CLAIMS

What is claimed is:

1. A lead drive box for use with a movable partition, comprising:

at least one trolley coupled to the lead drive box and configured for disposition at least partially within a track extending longitudinally between a first end and a second end;

a motor coupled to the lead drive box;

a rotatable drive member coupled to the lead drive box, operably coupled to the motor, and configured for engaging a fixed drive member extending along the track to motivate the lead drive box and the movable partition attached thereto along the track when engaged with the motor and the motor is rotating;

an electrical components module disposed within the lead drive box and configured for controlling operation of the motor responsive to one or more signals originating from one or more sources; and

a casing coupled to the at least one trolley and forming at least a partial enclosure for the lead drive box and configured for bearing the electrical components module and the one or more sources.

2. The lead drive box of claim 1, wherein the lead drive box is incorporated within a movable partition system, the movable partition system comprising a movable partition engaged with the track, and wherein the lead drive box is coupled to the movable partition and the track, the lead drive box configured to move along the track and move the movable partition along the track.

3. The lead drive box of claim 1 or claim 2, wherein the at least one trolley is further configured for bearing the motor and the rotatable drive member.

4. The lead drive box of claim 1 or claim 2, further comprising adjustable rollers operably coupled with the lead drive box for adjusting a plumb angle of the lead drive box.

5. The lead drive box of claim 1 or claim 2, wherein the casing includes opposing sides on opposite sides of the at least one trolley and substantially parallel with a direction of travel.

6. The lead drive box of claim 5, wherein the casing is configured to substantially fill a storage compartment for storing the movable partition and the lead drive box when not in use.

7. The lead drive box of claim 5, further comprising a vision panel through each of the opposing sides and configured for viewing a region on an opposite side of the movable partition.

8. The lead drive box of claim 5, further comprising one or more door displays on one or more of the opposing sides for displaying information about regions near the movable partition, information about operation of the lead drive box, or a combination thereof.

9. The lead drive box of claim 5, further comprising an emergency actuator borne by at least one of the opposing sides of the casing and operably coupled to the electrical components module.

10. The lead drive box of claim 1 or claim 2, wherein the casing extends substantially from the track to an opposing surface on at least three sides of the lead drive box.

11. The lead drive box of claim 10, wherein the at least three sides include a front side for engaging a wall when the movable partition is closed and opposing sides extending substantially perpendicular from the front side.

12. The lead drive box of claim 11, wherein the front side is substantially planar.

13. The lead drive box of claim 1 or claim 2, wherein the electrical components module includes a motor control module coupled to the lead drive box and proximate the motor and a post control module disposed in a location within the lead drive box separate from the motor control module.

14. The lead drive box of claim 1 or claim 2, wherein the motor and the electrical components module are disposed in a longitudinal direction between the track and an opposing surface and substantially within the partial enclosure of the casing.

15. The lead drive box of claim 1 or claim 2, wherein the one or more sources include at least one of:

an emergency actuator indicating an emergency command and the control electronics is configured to at least partially open the movable partition responsive to the emergency command;

a user-controlled switch indicating an open-or-close command and a direction of rotation of the motor is controlled responsive to the open-or-close command; and

another user-controlled switch indicating a stop-or-go command and rotation of the motor is controlled responsive to the stop-or-go command.

16. The lead drive box of claim 2, wherein the movable partition comprises a first accordion folding panel and a second accordion folding panel.

17. The lead drive box of claim 2, wherein the rotatable drive member comprises one of a sprocket and a gear and the fixed drive member comprises one of a chain and a belt having features complementary to, and configured to engage with, features of the rotatable drive member.

18. A method of moving a movable partition along a track, comprising:
engaging a rotatable drive member carried by a lead drive box with a fixed drive member extending along the track and having fixed, laterally offset opposite ends;
actuating a motor carried by the lead drive box to drive rotation of the rotatable drive member to move the lead drive box and the movable partition attached thereto along the track; and
controlling operation of the motor with an electrical components module carried by the lead drive box and responsive to one or more signals originating from one or more sources carried by the lead drive box.

19. The method of claim 18, further comprising encasing the lead drive box on at least three sides including a front side and opposing sides extending substantially perpendicular from the front side.

20. The method of claim 19, further comprising generating an emergency command from an emergency actuator disposed on at least one of the opposing sides and at least partially opening the movable partition responsive to the emergency command.

21. The method of claim 19 or claim 20, further comprising generating a movement signal including at least one of an open-or-close command and a stop-or-go command from a user-controlled switch disposed on at least one of the opposing sides and modifying behavior of the motor responsive to the movement signal.

