

[54] TORSIONAL VIBRATION ABSORBER SYSTEM

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[52] U.S. Cl. 74/574; 74/572; 74/573 R; 74/603; 74/604

[58] Field of Search 74/572, 573 R, 574, 74/603, 604

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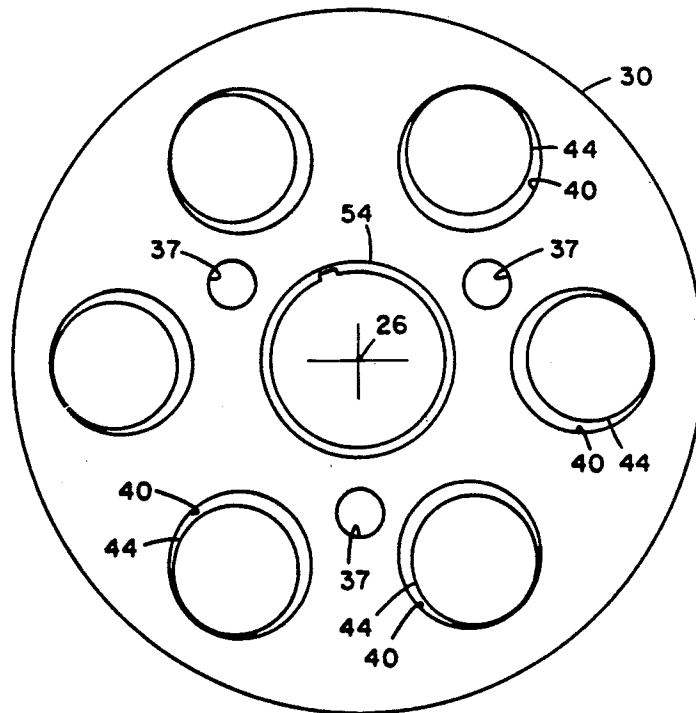
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[57] ABSTRACT

A system for absorbing torsional vibration in a shaft which is drivingly rotated about an axis and wherein the shaft is exposed to torsional disturbances which tend to cyclically increase and decrease the rotational speed of the shaft utilizes a body attachable to the shaft for rotating therewith as the shaft rotates about its axis of rotation and cylindrical rolling elements positioned within cavities disposed in the body. During operation of the system, the torsional disturbances induce pendulum-like motion of the cylindrical elements within the cavities in a manner which absorbs torsional vibration of the shaft. The cylindrical elements, the cavities and the torsional disturbances are related to one another in accordance with an equation which optimizes performance of the system and circumvents time-consuming trial and error techniques during design of the system. The system is particularly well-suited for absorbing torsional vibration in a shaft which is rotated about an axis in response to power pulses generated within an internal combustion engine.

