

AUTO CHAIRS FOR THE ST. LOUIS FAIR.

Automobile chairs propelled by electricity will be used at the World's Fair at St. Louis next year. A concession was recently granted by the Exposition to a St. Louis company, giving them the right to operate the new style chairs within the World's Fair grounds. The chair is the invention of Semple S. Scott and is the result of nearly three years' experimenting and designing.

It is said that the machine has a uniform speed of three miles an hour, which is exactly the same running up or down a steep grade or on a level. The occupant has no control over this speed whatever. The simplicity of operation is such that anyone can readily run it. The most desirable feature is the fact that the machine is provided with a sensitive guard rail. The latter is deemed the most valuable invention on the machine. If the machine collides with any object or person, a pressure of only a few ounces pushes this guard rail back and causes the wheels to become locked, thus bringing the chair to a dead stand-still before the machine itself strikes the object or person.

Each chair will carry two passengers, one of whom may operate the machine, or, if desired, an operator will be furnished, who will not only run the machine but will also serve as a guide to explain all the points of interest. The operator sits on a detachable seat at the rear of the chair, from which point he controls the machine, the controller and steering bar being removed from the front and attached to sockets in the rear.

Mocha Coffee.

During the past few years I have often heard the assertion made and have seen it in the newspapers in our country that there was no such article as Mocha coffee, that the term is purely a fiction, and that what was once known as Mocha coffee is so mixed with other coffees that there is no real Mocha.

In order to help correct such an impression and to do the coffee merchants of this place and the importers of our country an act of justice, I wish to say that there is such an article to-day in the American market as Mocha coffee, that this coffee is of the same kind and from the same place as the noted Mocha coffee of several generations ago, and that the growers and handlers of this coffee are as particular in regard to its quality and purity as they ever were.

At different times merchants have tried to ship coffee from other countries to this place and forward it from here as genuine Mocha, but the city authorities have always suppressed such traffic and have otherwise assisted the merchants in keeping up the standard and good name of this coffee.

Knowing of the carefulness with which the coffee interest is managed and the government's protection over it, I am of the opinion that if by the time the consumer gets his Mocha coffee it is not pure, the mixing has been done after it leaves Aden. —W. M. Masterson, U. S. Consul at Aden.

Mr. Edison's dry gold separating process is to be used in Australia. Mr. Cloyd M. Chapman, a mining engineer, has had a separator built and shipped to Australia.

IMPROVEMENTS IN STEAM SHOVELS.

BY WALDON FAWCETT.

A most notable advance has been made within the past few years in steam-shovel construction—

but at present the 55-ton shovel is accounted the standard machine; and 65-ton, 75-ton, and 85-ton are coming into use to an increasing extent, while even the 95-ton giants are proving that they are not only useful but also economical for certain classes of work.

The true meaning of the increase in the capacities of steam shovels is best indicated by comparative statistics. Thus, while the clear lift from rail to bottom of dipper-door when open is but 10 feet in the case of the 35-ton shovel, it is 12 feet in the 55-ton shovel; 15 feet in the 65-ton machine; 17 feet in the 75-ton shovel; and 18 feet in the 85-ton apparatus. The width of the cut which, in the old-style, lighter-weight shovels, rarely exceeded 48 feet at 8-foot elevation, ranges from 50 to 54 feet in the case of the newer models. The steel car of 29½ feet in length, which serves as a foundation for the 35-ton shovel, appears rather insignificant beside the cars of 41 feet 7 inches, which bear the latest specimens of steam shovel construction.

The same proportionate advance is manifest in the case of the main engines, which have grown from the 8 x 10-inch size in the 35-ton shovel, to the 14 x 16-inch engines of the present day 95-ton shovel. Likewise the steam generators have shared in the new order of things, as will be appreciated by a comparison of the 48-inch diameter boiler of the 35-ton shovel, with the 66-inch diameter boiler which supplies steam to the machinery of the 95-ton shovel.

After all, however, the most significant phase of the development of the steam shovel is found in the enlargement of the capacity of the dipper, or, in other words, the increase in the actual working capacity, as indicated by the task accomplished. The capacities of the dippers of various representative shovels are as follows:

35-ton, 1½ cubic yards; 45-ton, 2 cubic yards; 55-ton, 2½ cubic yards; 65-ton, 3 cubic yards; 75-ton, 3½ cubic yards; 85-ton, 4 cubic yards; 95-ton, 5 cubic yards. Still other radical improvements might be noted, each important in its way. For instance, the type of thrust motion, which was the frictional in the old-style shovels, has been changed so that independent reversible engines are now employed; and instead of the vertical, submerged-flue type of boiler in the old machines, the newer products of the shovel builders are equipped with locomotive boilers.

