early date, to 25 miles. The cars are of the

the regular traffic upon the streets.

The Manufacture of Plate Glass

The easting table of a plate glass factory is about 20 feet long, 15 feet wide and 7

inches thick. Strips of iron on each side

afford a bearing for the rollers, and deter-

mine the thickness of the plate to be cast.

The molten glass is poured on the table and

the roller passing from end to end spreads

the glass to a uniform thickness. The glass,

Corner of Tenth.

Holiday Handkerchiefs, Initials, embroidered, hemstitched, 10c to \$3; silk handkerchiefs, 25c to \$1 50, in great-est variety. ROSENBAUM & CO.

PLUSH jackets and sacques at nearly half price, at Rosenbaum & Co.'s.

AMUSEMENT ADVERTISE-MENTS usually appearing on this page will be found today on the Fourteenth page. NEW ADVERTISEMENTS.

RUBEN'S HOLIDAY HATS



THE BROADWAY BLOCK, THE UNION SQUARE,

Or would you prefer a real Alaska Seal Cap? We can give you a choice at \$3 50, \$5, \$6 and \$8. Gloves and Gauntlets in Seal, Otter and Beaver, at \$4, \$5, \$6 and \$8. Oregon Seal Caps at 87c, 98c, \$1 90 and \$2 40. A superb line of Gents' Fine Furnishings. See us on Umbrellas; our as-

sortment is matchless. The Hatter and Furnisher, 421 and 423 Smithfield St,

DYEING ARTIFICIALLY

The Products of the Laboratory Have Reached Such Perfection That Nature is Outdone.

CHEAP FUEL FROM PETROLEUM.

St. Louis People Have Gone Half Crazy Over

the Alleged Healing Qualities

of Electric Cars.

MOTORS IN UNDERGROUND TRANSIT.

Simple Method of Engraving on Leather and Wood Discovered by a Frenchman.

(PREPARED FOR THE DISPATCH.) A revolution in the oveing industry dates from the discovery of the first artificial coaltar dyestuffs. In this country there are several places where the manufacture of running he knows not, and as to a leakage these products is carried on, but, as a rule, or short circuit he is in blissful ignorance. the number of dyestuffs made in any one place is somewhat restricted, and in some cases the entire product is confined to a very small number, as magenta, cotton blue, etc. In England, France, Germany and other countries, but especially in Germany, this industry has attained its greatest growth, and in some cases the works are so large as

to resemble a small town or village. The earlier artificial dyestuffs produced shades so much more beautiful than those produced with the natural dyestuffs that, at first, the accompanying lack of permanency was not so much considered. As time went on, however, there was a reaction, and a demand for fast and bright colors arose, and has of late years been maintained. One great advantage in the use of artificial dyestuffs is that in each group of those dyed in the same way are those which will produce the three primary colors, so that, by proper combination, all shades can be produced in one dyeing operation.

As the natural dyestuffs do not possess this advantage, and many of the shades produced by them require two or more dyeing operations, the result has been that they have been largely displaced by the artificial products, and only those which present some special recommendations meet with any extensive use. Principal among these are logwood, fustic, indigo and cutch, all of which are used in enormous quantities; but even now the first and last have strong competi-tors in the artificial dyescuffs, and it is not impossible that in time all the natural coloring matters may be entirely superseded.

Electrical Invention.

The drift and tendency of electrical invention is an interesting thing to study. Telegraphic inventions to-day, though quite numerous, are but a very small proportion of the thousands of electrical putents now issued yearly. The same may be said of telephony, although a number of modifications are made from time to time in switchboard apparatus; but it is expected that there will be quite an outburst of inventions is this field during the next two years, as the first of the controlling patents of the telephone expires in 1893; and should any opposition companies then start up, as it is obable they will do by the dozen, it will he necessary for them to be equipped thoroughly with the most economical and efficient apparatus. Until very recently it was the electric light that commanded the attention of the electrical inventor, but at the present moment the electric railway offers it serious competition as an attraction to inventive genius, and the Patent Office every week is issuing large numbers of natents on electric railway motors, overhead trolleys, overhead switches, methods of gearing, traction-increasing devices, storage batteries for traction purposes and a vast

variety of other apparatus.
A great many patents are also being issued not only for electric railway conduits, which will obviate the necessity of using overhead trolley wires, but for conduits to accommodate all classes of wires. It is some vests since electrical patents have been sold for such large sums of money as were obtained here and abroad for the arc lamp, the incan escent lamp, and the various early forms of dynamos; but enormous sums of money in the aggregate are being made out of the lesser inventions of the day, and at any minute some new departure may be made, like that of electric welding, which will at once bring a new art into existence, and create an another group of electrical fortunes. Inventions by the score are still needed in such departments as electric heat-ing, electro-deposition of metals, the distriion of currents, the working of metals by electricity, and the application of power to all manner of industries, and it is believed that no better field of work invites the activity of the inventor to-day than elec-tricity in its newer manifestations.

