a smooth steel trough by peculiarly curved scrapers attached to the conveyor chain. This chain is what is known as the Dodge cable chain, the essential feature of which is that the links, instead of bearing directly upon each other and thus wearing out very rapidly, have malleable iron wearing blocks interposed at each articulation. These blocks not only take the wear but also fill in the end of the link



STANDARD COAL CONVEYOR.