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(54) Titre : ANTIVOL POUR VEHICULES ET DISPOSITIFS PORTATIFS

(54) Title: ANTI-THEFT DEVICE FOR VEHICLES AND PORTABLE DEVICES

(57) **Abrégé/Abstract:**

An alarm system (10) for use in a vehicle such as a bicycle, motorbike, quad bike, etc or portable devices such as laptops, projectors or the like, comprising a base (12) on which is mounted a vibration sensor (14), a microprocessor (16) and a transceiver (18). A power supply (20), consisting of batteries (22) are connected to the base (12) to provide power to the vibration sensor (14), the microprocessor (16) and the transceiver (18). The alarm system (10) can be part of the bicycle or portable device's locking mechanism or the like.



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An alarm system (10) for use in a vehicle such as a bicycle, motorbike, quad bike, etc or portable devices such as laptops, projectors or the like, comprising a base (12) on which is mounted a vibration sensor (14), a
5 microprocessor (16) and a transceiver (18). A power supply (20), consisting of batteries (22) are connected to the base (12) to provide power to the vibration sensor (14), the microprocessor (16) and the transceiver (18). The alarm system (10) can be part of the bicycle or portable device's locking mechanism or the like.

Field of Invention

5 The present invention relates to vehicle security, particularly security of two wheeled vehicles, such as, most especially, bicycles, quad bicycles, motorcycles and also, for portable devices, particularly laptop, projectors, drills and the like.

10 Security for vehicles such as bicycles, quad bikes, motor bikes and the like has long been a problem. Several locking devices, such as chain locks and the like are widely used to shackle a bicycle to an immovable structure such as a set of railings. However, such locks can be removed by cutting with bolt cutters or the like. Another known type of lock is used to prevent movement of one or both bicycle wheels. However, such a lock does not prevent the bicycle from being physically lifted and carried away.

Background of the Invention

15 It is known to provide an alarm unit for a bicycle, which unit comprises a sensor, for example a tilt or vibration sensor, which causes activation of a sounder or other alarm means in response to movement. The sounder, sensor and associated control means and power supply are housed in a casing which is bolted onto the frame of a bicycle or the lock mechanism. Once the alarm unit is armed, if the bicycle is moved, the sounder is actuated to alert the owner and/or passers-by that the bicycle is being tampered with, as well as to act as a deterrent.

25 However, local sounders do not work as passer-by typically ignores the sounder and noise is subject to noise pollution by-laws. Also such units highly visible and accessible, such that it is relatively easily removed, damaged or destroyed before the owner can return to claim the property.

Summary of the Invention

30 An improvement to known art is to 'centralized alarm system' as shown in figure 30, whereby the motion sensor (14) alarm is sent to alarm transceiver 32 via transceiver (18) and on to a alarm processor, such as PC (36), which can record the theft of the bicycle, by the use of CCTV cameras (38) and also the owner can be warned of the theft by the use of telephone (40) or

SMS service (42).

Typically, motion sensors are tripped when the bicycle is moved and also by wind, heavy automobiles driving by or any other heavy motion close by.

5 These false triggers are reduced by having a guard, monitoring the CCTV (38) output before calling the owner.

Brief Description of the Drawings

10 In drawings which illustrate by way of example only a preferred embodiment of the present invention,

Figure 1 is a block diagram of one embodiment of the present invention; and

15 Figure 2 is a block diagram of the complete system

Detailed Description of the Invention

As shown in Figure 1, in one embodiment the present invention comprises a
20 transceiver system (10) which is mounted on base (12). The motion is sensed by microcontroller (16) by the use of motion sensor (14). The system (10) sends its ID and motion data via transceiver (18) to a remote transceiver.

