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⑤④ **Wheelchair for invalids and/or infirms with opening seat.**

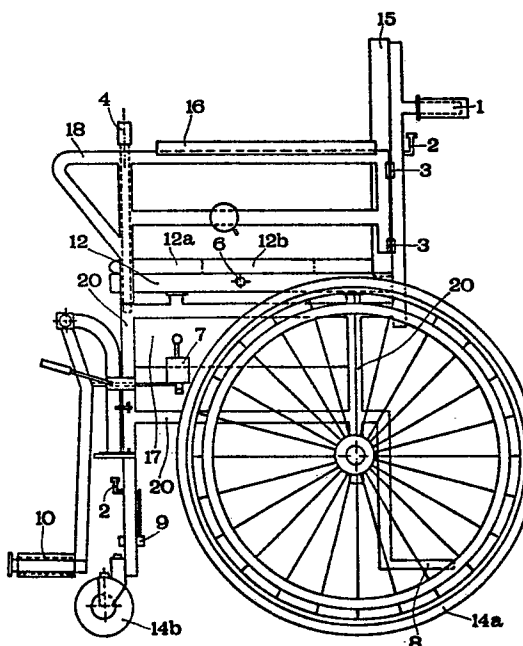
⑤⑦ Wheelchair for invalids and/or infirms and/or handi-capped, characterized in that it comprises a frame (20) in the shape of an inverted U, for placement over a w.c., and a seat that can be opened to allow discharge of the patient's waste materials, without a need for the patient to leave the wheelchair.

Footrests (10) are adjustable in height and inclination and are removable when the wheelchair is to be used in narrow places. In this case the patient may use emergency folding footrests (9).

Armrests (16) can be opened and removed and allow the patient to be transferred from a bed to the wheelchair and vice versa, with ease and independence, or with the assistance of one person at most.

Such wheelchair allows the infirm, invalid or handi-capped person to accomplish his or her basic functions in complete independence, or with a reduced outside assistance, with improvement of his or her physical and psychological wellbeing.

The wheelchair can be used in the private home, in nursing homes, hospitals, etc. with obvious advantages from a hygienic, aesthetic and psychological viewpoint.



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WHEELCHAIR FOR INVALIDS AND/OR INFIRMS WITH OPENING SEAT

It is well known that invalids, infirms and handicapped persons meet difficulties when they must satisfy their bodily wants, and that they in fact often need help from sanitary staff (one or two persons as the case may be) or
5 more generally from third parties.

This circumstance causes a condition of total dependence of the patient on outside persons, with consequent psychological diminution of the patient due to his or her being hindered in the most basic functions, on the one hand, and
10 causes a permanent engagement of outside persons with the invalid, either professionally or from affective motives, on the other hand.

Conventional wheelchairs for invalids do not overcome such problems because the transferral of the infirm from the
15 chair to the w.c. and vice versa always requires the assistance of at least one person to help the infirm.

Assistance by third persons is not dispensed with by use of known chairs which can be provided with a container for excreta under the seat, as such third persons are also

required in this case for emptying and cleaning the container, with even worse psychological implications for both the assistant and the assisted.

5 Moreover, the rigid armrests of known chairs cause considerable difficulties when transferring the infirm to the chair (say from a bed) and when removing the infirm from the chair.

The applicant is not aware at this moment of any wheelchair
10 similar to the subject matter of the invention.

This invention has as its object to provide a wheelchair for infirms, invalids and/or handicapped persons that allows the user to accomplish his or her physiological functions without assistance by third persons and without
15 a need to leave the wheelchair for such accomplishment.

This invention is concerned with a wheelchair for invalids and/or infirms and/or handicapped, the wheelchair being foldable or rigid, characterized in that it comprises:

- a) a seat adapted to be opened by removal of a portion of
20 the cushion covering it and opening two panels that are slidable upon ball rails, said panels being held together by a magnetic fastening and being driven for opening by two articulated handles for reduction of their transverse size, said panels not projecting transversely from said
25 wheelchair when opened, so as to allow a patient to use a w.c. without moving from the wheelchair;
- b) two armrests adapted to be opened by swiveling on hinges that are integral with the frame of the wheelchair, by



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means of a spring-and-knob device, and adapted to be removed completely, when necessary, to allow easy transferral of an invalid from or to the wheelchair to or from another chair or bed;

c) two main footrests adjustable in height and inclination, and adapted to be removed from the wheelchair, and two further emergency footrests, which are integral with the frame and are foldable, for use in narrow w.c. rooms and in lifts;

d) a frame in the shape of an inverted U, and provided with side and front screens for positioning the wheelchair on a w.c. and for preventing the invalid's faeces from dropping out.

A disclosure of a particular embodiment of the subject matter of the invention is given in the following, with reference to the attached drawings, with no restriction to the generality of the invention.

Fig. 1 is a plan view of the wheelchair subject of the invention.

Fig. 2 is a side view of the wheelchair according to Figure 1.

