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Contents.

Table listing various articles such as Agricultural inventions, Kindergarten teaching devices, Magnetic lag, experiment show, Man in South America, Meteors, August, Optical photometer, Paper metal surfaced, Spiders and their foes, Steamer, pioneer, of the Pacific, etc.

TABLE OF CONTENTS OF SCIENTIFIC AMERICAN SUPPLEMENT No. 921.

For the Week Ending August 26, 1893.

Price 10 cents. For sale by all newsdealers.

Detailed table of contents for the supplement, listing articles like AERONAUTICS, ANTHROPOLOGY, ARBORICULTURE, CIVIL ENGINEERING, COLUMBIAN EXPOSITION, COSMOLOGY, EDUCATION, ELECTRICITY, GEOLOGY, METALLURGY, MINING ENGINEERING, NAVAL ENGINEERING, PHOTOGRAPHY, PHYSICS, SOCIAL SCIENCE, TECHNOLOGY.

PROGRESS OF RAILWAYS IN THE UNITED STATES.

From Poor's Manual for 1893 we learn that the total length of track existing at the close of 1892 was 175,223 miles, for which the aggregate liabilities of the various companies was, in round numbers, eleven thousand and eighty-nine millions of dollars (\$11,089,000,000).

Out of this nearly two hundred and thirty-three millions of dollars were paid for interest, and a little over eighty-three millions went for dividends.

The aggregate rolling stock at the close of 1892 was as follows: Number of locomotives, 35,754; passenger cars, 26,321; baggage cars, 7,900; freight cars, 1,168,867.

ARMOUR INSTITUTE.

Armour Institute, the great technical school of Chicago, will open its doors on September 14 to 400 students, who have been enrolled by the president, Dr. Frank W. Gunsalus. The equipment in mechanical and electrical engineering is very fine, and some idea of the shops may be obtained when it is stated that a 150 horse power engine can be built in the machine shop.

COLOR PHOTOGRAPHY.

The subject of color photography has occupied the minds of investigators from the earliest days of the art. Even Daguerre and Niepce in their work with the mercurialized film on polished silver gave an approach to its latest development, the Lippman process.

The low actinism of colors belonging to the red end of the spectrum necessitates a very long exposure. This objection might be overcome. But the whole development up to date is one of great interest from the physical standpoint, while it is of but little value from the photographic standpoint.

Intelligence of the Horse.

Recently a New Jersey farmer, while passing along the street in New York, heard the well known "neigh" of his good old horse, which had been stolen from his barn last winter, six months having elapsed.

The Pioneer Steamer of the Pacific Ocean.

Nearly threescore years have passed since the Hudson's Bay Company's steamer Beaver floated down the Thames. The Beaver was the first European steamer to round Cape Horn and was the pioneer steamer of the Pacific Ocean, the passage from London to Astoria, Oregon, consuming 163 days.

Platinum.

The mining of this valuable metal is chiefly in Russia, and the following information is given by Mr. Geo. F. Kunz in the report of the mineral industries in the United States at the eleventh census.

No details of the cost of mining are available, but the cost of labor for washing in the three plants for the 180 days during which the work could be done is about \$7,000.

Metal Surfacted Paper.

A well polished yellow brass or nicked sheet of metal is wetted by means of a paint brush or sponge with a solution of higher alkaline sulphide or hydrosulphide, for instance, a solution containing 5 parts by weight of potassium trisulphide or hydrosulphide to 100 parts of water, and in addition, 1 per cent of spirit which is added to remove any greasy particles which may be present.