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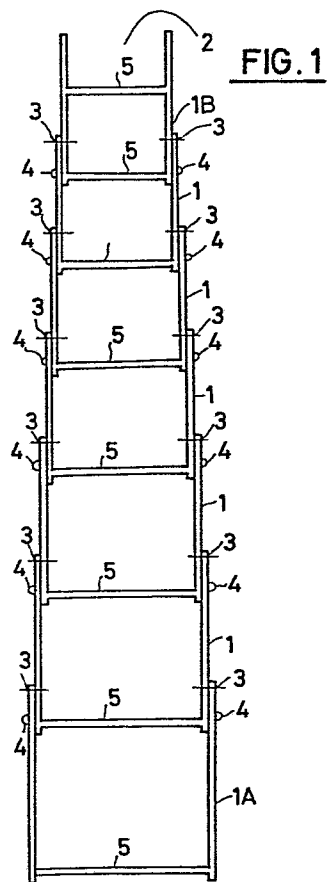
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⑤④ **Fold-up ladder.**

⑤⑦ Fold-up ladder, consisting of a multiplicity of "U"-shaped modules in the manner of a rectangular frame lacking of one of its smaller sides (2), each of which frames has its two arms hinged in (3) to both arms of the following smaller module, for which reason, in the folded position, every module (1) of the ladder is inscribed inside the frame of the foregoing one, except the largest (1A) corresponding to one end of the ladder, and by swinging them, the modules (1) become alternatively placed in such a position with respect the ones the others that the ends of the arms of the other group of modules, all them becoming placed in the same plane, out of which they are taken at the user's will by pulling the last smallest module (1B) upwards.

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"Fold-up ladder"

This invention refers to a new fold-up ladder.

5 The fold-up ladders presently known on the market consist of sections of several treads which are almost of the same length as that of the main strut of the portable ladder itself, to which it backs. These addition sections are linked by clamps to the couple of main struts between which
10 the treads are placed.

These clamps secure the struts of the main and secondary sections allowing the longitudinal extension of this secondary section along the main one to the allowed length and its securing required
15 by means of anchorage of one section in relation to the other. Another design consists in linking both sections, main and secondary, on their ends by a hinged joint. Nevertheless, this other solution is less reliable for the use of the ladder, as the securing lugged nut has to exert a great pressure in the
20 aligned position in order to avoid the collapsing of the end of the ladder once it has been subject to the load of the person stepping on the additional top section, the effect of which load is still
25 aggravated by the increase originated by the lever arm of the lengthening section itself. Therefore, this design is still less safer than the first one. Nevertheless, both designs show the drawback of the difficulty of handling of collapsible ladders,
30 as well as that of their weightness and that of requiring too much space when not in use, specially if they have to be carried from one working site to

another, as they usually do not fit into small cars.

To avoid this drawback, the subject of the present invention has been designed, thanks to which the ladder consists of as many different sections as treads compose it, being hinged one to that immediately following it upwards in dimensions, all of them being inscribed in the lowermost tread or section of dimensions greater than all the remaining components of the ladder. In this manner, when the ladder has been folded down, the same consists of a multiplicity of tread sections inscribed the ones inside the others, the whole constituting an assembly easy to taking on shoulders by passing the arm through the central orifice in the same manner as a roll of rope is borne.

On the other hand, this design also allows it to place the folded-down ladder inside the luggage compartment of passenger cars. In order to allow a better understanding, a practical embodiment is described beneath, as an example only, with no limitative character, of the new fold-up ladder, with reference to the annexed drawings.

Figure 1 shows diagrammatically a ladder built in accordance with the invention, unfolded so that every section is aligned with respect to the foregoing one, being fixed through the corresponding retractable securing fasteners, whilst figure 2 shows the same ladder, after having capsized its sections and folded them down completely, being carried by the user on his shoulder.

The invention consists in the ladder

being made up of a multiplicity of "U"-shaped modules, showing the shape of a rectangular frame lacking of one of the smaller sides (2), each of which frames has its two arms hinged in (3) to both arms of the following smaller module, for which reason, in the folded position, every module (1) of the ladder is inscribed inside the frame of the foregoing one, except the largest (1A) corresponding to one end of the ladder, and by swinging them, the modules (1) become alternatively placed in such a position with respect the ones the others that the ends of the arms of one group of modules face the ends of the arms of the other group of modules, all them becoming placed in the same plane, out of which they are taken at the user's will by pulling the last smallest module (1B) upwards, so that the assembly of modules (2) advances up to a certain limit, after which every module (1) is swung around itself for 180° with reference to the former, so that all the modules (1) become aligned to each other, by keying elements (4) arranged on each module so that in the aligned position of the greater lateral struts, the keying elements of one of the individual frames introduce in the orifices arranged in the lateral struts of the aligned opposite module, the treads of the latter therefore forming the own bases (5) of every "U"-shaped module.

It is understood that in the present case, every detail of construction and finish, that shall not alter, change or modify the essentially of the invention, shall be considered as variants.

