In the Wilson process the conditions of the ordinary puddling operation are very closely approximated. Iron ore, reduced to a coarse sand, is mixed with the proper proportion of charcoal or coke dust, and the mixture fed into upright retorts placed in the chimney of the puddling-furnace. By exposure for twenty-four hours to the heat of the waste gases from the furnace, in the presence of solid carbon, a considerable portion of the oxygen of the ore is removed, but little or no metallic iron is formed. The ore is then drawn from the deoxidizer into the rear or second hearth of the puddling-furnace, situated below it, where it is exposed for twenty minutes to a much higher temperature than that of the deoxidizer. Here the presence of the solid carbon, mixed with the ore, prevents any oxidizing action, and the temperature of the mass is raised to a point at which the cinder begins to form.

Then the charge is carried forward by the workmen into the front hearth, in which the temperature of a puddling-furnace prevails. Here the cinder melts, and at the same time the solid carbon reacts on the oxygen remaining combined with the ore, and forms metallic iron; but by this time the molten cinder is present to prevent undue oxidation of the metal formed, and solid carbon is still present in the mixture to play the same role, of reducing protoxide of iron from the cinder, as the carbon of the cast-iron does in the ordinary puddling process. It has been said that the cast-iron used as the material for puddling contains about three per cent. of carbon; but in this process sufficient carbon is added to effect the reduction of the ore to a metallic state, and leave enough in the mass to play the part of the carbon of the cast-iron when the metallic stage has been reached. —*Mining and Scientific Press.*

Railroad Dividends.

Even the best railroad lines are now experiencing a great shrinkage in their net profits. Those who are dependant on them for living feel the effect of the diminished returns keenly. How long this state of things will continue no one can foretell. The causes are by no means obscure. The hard times, diminished business, fierce competition between rival lines, account for the shrinkage. But we propose to say something concerning the nature and justifiableness of this competition in certain quarters. When the new lines were added between New York and Chicago, it was well enough known there was no occasion for them growing out of a lack of existing transportation facilities. There were enough roads to transport every ton of freight and every passenger. They had, therefor, no justification in reason, and were built simply to sell. They were gigantic speculations and nothing more. The existing roads were wise in seeing the danger and in trying to preserve the value of their properties. They sought to make rates and to abide by them. Not a very high degree of sense was required to teach the companies that if there was not business enough for all, it was better to transport what there was at a fair and uniform price, than to transport it at a loss. So combinations were formed which were justified as clearly as any combinations that ever existed. Unhappily for some of the parties who formed these combinations, they endeavored to be much smarter than the rest, so while attempting to get all they could by virtue of this arrangement, also attempted to get more beside by violating it. We need not single out the parties who deliberately from time to time violated this arrangement. They are well known to the entire country. It was the old story over again of trying to be smarter than your neighbors in getting more than a fair share. The result was just what was clearly foreseen in the beginning. Those who entered into the combination in good faith, getting tired of the repeated frauds and deceptions practiced on them, finally withdrew from the pool and competition then began with great fierceness, resulting in the transportation of a vast number of persons and a great deal of freight at no profit whatever. This has put an end to dividends and brought things to a crisis.

The violaters of the agreement now perceiving what their conduct has brought on themselves, are, it is said, desirous to restore rates and to abide by them, and this it is hoped will be done.

Railroads are no exception to other roads doing business in the world. They ought not to expect to get more than fair returns on their property, and to these they are clearly entitled. In some cases, however, they have tried to get more by engaging in stock watering and other harmful practices, and these have brought on some of the miseries from which they are now suffering.

Another mistake has been made in bonding their roads so heavily. This matter we have discussed in another connection. A large load of debt over a railroad company is a serious thing. After the panic of 1873 set in, thousands of individual fortunes were lost in consequence of heavy mortgages existing on their real estate. Having declined beyond the value of the margin there was nothing left for the owner, and the property was foreclosed and sold. Mortgages to a small extent might have been easily carried and paid out of the rents, but heavy calls proved too heavy, so all was lost. Railroad companies have been indulging too freely in the same kind of policy. They have bonded their roads too heavily, and thus subjected them to a great risk. The nature of this risk they are now experiencing. Those who are able to survive the times ought, whenever prosperity returns, to begin the reduction of their fixed indebtedness and thus be better prepared for business depressions whenever they occur, for they are likely to be repeated after brief seasons of prosperity. Much as we regret to have the bad times come, they appear to be inevitable, and the wise administrators of great corporations, like the captain of a ship, should always be prepared for a storm. One part of that preparation consists in reducing the fixed indebtedness, even of the best companies, far below the amount now existing. When this is done, they will move through times like these more easily, and will be more sure of protecting their property and sustaining the best interests of their stockholders than they can by maintaining their present course. We trust that the lessons which the present and former depression have taught will not be thrown away by these great corporations. Persons who depend on them for an income are so numerous that a safer policy is in order. By so doing we are sure that the best interests of all will be better conserved.

Recent Legal Decisions.

INSOLVENT PARTNERSHIP—LIABILITY OF RETIRING MEMBER.—Unless upon proof of fraud, the retiring member of a partnership that subsequently became insolvent cannot be held liable for any firm debts contracted after his retirement, according to the decision of the Supreme Court of the United States in the case of Penn. National Bank vs. Furness.

NEGLIGENCE—SURVIVAL OF ACTION.—A cause of action given by statute to the personal representatives of a deceased person to recover damages for the negligent killing of such person after the death of the wrong-doer, cannot be continued against his representatives, according to the decision of the New York Court of Appeals in the case of Hegerich vs. Keddie.

NEGOTIABLE PROMISSORY NOTE—INTEREST.—An instrument in the usual form of a negotiable promissory note, except that it provides for the payment of "interest at 10 per cent. per annum from date until paid, 7 if paid when due," in legal effect calls for interest at 7 per cent. from date till paid, and is therefore a negotiable promissory note. So held by the Supreme Court of Minnesota in the case of Smith vs. Crane.

FALSE REPRESENTATIONS — AGREEMENT TO ABANDON PROSECUTION.—In the case of Geier vs. Shade the Supreme Court of Pennsylvania held that the obtaining of money by false and fraudulent representations was an offence which might lawfully be settled by an agreement between the parties after the institution of a criminal proceeding, and that a promissory note given to the prosecutor to abandon the prosecution of such an offence was founded upon a valid consideration.

PROMISSORY NOTE—INDORSER'S LIABILITY.—A promissory note in renewal of one that had been discounted by a bank was indorsed by the defendant in the case of Wessel et al. vs. Glenn (Supreme Court of Pennsylvania), for the accommodation of the maker. When the note was signed and endorsed there was a blank left for the place of payment, which was preceded by the word "at." The maker took the note to the bank, but the bank refused to take it, as there was no place of payment. He then filled up the blank after the word "at" by writing the name of the bank. The court held that this was not such an alteration as would relieve the indorser.

MINING PARTNERSHIPS—ASSIGNMENT OF ONE PARTNER'S SHARE.—There is no relation of trust or confidence between mining partners which is violated by the sale and assignment by one partner to a stranger or to one of the associates of his share in the property and business of the association, according to the decision of the Supreme Court of the United States in the case of Bissell vs. Foss. The court adopted the language of Mr. Justice Field in an earlier case before the same court, in which he said: "Associations for working mines are generally composed of a greater number of persons than