A frame supporting a number of parallel extending tubes is used to support clothes and other laundry for drying. The frame is supported by four cords connected to its corners which extend downwardly from the corners of a drive housing which may be attached to the ceiling or some other high horizontal support. The housing contains a pair of parallel extending spaced shafts rotatably supported in end bearings. One of the shafts may be rotated in reversible directions by a remotely controlled motor connected to an end of that shaft. The motor-driven shaft supports two pairs of pulleys, one on each end. One pulley at each end has the ends of two of the support cords secured to it so as the shaft is rotated by the motor the cords are wound and unwound from the pulleys. The other two pulleys have the other two cords wound about them which cords extend horizontally over a pair of pulleys on the opposite, unmotorized shaft. All four cords extend downwardly through holes in the bottom of the shaft box and are used to lower the grid of tubes for loading and unloading laundry or to raise the grid so that the laundry will hang downwardly from the tubes.
FIG. 2

FIG. 3
VERTICALLY ADJUSTABLE SUPPORT DEVICE FOR LAUNDRY

FIELD OF THE INVENTION

This invention relates to devices for hanging laundry for drying and more particularly to a motorized system for adjusting the height of a laundry supporting grid with respect to a ceiling or the like so that the grid may be lowered for loading and unloading laundry and may be elevated to allow the laundry to hang vertically.

BACKGROUND OF THE INVENTION

A number of devices have been proposed for suspending washed laundry for drying. Most are supported on floor mounted frames which are bulky and none of these devices will support laundry such as sheets or clothes which are very long or wide.

SUMMARY OF THE INVENTION

The present invention is accordingly directed toward a clothes support device which has minimal impact on the floor above which it is supported and which is capable of supporting wet laundry of a large size for drying. The present invention takes the form of a grid of spaced parallel tubes on which wet laundry items can be hung for drying. The grid is supported by cords or the like extending downwardly from a drive housing which may be supported on a ceiling of a room or some other form of relatively high, generally horizontal, support. The drive housing preferably contains a pair of spaced rotatably supported shafts, one of which may be driven by a remotely controlled, reversible, electric motor.

In a preferred embodiment of the invention, which will subsequently be disclosed in detail, the frame is hung from the drive housing by four cords, each of which has one end fixed near one of the four corners of the grid. The upper ends of the cords are connected to pulleys on the motorized shafts within the drive housing. Two of the cords extend directly downwardly from their pulleys through holes in the bottom cover of the drive housing and are connected to the frame near two of its corners, and the other two cords first extend horizontally over pulleys supported on the motorized shaft and then extend downwardly through holes in the cover of the drive housing, in spaced relationship to the first two cords, and are connected to the other two corners of the frame.

In use, the motor may be controlled to extend the cords to lower the frame to a position where it is convenient to manually load the wet laundry items on the rollers. The motor may then be powered in the reverse direction to lift the frame up toward the drive housing, so that the clothing items extend downwardly from the frame. After completion of drying the grid may then be again lowered through energization of the drive motor and the dry clothing items removed. The grid can then be elevated again into close proximity to the drive housing so that it does not interfere with normal use of the area above which it is suspended.

BRIEF DESCRIPTION OF THE DRAWINGS

Other objects, applications, and advantages of the present invention will be made apparent by the following detailed description of a preferred embodiment of the invention. The description makes reference to the accompanying drawings in which:

FIG. 1 is an isometric view of a clothesline device formed in accordance with the present invention illustrating a clothing support grid supported beneath a drive housing fixed to a ceiling or like elevated horizontal surface;

FIG. 2 is a plan view from the top of the drive housing employed with the preferred embodiment of the present invention; and

FIG. 3 is a longitudinal sectional view through the drive housing of FIG. 2.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT OF THE INVENTION

Referring to FIG. 1, an elevated horizontal surface S, which may be the ceiling of an indoor room or some other form of elevated support, is used to suspend the clothesline support device of the present invention. Attached to the lower surface S is a drive housing C which may take the form of a rectangular box preferably formed of sheet aluminum. The box C has a lower cover 1 which is readily removable and is attached by screws or the like (not shown).

