cess of his undertaking, boldly forms his plans to lay dry the bed of an inland sea, of which those who stand on one shore cannot see the other.*

(56.) To gunpowder, as a source of mechanical power, it seems hardly necessary to call attention; yet it is only when we endeavor to *confine* it, that we get a full conception of the immense energy of that astonishing agent. In count Rumford's experiments, twenty-eight grains of powder confined in a cylindrical space, *which it just filled*, tore asunder a piece of iron which would have resisted a strain of 400,000 lbs.,† applied at no greater mechanical disadvantage.

(57.) But chemistry furnishes us with means of calling into sudden action forces of a character infinitely more tremendous than that of gunpowder. The terrific violence of the different fulminating compositions is such, that they can only be compared to those untamable animals, whose ferocious strength has hitherto defied all useful management, or rather to spirits evoked by the spells of a magician, manifesting a destructive and unapproachable power, which makes him but too happy to close his book, and break his wand, as the price of escaping unhurt from the storm he has raised. Such powers are not yet subdued to our purposes, whatever they may hereafter be; but, in the expansive force of gases, liberated slowly and manageably from chemical mixtures, we have a host of inferior, yet still most powerful, energies, capable of being employed in a variety of useful ways, according to emergencies.‡

(58.) Such are the forces which nature lends us for

* No one doubts the *practicability* of the undertaking. Eight or nine thousand chaldrons of coals duly burnt would evacuate the whole contents. But many doubt whether it would be profitable, and some, considering that a few hundreds of fishermen who gain their livelihood on its waters would be dispossessed, deny that it would be *desirable*.

† "Experiments to determine the Force of fired Gunpowder." Phil. Trans. vol. lxxxvii. p. 254. et seq.

‡ See a very ingenious application of this kind in Mr. Babbage's article on Diving, in the Encyc. Metrop.—Others will readily suggest themselves. For instance, the ballast in reserve of a balloon might consist of materials capable of evolving great quantities of hydrogen gas, in proportion to their weight, should such be found.