Power From Tide Water

The project of a large plant to be erected at South Thomaston, on the Maine coast, to compress air by the inflow and outflow of water in a large tidal basin, has already attraced considerable attention. Further information has been communicated to "The Engineer" (Chicago) by William O. Webber, who gives details of the lock and gates, a plan and sections of the construction at the same point, and a profile of the locatio nat South Thomaston. Says Mr. Webber:—

"At this point the maximum tide is 10.6, mean tide 9.4, and minimum tide 7.9 feet, giving, respectively, 5,000, 4,000 and 3,000 horse-power.

"In the dam, where the main channel is navigable, will be a lock for vessels, 40 feet wide, 200 feet long, and 28 feet deep. On either side of this lock will be one or more sets of shafts, each making a unit, or compressor, of 1,000 or more horse-power. These shafts will be sunk into the rock to a depth of 203.5 feet below mean low water, the downflow shaft being 15.75 feet in diameter, and the upflow shaft 35.65 feet in diameter. The inflow gates will be five in number and 10 feet wide, the outflow gate six in number and 10 feet 8 inches wide.

"The water on entering the inflow gates will swing them open, pass down the downflow shaft at a velocity of 16 feet per second, drawing in air through about 1,500 half-inch inlet tubes. Arriving at the bottom of the shaft, the combined air and water will flow in both directions, horizontally, the air separating from the water untill all of the air is accumulated in the separating chambers. The water will then flow up the up-take shaft at a velocity of three feet per second, and out through the outflow gates.

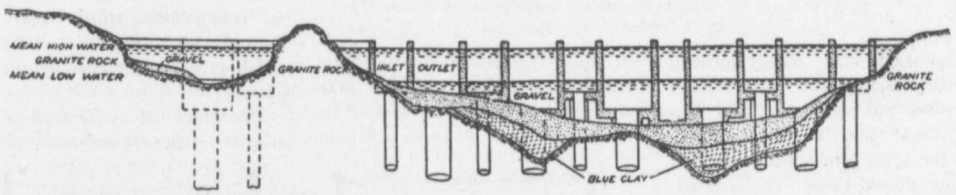
"The air entrapped in the air chamber is then under a head of water 195.5 feet high, varying with the height of the tides. This compressed air is then led up the upflow shaft in a 14 inch pipe. At the top of the gates these 14 inch pipes are united into a 30 inch pipe, which conveys the air ashore."

The air thus compressed, we are told, will contain only about one-sixth the moisture that is in the atmosphere from which the air is drawn. This dryness makes it particularly adaptable for transmission to considerable distance, in pipes, without undue friction. The author states that the whole 5,000 horse-power could be transmitted 1 mile, in a 30 inch pipe, with a loss of only 1.5 pounds pressure, or 10 miles, in a 48 inch pipe, with a loss of only 2.5 pounds pressure. We read further:—

"This air can be used cold, without danger of freezing in expanding, in steam engines or rock drills. A test was made on an 80 horse-power Corliss engine, in which the entering air was 5.3 degrees F., and the exhaust minus 40 degrees, and continued for ten hours without the slightest sign of frost in the exhaust passages and pipes of the engines. A marked economy, however, is obtained by pre-heating this air immediately before using it in motors, as raising the air to 370 degrees will practically double the volume of the air, and, instead of requiring 3 to 4 pounds of coal per horse-power per hour, as air receives heat about six times as easily as water, these results can be obtained at an expenditure of from 1-2 to 5-8 pound of coal per horse-power per hour.

"As there are no working parts in the compressor, there is no depreciation, or operating expenses, to be taken into account, excepting watchmen to prevent depredations on the plant, keep ice and floating timbers from permanently obstructing the inlet racks, and operate the boat lock. Therefore the cost per horse-power is practically represented by the interest on the original investment and the wages of these watchmen. The cost of original construction will amount to about $100 per horse-power.

"There are numerous places, all practically situated between the 40th and 50th parallels of latitude, in both the northern and southern hemispheres, where the tides are of sufficient magnitude to make this plan commercially feasible, the necessary requirements being a tidal basin, of considerable size, connected with the ocean by a comparatively narow outlet. Each acre of such basin, under a 9 foot tide, is capable of producing 5 horse-power. It is not commercially feasible to develop such a plant with a basin containing much less than 200 acres, or requiring a length of dam exceeding 3 feet per acre of pondage."



PROFILE VIEW OF TIDAL POWER PLANT.

OBITUARY

There died in Chicago recently one of the best-known brick manufacturers on the American continent, in the person of Frank Alsip, brother of Wm. Alsip, president of the Alsip Brick, Tile and Lumber Company of Winnipeg. Deceased was also famous as an inventor of numerous improved brick-making devices. He was born in Pittsburgh, Pa., in 1827, and was one of the Argonauts who crossed the plains in '49 to the California gold fields. He returned to Wisconsin in 1857 and, after the great Chicago fire, established several strong companies with a total capacity of one hundred million brick per annum. Two sons and two daughters survive.

VOLTAR, AN ANTI-CORROSIVE COMPOUND.

Voltar, the well-known anti-corrosive compound, manufactured by the Electric Cable Company, 17 Battery place, New York City, has been specified by the bridge department for the painting of the Brooklyn Bridge.