

Filed July 25, 1963

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FIG. 9

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Filed July 25, 1963

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FIG. 3

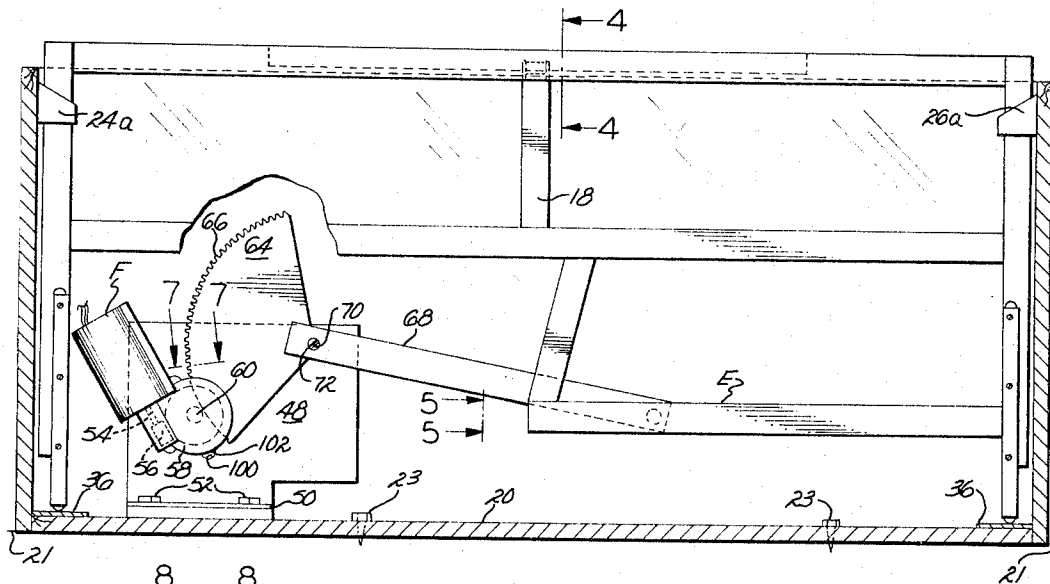
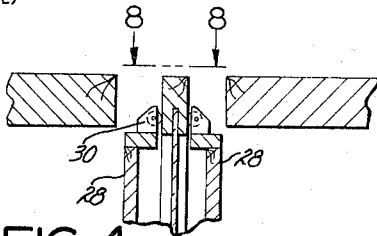


FIG. 4

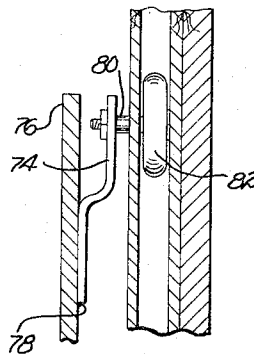


FIG. 6

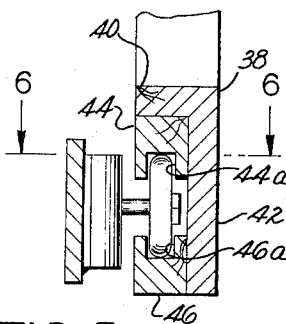


FIG. 5

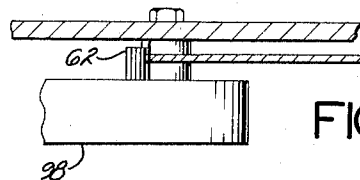
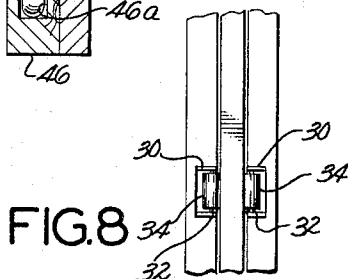


FIG. 7



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RESTAURANT BOOTH DIVIDER AND ACTUATING MECHANISM THEREFOR

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Filed July 25, 1963, Ser. No. 297,588

6 Claims. (Cl. 52-173)

The present invention relates generally to restaurant equipment, and more particularly to a movable booth divider which can be moved to assume a dividing or a non-dividing position.

It is common restaurant practice to position a number of booths in a central location, normally arranged in pairs, with the tables and seats or benches associated therewith being in longitudinal alignment therewith, which booths are adapted to be used singly by small parties, or jointly by a large party. When the two booths are in current use by small parties, it is desirable from a standpoint of privacy that the two booths be separated. However, it is not desirable for the divider to remain in a fixed, dividing position at all times, for it prevents utilization of two booths by a larger group of diners. The term "seats" as used herein should be construed to include chairs and stools, as well as benches.