Transceiver (32) monitors the transmission from system (10) and sends the
25 data (motion sensor data and ID of system (10)) to PC (36) via Local Area Network (LAN) (34). On recite of data, the PC (36) moves the CCTV (38) towards the proper bicycle rack (not shown). The owner can be warned, automatically by PC (36) or a guard (not shown) can verify the image form CCTV camera (38) to ensure the bicycle is being tampered with and then

warn the owner by the use of telephone (40) or via SMS service (42). The images can also be recorded by PC (36) for use by the police. The present invention can also be used to monitor tampering with parked automobiles & similar objects, as any vibration will send a signal to a local receiver.

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In an alternate embodiment, periodic messages are sent to system (10) by PC (36) via LAN (34) and transceiver (32). This way the PC (36) can verify that the bicycle or other portable device is present within the vicinity of the transceiver (32). This feature can, also, be used to open private garage doors or start parking meters and other similar applications.

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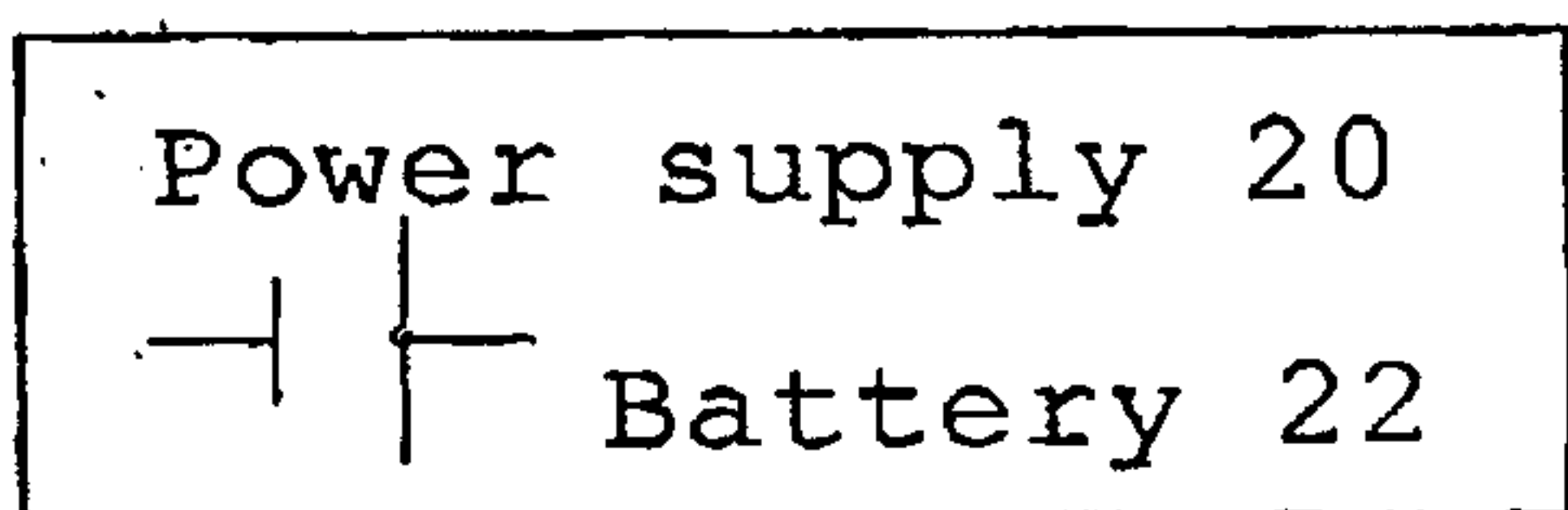
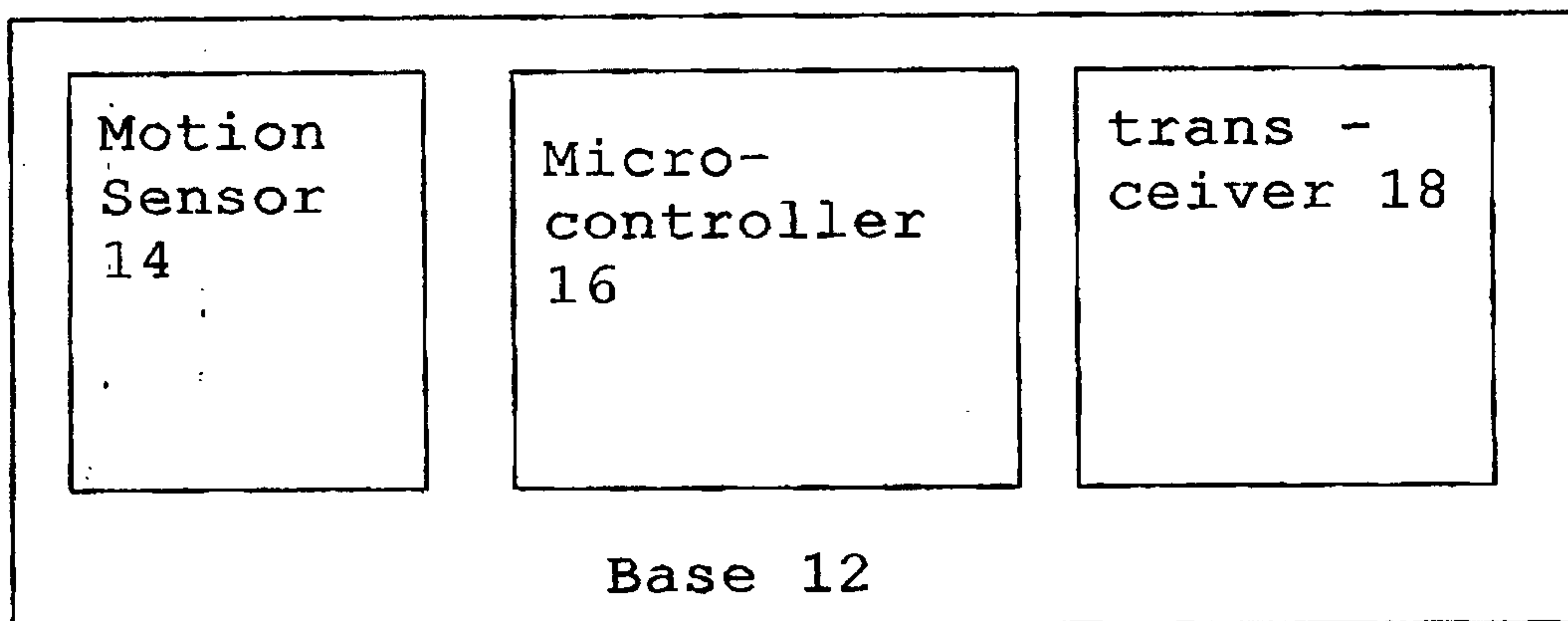
This concept can also be used, to warn the owner when a pet or equipment moves out of the vicinity or the range of the receiver.

