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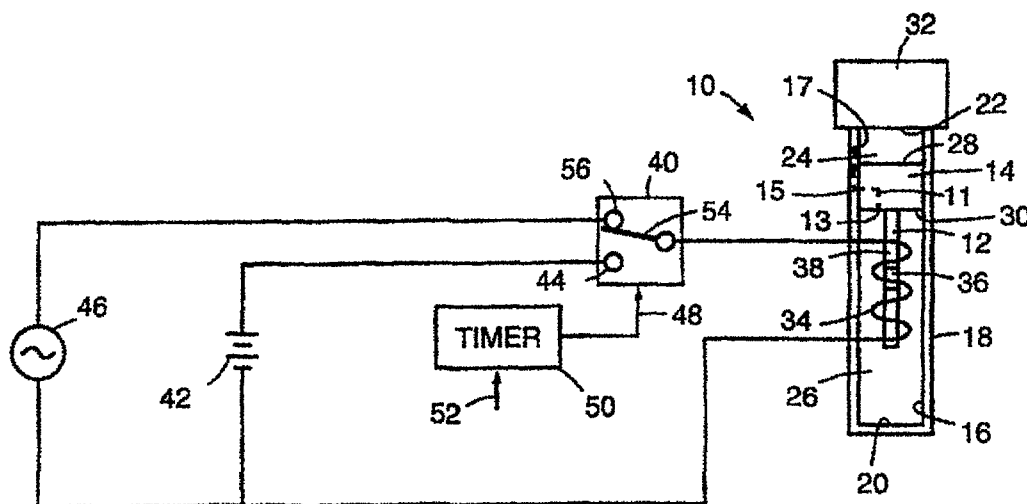
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(54) Title: DC CENTERING OF FREE PISTON MACHINES



(57) Abstract: In a free piston machine (10), a coil (34) is mounted to its housing and magnetically linked to a permanent magnet (36) or electromagnet on its piston member (38) to form a linear motor. The coil and magnet are either added to embody the invention or are part of an AC linear alternator or AC linear motor which are a part of the free piston machine. A source (42) of DC electrical current and a switch (40) for connecting the DC source to the coil supply DC current to the coil when the switch is closed so that the coil and magnet temporarily operate as a DC linear motor until the piston is adequately centered for start-up without collision. The DC source voltage is temporarily applied to the coil to move the piston away from an end wall of the cylinder. This is accomplished by applying the DC current to the coil for a predetermined time interval, or by sensing when the piston has reached an adequately centered position.

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