20 Claims, 4 Drawing Sheets



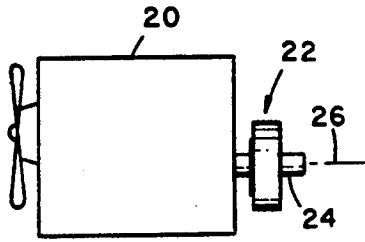


Fig. 1

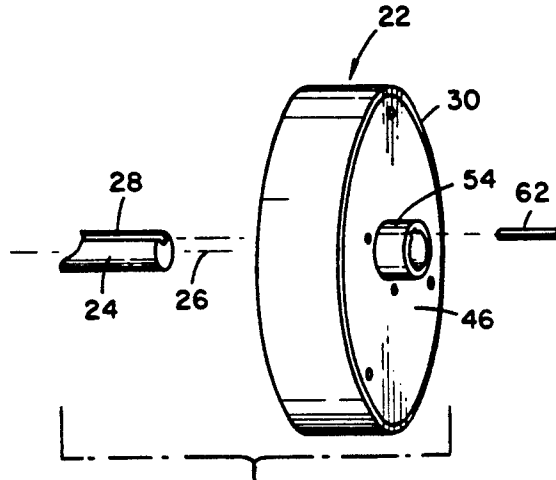


Fig. 2

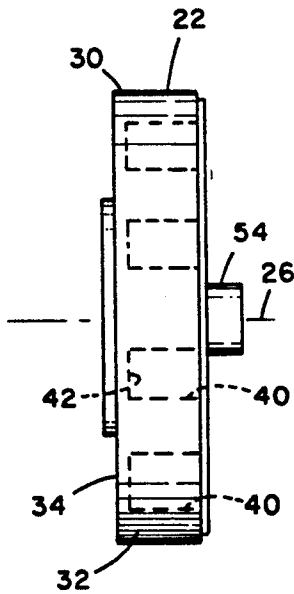


Fig. 3