22. The method of claim 19 or claim 20, further comprising enabling viewing through each of the opposing sides to a region on an opposite side of the movable partition with a vision panel in each of the opposing sides.

23. The method of any of claims 18 through 20, wherein engaging the rotatable drive member with the fixed drive member comprises engaging one or more

sprockets with a chain, engaging one or more pulleys with a belt, or engaging a pinion gear with a rack gear.

24. The method of any of claims 18 through 20, further comprising displaying information, on one or more door displays carried by the lead drive box, about regions near the movable partition, information about operation of the lead drive box, or a combination thereof.

AMENDED CLAIMS
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1. A lead drive box for use with a leading end of a movable partition, comprising:

a casing having a front side and opposing sides extending substantially perpendicular from the front side and at least substantially parallel to a direction of travel of the movable partition, the casing forming at least a partial enclosure for the lead drive box and configured for coupling with the leading end of the movable partition;

at least one trolley coupled to the casing and configured for disposition at least partially within a track extending longitudinally between a first end and a second end;

a motor coupled to the casing;

a rotatable drive member coupled to at least one trolley, operably coupled to the motor, and configured for engaging a fixed drive member extending along the track to motivate the lead drive box and the movable partition attached thereto along the track when the rotatable drive member is engaged with the motor and the motor is rotating;

an electrical components module coupled to casing and configured for controlling operation of the motor responsive to one or more signals originating from one or more sources, wherein the casing is configured for bearing the electrical components module and the one or more sources at least partially within the at least a partial enclosure.

2. The lead drive box of claim 1, wherein the lead drive box is incorporated within a movable partition system, the movable partition system comprising a movable partition engaged with the track, and wherein the lead drive box is coupled to the movable partition and the track, the lead drive box configured to move along the track and to move the movable partition along the track.

3. The lead drive box of claim 1 or claim 2, wherein the at least one trolley is further configured for bearing the motor and the rotatable drive member.

4. The lead drive box of claim 1 or claim 2, further comprising adjustable rollers operably coupled with the lead drive box and configured for adjusting a plumb angle of the lead drive box.

5. The lead drive box of claim 1 or claim 2, wherein the casing is configured to substantially fill a storage compartment for storing the movable partition and the lead drive box when not in use.

6. The lead drive box of claim 5, wherein the casing is further configured to be flush with the storage compartment, wherein the storage compartment is a pocket in a wall.

7. The lead drive box of claim 1 or claim 2, further comprising a vision panel through each of the opposing sides of the casing and configured for viewing a region on an opposite side of the movable partition.

8. The lead drive box of claim 1 or claim 2, further comprising one or more door displays on one or more of the opposing sides of the casing and configured for displaying information about regions near the movable partition, information about operation of the lead drive box, or a combination thereof.

9. The lead drive box of claim 1 or claim 2, further comprising an emergency actuator borne by at least one of the opposing sides of the casing and operably coupled to the electrical components module.

10. The lead drive box of claim 1 or claim 2, wherein the casing extends substantially from the track to an opposing surface on at least three sides of the lead drive box.

11. The lead drive box of claim 10, wherein the front side of the casing is configured for engaging a wall when the movable partition is closed.

12. The lead drive box of claim 11, wherein the front side of the casing is substantially planar.

13. The lead drive box of claim 1 or claim 2, wherein the electrical components module includes:

a motor control module coupled to the casing and proximate the motor; and

a post control module coupled to the casing and disposed in a location within the lead drive box separate from the motor control module.

14. The lead drive box of claim 1 or claim 2, wherein the motor and the electrical components module are disposed in a longitudinal direction between the track and an opposing surface and substantially within the partial enclosure of the casing.

15. The lead drive box of claim 1 or claim 2, wherein the one or more sources include at least one of:

an emergency actuator indicating an emergency command, wherein the electrical components module is configured to at least partially open the movable partition responsive to the emergency command;

a user-controlled switch indicating an open-or-close command, wherein a direction of rotation of the motor is controlled responsive to the open-or-close command; and

another user-controlled switch indicating a stop-or-go command, wherein rotation of the motor is controlled responsive to the stop-or-go command.

16. The lead drive box of claim 2, wherein the movable partition comprises a first accordion folding panel and a second accordion folding panel.

17. The lead drive box of claim 2, wherein the rotatable drive member comprises one of a sprocket and a gear, and wherein the fixed drive member comprises one of a chain and a belt having features complementary to, and configured to engage with, features of the rotatable drive member.

