

BICYCLE LIGHTING SYSTEM AND GENERATORABSTRACT

A novel type of bicycle lighting system comprises a high-performance dynamo system (1, 5) including a dynamo generator (1) and a converter arrangement (5) connected with the latter and with the lamps. The converter arrangement (5) converts the electric power generated by the dynamo generator (1) into a regulated direct-current voltage for generating light and simultaneously charging a battery.

The dynamo generator (1) consists of an inner circuit (21) and an outer circuit (22), both of which rotate about a stationary air-core coil (23), and the pole shoes form in conjunction with the standing air-core coil a high-efficiency generator arrangement, by means of which there is achieved an efficiency of at least 90%. By virtue of such power output there is ensured that the dynamo system (1, 5) generates, starting from a minimum traveling speed of 5 kmph, an electric energy adequate to charge the battery and simultaneously supply the current for a front-light (2) and a rear-light (3). As long as the minimum traveling speed is not exceeded, the converter arrangement (5) as well as the front-light (2) and the rear-light (3) are additionally fed from the battery (standing light). Electronic components, such as a threshold-value device (12-16) and a delay circuit (17), ensure that the proposed bicycle lighting system generates a constant lighting voltage of about 6 V, and that an apportioning of the energy required for producing light and the energy required for charging the accumulator battery (4) in a ratio of 1-2:1 is possible essentially independent of the speed starting from approximately 5 kmph. In case of an outage or defect of the battery (4), the dynamo generator (1) directly supplies the light sources by means of the dynamo system. (Figure 2a)