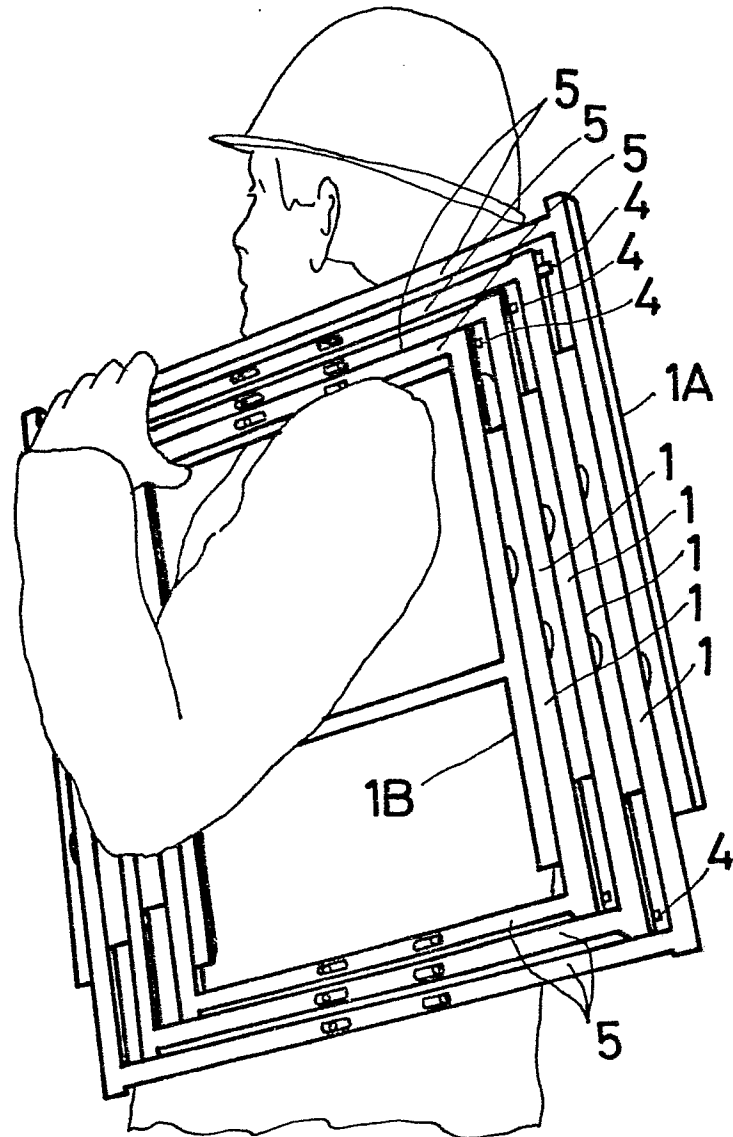
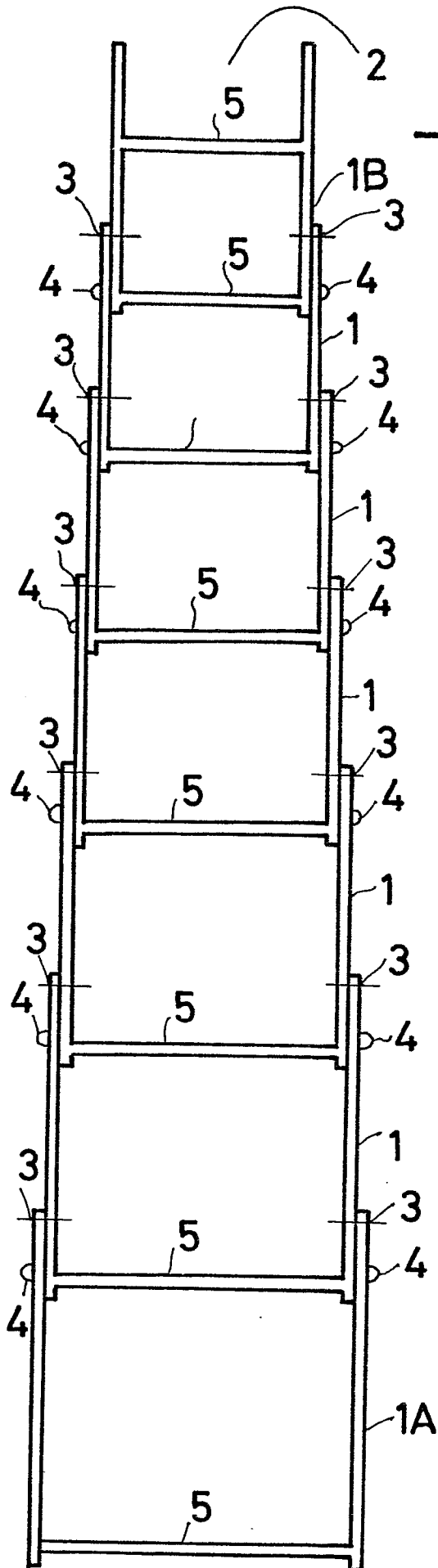
CLAIM.

New fold-up ladder, characterized by .
consisting of a multiplicity of "U"-shaped modules
in the manner of a rectangular frame lacking of one
5 of its smaller sides (2), each of which frames has
its two arms hinged in (3) to both arms of the follo-
wing smaller module, for which reason, in the
folded position, every module (1) of the ladder is
inscribed inside the frame of the foregoing one,
10 except the largest (1A) corresponding to one end
of the ladder, and by swinging them, the modules (1)
become alternatively placed in such a position with
respect the ones the others that the ends of the arms
of one group of modules face the ends of the arms
15 of the other group of modules, all them becoming
placed in the same plane, out of which they are
taken at the user's will by pulling the last small-
est module (1B) upwards, so that the assembly of
modules (1) advances up to a certain limit after
20 which every module is swung around itself for 180°
with reference to the former, so that all the modules
become aligned to each other, by keying elements (4)
arranged on each module so that in the aligned posi-
tion of the greater lateral struts, the keying
25 elements of one of the individual frames introduce
in the orifices arranged in the lateral struts of
the aligned opposed module, the treads of the ladder
therefore forming the own bases (5) of every "U"-
shaped module.



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FIG. 1FIG. 2