

heights, according to the lift of the rapid they have to overcome ; they cross the rivers where the banks are found to be most retentive and the space narrow ; and immediately behind them, or in some instances, as the nature of the country requires, at one end, the locks are excavated out and built. These locks vary in lift according to the lift of rapid : where the rapid is 60 feet, the locks are proposed to be six in number ; if 80 feet, eight, and so forth : 10 feet being always considered a proper lift for a lock. The extensive utility of these dams must be obvious to any person who considers the business in an engineering point of view ; they do away with lines of extended excavations through a thick-wooded wilderness. In several instances, a dam not more than 24 feet high, and 180 feet wide, will throw the rapids and rivers into a still sheet above it for a distance of more than 20 miles. The dams also back the waters up creeks, ravines, and valleys ; and, instead of making one canal, they form numerous canals of various ramifications, which will all tend greatly to the improvement of a very fertile country. As they convert the rivers into extensive reservoirs, they may be filled and emptied as often as possible, without creating either the slightest disturbance in the movements of the