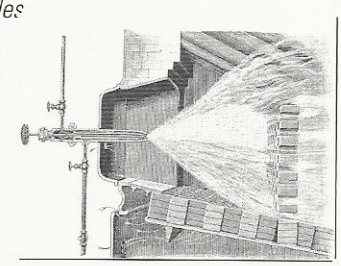
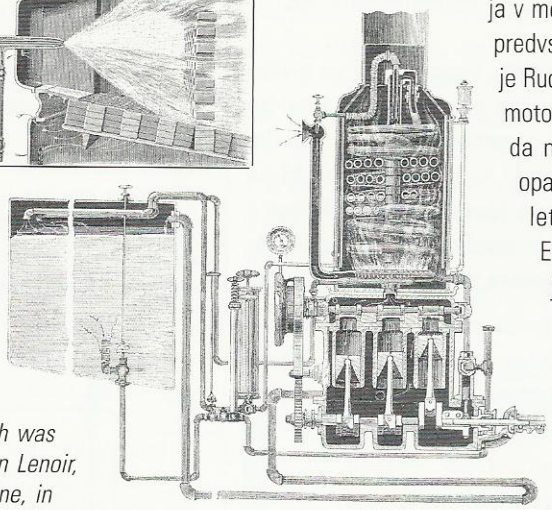
Energy that Runs Motor Vehicles

At the end of the 19th century, the internal combustion engine started its victorious rise. Because of their lightness, such engines soon after they had shaken off their childish diseases replaced the steam engines in road vehicles and produced an alternative for running airplanes. Unlike the steam engines, in which the fuel's energy was firstly transformed into the energy of heat, in the internal combustion engines the fuel's energy transforms directly into mechanic energy. Despite Rudolf Pawlikovski's 1911 invention of a powdered solid fuel run engine[10], today generally liquid and gas fuels are used. As a curiosity, we should mention abbot Hautefeuille's engine concocted in the second half of the 17th century, which was presumably run by gunpowder. Belgian Lenoir, one of the pioneers of explosion engine, in 1860 used acetylene to run his motor . The substance is today used for open-flame welding. Inventors after Lenoir were searching for fuels among liquid oil derivatives that mixed with air to form an explosive gas mixture. Petrol turned out to be the most adequate whereas in diesel motors gas oil was used. Their immediate competition petroleum, alcohol, benzol and gas fuels proved to be rather unsuitable.

Energija za pogon motornih vozil

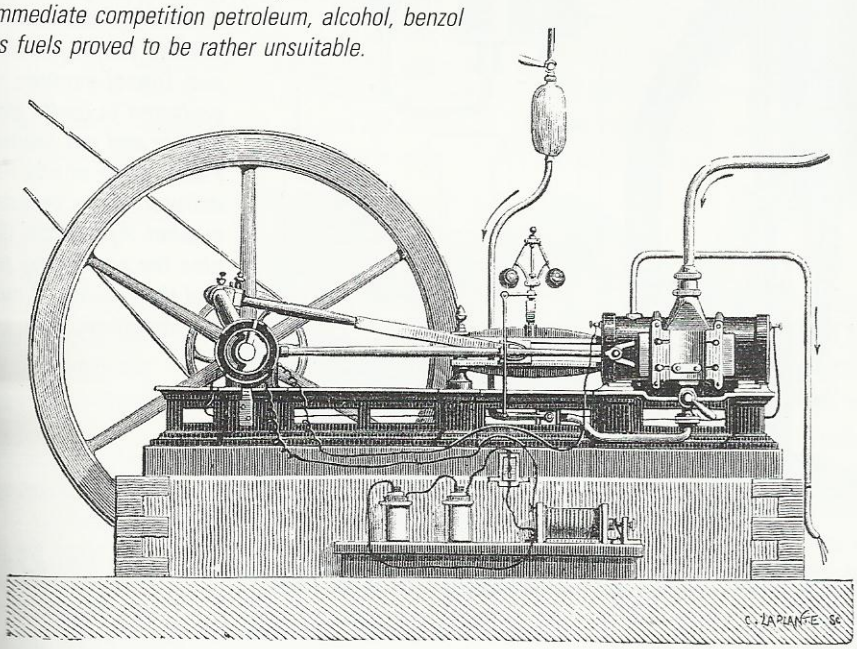
Ob koncu 19. stoletja je začel motor z notranjim izgorevanjem svojo zmagovito pot. Ker je bil takšen motor lahek, je kmalu potem, ko se je otresel svojih otroških bolezni, začel na cestnih vozilih zamenjevati parni stroj in je nakazal možnosti za pogon letal. Za razliko od parnega stroja, kjer se energija goriva pretvarja najprej v toplotno, se pri motorjih z notranjim izgorevanjem ta pretvarja v mehansko neposredno. V poštev pridejo predvsem tekoča ali plinasta goriva, čeprav je Rudolf Pawlikovski že leta 1911 razvil tudi motor na trdo gorivo v prahu[10]. Zanimivo je, da naj bi prvi motor, ki si ga je zamislil opat Hautefeuille v drugi polovici 17. stoletja, uporabljal kot gorivo smodnik. Eden od pionirjev eksplozijskega motorja, Belgijec Lenoir, je leta 1860 za pogon svojega motorja uporabil acetilen. Acetilen danes poznamo kot plin za plamensko varjenje. Izumitelji po Lenoirju so iskali pogonska goriva med tekočimi naftnimi derivati, ki pomešani z zrakom postanejo eksplozivna plinska zmes. Kot najprimernejše gorivo se je uveljavil bencin in za dieselske motorje plinsko olje. Njuni neposredni tekmeci petrolej, alkohol, benzol in plinasta goriva so pokazali več slabosti kot prednosti.





Gorilnik na tekoča goriva (energija goriva se pretvarja najprej v toplotno) in parni stroj na tekoče gorivo za pogon motornega čolna

A burner on liquid fuels (the energy of the fuel firstly transforms into heat) and liquid fuel steam engine for motor boats



Lenoirjev plinski motor iz leta 1860

Lenoir's gas engine from 1860

[10] Albert Struna: *Avtomobil - revised and supplemented second edition, Založba ljudske tehnike Slovenije v Ljubljani, Ljubljana 1951, p. 128.*

[10] Albert Struna: Avtomobil - druga popravljena in dopolnjena izdaja, Založba ljudske tehnike Slovenije v Ljubljani, Ljubljana 1951, stran 128