

MASTER CAR BUILDERS IN CONVENTION.

The convention of 1888 met at Thousand Islands on the 20th of June. The proceedings were not of great importance. A report was presented on the best form and construction of car roofs. After this, a report was made by the committee on car heating, from which it appears that the States of New York, Massachusetts, and Michigan have passed stringent laws prohibiting the use of stoves in cars. The committee in their report state that during the past year several of the railway companies have made extensive experiments in car heating by steam taken from the locomotive. The committee is of opinion that the steam pressure should be kept as low as possible, because the rupture of a highly charged steam pipe in a car filled with passengers would prove as disastrous as the so-called "deadly car stove," and the effect of high pressure steam escaping from the traps and from the rear of the train has been found objectionable on account of injury to the paint and varnish of the cars, as well as from condensation at the stations.

As to the best means for retaining heat in the car after the locomotive or source of heat has been disconnected, the committee regards it as an open question. The retention of the stoves within the cars, the use of hot water circulation, or a drum filled with brine within the steam pipe, seem to have been the most general ways of accomplishing this end. The committee were unable to make any definite recommendation on the subject.

In respect to steam couplers, the committee was instructed to recommend two couplers for ballot, so that one can be chosen as the standard. A form for a standard axle for a 60,000 pound car was adopted, to be submitted for approval by letter ballot.

The report of the executive committee on automatic freight car couplers was presented, in which it appears that the letter ballot resulted in the adoption by 474 against 109 of the Janney style of coupler, as the type of the Master Car Builders' Association. A 30 inch drawbar was also adopted.

Mr. William McWood was re-elected president. The convention adjourned to meet at Lake George in 1889. A large number of interesting exhibitions of railway appliances was presented to the Association.

Electric Transmission of Power.

Electric railways are becoming so common that the announcement of a new line or the adoption of electric locomotives scarcely attracts attention. The Union Electric Company's nine locomotives are doing excellent work in the Pennsylvania coal mines, and present some evident advantages over the steam locomotive underground. The electric transmission of power in the mining districts has already developed an enormous market for electrical machinery. From every part of this country and from nearly every foreign country inquiries are coming to our manufacturers of electric plant, showing the interest which is being taken in this great advance in engineering throughout the world. South Africa and Japan, Australia and Mexico, as well as all parts of this country, are wanting electric motors and electric transmission of power, and are all seeking for the machines here; for though this branch of engineering is still in its very infancy, American practice appears already to have taken a distinct lead.

We recently described an 18 mile installation for pumping, hoisting, etc., on the Big Bend of the Feather River, Cal., which is under contract by the Sprague Electric Motor Company.

In Arizona an installation is proposed to bring about 150 horse power from a water fall to a large mine and smelting works, a distance of 8 miles, and it is estimated that the conductors will call for 8 tons of copper to the mile. This is an indication of one of the potent allies of the copper syndicate which may help to absorb their large surplus of copper. On the Comstock it is proposed to use electric transmission to run, in part at least, the new Nevada mill. At present this mill, which has 20 stamps, is run by a Pelton impact water wheel, 11 feet diameter, using water under a head of about 650 feet, derived from the ditch of the Virginia & Gold Hill Water Company. It is now proposed to take the water after it has driven this wheel, lead it down the Chollar shaft to the level of the Sutro tunnel, where it will have about 1,600 feet head, and there drive another 11 foot diameter Pelton wheel.

The underground installation will consist of five dynamos, and the power will be transmitted to the mill at the surface, about 2,000 feet, through a five-eighths inch copper cable, and electric motors will then utilize it to drive the mill, which, as enlarged, will have 60 stamps, 80 pans, etc.

The consumption of water will be regulated to the power required to drive the mill, and it will undoubtedly be very much less with the 60 stamps than it now is with 40. As the water has to be bought, this will probably prove a substantial economy.

In the Consolidated Virginia and California mills the power has been transmitted through wire ropes from water wheels situated at intervals of 500 feet vertically

in the shaft, utilizing the pressure down to the level of the Sutro Tunnel; but faulty construction occasioned much trouble, which it is hoped can be altogether overcome by the use of electric transmission, which is to be used should the Nevada mill experiment result satisfactorily, as it no doubt will.

A Silver City, Idaho, mine is putting in a Sprague electric plant, to drive a 50 stamp mill four miles away from a waterfall, while the same manufacturers have recently received an order for an electric plant to be used in training and elevating the guns on the new United States cruiser Chicago.

We also hear of an iron company in the South thinking of running dynamos at the furnace to drive pumps several miles away.

From all parts of the country come inquiries concerning the economy of this method of transmission of power, and certainly in many cases the conditions are extremely favorable to the electric plant.

It would far exceed the limits of space at our command to enumerate all the projected electrical plants which have been reported. Nearly every town either has, or proposes having, electric tram cars. Many of our mines and metallurgical works are proposing to use electric locomotives, either with conductors or storage batteries. Nearly all mills and furnace works use electric lights. Mining machinery, drills, coal cutters, pumps, and hoisting engines will be driven in many places by what is now the waste power of neighboring waterfalls, and before long we shall have few waste waterfalls. No is it true of this country alone. Foreign countries, especially those that are ill provided with cheap fuel, will through the aid of American electrical machinery share the benefits which we expect to reap in at home.—*Eng. and Min. Journal.*

Exhibition of Appliances for the Prevention of Accidents.

A novel exhibition, open to competition from all parts of the world, is to be held in Berlin next year, during the months of April, May, and June. It is proposed to exhibit all forms of appliances designed for the saving of human beings from accidental injuries. This definition is broadly interpreted, and a very well arranged classification has been adopted. The idea of the exposition had its origin in a discussion held by the Institute for Brewing, at Berlin, in 1887. It appeared that workmen were in such constant danger from moving machinery and other factors of danger in industrial establishments, that a good work might be done in inaugurating a spirit of competition among the world of inventors in the matter of saving factory operatives from accidents.