New Mode of Engraving. A French scientist has lately introduced

a process for the engraving of designs on wood, leather or similar materials by means of a pencil or tool, the point of which is constantly at red heat. After a series of experiments with hot from and platinum wire heated by electricity, a special tool was finally devised by the inventor of this process, which renders the operation extremely simple. The tool in question is another application of the cautery instru-ment used by surgeons. The pencil has a wooden handle upon which is mounted small plat num tube with a fine point. Two separate receptacles communicate with the tools by means o'a rubber tube; one of these contains a hydro-carbon, such as alcohol, benzine or wood spirit, and the other contains compressed air. A constant flow of the hydro-carbon vapor is main-tained at the point of the tool, which is thereby kept in a state of intense heat. Both receptacles are provided with regulating apparatus, by which the supply of ink can be adjusted or out off, as desired. The operation of trucing designs on wood work and leather is thus simplified to the nost possible extent. A tracing of the design is made on the article to be ornsnted, and any degree of relief is instantly effected, very little skill on the part of the bperator being required. The new process will be of the greatest service to book binders, carpenters and others, as well as affording a ready means of labeling cases, barrels, etc.

The Electric Car Cure for Rheumatism

Accounts come from St. Louis of the latest craze in that city, which is to ride on the electric car to cure rheumatism. A greater number than would be imagined of the crowds that fill the electric cars are people who have the idea that electricity will care every allment under the sun, and in St. Louis these adherents of the electric faith propaganda muster especially strong. A onductor on one of the street car lines is conductor on one of the street car lines is reported as saying: "It is amusing to see passengers on our line eveing each other and whispering to companions about the new cure for rheumatism. If a man, woman or child boards a car with a crutch or cane you can hear whispers to the effect that there is a rheumatic patient out to test the

To Solve the Cheap Fuel Problem. Among the latest attempted solutions of the cheap fuel problem is the method of a German inventor, who proposes to manufacture gas by dropping a stream of crude petroleum through a blast of cold air from a force pump. The gas thus obtained will be confined in a regular cylinder open at one end, where it will be lighted. This produces an intensely hot flame of several

teet in length. By means of this flame the inventor proposes to heat boilers, and he

strengthen an urgent plea for the employment of only highly trained and competent men in situations of responsibility connected with the electric lighting industry. To show the danger of placing important installations in charge of incompetent and stallations in charge of incompetent and illiterate men, a case is instanced where a first-class installation for several bundred lights is erected by an electrical firm. The house to be supplied with current is sny, a mile away from the generating plant, which is erected alongside of, and forms a part of large manufacturing premises. The man in charge is simply a boiler stoker, and his duties include stoking two large boilers, driving several engines and pumps in different parts and, as a sort of make-weight, attending to the electric installation.

tending to the electric installation. The plant, except the accumulators, is entirely in charge of this man, but as to the generation of the current he knows abso-lutely nothing. He doesn't know what speed the engines or dynamo run at or the difference between a volt and an ampere. He simply has a mark on the two "gauges," and when he reaches these he stops the engine. What the engines are doing while

maintains that the heating of large blocks can thus be reduced very considerably.

Unskilled Attendants.

The recent fire at the Grosvenor Gallery station in Loudon is commented upon by an Inglish electrical journal and made to strengthen an urgent plea for the employimportance to mending a gas pipe."

Protection of Borses' Feet. A reputed protection for the fore feet of a horse is a shoe consisting of a rubber oval band about quarter of an inch thick, terminating at the ends in a caulk or cushion. The general shape is that of a horseshoe, the rubber cushions representing the heel caulks. An iron plate goes with this, and the heel ends are shortened to give room for the rubber caulks. The rabber shoe, with a layer of canvas on its flattened side, goes against the foot, and is nailed on with the iron shoe, the hole forming an iron plate shoe with rubber heel caulks. When it is estimated that a horse weighing 1,000 pounds, going at a 3:30 gait, strikes a ton every time he puts down his fore toot, it is not hard to understand that any efficient mode of reducing the tremendous concussion that must ensue is of the utmost

An Electrical Union

The rival cities of Minneapolis and St. Paul are now united by an electric railway over which the cars are traveling at the rate The question is asked: "Is it not self-evi- of 15 miles an hour, to be increased, at an

most modern make, longer and wider than ordinary, and are crowded the whole time. running on about ten minutes headway. It is predicted that this road will do more than is predicted that this road will do more than anything to bring the two cities together and make one populous center of them. By means of this service a ride of 20 miles for 10 cents is a possibility, showing how great an economy is effected to the public by the introduction of electricity. In spite of the innumerable stops that the cars make on the way, the running will be reduced considerably under 50 minutes. Some idea of the extent to which electric traction has succeeded in cities that are more sensible and progressive than New York may be formed progressive than New York may be formed from the fact that Minnespolis, during the past year, has started no fewer than 14 elec-tric lines.

