

PAPER VII.—ENGINEERING AND ENGINEERS.

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“ENGINEERING is the art of directing the great sources of power in nature, for the use and convenience of man.” So said Thomas Telford, the eminent Civil Engineer, just 51 years ago, when, as first President of the Institution of Civil Engineers, he delivered his inaugural address. So, with even greater justice and honest exultation, may the Engineer of the present day exclaim, looking back at the mighty strides which science has made in the last half-century, and on the amazing results which surround us.

So numerous, so vast are those results, that we are fairly staggered with the magnitude of the subject as we begin to recall them. They meet us at every turn of daily life, and fill us with ever-fresh surprise at the powers which the Divine Creator has hid in nature, and at the ability with which He has endowed man to develop those powers.

In peace and in war, in our quiet homes and in the rushing travel of the day, on land and at sea, we meet the Engineer, and enjoy daily a thousand advantages and comforts from his skill and labor. The lighthouse which welcomes us as we approach the land; the breakwater which secures the anchorage; the quays and wharves at which the ship, itself of iron curiously wrought together, unloads; the engines within it, so mighty as to be capable of urging the mass, weighing thousands of tons, against the storm and over the ocean to the appointed post, and yet so delicately made that a bearing scarcely heats, and that the touch of a finger can govern the whole; the motive-power of water so combined with heat as to create steam—a power so terrific, that uncontrolled it can shatter into fragments the vast