The Prussian government has, in a practical manner, approved of the plan by giving the use of the large exhibition place in Berlin, near the zoological garden, to the committee free of charge. Exhibits of all classes of articles bearing in any way on the protection or saving of life in factories will find a place in the exhibition. This is insured by the well planned classification we have already alluded to. It is too long for us to give here, but it is well worth inspection as a sample of thorough organization.

To enlarge the scope of the exhibition and to make it more useful, it is judged of importance to have manufacturers send the apparatus, or models of the same, which they may have devised for their own private use. This will prevent the affair from taking the form of a mere contest between rival dealers in life-saving machinery.

A special consular report has been issued by the United States government *apropos* of this interesting occasion. It is to be hoped that America will be worthily represented there. Unfortunately, the date of entering exhibits is set at so early a period that it seems doubtful if this country can contribute a fair representation. An illustrated report of the exhibition is in contemplation, and if issued will be a most interesting document.

Patent Rights and the Dental Profession.

The question, "Is dentistry a profession?" is no longer argued even by intelligent people outside of the profession. It is admitted everywhere. Frequently, however, we see very quaint and curious ideas of what dentists as professional men should do and what they should not do in order to maintain their professional standing. The most unique idea of all is that appliances invented by the ingenuity of the dentist must not be patented, and if he does secure such patents, he must at once be dropped from the professional ranks. Now, the fact is, the action of patenting any appliance or method has nothing at all to do with the professional standing of any dentist; it is not *per se* an unprofessional act. If any man freely and fully grants to his profession, without restriction, the use of any method he has discovered, let all praise be his; but because his neighbor cannot afford to do this, or does not do it, let no man be so weak and unjust as to say that he has acted unprofessionally. Indeed, he may be, and no doubt often is, in every-day life and practice the better professional man of the two.

A man's professional standing, we are happy to know, is determined by his intelligent, competent procedure in professional ways and by the noble and gentlemanly character which gives direction to every phase of his life's work, and very little by the fact that he has or has not taken out a patent upon any of his inventions.

In the name of all that is logical, we wish candidly to ask all reasonable persons if a dentist has not as good a right to receive payment for an invention over which he has spent time, thought, and money as he has to receive payment for any of the usual operations in dental practice. His invention represents time, outlay, and brain power, just as much as does the gold filling which he inserts, and why should he not receive the compensation which a patent secures?

Our authors, our literary men, secure copyrights upon their books and manuscripts, and yet no one is so dull and illogical as to accuse them of unprofessional conduct. Certainly not; they deserve protection. Now the patent right to the inventor is just the same as the copyright to the author, and they both have a perfect and legitimate right to secure the benefits coming with such protection without being called to account for being "unprofessional" by writers who cannot be said to have grasped the true meaning of the term.

Patent rights, as well as copyrights, are productive of much injustice and subject to many abuses, but no reasonable man will argue from this fact that there is anything belittling or unprofessional in securing a patent right or a copyright. We honor the man who gives his inventions to his profession without price as highly as do any of our cotemporaries, but we strongly deny that a dentist who secures a patent can—on that account—be called unprofessional.—*Western Dental Journal.*

Testing Waste and Soil Pipes and Preventing Sewer Gas Entering Unoccupied Houses.

The *Sanitary News* considers the water test among the most severe ones. Air pressure, while not so satisfactory in point of immediate results, has the advantage of being distributed with nearly equal force to every point in the system. The mercurial gauge easily detects the fact of a leak, and the substitution of an odorous smoke for air quickly locates the spot. The peppermint test is well known as being well adapted to old work as well as new. A modification of this was tried the other day in this city by a gentleman whose cat was made the detector. An infusion of valerian was poured down the vent pipe, and pussy was given the run of the rooms and passages where any escape might reach. She located three leaks, and came near uncovering them, too, in her eagerness to reach the, to her, attractive odor.

The *Review and Record*, of Brooklyn, advises when a house is vacated for a short time, either the filling the traps with glycerine or having a plumber take charge of the house and see that the pipes are flushed and the traps filled in every ten or twelve days. The Chicago plumber has something to say on this important subject.

Three advised the filling of the traps with glycerine, two more advised turning off the water after filling the traps, a third would fill the bowl of the closet with glycerine, another would remove the water closets and bath tubs and solder a lead cap over the trap, while a fifth recommends salt.

The diversity of views is not very marked until the salt is reached, and then the *Review and Record* says: We confess to a mild sort of surprise that any plumber would recommend such a substance. First, we would have no means of knowing when the trap would be filled sufficiently, and secondly, how are we to do the filling? Shall we have to remove the fixtures, pack the trap well, and then replace the fixtures again? And, having done this, are we to rest satisfied with this "dry packing," and take no precaution against the "porosity" of this filling?

No one acknowledging to have given the subject proper attention could claim for a mass of salt such a degree of imperviousness as would resist the pressing sewer gas, and as we have no desire to place our readers in such a "pickle," we will stick to the glycerine theory or to the regular flushing with traps at short intervals, so as to guard against the loss of seal by evaporation. We have no doubt that the removal of the fixtures and the capping of the traps would be excellent—for the plumber—but as other opportunities for making an honest dollar are not scarce, we must in this instance leave him to his own resources.

A Disgrace to Civilization.

The *Chicago Journal of Commerce* states that three newsboys of that city, guilty of no misdemeanor, were arrested last week at their request and sent to the Bridewell. Their reason for wishing to go there, as stated to the police justice, was that they wanted to learn a trade. Under the laws of the trades unions there is almost no chance for the American boy to learn a trade in any shop or manufactory outside of a house of correction.