The cover 1 has four slots 2 adjacent to its four corners for the passage of four cords 3 and 3'. The lower ends of the cords 3 and 3' are connected near the four corners of a rectangular frame 4 which is part of a laundry grid G. The frame 4 supports a number of parallel spaced tubes 5 which extend the full length of the frame and are adapted to support items of washed laundry including large area pieces such as bed sheets and the like.

The interior of the drive housing C is illustrated in FIGS. 2 and 3. The drive housing supports a pair of spaced shafts 6 and 7 which are respectively disposed adjacent to the two long sides of the housing C. The shaft 6 is freely rotatably supported in a pair of end bearings 8 affixed to the opposed side walls of the housing. The shaft 7 has one end supported in an end bearing 8 and the other end connected to the shaft of a remotely controlled, reversible, electric motor M, which is supported on a side wall of the box C. Near the bearing 8, the shaft 7 carries a pair of pulleys 9 and 9' and near the motor M the shaft 7 carries another pair of pulleys 10 and 10'. The freely rotating shaft 6 similarly carries a single pulley 11 adjacent to one end of bearing 8 and a second pulley 12 adjacent to the other end bearing 8. The pulley 11 is aligned with the pulley 9' on the motorized shaft and the pulley 12 on the freely rotatable shaft is aligned with the pulley 10' on the motorized shaft 7.

The upper ends of the two cords 3 are affixed to the pulleys 9 and 10 and the upper ends of the two cords 3' are affixed to the two pulleys 9' and 10'. As can best be seen in FIG. 3, the two cords 3 pass through holes 2 in the cover 1 directly below the pulleys 9 and 10 while the two cords 3' extend generally horizontally across the width of the drive housing C and over the tops of the two pulleys 11 and 12 on the freely rotatable shaft. Thus, when the motor is rotated in a first direction, indicated by the letter F on the pulley 10 in FIG. 3, the four cords are all extended and the weight of the clothesline support frame G pulls the frame and its cord ends downwardly. When the motor M is driven in the reverse direction, all four cords 3-3' and 3'-3' are wound up on the four pulleys 9, 9', 10, 10' and the frame G is raised toward the drive housing C.

The motor M is preferably radio remote controlled and has an antenna A for the receipt of controlling signals.

When not in use, the frame G is preferably raised by retraction of the cords 3 and 3' until the frame is adjacent to
the drive housing C so that it is unobtrusive and does not in any way interfere with activity beneath the drive housing.

[0016] When the unit is to be used to support washed clothing for drying, the motor M is first actuated so as to extend the cords and the frame G is lowered to a convenient height for loading with wet laundry items. The loading is preformed manually and after loading the motor M is driven in the reverse direction so as to raise the frame G to a sufficient height that the largest of the laundry items which have been loaded on the frame G is above the floor by a sufficient distance to allow any desirable activity on the floor beneath the drive housing C. After the wash has dried, the motor is again powered in the reverse direction to lower the frame for unloading.

[0017] While the present invention has been illustrated by description of the preferred embodiment, it should be understood that a variety of variations of the preferred structure would also fall within the scope of the invention as defined by the following claims. Having thus described my invention, I claim:

1. A vertically adjustable support device for drying wet laundry, comprising:
   a grid of elongated tubes on which wet laundry items can be hung for drying and a drive for raising and lowering the grid, the drive adapted to be supported below an elevated support and comprising a rotatably supported shaft and a motor for rotating the shaft, and a plurality of cords having one end connected to the shaft and the other end connected to the grid, so that rotation of the shaft by the motor extends or retracts the cords and thereby lowers or elevates the grid.

2. The vertically adjustable support device for laundry of claim 1 wherein the grid is generally rectangular and the cords are four in number and connect near the corners of the grids at one end and to the motorized shaft at their opposite end.

3. The vertically adjustable support device for drying laundry of claim 2 further comprising a second rotatably supported shaft carrying a pair of pulleys and wherein two of the cords connected to the motorized shaft extend over the pulleys on the second shaft so as to space said two of the cords relative to the other two cords.

4. The vertically adjustable support device for laundry of claim 1 wherein the motor is reversible and remotely controllable.

5. The vertically adjustable support device for laundry of claim 4 wherein the motor is radio controlled.

6. The vertically adjustable support device for laundry of claim 3 wherein the motorized shaft and the second rotatably supported shaft are contained within a rectangular housing adapted to be supported beneath the ceiling of a room.

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