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(72) Inventeurs/Inventors:

Itoh, Susumu, JP;
Uchida, Hiroshi, JP

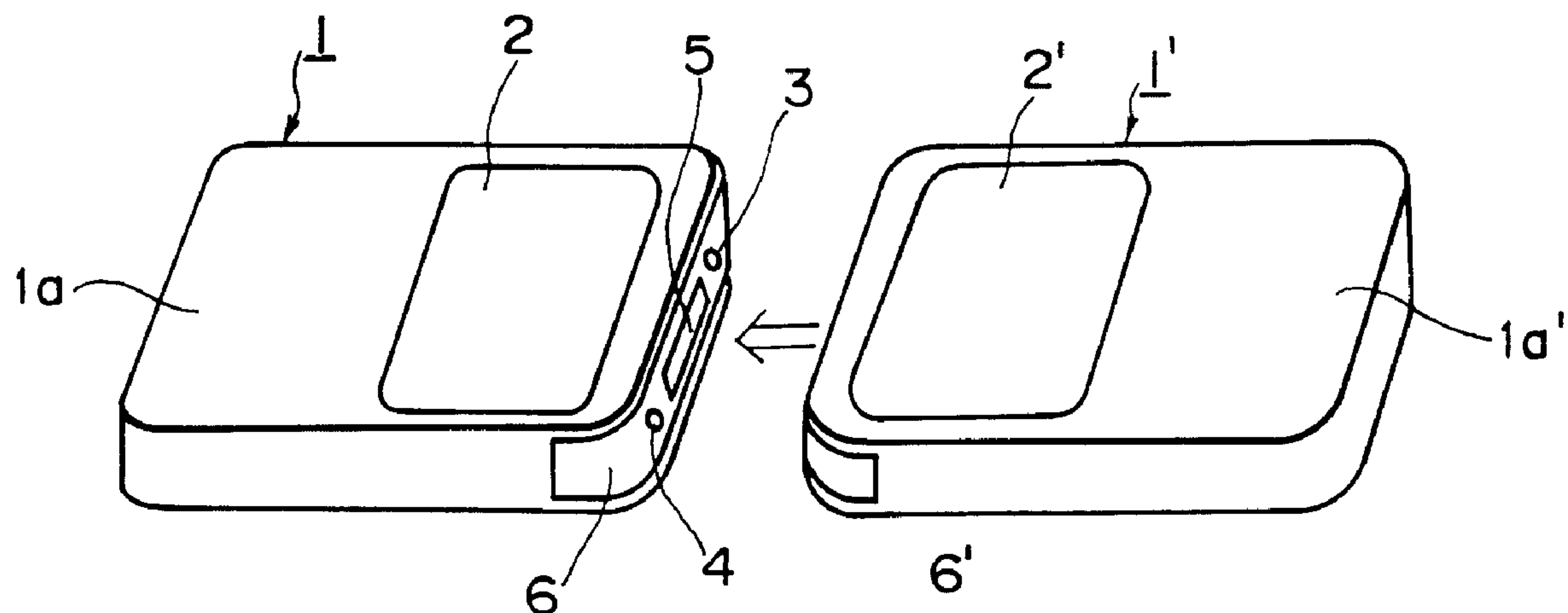
(73) Propriétaire/Owner:

SONY CORPORATION, JP

(74) Agent: GOWLING LAFLEUR HENDERSON LLP

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(54) Title: PORTABLE ELECTRONIC APPARATUS



(57) Abrégé/Abstract:

A portable electronic apparatus including a casing having a connecting surface adapted to be connected to a connecting surface of an external apparatus; a control unit accommodated in the casing; a transmitting terminal provided on the connecting surface of the casing for transmitting data as an optical signal generated by the control unit; and a receiving terminal provided on the connecting surface of the casing for receiving data as an optical signal generated by the external apparatus. The transmitting terminal and the receiving terminal are positioned in symmetrical relationship to each other with respect to a center of the connecting surface of the casing. Accordingly, in carrying out data transfer by optical space communication between two portable electronic apparatuses of the same kind, the transmitting terminal of one of the portable electronic apparatuses can be easily aligned to the receiving terminal of the other portable electronic apparatus.

