MOVABLE BENCHES CAN ADD GROWING SPACE TO YOUR GREENHOUSE

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An increase of 10 to 25 percent in growing space can be achieved by changing your fixed benches to ones that move. The concept used in many efficient European greenhouses is now spreading through the U.S. and Canada. Systems are available from several companies but many growers are buinding their own.

The basic concept of the movable bench system is to convert all except one aisle to growing space. The bench tops are supported on pipe rollers and allowed to move sideways 18 to 24 inches, the width needed for a work aisle. When you need to get to a particular bench, other benches in the house are pushed together leaving the aisle at the bench. Only one side of the bench can be worked on at a time. Because the benches move, connections for water, heat and electrical systems that are attached to the bench are made flexible. Benches as long as 200 feet can be moved easily by turning one of the support rollers with a crank at the end of the bench.

An example of the potential gain in growing space is shown in figure 1. Consider a pot plant grower with a greenhouse having dimensions of 40' wide by 100' long. The present layout with fixed benches gives 2820 sq. ft. of bench growing space and 1180 sq. ft. of aisle for a 70 percent usable space. By converting to a movable bench system and allowing only one 2 foot aisle, the grower gains 752 sq. ft. of growing space. The usable space is now 89 percent of the total floor area. Energy inputs to provide the proper environment control remain the same.

There are many variations in bench design. The bench can be fabricated of wood or metal with either a solid or mesh bottom. Several manufacturers make an aluminum extrusion that adapts to an expanded metal bottom. A molded polyethylene grow tray is also available. The support unit can be made from pipe, tubing or concrete blocks. The key to a smooth working unit is to have metal surfaces for the pipe rollers to move on.

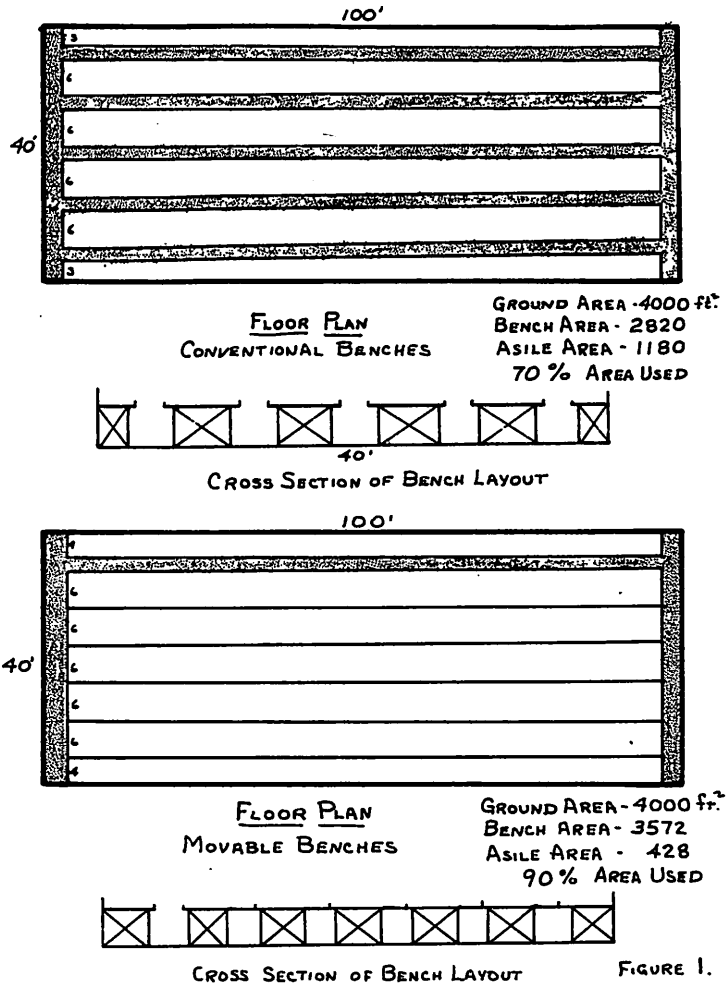

FIGURE 1.

Plans for 5 and 6 foot wide benches are shown in figures 2 and 3. To plan a system for your greenhouse, lay out a cross-section of the existing benches on a piece of graph paper. Note the size and location of existing side wall benches if any. These can usually remain in place. Locate one aisle next to a side bench. Generally an 18 inch aisle can be used with 5 ft wide benches and a 24 inch aisle with 6 foot benches. Adjust the number of bench tops and their width to fill the remaining width of the greenhouse.