Some recent achievements constitute a revelation of the possibilities of the new types of shovels. On the Great Northern Railroad, recently, a 65-ton shovel took out 4,300 cubic yards of sand in a single day, and, during an interval of several months, took out an average of 2,291 yards per day. At Ishpeming, Mich., last season, a 65-ton shovel handled 120,000 tons of iron ore with practically no breakage or delay for repairs. A still more striking example of the endurance of the modern steam shovel is afforded by two 60-ton machines at the Lake Superior Consolidated Iron Mines, which handled without a break 304,326 tons of iron ore, 135,048 cubic yards of gravel, and 76,177 cubic yards of dirt from railroad cuts.

A standard medium-size shovel, in use on railroad

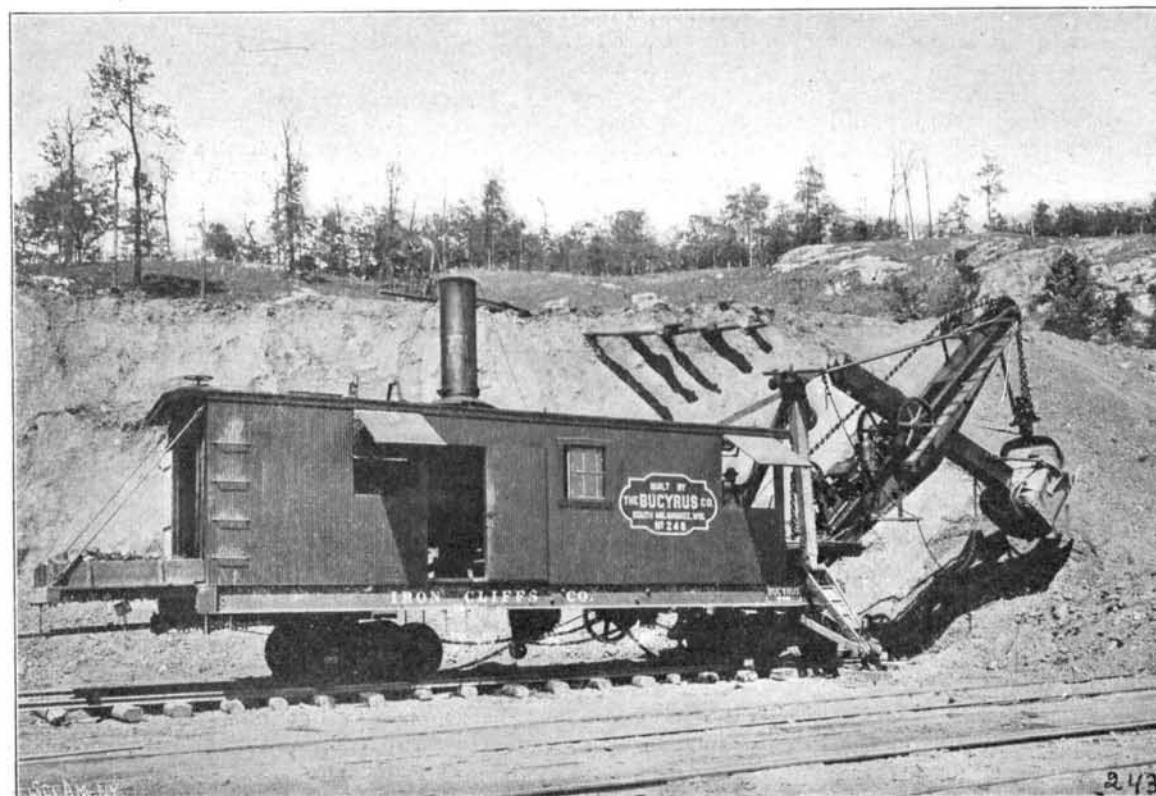


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progress impelled in part by the greater exactions made upon these mechanical excavators by modern construction work. The 35 and 45-ton shovels were considered, until a comparatively short time since, amply sufficient for almost all kinds of excavations;



A Sixty-Five Ton Shovel Engaged in Railroad Work.



Loading Ore from a Stock-Pile with a Sixty-Five Ton Shovel.

IMPROVEMENTS IN STEAM SHOVELS.