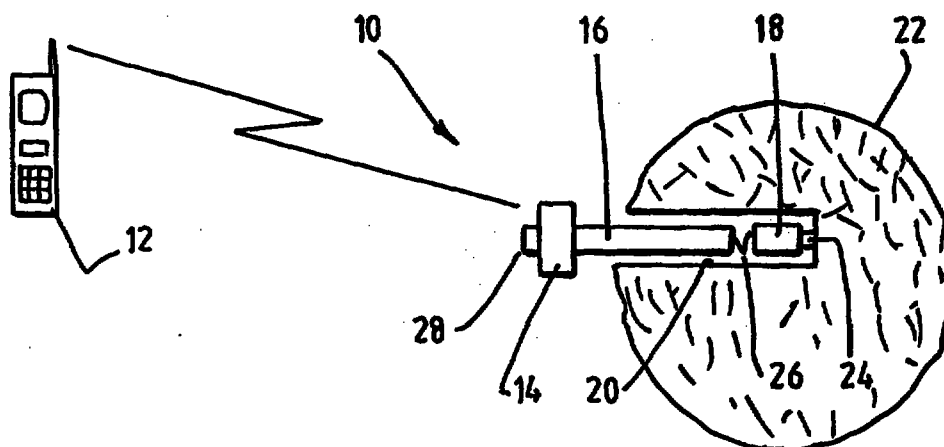




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(54) Title: CONTROLLED ELECTROMAGNETIC INDUCTION DETONATION SYSTEM FOR INITIATION OF A DETONATABLE MATERIAL

**(57) Abstract**

The controlled electromagnetic induction detonation system for initiation of a detonatable material system (10) includes an automated radio charge (ARCH) module (18) connectable to an electric detonator (24), a transducer module (14) for providing operational power by electromagnetic induction to the ARCH module (18), and a remote controller (12) for sending instructions to the transducer module (14) from a location remote from the detonator (24). Upon completion of an arming sequence, the transducer module (14) generates an electromagnetic field which is picked up by a coil in the ARCH module (18) and used to power the ARCH module (18) and provide a detonation current for the detonator (24). The transducer module (14) or at least a coil thereof which produces the electromagnetic field is supported on or in a stemming bar (16) which in turn acts as a core of an electromagnet confining the magnetic flux for pick up by the ARCH module (18). Multilevel access control and interlock systems operate between the remote controller (12), transducer unit (14) and the ARCH module (18) to reduce the likelihood of unintentional initiation of the detonator (24).