The wheelchair according to this invention comprises a frame 20, built from welded stainless steel tubes, or from aluminium alloy, in the shape of an inverted U, so that the wheelchair may be easily placed over a w.c., the latter being enclosed under the seat and between the two main wheels of the wheelchair.

The frame 20 is provided with main driving wheels 14a and with frontal support wheels 14b, the former being provided



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with a brake 7 and with a handrail for propulsion by the infirm.

5 On the frame 20 are mounted tracks 13, slidable on balls received in slots in the seat, whose panels 12 are adapted to be opened by means of handles or knobs 6, the latter being articulated in order to be capable of being actuated also in narrow places.

10 It should be noted that the seat panels 12 do not project laterally when fully opened; this allows for a considerable reduction in lateral dimension of the wheelchair and improves manoeuvrability in narrow places.

Panels 12 are kept closed by a magnetic fastening 11 to avoid clanking while the chair is moving.

15 A cushion 12a is placed on the seat 12, the cushion having an oval aperture, within which a cushion 12b of shape and size identical to panels 12 is received. Such cushion can be removed according to the patient's need.

20 The frame 20 is further provided with footrests 10, adjustable in height and inclination and completely removable in case of need (narrow places, lifts, etc.). In this case two further folding footrests 9 are available for use, serving as emergency footrests, which allow the infirm to be comfortable with no added bulk.

25 The armrests 16 can be opened by means of a knob 4 or a spring and by swiveling around hinges 3, which are provided on the chair back 15 and are completely removable in case of need.



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5 The infirm can thus be easily transferred from the wheelchair to a bed or other chair and vice versa. The infirm can thus effect such operation by himself or at most with the help of one person.

The back 15 of the wheelchair can be raised and reclined and is provided with a rear pocket for articles commonly used by the patient, particularly the removable cushion.

10 The wheelchair is provided with handles 1 for propulsion and with handlebars 18 for easy operation in reverse motion, with footboards 8 for rotation of the wheelchair and improved manoeuvrability and with safety belts fastened to hooks 2, to keep the trunk and legs of the infirm in place, for completely safe transport of the invalid in steep descents.

15 Screens 17 at the front and the sides of the seat work as guards to avoid scattering of excreta.

20 The wheelchair is built in such a way that it can be provided with all sorts of fittings, such as a calling bell, an electronic staff paging device in case of need or emergency, an electric driving motor supplied by an accumulator that can be charged during the night, etc. Moreover, the wheelchair can be height-adjustable, with mechanical or hydraulic means.

25 The wheelchair can be completely disassembled for repairs, to improve its serviceability. Moreover, its maintenance is minimal.

The new features of this invention, which make it different



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5 from known devices, reside in the special structure of the wheelchair, as it appears from the disclosure, which in most cases allows the patient (infirm, invalid or handicapped) to be completely independent from outside help for accomplishment of his or her basic functions.

The wheelchair improves the infirm's comfort and wellbeing and alleviates the task of the tending staff.

10 Such wheelchair can, therefore, be used by such patients everywhere: home, nursing homes, hospitals, etc., with apparent advantages from the hygienic, aesthetical and psychological viewpoints.



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CLAIMS:

1) A wheelchair for invalids and/or infirms and/or handicapped persons, the wheelchair being foldable or rigid,
5 characterized in that it comprises:

a) a seat adapted to be opened by removal of a portion
(12b) of the cushion (12a) and opening of two panels (12)
that are slidable upon ball rails, said panels being held
together by a magnetic fastening (11) and being driven for
10 opening by two articulated handles (6), for reduction of
their transverse size, said panels (12) not projecting
transversely from said wheelchair when opened, so as to
allow a patient to use a w.c. without moving from the wheel-
chair;

15 b) two armrests (16) adapted to be opened by swiveling on
hinges (3) that are integral with the frame of the wheel-
chair, by means of a spring-and-knob device (4), and
adapted to be removed completely, when necessary, to allow
easy transferral of an invalid from or to the wheelchair to
20 or from another chair or bed;

c) two main footrests (10) adjustable in height and incli-
nation, and adapted to be removed from the wheelchair, and
two further, emergency footrests (9), which are integral
with the frame and are foldable, for use in narrow w.c.
25 rooms and in lifts;

d) a frame (20) in the shape of an inverted U and provided
with side and front screens (17), for positioning the wheel-
chair on a w.c. and for preventing the invalid's faeces from
dropping out.

30 2) A wheelchair according to claim 1, characterized in



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that it further comprises two rear footboards (8) for lifting the wheelchair when necessary, and two front handlebars (18).

- 5 3) A wheelchair according to claim 1, characterized in that it is adjustable in height by mechanical or hydraulic means, to be fitted to different types of w.c.
- 4) A wheelchair according to claim 1, characterized in that it can be moved by an electric motor, supplied from an accumulator.
- 10 5) A wheelchair according to claim 1, characterized in that its frame is built from stainless steel tubes.
- 6) A wheelchair according to claim 1, characterized in that its metal portion is completely made of light alloy.
- 15 7) A wheelchair according to claim 1, characterized in that it is built in such a way as to be completely disassembled for maintenance or repair.



FIG. 1