18. A method of moving a movable partition along a track, comprising:

engaging a rotatable drive member carried by a lead drive box with a fixed drive member extending along the track and having fixed, laterally offset opposite ends;

actuating a motor carried by the lead drive box to drive rotation of the rotatable drive member to move the lead drive box and the movable partition along the track, the lead drive box attached to the movable partition on a leading end thereof;

controlling operation of the motor with an electrical components module carried by the lead drive box and responsive to one or more signals originating from one or more sources carried by the lead drive box; and

encasing the lead drive box on at least three sides including a front side of a casing and opposing sides of the casing extending substantially perpendicular from the front side forming at least a partial enclosure within which the electrical components module is at least partially enclosed.

19. The method of claim 18, further comprising:

generating an emergency command from an emergency actuator disposed on at least one of the opposing sides of the casing; and

at least partially opening the movable partition responsive to the emergency command.

20. The method of claim 18 or claim 19, further comprising:

generating a movement signal including at least one of an open-or-close command and a stop-or-go command from a user-controlled switch disposed on at least one of the opposing sides of the casing; and

modifying behavior of the motor responsive to the movement signal.

21. The method of claim 18 or claim 19, further comprising enabling viewing through each of the opposing sides of the casing to a region on an opposite side of the movable partition with a vision panel in each of the opposing sides of the casing.

22. The method of claim 18 or claim 19, wherein engaging the rotatable drive member with the fixed drive member comprises engaging one or more sprockets with a chain, engaging one or more pulleys with a belt, or engaging a pinion gear with a rack gear.

23. The method of claim 18 or claim 19, further comprising displaying information, on one or more door displays carried by the lead drive box, about regions near the movable partition, information about operation of the lead drive box, or a combination thereof.

CLAIMS

1. A lead drive box for use with a movable partition, comprising:

at least one trolley coupled to the lead drive box and configured for disposition at least partially within a track extending longitudinally between a first end and a second end;

a motor coupled to the lead drive box;

a rotatable drive member coupled to the lead drive box, operably coupled to the motor, and configured for engaging a fixed drive member extending along the track to motivate the lead drive box and the movable partition attached thereto along the track when engaged with the motor and the motor is rotating;

an electrical components module disposed within the lead drive box and configured for controlling operation of the motor responsive to one or more signals originating from one or more sources; and

a casing coupled to the at least one trolley and forming at least a partial enclosure for the lead drive box and configured for bearing the electrical components module and the one or more sources, wherein the motor and the electrical components module are offset from each other in a direction substantially parallel to a length of the lead drive box, and substantially within the casing.

2. The lead drive box of claim 1, wherein the at least one trolley is further configured for bearing the motor and the rotatable drive member.

3. The lead drive box of claim 1, further comprising adjustable rollers operably coupled with the lead drive box for adjusting a plumb angle of the lead drive box.

4. The lead drive box of claim 1, wherein the casing includes opposing sides on opposite sides of the at least one trolley and substantially parallel with a direction of travel.

5. The lead drive box of claim 4, wherein the casing is configured to substantially fill a storage compartment for storing the movable partition and the lead drive box when not in use.

6. The lead drive box of claim 4, further comprising a vision panel through each of the opposing sides and configured for viewing a region on an opposite side of the movable partition.

7. The lead drive box of claim 4, further comprising one or more door displays on one or more of the opposing sides for displaying information about regions near the movable partition, information about operation of the lead drive box, or a combination thereof.

8. The lead drive box of claim 4, further comprising an emergency actuator borne by at least one of the opposing sides of the casing and operably coupled to the electrical components module.

9. The lead drive box of claim 1, wherein the casing extends substantially from the track to an opposing surface on at least three sides of the lead drive box.

10. The lead drive box of claim 9, wherein the at least three sides include a front side for engaging a wall when the movable partition is closed and opposing sides extending substantially perpendicular from the front side.

11. The lead drive box of claim 10, wherein the front side is substantially planar.

12. The lead drive box of claim 1, wherein the electrical components module includes a motor control module coupled to the lead drive box and proximate the motor and a post control module disposed in a location within the lead drive box separate from the motor control module.

13. The lead drive box of claim 1, wherein the electrical components module further includes a multiplexer configured to multiplex command signals from the electrical components module, the one or more signals originating from the one or more sources, or combinations thereof.

14. The lead drive box of claim 1, wherein the one or more sources include at least one of:

an emergency actuator indicating an emergency command and the control electronics is configured to at least partially open the movable partition responsive to the emergency command;

a user-controlled switch indicating an open-or-close command and a direction of rotation of the motor is controlled responsive to the open-or-close command; and

another user-controlled switch indicating a stop-or-go command and rotation of the motor is controlled responsive to the stop-or-go command.

