

The submarine armour continued to be improved along the lines of its present form, for deep sea work, in which depths of one hundred and forty-eight feet have been attained, involving work under an air pressure of sixty-five pounds per square inch for several hours. It has been claimed that a depth of two hundred feet has been reached without serious results from the great pressure due to that depth.

The compressed air and vacuum pump was greatly improved by Otto VanGuerickue about 1650, and it has been claimed as his invention.

Savary increased the pressure of air for blast furnaces by the use of more substantial blowers, in the latter part of the seventeenth century.

Denys Papin was the first to propose and make, in 1653, an actual test of the transmission of power for a distance by compressed air. His early ideas being finally developed into more practicable shape, they resulted in his recommending the use of water power for compressing air. His system of an air pump driven by a water wheel, operating on air and water chambers, at a distance, was in the right direction, but failed in his practical operation by the elasticity of the air which he had intended to use as a long piston in transmitting power from an air working piston to distant water piston.

Papin first conceived the idea of the pneumatic tube for transmitting parcels by air pressure, thus antedating by more than two hundred years our pneumatic tube postal and package service and thus early opening for future advancement in the use of compressed air.

In 1757 Wilkinson, in England, patented a method of compressing air by the use of a column of water, effecting his object by means of a series of chambers, all water compressors, used one after another so as to keep up a regular pressure, thus in a crude way preceeding by a hundred years the water compressor of Somiliar at the Mont Pinis Tunnel.

The application of compressed air to practical uses and its transmission for power purposes seem to have commenced in the last years of the eighteenth century.

Professor St. Clair, of the Edinburgh University, in 1875, purposed attaching air bags to sunken vessels beneath the surface of the water and inflating them by air pumps. Its most successful trials were made in 1864, in raising a steamer sunk in Lake Boden, and in raising the vessels sunk at Sebastopol during the Crimean War.

Compressed air for driving vehicles seems to have had its birth with the beginning of the nineteenth century, in a patent to Medhurst, in England, August 2nd, 1800, for means for propelling carriages by compressed air from a reservoir.