

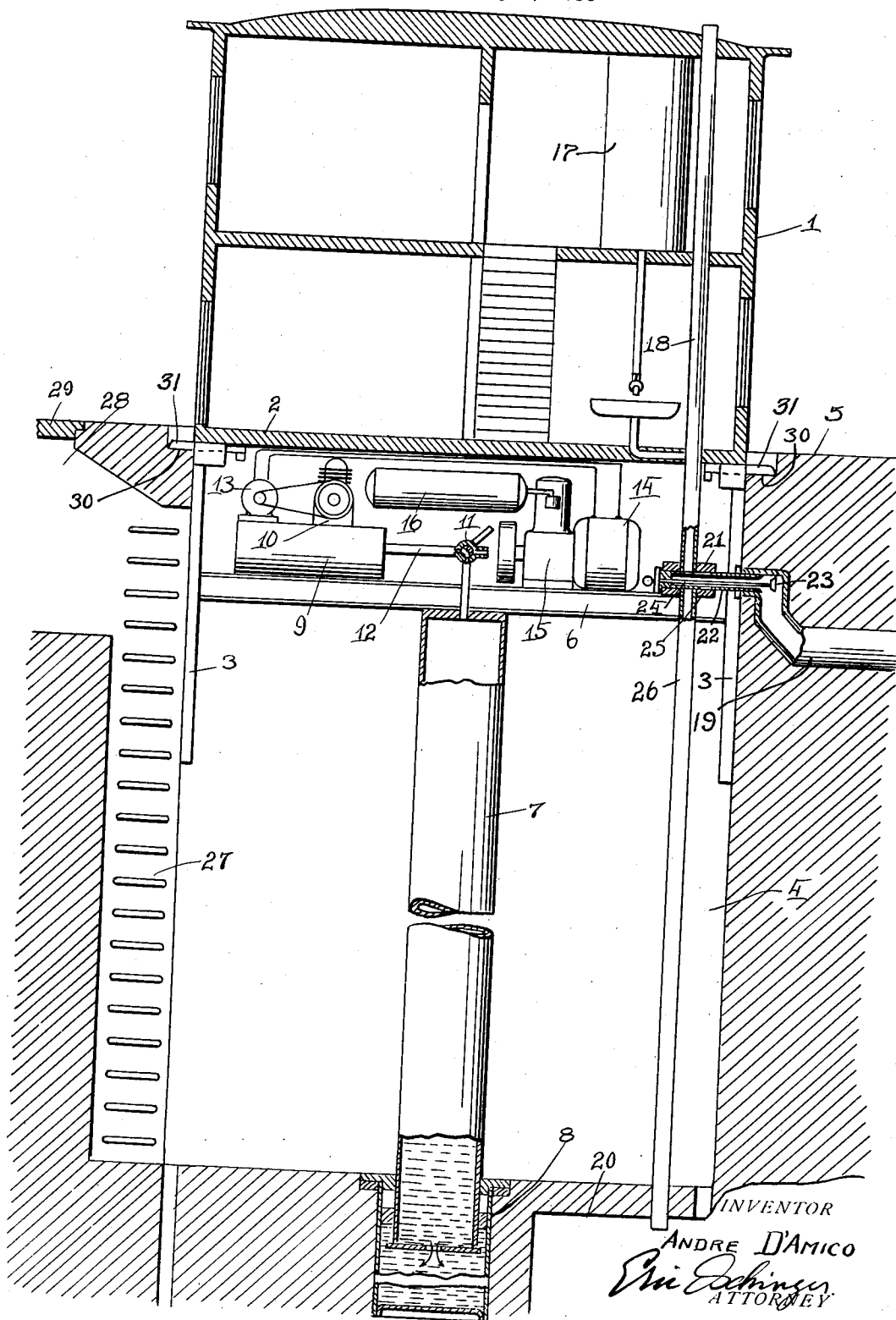
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A. D'AMICO

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BUILDING STRUCTURE WITH SELF-CONTAINED RAISING AND LOWERING MECHANISM

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BUILDING STRUCTURE WITH SELF-CONTAINED RAISING AND LOWERING MECHANISM

Andre D'Amico, Rochester, N. Y.

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1 Claim. (Cl. 20—1)

This invention relates to disappearing structures and has for its principal object to provide a novel movable structure equipped with all necessities for use as a dwelling which may be raised and lowered at will to be concealed within the ground or elevated above the ground in order to protect the structure against floods, dust storms, cyclones etc., and against destruction from the air by bombing or other means during war times.