When groups or parties come into a restaurant which employs booths, it is desirable that the dividers between two booths be quickly adjusted in order that the guests may be accommodate with a minimum of delay or confusion. A major object of the present invention is to provide a transversely positioned divider between adjoining ends of two longitudinally aligned restaurant booths which is vertically movable, controlled by means located at a convenient position, and adapted to be raised from a first concealed position to a second position wherein the upper edge of the divider is at a substantial elevation above the upper surface of the tables in each booth.

Another object of the invention is to provide a divider and actuating mechanism therefor of extremely simple mechanical structure, may be easily and quickly installed in the existing restaurant structures, or incorporated in new booths that may be built therein, and one which, due to its simplicity of structure and operation, requires a minimum of maintenance attention.

A still further object of the invention is to provide a number of booths in a restaurant which are arranged in pairs with the movable dividers of the present invention located therebetween in the manner described, and with control of the movement of the dividers between the first and second positions being controllable from a position remote from the booth structures.

A further object of the invention is to provide vertically movable dividers that are moved upwardly and downwardly by power means which is carried out so smoothly that there is no possibility that the dividers will jam or stick without the possibility of personal injury during raising or lowering thereof, as well as effecting such change in far less time than possible heretofore.

Yet another object of the invention is to provide a divider that normally may remain in a dividing position to enlarge a booth to accommodate the larger than normal group of patrons.

These and other objects and advantages of the present invention will become apparent from the following description of a preferred form thereof, and from the accompanying drawings illustrating that form, in which:

FIGURE 1 is a perspective view of two booths that include tables and seats which are in longitudinal alignment, with one of the vertically movable dividers being disposed between the two booths, and which is actuable to move from a first concealed position and the dividing position shown in this figure upon manipulation of switches;

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FIGURE 2 is a side elevational view of the vertically movable divider shown in FIGURE 1, taken on the line 2-2 of that figure, shown after it has been raised to an elevated position relative to the table top shown in phantom line;

FIGURE 3 is also a side elevational view of the divider shown in FIGURE 1, but shown after it has been lowered to a position where the upper edge thereof is substantially flush with the tops of the two tables in the booths;

FIGURE 4 is a fragmentary, vertical cross-sectional view of the divider taken on the line 4-4 of FIGURE 3;

FIGURE 5 is a vertical cross-sectional view of a portion of the device taken on the line 5-5 of FIGURE 3;

FIGURE 6 is a horizontal cross-sectional view of the divider taken on the line 6-6 of FIGURE 5;

FIGURE 7 is a fragmentary, horizontal cross-sectional view of the divider taken on the line 7-7 of FIGURE 3;

FIGURE 8 is a fragmentary top plan view of a portion of the device taken on the line 8-8 of FIGURE 4; and

FIGURE 9 is a diagrammatic view of the electric circuit used in selectively actuating the movement of any one of a number of movable dividers.

With continuing reference to the drawings for the general arrangement of the invention, it will be seen that an elongate divider A is provided that is located between the adjoining ends of two tables B. The two tables B each have a pair of seats C situated on each side thereof, with the seats and tables being in longitudinal alignment.

In the average restaurant a number of booths are normally arranged in pairs as shown in FIGURE 1, with the tables B and seats C of each booth being separated by a divider A when it is moved from a first concealed position to a second elevated position as shown in the drawings. Each of the dividers A, as may best be seen in FIGURES 2 and 3, is formed from two elongate, vertically spaced side members 10 and 12 that are connected on their ends by end pieces 14 and 16. A vertically positioned rigid member 18 extends between the cross members 10 and 12 at a desired intermediate position between the end pieces 14 and 16, as shown in FIGURES 1-3 inclusive. The end pieces 14 and 16 and intermediately positioned member 18 are preferably of rectangular transverse cross section. Each of the dividers A (FIGURE 1) is situated in a transversely extending space D that is defined between the adjoining ends of the seats C and tables B. An elongate base 20 is provided which is substantially the same width as space D and rests on the floor surface 22.

Each of the end pieces 14 and 16 includes an extension 14a and 16a that projects below the lower side piece 12. Elongate stops 14b and 16b are mounted on each extension 14a and 16a, the purpose of which will be explained hereinafter. Two uprights 24 and 26 project upwardly from the ends of base 20. U-shaped guides 24a and 26a are mounted on the upper interior end portions of uprights 24 and 26, and these guides slidably engage opposite sides of end pieces 14 and 16, as well as the extensions 14a and 16a when the divider A is moved from the first position shown in FIGURE 3 to the second dividing position shown in FIGURE 2.