Electric Snow Sweepers.

The companies manufacturing electric snow plows and sweepers are said to be just now overwhelmed with orders. The value of these appliances in dealing with large quantities of snow has been so thoroughly demonstrated that improvements on even the latest machines are being brought out almost daily. A new snow plow for electric street railways differs in many respects from the old-fashioned, cylindrical-shaped broom, revolving beneath the body of a truck and throwing the snow and dirt in all directions. It consists of an ordinary in all directions. It consists of an ordinary car truck equipped with two motors, one of which propels the car, while the other re-

after cooling rapidly, is transferred to the annealing oven, where it remains several days. When taken out it is very rough and neven, and in that state is used for skylights and other purposes where strength is desired rather than transparency. The greater part of the glass, however, is ground, amouthed and polished. Electricity for Underground Traction.

The success of the new City and South London Railway has given a tremendous impetus to electric traction in England, and apropos of the electric locomotives which are used on the new line, a London paper says: "One great benefit of the electric railway remains to be mentioned. It sounds the death knell of steam locomotive underground lines. As soon as people realize that electric rail-

MERRY CHRISTMAS TO EVERYBODY

IT IS OUR SINCERE WISH THAT THE PRESENT SEASON MAY BE A MERRY ONE TO EVERYBODY IN THE ENTIRE COMMUNITY.

RING THE JOYOUS BELLS! :: SANTA CLAUS IN HIS GLORY!

-WILL HOLD HIS <> GRAND ANNUAL CARNIVAL RECEPTIONS!<>>

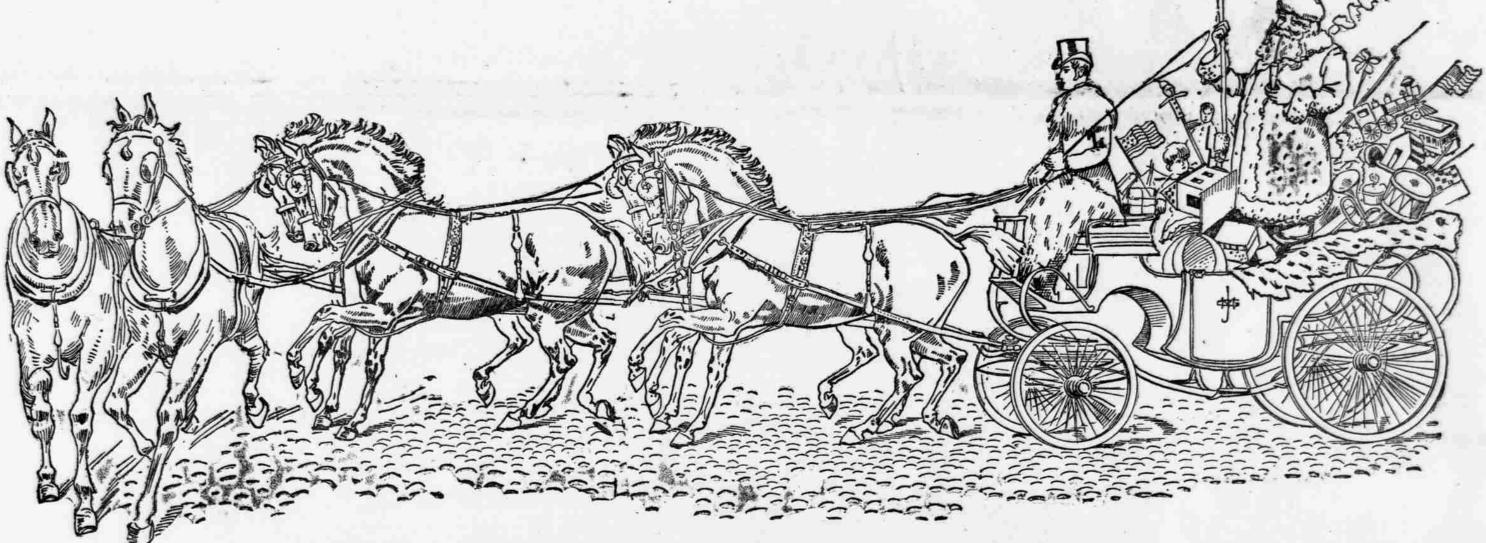
AT GUSKY'S BIG AUDITORIUM!