This and other objects and attendant advantages will become more readily apparent from the detailed description of the invention which follows, reference being had to the accompanying drawing in which the figure shows a vertical section of the novel structure forming the subject matter of the invention.

As illustrated in this figure, the structure in the form of a dwelling 1 is constructed on a suitable ground floor 2 from which depend the guide posts 3, 3. These guide posts project into the vertical pit 4 and guide the vertical movement of the dwelling structure as well as hold the structure braced in an erect position when it is raised to and above the ground level 5.

Between the guide posts 3 and below the ground floor 2 is provided the supporting platform 6. This platform is spaced from the ground floor so as to form an operating room for the apparatus which is necessary for the movement and maintenance of the structure. Movement of the structure is effected by a hydraulic lift which comprises the hollow piston 7 which is mounted to move in and out of the cylinder 8. The latter extends into the ground from the bottom of the pit 4 so that the piston is free to move up and down in the pit. The closed top of the piston is connected with the air storage tank 9 which is filled with compressed air by the air compressor 10. A suitable two-way valve 11 is provided in the air line 12 which connects the tank 9 with the inside of the piston 7 so that air under pressure from the tank may be admitted to raise the piston in its cylinder or allowed to escape from the piston to cause it to recede into the cylinder. A suitable oil or other liquid is contained in the hollow piston and the cylinder and the compressed air admitted and exhausted from the hollow cylinder operates to transfer the liquid from the piston into the cylinder and back again in the operation of the piston.

Electric power for the operation of the compressor 10 by means of the electric motor 13 is generated by the generator 14 which in turn is

driven by an internal combustion motor 15 operated from fuel stored in the fuel storage tank 16. The electric power generated by the generator 14 is also used for heating and lighting the interior of the building. A suitable water storage tank 17 is located within the building to provide an ample water supply at uniform pressure in the raised or lowered position of the building. This water supply tank is adapted to be filled in any desired manner.

In order to provide proper sanitation for the building in its elevated and lowered positions, its soil pipe 18 may be connected with both a sewer pipe 19 and a cess pool 20. For this purpose the soil pipe is provided with a valve structure made up of a valve housing 21, a sliding pipe 22 movable in this housing and a valve 23 carried on a valve rod 24 for opening and closing the open end of the sliding pipe as well as moving the sliding pipe. The open end of the sliding pipe is adapted to telescope into the end of the sewer pipe with the building elevated into the position illustrated in the figure to thus connect the soil pipe with the sewer pipe 19. Before the building is raised into a higher position or lowered into the pit, the sliding pipe is pulled out of engagement with the sewer pipe by pulling the handle of the valve rod 24 to close the end of the sliding pipe by means of the valve 23. In so doing the opening 25 in the sliding pipe 22 is brought in register with an extension 26 of the soil pipe 18 to thus connect the soil pipe with the cess pool 20.

In order to provide for ingress and egress into the building while it is located within the pit either wholly or partially, a suitable stair case 27 is located adjacent to the pit 4, and a man-hole 28 at a distance to one side of the building and normally closed by a cover 29 serves as the inlet and outlet for this emergency staircase.

For the purpose of holding the structure in a natural elevation in which the ground floor thereof is substantially in line with the ground level which surrounds it, suitable horizontally movable bolts 31 are provided which are adapted to engage the ledges 30 provided in the sides of the pit near the top thereof. When the structure has been elevated so that the bolts 31 are in line with the ledges 30, or slightly above them, they are moved outwardly from the bottom of the structure so as to provide for the entire support of the structure by a number of these bolts. The hydraulic mechanism is then relieved from the support and may be held inactive until it is desired to either raise and support the struc-

ture above the ground level or have it descend into the pit. In the latter case the bolts, of course, must be first withdrawn to permit the descent of the structure.

5 I claim:

10 In an elevatable dwelling vertically movable into and out of a pit substantially the size of said dwelling, a cellar compartment formed on the lower part of said dwelling and isolated from the remainder of said dwelling thereabove, hydraulic raising and lowering means for said dwelling comprising actuating and control means located in said compartment, a soil pipe positioned substantially vertically in said dwelling
15 and extending through said compartment, a first

sewage receiving means positioned in the side of said pit opposite the position of said compartment when said dwelling is in the elevated position, a second sewage receiving means projecting upwardly from the bottom of said pit substantially in the line of said soil pipe, and two-way valve means mounted in said compartment detachably connected to said first sewage receiving means and connected with said second sewage receiving means and arranged to selectively connect said soil pipe with said first or with said second sewage connecting means, whereby sanitation is provided for said dwelling in both elevated and lowered positions.

ANDRE D'AMICO.