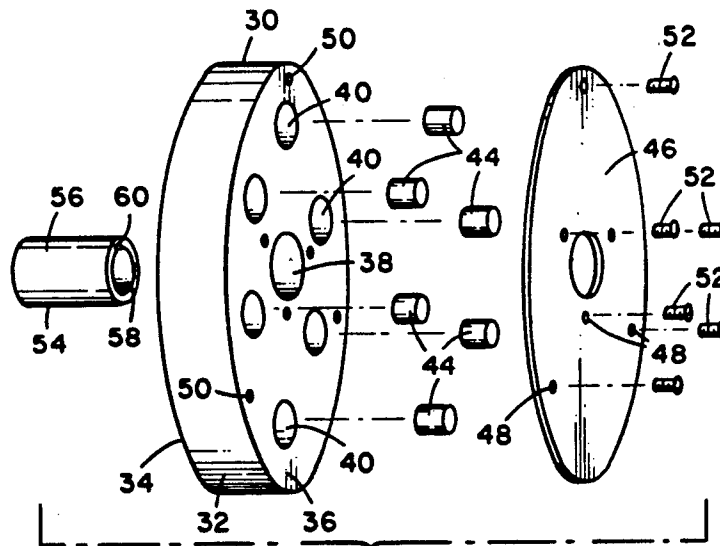


Fig. 4

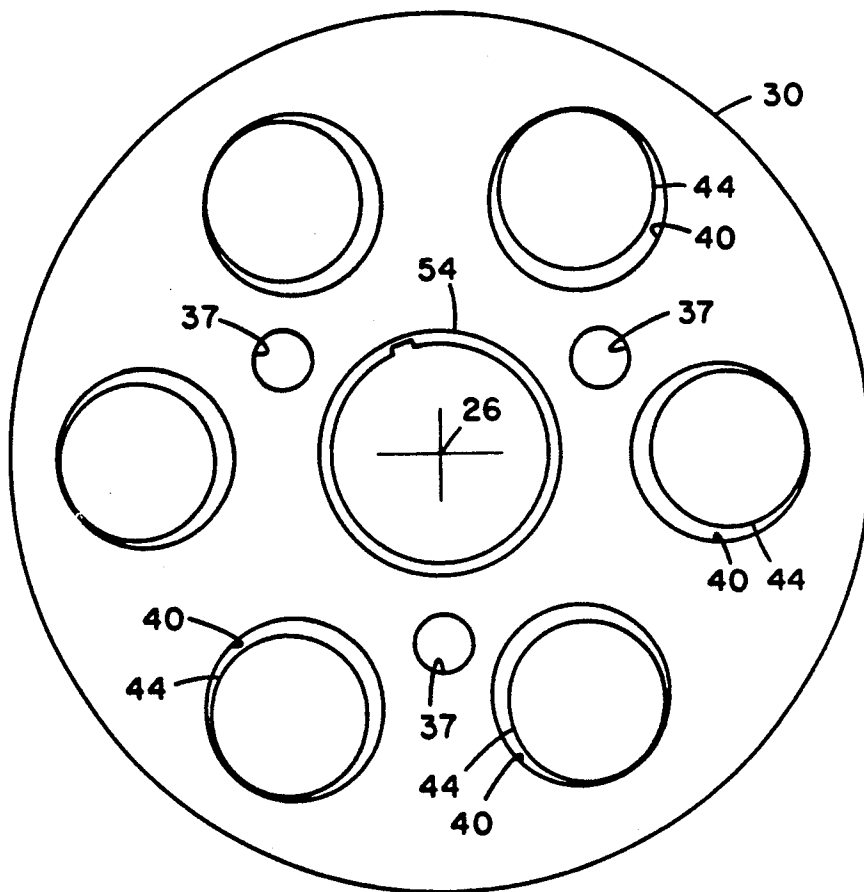


Fig. 5

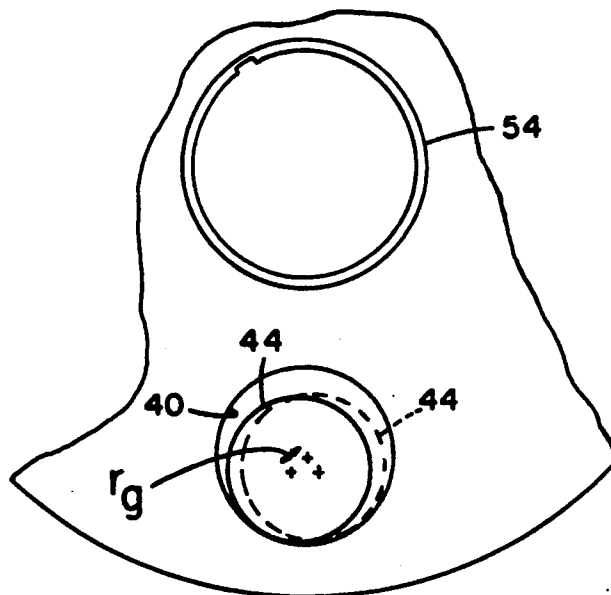


Fig. 6

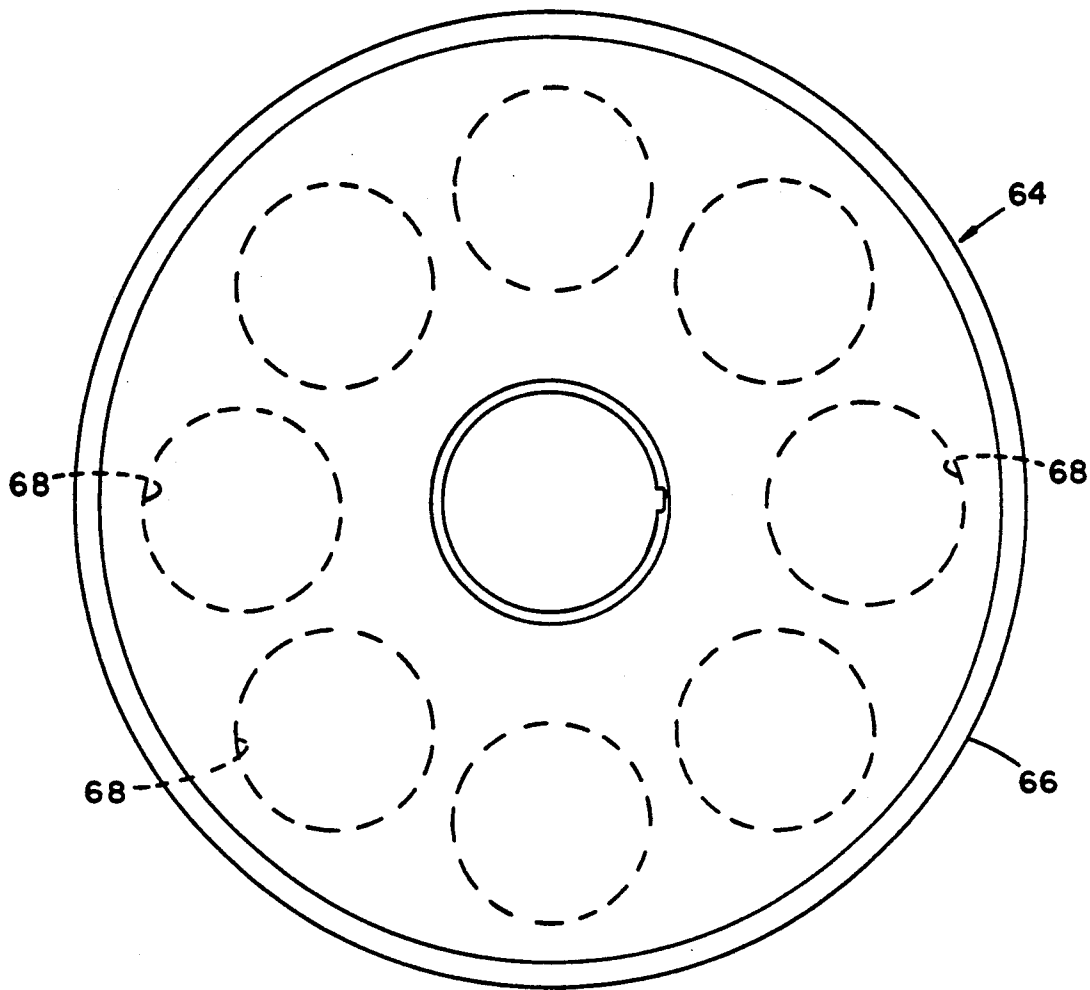


Fig. 7

