

These riparian lines of level or horizontal contour lines so well defined by the chips and saw dust from mill streams, twigs, leaves, rushes, and flotsam from passing vessels, or sweepings thrown overboard, and what not else—these lines thus trace out along the river shore persist until again a series of rising or gaining tides with increase of the moon's attraction, cause every successive flow to wipe out and remove or wash higher up on the beach the detritus brought in by the preceding tide.

But this alternating action of the rising and falling tide water can be made continuous in its results as with the wind which is another intermittent or irregular source of power.

In the same way as the wind can be utilized at irregular intervals for work not necessarily consecutive or continuous; as in pumping water into a railway or other tank, sawing fire wood, threshing grain, pumping out the bilge water of a pontoon or other vessel, grinding corn, etc—so could the tides be utilized, as will be explained hereafter; but for continuous action, the only and best way in which the power afforded by them can be brought to bear, or one of the best ways in which this can be done, is by pumping and storing sufficient water in a reservoir or cistern of adequate dimensions, to hold out from tide to tide or from day to day, moon to moon, and season to season. The dimensions of the recipient would have to be regulated so as to equalize the outflow from it or nearly so, and the outflowing stream could be used to revolve an overshot or breast wheel; or better with a turbine, to give the continuous motion sought for. Tide motion, it is evident might thus be utilized successfully, more especially in such inlets or estuaries as the Bay of Fundy where the rise of tide attains to 40 and even 60 ft. and in some such estuaries in other parts of the world where the tidal amplitudes are very great.

The mechanical action of the tide above alluded to may be secured in two ways, viz. either by a float or pontoon rising and falling with the tide and by means of a connecting rod, as between the crank and piston of a steam engine, through or without the intermediary of a working or oscillating beam, procure a rotary motion capable of being multiplied by gearing into a speed practicable for some purposes.

Or by a more direct method of tidal action resorted to in a