The guides 24a and 26a, as best seen in FIGURE 2, are located below the upper surface of the tables B and are substantially concealed from those seated on the seats C. Two laterally separated rigid members 28 project upwardly from the base 20 in longitudinal alignment with the rigid member 18. Each member 18 has a U-shaped frame 30 affixed to the upper end thereof, and each frame supports a pin 32 on which a roller 34 is rotatably

supported. Rollers 34 are at all times in pressure contact with the exterior vertical side surfaces of member 18. Due to their support from the members 28, the rollers 34 serve to guide the central portion of the divider A and prevent any appreciable lateral movement thereof as the divider is moved between the second position shown in FIGURE 2 and the first position shown in FIGURE 1.

The stops 14b and 16b, as may best be seen in FIGURE 3, rest on the upper surfaces of two plates 36 that are mounted on the upper end surfaces of the base 20. When the stops 14b and 16b rest on the plates 36 they place the upper edge surface of the divider A at an elevation where it is substantially flush with the upper surfaces of the tables B. The upward movement of the divider A beyond the position shown in FIGURES 1 and 2 is prevented by the upper ends of the stops 14b and 16b when the lower edges of the guides 24a and 26a come into contact therewith.

Each of the dividers A (FIGURE 2) has a frame E projecting downwardly therefrom, as shown in FIGURE 3. Each frame E includes a horizontal, inverted rigid member 38 of an inverted L-shaped cross section defined by a horizontally positioned leg 40 and a vertically situated leg 42. The lower surface of the first leg 40 rigidly supports a track 44. A second track 46 is affixed to the lower portion of the second leg 42, as may best be seen in FIGURE 2. Tracks 44 and 46 have vertically aligned, longitudinally extending grooves 44a and 46a, respectively, formed therein that are in vertical spaced relationship but lie in substantially the same vertical plane.

A rigid plate 48 is provided that is vertically disposed (FIGURE 3) and has a horizontal flange 50 extending outwardly from the lower portion thereof, with the flange being secured to the base 20 by bolts 52 or other conventional fastening means. A motor F is secured to the plate 48 by conventional fastening means (not shown), which has a drive shaft 54 that supports a worm gear 56.

Gear 56 meshes with a circular gear 58 that is rotatably supported on a shaft 60 which projects outwardly from the plate 48. The gear 58 has a pinion gear 62 (FIGURE 7) rigidly affixed thereto, and this gear and pinion is concurrently rotated by the worm gear 56 when the motor F is actuated. Pinion 62 meshes with an arcuate segment 64 having teeth 66 on the circumferential edge thereof. The arcuate segment 64 is rigidly secured to an end portion of an elongate arm 68, and a bore 70 extends transversely therethrough, as shown in FIGURE 3. The bore 70 pivotally supports the arm 68 and segment 64 on a horizontal pin 72 that is rigidly affixed to the upper portion of the plate 48 by conventional means (not shown).

A bracket 74 is affixed to an end portion 76 of arm 68. The bracket 74 may be affixed to the arm 68 by welding or the like at the position 78. A stub shaft 80 is transversely mounted on bracket 74 in a direction normal thereto and the stub shaft rotatably supports a roller 82 that is of such diameter and width as to be rotatable within the confines of the grooves 44a and 46a. The diameter of the roller 82 is such that the roller will not concurrently engage the upper portion of groove 44a and the lower portion of groove 46a.

When the segment 64 and arm 68 are moved upon electrical energization of the motor F, the arm moves counter clockwise and raises the divider A from the first position shown in FIGURE 3 to the second position shown in FIGURE 2. After the divider A have been raised to the second position, the upper ends of the stops 14b and 16b are in contact with the lower portions of guides 24a and 26a whereby further upward movement of the divider is stopped. Motor F is then de-energized.

Due to the meshing of the worm gear 56 with gear 58, this engagement is such that the worm gear can ro-

tate relative to the gear 58, but when the latter gear is subjected to a load it cannot rotate relative to the worm gear. Thus, any torque imparted to gear 58 will not be sufficient to cause rotation of the worm gear 56, and the divider A will remain in any desired location between the first position shown in FIGURE 3 and the second position shown in FIGURE 2 without the necessity of employing a braking mechanism to prevent rotation of the pinion gear 62.