ON MONDAY AND TUESDAY, DEC. 22 AND 23, FROM 9 A. M. TO 12 NOON, FROM 2 TO 5:30 P. M., AND FROM 7 TO 8:30 P. M., AND ON WEDNESDAY (24th) FROM 9 A. M. TO 12 NOON, AND FROM 2 TO 5:30 P. M. ONLY.

LL good children, accompanied by their parents, are specially invited to attend these receptions. Santa Claus not only promises to delight them, but will give them a chance to see the beautiful presents which he will give to the orphans in the asylums of Pittsburg and Allegheny on Christmas Day. Elegant decorations, good music, lots of fun, and each child will be presented with a fine box of candies.

LL THE WAY FROM THE CRYSTAL PALACE, LONDON, ENG., PROFESSOR PUNCHENELLA, With His Laughable Manakins. The Professor will appear daily and afford an endless amount of fun for young and old. RECEIVED WITH SHOUTS OF LAUGHTER EVERYWHERE.

CHRISTMAS MORNING, AT 9 O'GLOCK, SHARP, SANTA GLAUS WILL LEAVE GUSKY'S



ANNUAL TOUR OF THE ORPHAN ASYLUMS OF PITTSBURG AND ALLEGHENY.

ALLEGHENY DIVISION:

Ridge Avenue Orphans' Home, 9:30 A. M. Colored Orphans' Home, Greenwood avenue, 10:30 A. M. Womans' Christian Home, Locust street, 11:30 A. M. United Presbyterian Orghans' Home, Monterey street, 12:30 P. M. Allegheny Day Nursery, North avenue and Federal street, 1:30 P. M. Allegheny Day Nursery, 51 Diamond street, 2 P. M. Allegheny General Hospital, Stockton avenue, 2:30 P. M. Protestant Boys' Home, Anderson street, 3 P. M. Home of the Friendless, Washington street, 3:30 P. M. Little Sisters of the Poor, Washington street, 4:30 P. M. Home of the Good Shepherd, Troy Hill, 5:30 P. M.

HE procession will be a fine one. In the van will be Santa Claus in his State Coach, drawn by six beautiful steeds, followed by carriages containing representatives of the Press, together with many prominent ladies and gentlemen, who have signified their desire to see the presentations to the orphans, the rear being brought up with twenty-five gaily decorated wagons, loaded with the Christmas

presents. The route will be along Market street to Sixth street, thence over the suspension bridge, up Federal to Ohio, down Ohio to Marion, to Ridge Avenue Orphan Asylum, and on to the Homes named.

The Pittsburg division will go with the Allegheny contingent to Ridge avenue, and will return by way of Seventh Street Bridge, proceeding to Smithfield Street Bridge and on to St. Michael's South Side, where

PITTSBURG DIVISION:

St. Michael's Orphan Asylum, South Side, 11:30 A. M. Homeopathic Hospital, Second avenue, 12:30 P. M. Children's Temporary Home, Washington street, 1:30 P. M. St. Paul's Orphan Asylum, Tannehill street, 2 P. M. West Penn Hospital 4 P. M. Episcopal Church Home, Fortieth street, 5 P. M. Little Sisters of the Poor, Bloomfield, 6 P. M.

German Protestant Orphans' Asylum, West Liberty Borough, presents taken to Sixth avenue and Smithfield street. Children's Aid Society; presents taken to Dispensary Building, Sixth

St. Joseph's Orphan Asylum, Troy Hill, 6:30 P. M. More to Fill the Stockings.

OUR STORE IS THE PLACE TO FIND THE GOODS TO DO IT!

IMMENSE VALUES FOR THE NEXT THREE DAYS!

Our Mammoth Store is Crowded to Overflowing

With Clothing for Men and Boys, Hats, Shoes, Holiday Slippers, Choice Furnishings, Umbrellas, Smoking Jackets, House Coats, Bath Robes, Fur Caps and Gloves, Jewelry for gentlemen, and thousands of fancy articles from a quarter of a dollar in price to a quarter of a hundred dollars. The magnitude of our sales enables us to buy and sell at wonderfully close prices.

WE SHALL BE OPEN TO-MORROW AND TUESDAY NIGHTS UNTIL 8:30 O'CLOCK AND CHRISTMAS EVE UNTIL 11 O'CLOCK.

Send your address for a copy of the Grand Christmas number of our Illustrated Paper. It's a daisy, brimful of wit and humor and elegantly and artistically illustrated.

GUSKY'S,

GUSKY'S.