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A preferred embodiment of the invention having thus been described by way of example only, it will be apparent to those skilled in the art that modifications and adaptations may be made without departing from the scope of invention, as set out in the appended claims.

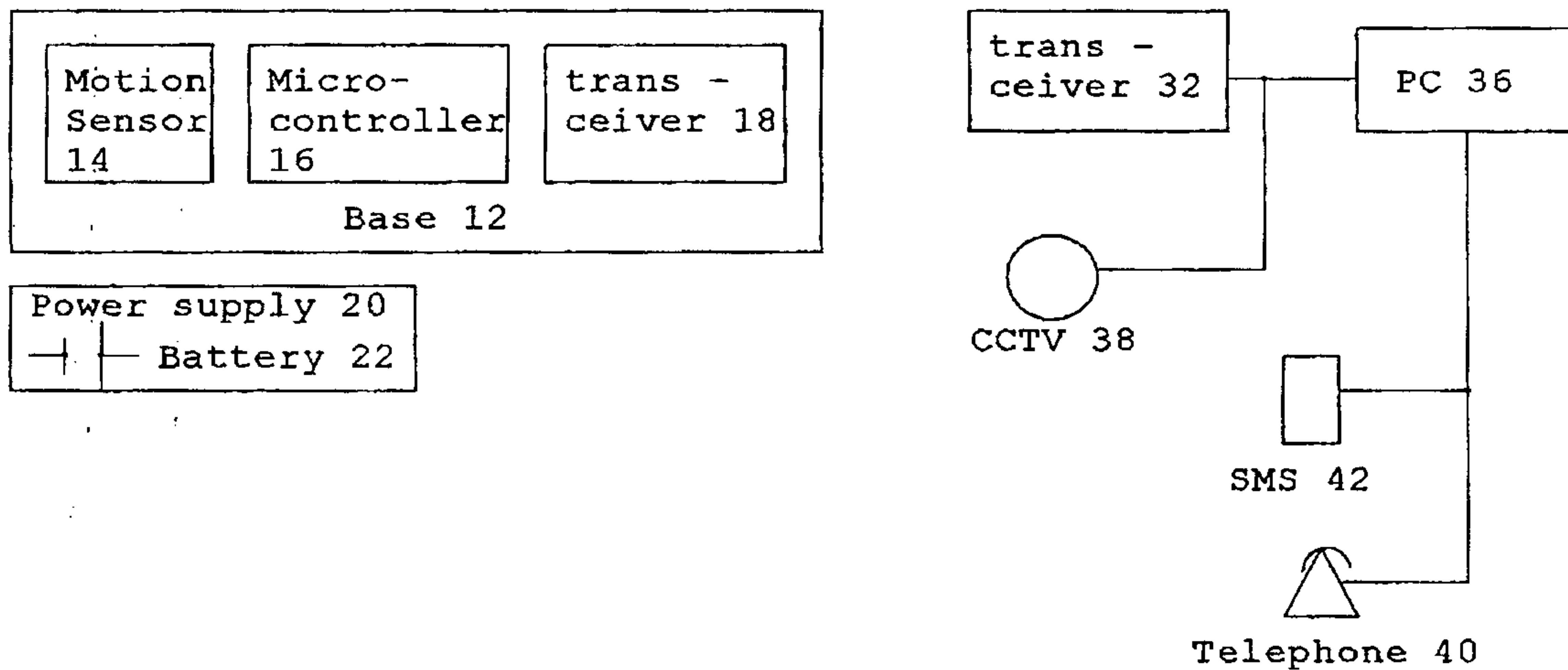
**THE EMBODIMENTS OF THE INVENTION IN WHICH AN
EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE
DEFINED AS FOLLOWS:**

- 5 1. An alarm system for use in a vehicle such as a bicycle, motorbike, quad
bike or the like, the alarm system comprising: i) sensing means for sensing
unauthorised disturbance of the vehicle; and ii) transceiver means, operative
in response to an unauthorised disturbance of the vehicle sensed by the
sensing means; said sensing means and said transceiver means being capable
of being mounted or otherwise fixed or held within the body of the vehicle
10 or the locking mechanism, when in use.
2. An alarm system according to claim 1, comprising control means,
preferably micro-processor based, for controlling the operation of the
transceiver means.
- 15 3. An alarm system according to claim 2, wherein said control means is
capable of being mounted, fixed or otherwise held within the main body of
the vehicle or the locking mechanism.
4. An alarm system according to any one of the preceding claims, wherein
said sensing means comprises a movement sensor, preferably a vibration or
tilt sensor.
- 20 5. An alarm system according to any one of the preceding claims,
comprising means for switching the alarm system between an active mode
and an inactive mode.
6. An alarm system according to claim 1 wherein said unit is substantially
enclosed within a (preferably waterproof) housing.
25
7. An alarm system for use in a vehicle such as a bicycle, motorbike, quad
bike or the like, the alarm system comprising: i) microcontroller with pre-set
ID; and ii) transceiver means, operative in response to a message from
central station to verify the presence of the remote alarm.
30



System 10

Figure 1



System 30
Figure 2