

This excavation was something like 450 feet long by 300 feet wide. It was quite imperative that a skip load of material should be lifted up directly at the place where it might be filled, and it was therefore necessary to use a hoisting and conveying device, which would reach out further than it would be practicable to use a derrick. At that time, about 1888, the cableway was in a crude state of perfection, but in spite of the crudeness of the machine it was found to be by far the most practical device that could be used for that purpose. The plant, as originally installed, consisted of four cableways, and a large derrick with a 100 foot boom. The cableways were much preferred to the der-

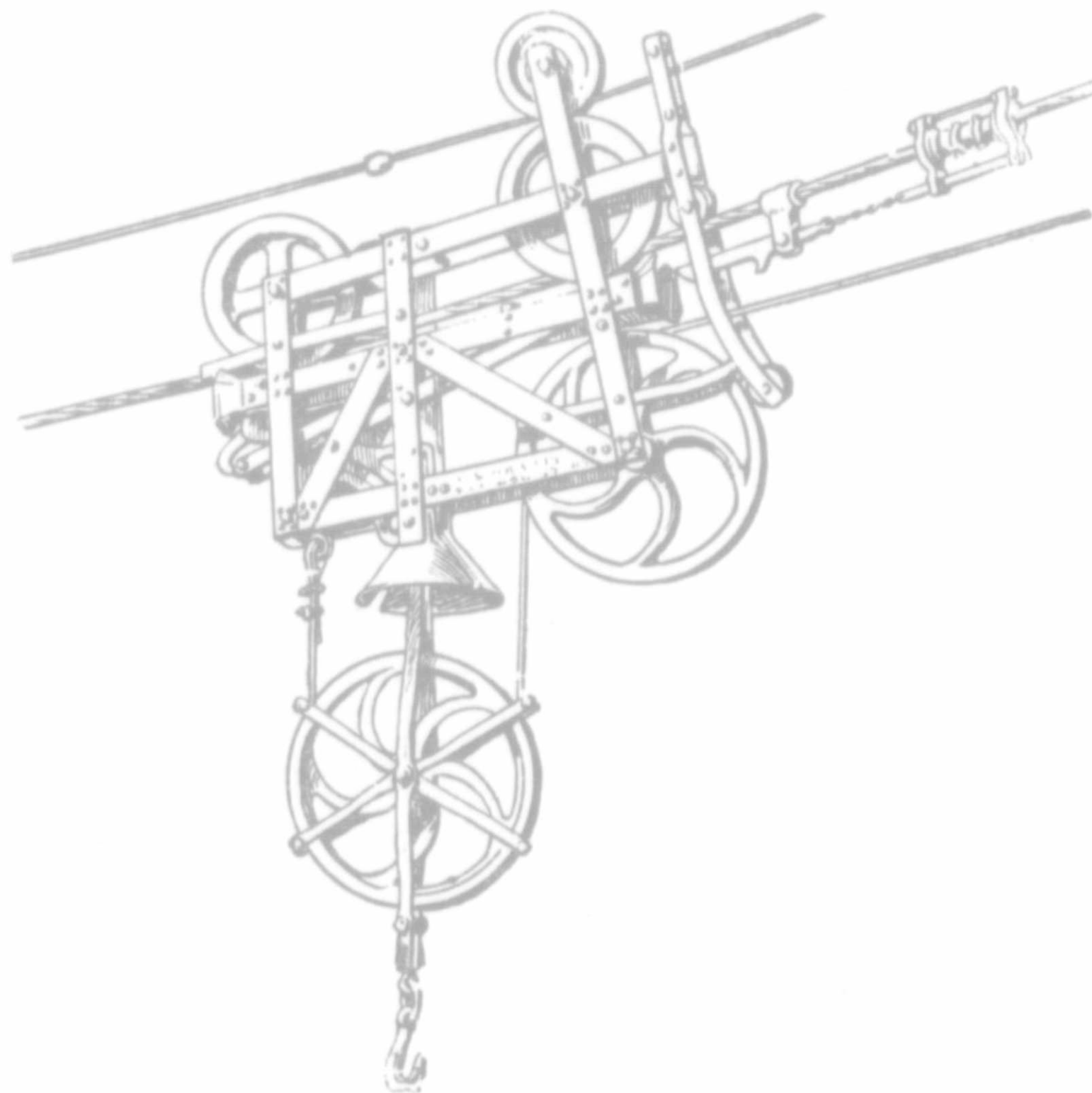


FIG. 2.—Harris-Miller Carriage and Fall Rope Carrier for Incline Cableways.

rick, and by them practically all the work was done. It was found by actual records that the cableway would take out ten per cent. more loads per day than the derrick, in spite of the fact that it was reaching out some 300 feet, while the derrick on the other hand could only reach out 100 feet. Similar engines were used for hoisting the load in