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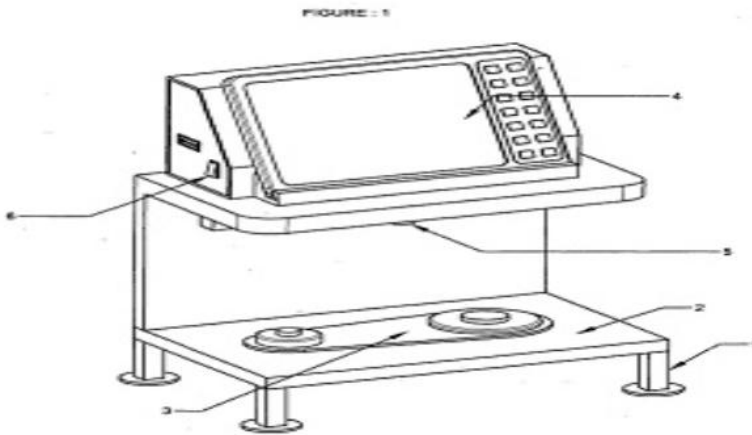
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(57) Abstract :

A connecting rod is one of the components of an Internal combustion (IC) engine that connects the piston to the crankshaft. This, along with the crank, converts the reciprocating motion of the piston into the rotary motion of the crankshaft. In this invention, an attempt has been made to inspect a connecting rod using a Vision system. A Vision system consists of a charge-coupled device (CCD) camera, frame grabber, cables, and advanced image processing hardware, all connected to a high-end computer. The surface image is captured using a CCD camera during the inspection of the connecting rod. The image is then digitized and then subsequently analyzed for texture and dimension. A frame grabber would help get a digital image from the analog signals obtained from the CCD camera. For getting accurate results of texture assessment, high-quality images are required. This is only possible by having proper illumination during image acquisition. For proper illumination, a Connecting rod inspection fixture is needed. The main objective of this research work is to inspect a connecting rod for dimensions and texture. This inspection would ensure the successful deployment of the connecting rod. In this context, the proposed invention assumes special significance. The method is non-contact in nature, and high measuring speeds are possible. Also, since both the texture and dimensional measurements are done in a single setup. This will down the cost of the inspection. Thus, by reducing the cost of inspection, the product can be competitive in the market.



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