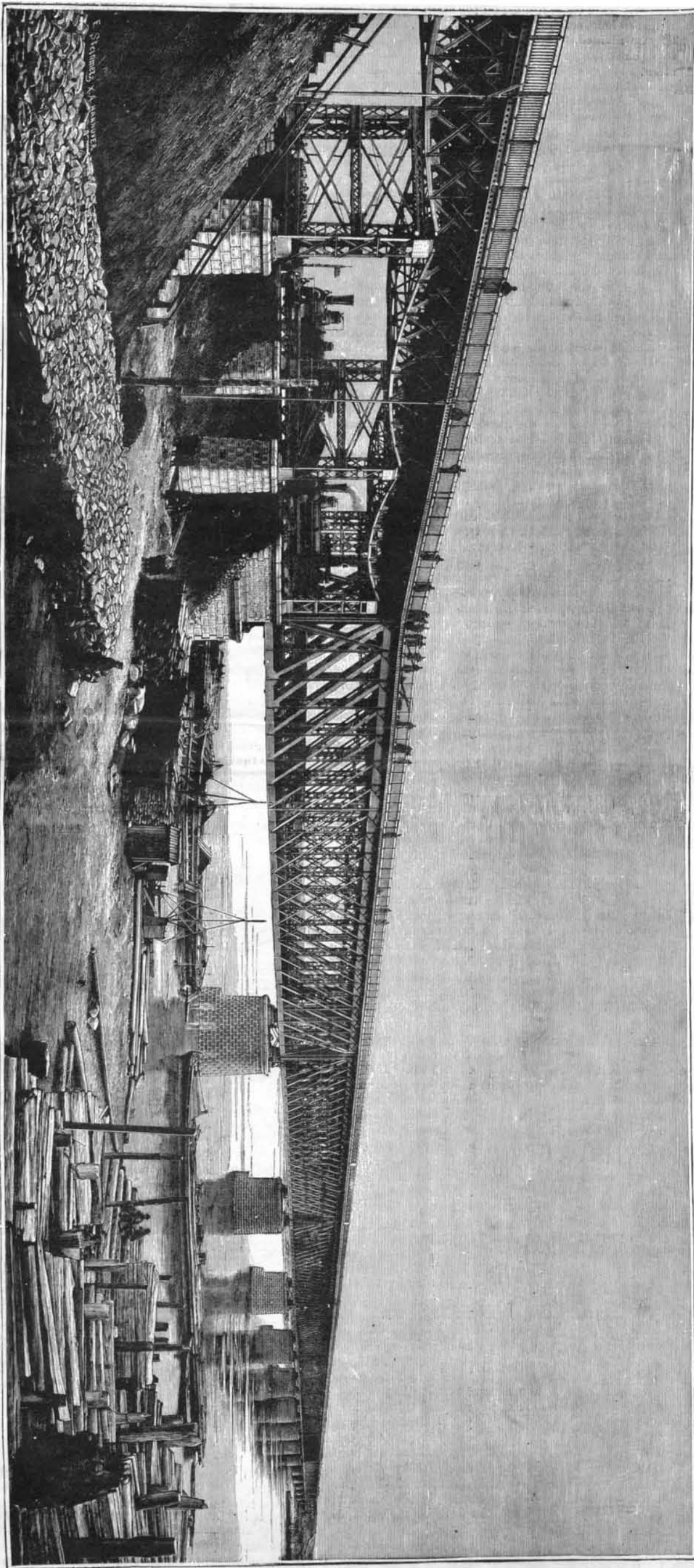


ROAD AND RAILWAY BRIDGE OVER THE RIVER DNIEPER, AT JEKATERINOSLOW, RUSSIA.

**BRIDGE OVER THE DNIEPER.**

We publish a perspective view of the new road and railway bridge over the Dnieper, at Jekaterinoslow, on the Tekaterine Railway, Russia. This imposing structure, with its approaches nearly three-quarters of a mile long, was designed by Professor N. Belelubsky, of St. Petersburg; the ironwork was made by the Brjonsk Iron Works, and erected under the direction of Chief engineer Mr. W. Beresin.—*Engineering.*

Steel Nails vs. Iron Nails.

According to the *Chicago Journal of Commerce*, the monthly meeting of the Western Nail Association, which was held at Pittsburg on Feb. 11, was not a stirring or enthusiastic gathering. There is little in the outlook of the nail trade in the near future that can be called exhilarating, either to the manufacturers or their employees. The price has ruled low for the past year, and the new card rate of \$2.25 per keg, which was adopted by the association, little more than covers the bare cost of production. The most that can be said about the matter is that the demand for nails is fully up to the average, and the capacity for production is so much above the highest possible demand that prices must necessarily rule low. What is of more public importance, however, than the present or future price of cut nails is the positive and unmistakable indication that the business is undergoing a revolutionary process. The steel nail is to take the place of the common iron nail. Already one-half of the nails manufactured in Wheeling are made of steel, and the machinery and plant necessary for their manufacture is being erected in every nail center and at nearly every nail foundry. At first there were doubts and objections urged against their use, as there is to every new innovation. The heads flew off in driving, it was said, and carpenters did not believe they would hold in wood as well as the iron nail. A little more care in the manufacture has obviated the first objection, while experience has shown that the last is wholly groundless.

Under present conditions, steel nails can be made ten cents per keg cheaper than those made of iron, where the manufacturer has to purchase his ingots, and where he manufactures the latter himself, the difference in favor of the new nail is still greater. The effect of the new departure in this industry is likely to be more far-reaching than at first would appear probable. The necessary plant is very expensive, and its erection and general adoption will render practically worthless the vast outlay of capital now invested in the old-fashioned nail plant. It does away with the iron puddler and all his works so far as they have any relation to the nail business. Indeed, it is claimed that the puddler with his inflexible scale, which was the controlling element in fixing the prices of all the nail processes, is responsible for the introduction of the steel nail, and that his obstinacy has left him without an occupation in the nail business in the future. Whatever the reasons may be, and however they may affect the present capital invested in this great industry and men who carry it on, it is very certain, concludes the writer, that the steel nail has come to stay, and that in the course of the next five years it will have as completely supplanted the iron nail as the steel rail has its iron predecessor.

Changes a Half Century has Wrought.

When I was a boy, says Mr. George C. Stone, manager of the Vermilion Iron Mines, to a representative of *The Miller*, and that was forty-years ago—I became a clerk in a hardware store. There wasn't a knife, a pin, a lock, a door knob, a hinge, for sale of American make. Everything came from England. The pins were made of two pieces, one little bit of wire being wound around the head of the pin. It often slipped off, and became an unmitigated nuisance. The solid headed pin of to-day is an American institution, and it took a Yankee to make the machine that not only makes it, but at the same time sticks it into the paper it is sold on. The keys in those days for large door locks were huge crowbars six or eight inches long, and weighing a pound or more. You couldn't carry them in your pocket. All locks were of bolts and springs. The tumbler lock was unknown. These little keys we have nowadays—and they are an American device—show how much progress has been made in the use of iron. All the screws used to be imported, and the gimlet pointed screw of to-day, which bores its own hole, was an American innovation.