

REMOVING A BRIDGE BY ELECTRICITY.

A novel use for electricity developed recently in an Indiana town. It was in wrecking an old-fashioned bridge that had been declared unsafe. The country authorities had purchased the stone piers and approaches on the agreement by the bridge owner that he would remove the wooden part of the bridge, leaving the masonry intact for the new bridge. After making the trade the bridge owner found himself in a dilemma. He could contract with no one who would agree to remove the bridge in the manner required by the contract. Contractors, bridge builders and house wreckers were consulted, but none of them were willing to undertake the job. Letters and telegrams sent to contractors at a distance failed to bring any good result. The owner was in despair. His thirty days' time allowed for removing the bridge expired, and by making a desperate appeal he secured an extension of a week. Many suggestions were offered, among them to blow the bridge up with dynamite or to destroy it by fire, but nothing that seemed feasible, or that would take down the wood-work without destroying the piers, was proposed. Finally at the last minute a proposition was made to him to remove the bridge by electricity. It was accepted at once and work begun. The method adopted was perfectly simple, and this is the way it was put into execution: Each span of the bridge was composed of nine chords, each consisting of three timbers. Therefore, if these twenty-seven sills were cut simultaneously the span would drop between the piers to the river beneath. This was what was actually done, the cutting being accomplished by burning through the wood by loops of iron resistance wire made red hot by the passage of an electric current and weighted down by sash weights. The timbers were of yellow poplar and nine inches square. Each one was burn-

ed simultaneously in two places. Thus the mass of timbers dropped well inside the piers without injuring them. It took one hour and forty minutes to wreck each span.

SUGGESTIONS AS TO SCAFFOLDING.

There are three main considerations that compel close attention and careful study to scaffolding. It should be built upon as economical a plan as possible; the system, or plan, should be simple in all its details, easy of erection, and easy of demolition; and, finally, it should possess strength sufficient for any load it may be called upon to bear. The conditions are so varying, every change in the plan of the structure demand an alteration in the work, that no fixed rules can be laid down. Almost every builder has methods of his own, little secrets of his trade learned by years of experience. But in scaffolding for large buildings, while the question of safety should never be lost sight of, the timber ought to be so used as to permit of their being sold or used after the work shall have been completed. When circumstances allow they should be kept in marketable lengths, and as free from disfiguration as is consistent with the work in hand. Timber of straight grain, clear, and of a good kind, is cheaper in the end than that, not having these qualities, although first cost may be more. The architect, when computing his strains, figures upon the strength of the best timber; but the builder in his scaffolding is sometimes forced to use timber that is imperfect, and it is then that his past practice comes to his aid. The quality of the material changes the whole aspect of the affair, and its successful use, whether good or bad, can only be learned by actual handling. One of the most important divisions of scaffolding is that in bridge erection; and it is here that peculiarities of education are best illustrated. A long span bridge over a deep ravine or river requires an elaborate system

of bracing, and a new factor in the problem now comes forward. It is not every engineer who can design a first class bridge, and then go and erect it in unfavorable situations. Every year the designer and constructor are occupying more widely divergent and independent stations, similar to the architect and builder. As a whole the science of this class of works, which are used to-day and destroyed to-morrow, is becoming one of great importance, increasing in the same ratio as the magnitude of the works, and it is becoming a distinct profession, demanding specialists to master its ever-varying conditions.

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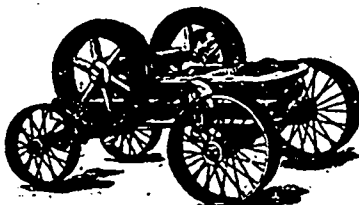
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