



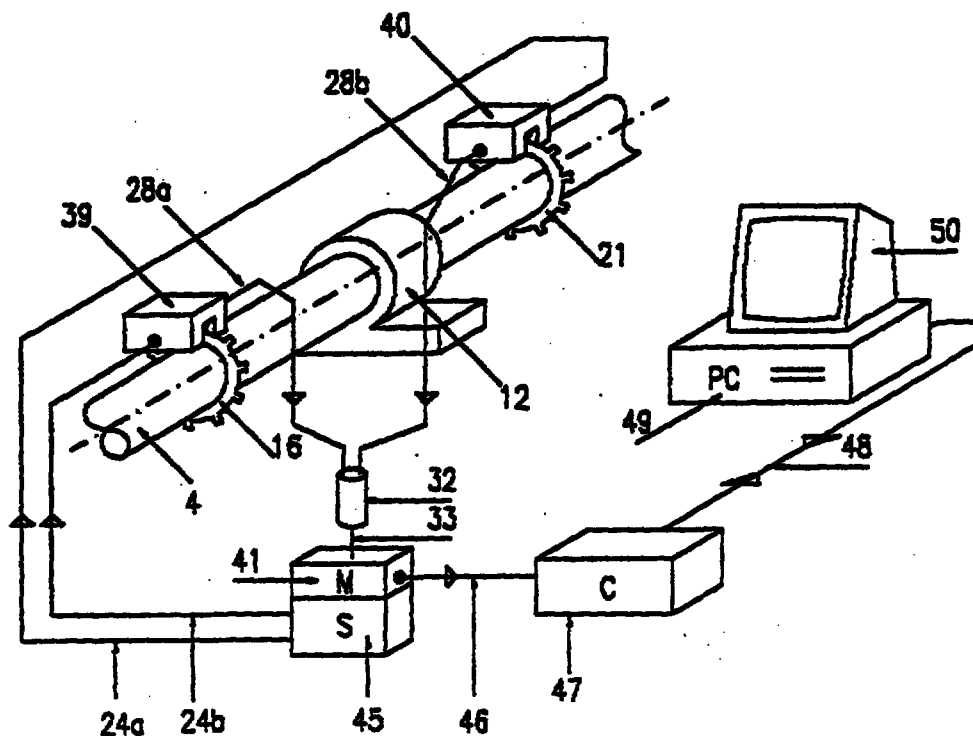
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(54) Title: APPARATUS FOR TORQUE MEASUREMENT ON ROTATING SHAFTS

(57) Abstract

Apparatus intended for measuring of the torque of rotating shafts for the purpose of calculating the shaft power without using sensors mounted or glued to the shaft. The long time accuracy is increased by using only one single optical electronic sensor in the pulse receiver. Alteration of sensor data due to temperature variations and ageing do not affect the accuracy. The light is transmitted from the source/transmitter through optical fibre. The lightbeam is pulsed in two air gaps by coding discs/gearwheels mounted to the shaft at a convenient distance from each other (16 and 21). The light is transmitted by optical fibres (24a, 24b) from the source/transmitter (45) and via the optical U-shaped elements (39, 40) where the lightbeams are pulsed and added in the light collector (32). The time displacement between the vanes/teeth on the two discs/gearwheels is a measure on the shaft torque, enabling the shaft power to be calculated in the computer (50). To increase the accuracy in case of shaft vibrations, the width modulated pulses are accumulated and averaged at convenient numbers of shaft turns. The accuracy is increased by detecting both rising and falling pulse edges in order to double the number of pulses each shaft turn.



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