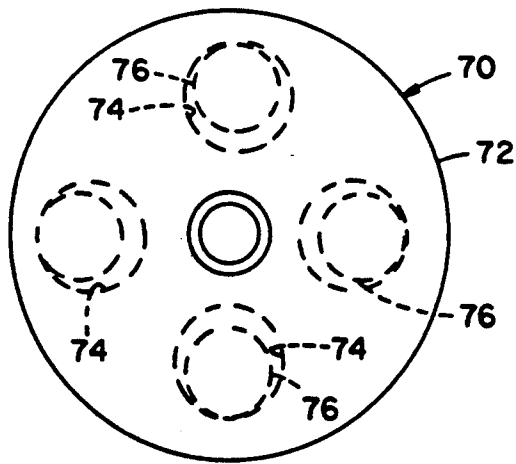


Fig. 8

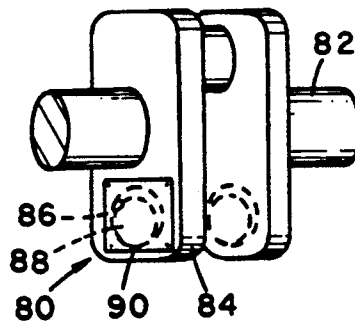


Fig. 9

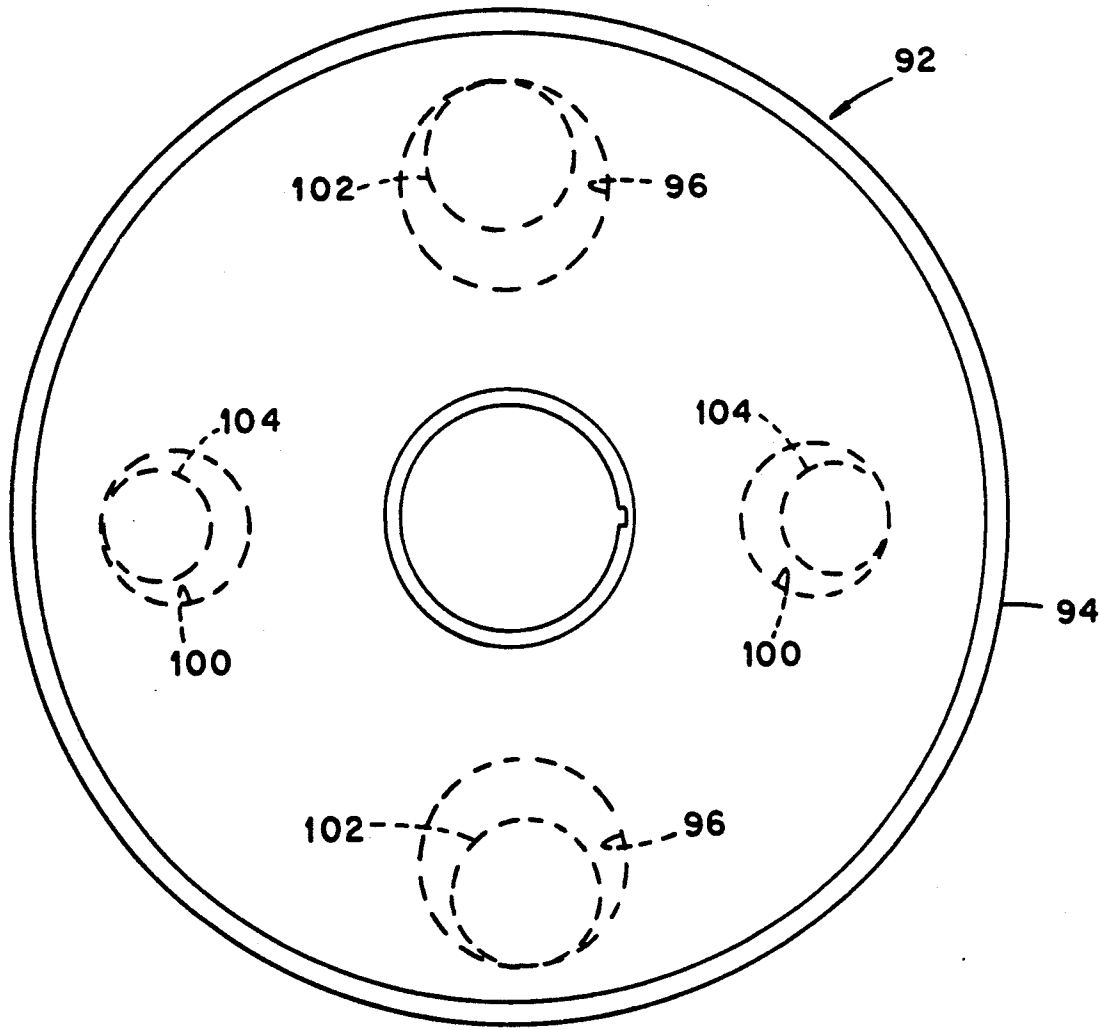


Fig. 10

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