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MODERN MACHINERY SUPERSEDING LABOR

POWER-DRIVEN machinery is being manufactured with ever-increasing capacities, reducing labor costs (in hours, at least, if not always in dollars, owing to increasing wages) per unit of work done, permitting larger jobs to be completed within the same time, reducing the important item of "interest during construction," and providing the engineer with more powerful weapons with which to overcome obstacles and to harness the forces of nature.

A striking example of the utility of big plant for big work, is the Queenston-Chippawa power canal, the progress of which is described in this issue. The amount of earth and rock being handled by a comparatively small force, constitutes a record previously unknown in the construction world. The daily removal of over 20,000 cu. yds. of earth and rock, in addition to the accomplishment of a great amount of other work such as railroad construction, bridge-building, etc., all with an average daily payroll of considerably less than 2,000 men, is a feat that could not have been performed a few years ago without expenditures for plant that would have been enormously out of proportion to the value of the work being done. This feat has been made possible by the development of economical machines that are giants in comparison with the machines of a decade ago.

The construction undertakings of the past were not large enough, with but few exceptions, to permit of huge investments in construction plant, and in many cases where unusually powerful equipment could have been used, it was not designed owing to the recognized impossibility of finding a market for it after the work had been completed. To-day there is almost invariably a market for all construction equipment that is in good condition, regardless of its size.

The power-shovel manufacturers and the builders of large crushers are, in a great measure, responsible for the improved methods of handling rock, and they predict that within a very short time they will be selling 10-yd. shovels, 84-in. by 120-in. jaw crushers and 84-in. gyratory crushers. On the Queenston-Chippawa job there are 10-yd. shovels and a 60-in. by 84-in. jaw crusher. Since this job was started, 66-in. by 86-in. jaw crushers and 60-in. gyratory crushers have been built and placed in successful operation.

The evolution of huge shovels and crushers has been slow but steady and sure. Sizes of crushers built thirty years ago, and at that time considered large, to-day are not manufactured excepting for laboratory work, as their operation is no longer economical.