

PATENT NO. 327961
LIFT FOR RESIDENTIAL USE UP TO 2ND FLOOR AND METHOD FOR
RUNNING THE SAME

APPLICATION NO. 11/KOL/2011

APPLICANT

Directorate of Youth Services,
Government of West Bengal

ABSTRACT

A lift for residential use for a maximum height of 20-25 feet consists of a shaft (1) having a threaded portion to match with the threaded portion of the nut (2). A pulley (4) integral with the shaft (1) is connected to another pulley (6) by chain (7). The pulley (6) mounted on the shaft (8) of the reversible motor (9) receives the drive and rotates the nut (2). The rotation of the shaft along with nut is arrested by the arms (23) getting locked in the angle (25) resulting the shaft (1) moving upwards or downwards according to the rotation of the reversible motor (9) when the movement of the cage is guided by the ball bearings (33) moving over the angle (25). At the bottommost position, around 40 ft. length of the shaft is accommodated inside a tube (10) which is 45 ft in length and is inside the cement slab and the soil. The inside dimension of the tube (10) is such that it acts as a guide bush for the shaft (1) and at the maximum top position of the cage at least 15 ft. of the shaft is inside the tube (10). The cage (18) is made of channels and angles with plate (24) serving as the platform of the cage (18) and is supported by the outside box type construction around the cage with angles (25) and (31). The angle (25) is grouted inside the cement slab (13).

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CLAIM 1

Lift (L) for residential use for a minimum height 20-25 ft comprising a shaft (1) for the movement of the cage (18); a cage (18) for providing people room to stand; a nut (2) with a pulley (4) integral with it, the said nut having a thread (11) inside matching the shaft (1); a bearing (3) for accommodating the bottom part of the nut (2) having bigger inside diameter; a cap type thick plate (27) with recess bore for holding the bearing (3) on the top of a cement slab; a plurality of clamps (14, 16) and bolts (17a, 17b) for clamping the bearing rigidly in its position; a pulley (6) connected to the pulley (4) by a chain (7); a motor (9) driving the pulley (6) which in turn drives the pulley (4); a plurality of angles (25, 31) fabricated to form a box type structure enclosing the cage (18); a plurality of angles (26) fabricated to form closed box type structure forming a cage (18); a tube (10) placed beneath the ground level to a required depth for accommodating the shaft (1) and to act as a guide when the cage comes down; 8 a plurality of arms (23) having its one end in the angle (25) and the other end welded to a ring (28) disposed beneath the platform (24) for arresting the rotation of the nut and shaft together; characterized in that, a plurality of nuts (22) locking the shaft (1) from the top and bottom of the plate (21) and a plurality of arms (23) having one of its end welded to a ring (28) and the other ends of each said arm being attached to a ball bearing (33) arresting inside the angle (25) is disposed beneath the platform (24) for arresting the rotation of the nut (2) and shaft (1) together and for allowing the shaft to move upwards or downwards according to the rotation of reversible type motor (9) when the traversing of the lift to each floor upwards or downwards is controlled by inductive proximity switch when the motor is stopped and break release is deactivated.