

## The Lucas “vacuum” headlamp dipping system

Several members of the 20hp Register have a cylinder behind their cars’ instrument panels, with copper pipes leading towards the front headlamps. Two examples are shown in the Figures. This is a type of pneumatic headlamp dipping system. It is a push/pull pneumatic vacuum mechanism with *no* connection to the engine manifold vacuum. Some examples still work very well. Cars with this system were all made in 1928.

In the book *Early Vehicle Lighting* by Peter Card he writes: ‘The first simple anti-glare device was the “dipping reflector” which was patented by Joseph Lucas Limited in 1927. This took the form of a pneumatic cylinder and control knob mounted on the steering column, and was connected by rubber tubing to a small pneumatic cylinder in each headlamp (see Figure). When the knob was pulled out a piston in each lamp moved the reflector into a diagonally dipped position, throwing the beam of light on to the nearside kerb. This enabled drivers to see both pedestrians and oncoming cars. In 1930 there was a further improvement that helped to reduce the combined strength of the beam; this was descriptively referred to as “dip and switch”. The reflectors were now moved by a solenoid.’



In Europe, Bosch, Marchal and Zeiss developed systems based on double-filament bulbs.

Two earlier anti-glare mechanisms were used on 20hp cars, firstly the “Barker Dippers” introduced in 1923 which used levers to simply swivel the headlamps downwards, and secondly a rheostat mounted on the instrument panel which could dim the headlamp filaments by reducing the voltage.





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