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ISOLATION APPARATUS

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ABSTRACT OF THE DISCLOSURE

An isolation unit for bed-confined patients having separable disposable components assembled where used into a hermetically sealed enclosure of the bed and some space over patient, the enclosure having access passages for arm insertion to manipulate confined objects and the isolated patient, at least one ingress and egress passage normally sealed from the interior of the patient enclosure and arranged for decontamination of its interior surface permitting introduction of material for patient consumption and waste removal from the enclosure while gaseous outflow is prevented, and means in sealed relation to the enclosure for introducing oxygen circulation into and for decontamination of gas discharge flow therefrom.

This invention relates to apparatus for the isolation of bed patients having diseases which require complete isolation from hospital personnel and other patients.

Patients having certain contagious diseases such as gaseous gangrene, meningitis, hepatitis and the like require complete isolation from other patients, hospital personnel and other persons. This isolation heretofore usually has been provided by carefully closed rooms in which only a single patient is confined and hospital personnel caring for such patients enter and leave through normally closed doors and usually special protective clothing is required for such personnel. Such isolation of patients is costly from the standpoint of the room space required for each patient and also results in the necessity of complete decontamination of personnel clothing and various types of equipment which is taken into and removed from the room and the room itself once the patient is cured. In addition, this procedure makes it difficult to transfer a patient to different locations.

Accordingly, it is an object of this invention to provide simple, durable and easy to use isolation apparatus for bed confined patients requiring complete isolation, which is capable of confining a person over extended periods of time and which may be easily disposed of after usage.

Another object of this invention is to provide isolation apparatus which is suitable for a patient confined entirely to the bed or which is suitable for providing sufficient room adjoining the bed in which an ambulatory patient may stand and walk around.

It is a further object of this invention to provide isolation apparatus for a bed patient which is suitable for usage in the same room as other isolated and/or non-isolated patients and may be conveniently moved from location to location without exposure and contaminating the surroundings.

Still a further object of the invention is to provide an isolation enclosure in which the patient and objects therein may be manipulated from externally of the enclosure and wherein food and the like may be introduced and waste material removed without contaminating the surrounding room and contents.

In summary, the present invention provides an isolation enclosure or chamber for use in conjunction with a hospital bed whereby only the bed and the immediate surrounding area is enclosed and which has provided in conjunction therewith portable means necessary for sustaining a person within that enclosure for extended periods of time. Another innovation of the present invention is the provision of a self-sustaining isolation enclosure in which all of the contaminated portions can be easily disposed of by burning in its entirety after its use has been completed without contaminating auxiliary equipment used therewith or the air of the surrounding room. A further innovation in the present invention is the provision of an isolation enclosure for the patient having transparent portions and which has a relatively small volume as compared to the usual hospital room, thereby avoiding the high capacity equipment for supplying oxygen and decontaminating the gas outflow from the air surrounding the patient.

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Other objects, advantages and capabilities of the present invention will be more apparent as the following description proceeds when considered with the accompanying drawings in which:

FIG. 1 is a perspective view of an isolation unit assembly embodying the present invention for a bed-confined patient with the patient enclosure member, waste disposal container, oxygen supply, decontaminating source and gas decontamination means illustrated therein;

FIG. 2 is an enlarged sectional view taken along lines 2—2 of FIG. 1 showing a fragment of the support assembly for the patient enclosure member;

FIG. 3 is a fragmentary sectional view taken along lines 3—3 of FIG. 2;

FIG. 4 is a fragmentary side elevation view of a port arrangement on the enclosure member for fastening the inlet and outlet flow lines in sealed relation to the enclosure member and pass receptacle illustrated in FIG. 1;

FIG. 5 is a fragmentary top plan view of a zipper arrangement for opening and closing a wall portion of the enclosure member shown in FIG. 1 and drawn to an enlarged scale;

FIG. 6 is a rear elevation view of the pass receptacle with a portion of the associated waste disposal container disposed in sealed relation to one compartment thereof;

FIG. 7 is a side elevation view of the pass receptacle as shown in FIG. 6;

FIG. 8 is a perspective view of an ambulatory type isolation enclosure member embodying this invention with the bed and patient fully enclosed and the oxygen supply and decontamination equipment shown in FIG. 1 not repeated for purposes of clarity;

FIG. 9 is a fragmentary end elevation view showing the support assembly for the isolation enclosure shown in FIG. 8; and

FIG. 10 is a fragmentary top plan view of the support assembly shown in FIG. 9.

Referring now to the drawings, the entire apparatus for isolating a bed-confined patient and sustaining the patient within a sealed enclosure will first be described in general with reference to FIG. 1 followed by a more detailed description of the various component parts which make up the complete assembly.

In general, the isolation apparatus illustrated in FIG. 1 comprises a sealed enclosure member **2** surrounding a patient **3** disposed in a prone position on the mattress and bedding of a hospital type bed **4** with the enclosure member being held in an essentially box-like configuration by a support assembly **5**. One and preferably a plurality of glove members **7** are provided in the side walls of the enclosure member for arm insertion into the enclosure to manipulate objects within the enclosure member from externally thereof. A sealed pass receptacle or box **8** is disposed at one end of the enclosure member from which a waste disposed container **9** is supported in a depending manner to extend and be supported by the floor surface externally of the enclosure member. Preferably, all or at least a substantial part of enclosure **2**