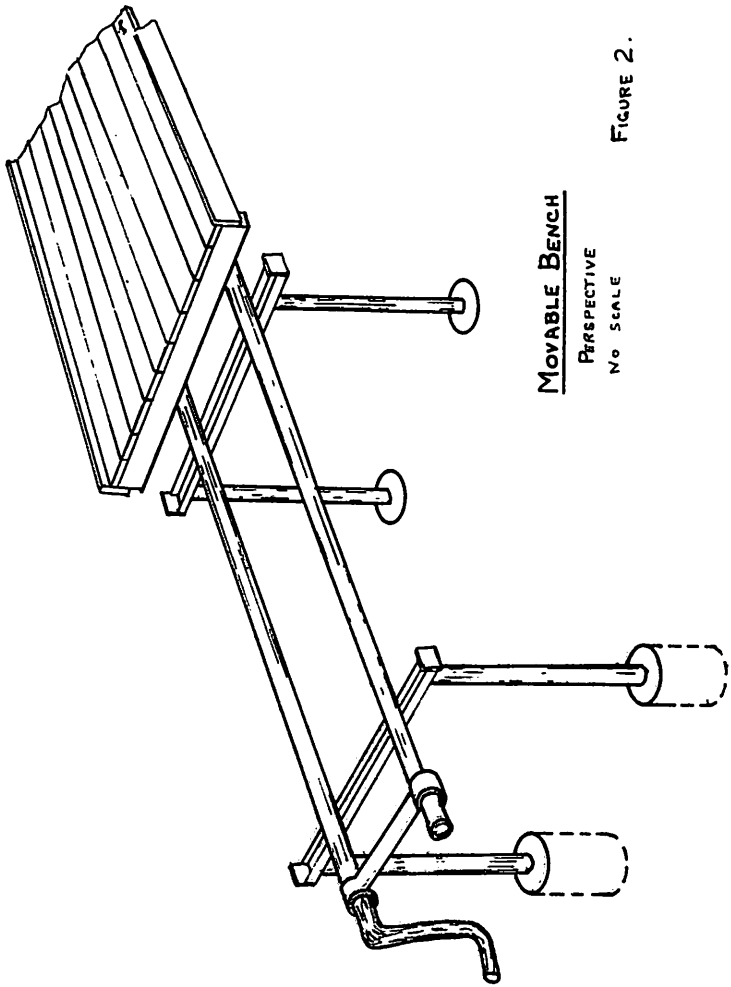

FIGURE 2.

MOVABLE BENCH

PERSPECTIVE

NO SCALE

Movable benches adapt easiest to new greenhouse construction but can even be fitted to an older greenhouse. Where posts are in the way, a section of the bench bottom is removed to allow it to move. Support may be needed around the opening.

One disadvantage to any bench system with long aisles is the great amount of walking needed to fill and unload the benches. Development of the narrow belt conveyor that extends for 100 feet or more between the benches but yet folds into a

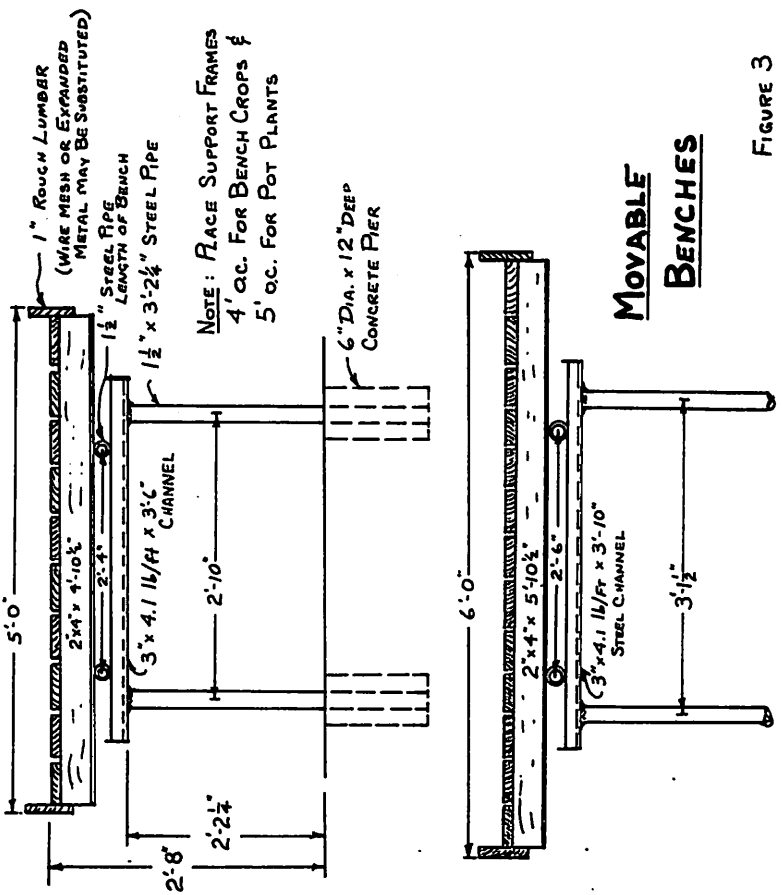

Figure 3

compact unit for transport or storage has reduced plant handling labor especially with pot plants. These are available from equipment suppliers.

With the rapid rise in energy costs as well as new construction costs, the movable bench system allows the grower to increase growing space without adding greenhouses. Finally the cost of this system is about the same as conventional benches.