15. A movable partition system comprising:

a movable partition engaged with and movable along a track extending longitudinally between a first end and a second end; and

a lead drive box coupled to the movable partition and the track, the lead drive box configured to move along the track and move the movable partition along the track and comprising:

at least one trolley coupled to the lead drive box and configured for disposition at least partially within the track;

a motor coupled to the lead drive box;

a rotatable drive member coupled to the lead drive box, operably coupled to the motor, and configured for engaging a fixed drive member extending along the track to motivate the lead drive box and the movable partition attached thereto along the track when engaged with the motor and the motor is rotating;

an electrical components module disposed within the lead drive box and configured for controlling operation of the motor responsive to one or more signals originating from one or more sources carried by the lead drive box; and

a casing coupled to the at least one trolley and forming at least a partial enclosure for the lead drive box and configured for bearing the electrical components module and the one or more signal sources, wherein the motor and the electrical components module are offset from each other in a direction substantially parallel to a length of the lead drive box, and substantially within the casing.

16. The movable partition system of claim 15, wherein the movable partition comprises a first accordion folding panel and a second accordion folding panel.

17. The movable partition system of claim 15, wherein the one or more sources include at least one of:

an emergency actuator indicating an emergency command and the control electronics is configured to at least partially open the movable partition responsive to the emergency command;

a user-controlled switch indicating an open-or-close command and a direction of rotation of the motor is controlled responsive to the open-or-close command; and

another user-controlled switch indicating a stop-or-go command and rotation of the motor is controlled responsive to the stop-or-go command.

18. The movable partition system of claim 15, wherein the rotatable drive member comprises one of a sprocket and a gear and the fixed drive member comprises one of a chain and a belt having features complementary to, and configured to engage with, features of the rotatable drive member.

19. The movable partition system of claim 15, wherein the casing includes opposing sides on opposite sides of the at least one trolley and substantially parallel with a direction of travel.

20. The movable partition system of claim 19, further comprising a vision panel through each of the opposing sides and configured for viewing a region on an opposite side of the movable partition.

21. The movable partition system of claim 19, further comprising one or more door displays on one or more of the opposing sides for displaying information about regions near the movable partition, information about operation of the lead drive box, or a combination thereof.

22. The movable partition system of claim 19, further comprising an emergency actuator borne by at least one of the opposing sides of the casing and operably coupled to the electrical components module.

23. The movable partition system of claim 15, wherein the electrical components module includes a motor control module coupled to the casing and proximate the motor and a post control module disposed in a location within the lead drive box separate from the motor control module.

24. The movable partition system of claim 15, wherein the electrical components module further includes a multiplexer configured to multiplex command signals from the electrical components module, the one or more signals originating from the one or more sources, or combinations thereof.

25. A method of moving a movable partition along a track, comprising:

engaging a rotatable drive member carried by a lead drive box with a fixed drive member extending along the track and having fixed, laterally offset opposite ends;

actuating a motor at least substantially within the lead drive box to drive rotation of the rotatable drive member to move the lead drive box and the movable partition attached thereto along the track; and

controlling operation of the motor with an electrical components module offset from the motor in a direction substantially parallel to a length of the lead drive box, and at least

substantially within the lead drive box and responsive to one or more signals originating from one or more sources carried by the lead drive box.

26. The method of claim 25, further comprising encasing the lead drive box on at least three sides including a front side and opposing sides extending substantially perpendicular from the front side.

27. The method of claim 26, further comprising generating an emergency command from an emergency actuator disposed on at least one of the opposing sides and at least partially opening the movable partition responsive to the emergency command.

28. The method of claim 26, further comprising generating a movement signal including at least one of an open-or-close command and a stop-or-go command from a user-controlled switch disposed on at least one of the opposing sides and modifying behavior of the motor responsive to the movement signal.

29. The method of claim 26, further comprising enabling viewing through each of the opposing sides to a region on an opposite side of the movable partition with a vision panel in each of the opposing sides.

30. The method of claim 25, wherein engaging the rotatable drive member with the fixed drive member comprises engaging one or more sprockets with a chain, engaging one or more pulleys with a belt, or engaging a pinion gear with a rack gear.

31. The method of claim 25, further comprising displaying information, on one or more door displays carried by the lead drive box, about regions near the movable partition, information about operation of the lead drive box, or a combination thereof.