In FIGURE 1 it will be seen that six electrical switches S-1 to S-6 are shown, each of which controls the positioning of a separate divider A, but one of which is shown. Each of the motors F is of a reversible type, and each of the switches S-1 to S-6 is of the double pole, double throw type.

Two of the switches S-1 and S-6 are shown in detail in FIGURE 9, together with the wiring thereof to a source of domestic power and to two motors F-1 and F-6. The switch S-1 includes two separate blades 84 that are connected to two conductors 88 and 90 extending to a source of domestic power (not shown). Switch S-1 includes a first pair of contacts 92 and a second pair of contacts 94. Contacts 92 are connected by conductors 96 to the terminals of motor F-1. Contacts 94 are connected by conductors 98 to junction points 96a on conductors 96. The current flows to motor F-1 in one direction when blades 84 are in engagement with contacts 92, and in the opposite direction when in engagement with contacts 94. Change of direction of power flow to the motor F-1, of course, changes the direction of rotation of shaft 54. Thus, the divider A can be raised or lowered by changing the direction of rotation of the motor F-1. Motor F-6 is similarly wired to motor F-1, which wiring is identified by the same numerals used in conjunction with motor F-1, but to which primes have been added.

The use and operation of the invention have been previously described in detail and need not be repeated.

As can best be seen in FIGURES 3 and 7, a shield 98 is provided that extends around the shaft 54, worm gear 56, and gear 58, to prevent personal injury should someone inadvertently come into contact therewith during operation. The shield is adapted to be held in place by tabs 100 that extend therefrom, and these tabs 100 are secured to the plate 48 by screws 102, or other conventional means. The base 20 may be secured to the floor 22 by screws 23, or the like.

Although the present invention is fully capable of achieving the objects and providing the advantages hereinbefore mentioned, it is to be understood that it is merely illustrative of the presently-preferred embodiments thereof and I do not mean to be limited to the details of construction herein shown and described, other than as defined in the appended claims.

I claim:

1. In combination with two restaurant booths including two tables with seats on opposite sides thereof, which tables have adjacent parallel ends separated by a first distance, a divider assembly disposed between the separated ends of the tables comprising:

- (a) a rectangular panel, the longitudinal edges of which are parallel to the upper surface of said tables, said panel being of lesser thickness than said first distance, with said panel being sufficiently wide that when disposed between said tables in a first position the upper longitudinal edge thereof will be substantially flush with the upper surfaces of said tables;
- (b) vertical guide means occupying fixed positions relative to said tables for engaging predetermined vertically extending areas of said panel to permit movement of said panel between said first position and a second position, with the upper longitudinal edge of said panel when in said second position being a substantial distance above the upper surfaces of said tables;
- (c) power means for moving said panel to said first or second position or one therebetween; and

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(d) means for controlling said power means.

2. A divider assembly as defined in claim 1 wherein said means for controlling said power means is located in a position remote from said booths.

3. A divider assembly as defined in claim 1 wherein said panel includes two smooth, vertically extending end portions that movably engage said guide means, with said guide means being disposed below the tops of said tables, and with said guide means being substantially concealed from those seated in one of said seats.

4. A divider assembly as defined in claim 1 wherein said power means includes:

- (a) a base disposed under said tables and in alignment with said space therebetween;
- (b) a rigid plate extending upwardly from said base;
- (c) an arm pivotally supported from said plate;
- (d) means movably connecting an outer end portion of said arm to said panel;
- (e) an arcuate gear segment rigidly affixed to an inner end of said arm;
- (f) a shaft rotatably supported on said plate;
- (g) a pinion gear affixed to said shaft;
- (h) a circular gear affixed to said shaft;
- (i) a worm gear that meshes with said circular gear;
- (j) a driving shaft that supports said worm gear; and

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(k) a reversible prime mover that drives said driving shaft.

5. A divider assembly as defined in claim 4 wherein said reversible prime mover comprises a reversible electric motor, and said means for controlling said power means includes:

- (a) an electric circuit connecting said electric motor to a source of domestic power; and
- (b) a manually operable switch in said circuit for breaking said circuit to said motor and for selectively causing said power to flow to said motor in either of two possible paths to control the direction of rotation of said motor.

6. A divider assembly as defined in claim 5 wherein said manually operable means comprises a double pole, double throw switch.

References Cited by the Examiner

UNITED STATES PATENTS

1,992,903	2/1935	Potashnik	297—158
3,083,417	4/1963	Cook	52—64

FRANK L. ABBOTT, *Primary Examiner*.

J. MURTAGH, *Assistant Examiner*.