ABSTRACT OF THE DISCLOSURE

A portable electronic apparatus including a casing having a connecting surface adapted to be connected to a connecting surface of an external apparatus; a control unit accommodated in the casing; a transmitting terminal provided on the connecting surface of the casing for transmitting data as an optical signal generated by the control unit; and a receiving terminal provided on the connecting surface of the casing for receiving data as an optical signal generated by the external apparatus. The transmitting terminal and the receiving terminal are positioned in symmetrical relationship to each other with respect to a center of the connecting surface of the casing. Accordingly, in carrying out data transfer by optical space communication between two portable electronic apparatuses of the same kind, the transmitting terminal of one of the portable electronic apparatuses can be easily aligned to the receiving terminal of the other portable electronic apparatus.

PORTABLE ELECTRONIC APPARATUS

BACKGROUND OF THE INVENTION

The present invention relates to a portable electronic apparatus such as a portable computer or a handy terminal adapted to carry out data transfer with an optical signal.

Conventionally, optical communication between two portable electronic apparatuses is carried out by using optical fibers and optical connectors for connecting the two portable electronic apparatuses to each other through the optical fibers. This system is suitable to cope with undue radiation. However, it has a disadvantage such that the optical connectors cannot be quickly connected together to require much time. As a technique for solving this problem, it is known to adopt optical space communication without using any optical fibers and optical connectors. In the optical space communication, it is only necessary to decide a direction of radiation of an optical signal, so that data transfer can be easily carried out.

In the optical space communication, however, it is necessary to transmit an optical signal to another apparatus located remote from a transmitting position to some extent. Therefore, an output of the optical signal must be enlarged, resulting in an increase in current consumption. Accordingly, this technique is not applicable to a portable electronic

apparatus.

SUMMARY OF THE INVENTION

It is accordingly an object of the present invention to provide a portable electronic apparatus which can carry out data transfer quickly and suppress current consumption.

According to the present invention, there is provided a portable electronic apparatus comprising a casing having a connecting surface adapted to be connected to a connecting surface of an external apparatus; a control unit accommodated in said casing; a transmitting terminal provided on said connecting surface of said casing for transmitting data as an optical signal generated by said control unit; and a receiving terminal provided on said connecting surface of said casing for receiving data as an optical signal generated by said external apparatus; wherein said transmitting terminal and said receiving terminal are positioned in symmetrical relationship to each other with respect to a center of said connecting surface of said casing.

In the portable electronic apparatus having the above-mentioned construction, the transmitting terminal and the receiving terminal are positioned in symmetrical relationship to each other with respect to the center of the connecting surface of the portable electronic apparatus. Accordingly, in carrying out data transfer by optical space communication between two portable electronic apparatuses of the same kind

having the above construction, for example, the transmitting terminal of one of the portable electronic apparatus can be easily aligned to the receiving terminal of the other portable electronic apparatus only by attaching the connecting surface of the one portable electronic apparatus to the connecting surface of the other portable electronic apparatus in alignment. That is, an optical path between both the portable electronic apparatuses can be easily formed.

As described above, the portable electronic apparatus of the present invention has the transmitting terminal and the receiving terminal positioned in symmetrical relationship to each other with respect to the center of the connecting surface as a reference point. It is therefore advantageous that optical space communication between the portable electronic apparatus of the present invention and an external apparatus, especially, another same type portable electronic apparatus can be carried out easily and securely.

Other objects and features of the invention will be more fully understood from the following detailed description and appended claims when taken with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective view of a portable computer as a portable electronic apparatus according to a first preferred embodiment of the present invention;

Fig. 2 is a horizontal sectional view of an essential part

