NOTES.

Recent experiments have been made with ramie fibre as a substance for making steam pipes. The material is subjected to tremendous hydraulic pressure, and being unaffected by moisture, will neither shrink nor swell, besides being a non-conductor of heat. These pipes are said to have twice the tensile strength of steel pipes.

TIGHTENERS.—Tighteners are mostly required in cases where belts are running on pulleys largely differing in size. They should be run near to the smaller pulley, whether it be the driver or driven, provided, of course, it is practicable to do so. There may be cases where the tightener cannot be applied close to the small pulley. The object of having the tightening pulley closest to the smallest of the two pulleys, is to use it for the purpose of increasing the lap of the belt on the pulley.

In considering the matter of the value of a coal for boiler purposes, says the Boston *Journal of Commerce*, the rate of combustion of the coal is too often overlooked by the careless engineer, who, glancing at what appears to be a hot fire, immediately concludes that is all there is to be desired. The reason why so much bituminous coal is used where a mixture with other coals might be economical, is because of the slow rate of combustion of the poorer fuel. It is not possible to get as much power from a boiler with hard coal as soft, and the harder the coal is and more difficult to burn the less will the power of a given boiler be. An engine must have the steam, and if a slow-burning coal is to be used, no matter how hot a fire is obtained, extra boiler power must be provided because the boilers are less efficient as steam producers. If a coal is twice as hard to burn, twice the boiler capacity will be required to supply steam, and this requires the outlay of an extra large plant and its maintenance, and in the most of our mills the preference is not to extend the size of the plant, hence the large use of bituminous coal. Mr. Barrus found that the labor and coal to produce 1000 horse power in a day was much less with a mixture of pea and dust and culm, and that Nova Scotia culm would produce 1000 horse power at a less cost than Cumberland, but the greater amount of steam produced by the boilers using the Cumberland coal was an advantage that the cheapness of the other coals could not overbalance. The harder a coal is to burn the less its adaptability for boiler uses from a practical standpoint. This is one thing the Nova Scotia coal must compete against.