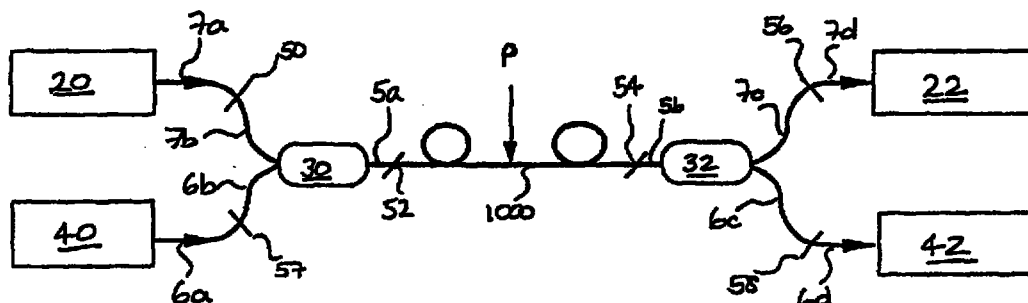




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(54) Title: INTRINSIC SECURING OF FIBRE OPTIC COMMUNICATION LINKS



(57) Abstract

An optical waveguide system for securing live fibres against tampering and tapping off of data in optical fibre communication links is disclosed. The communication link includes a waveguide (1000) which extends from one location to another for transmitting a data signal. A data transmitter (20) launches the data signal into the fibre (1000) and a data receiver (22) receives the data signal. A sensing signal transmitter (40) launches a sensing signal into the fibre (1000) and a sensing signal receiver (42) receives the sensing signal for the fibre (1000). The transmitters (20 and 40) are coupled to the fibre (1000) by wavelengths multiplexing/demultiplexing coupler (30) via input arms (7a and 6a) of the coupler (30). The signals are transferred to the receivers (22 and 42) by a further wavelength multiplexing/demultiplexing coupler (32) via output arms (7c and 6c). The couplers (30 and 32) ensure that the signals are combined with minimum power loss and are separated for transmission to the detectors also with minimum power loss and with substantially all of the data signal being transmitted to the receiver (22) and all the sensing signal being transmitted to the receiver (42).