June 9, 1964 M. P. MADSEN 3,136,358

MOTOR DRAWN CURTAIN

Filed July 5, 1963

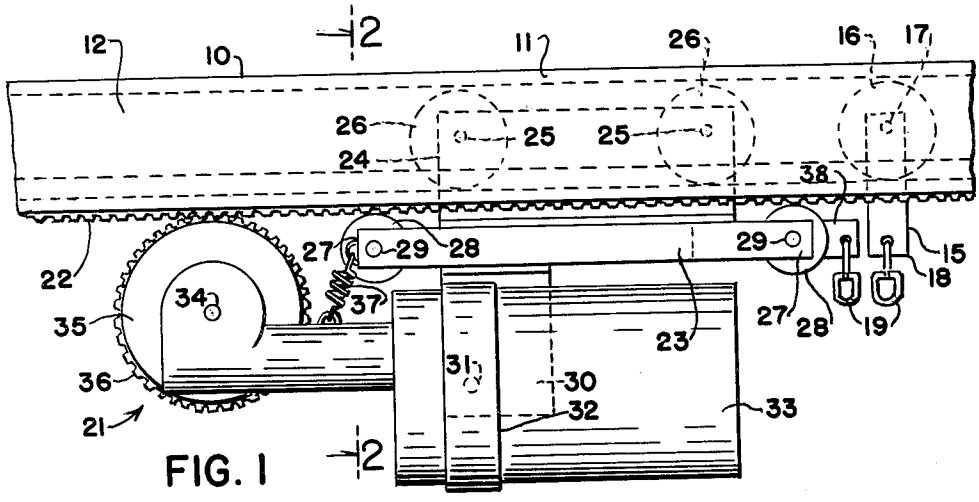

FIG. 1

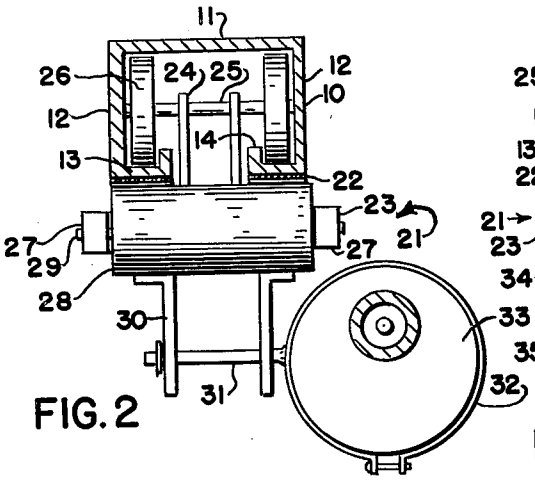

FIG. 2

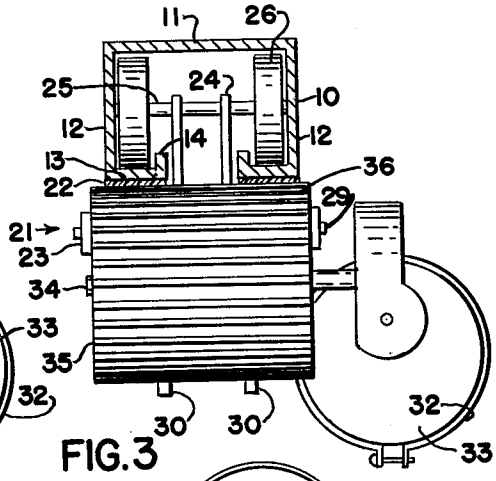

FIG. 3

FIG. 4

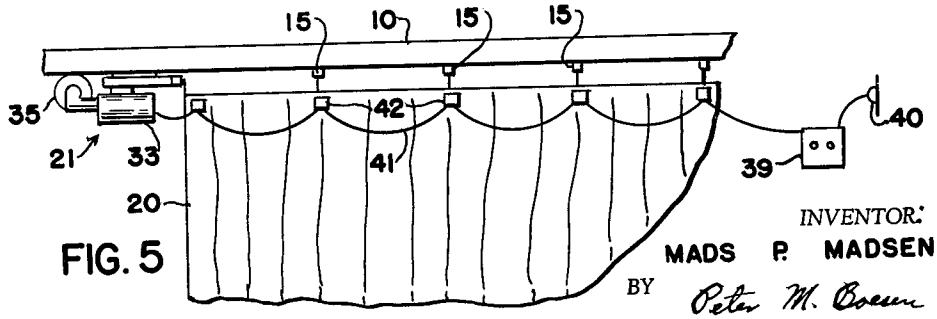

FIG. 5

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MOTOR DRAWN CURTAIN

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This invention relates in general to curtain supporting apparatus, and, more particularly, to large theatre curtains and the like and the apparatus for their support.

Modern theatres, hotels, world's fairs, exhibit buildings, and the like often require large track supported curtains which must be drawn open and closed. The track may, for best aesthetic and practical architectural reasons, have to make a reverse or S curve. If the regular pulleys and ropes of conventional theatre hardware are used, they will be expensive, complicated, and prone to failure.

It is, therefore, an object of this invention to provide a simpler, less expensive track supported curtain which may be opened and closed.

Another object of this invention is to provide a track supported curtain which may easily be drawn along any shape of track curve.

Many other objects, advantages, and features of invention reside in the particular construction, combination, and arrangement of parts involved in my invention and its practice otherwise as will be understood from the following description and accompanying drawing wherein:

FIGURE 1 is a back view of a fragment of a curtain track with the curtain removed showing my curtain drawing apparatus suspended therefrom;

FIGURE 2 is a section taken on line 2—2 of FIGURE 1;

FIGURE 3 is a rear end view of my curtain drawing apparatus shown suspended from a curtain supporting track shown in transverse section;

FIGURE 4 is a top view of a curtain supporting track arranged in a typical compound curve; and

FIGURE 5 is a back view of a fragment of track having a curtain suspended therefrom and being drawn by my curtain drawing apparatus.

Referring to the drawing in detail, a typical curtain supporting track 10 is of extruded aluminum or the like. Track 10 has a top wall 11, side walls 12, inwardly extending bottom walls 13, and upwardly extending inner walls 14. A standard curtain support element 15 has two wheels 16 rotatably mounted on an axle 17 from which there depends a support member 18 hanging between the inner walls 14. A swivel 19 is attached to the upper edge of a curtain 20 to connect it to member 18.

The curtain drawing device of my invention, generally designated by the numeral 21, requires that track 10 have strips of rubber 22 cemented to the lower surfaces of the bottom walls 13. The strips 22 are preferably cut transversely from ribbed rubber matting or runner having closely spaced ribs or corrugations on one surface. Thus the strips 22 give the appearance of a rack gear disposed on each wall 13. The strips 22 are cemented in place with a suitable adhesive such as an epoxy glue. The fact that the strips 22 are of rubber or other flexible material allows them to be easily secured to conform to any curvature of track 10.

My curtain drawing apparatus 21 consists of a plate 23 from which two flanges 24 are fixed to extend upward between the inner walls 14 of a track 10. Axles 25 support two pairs of wheels 26 which roll upon the bottom walls 13 of track 10. Plate 23 may have projecting end portions 27 between which the rollers 28 are rotatably mounted by the axles 29. The rollers

28 ride on the under surfaces of the strips 22 to hold the wheels 26 down on the bottom walls 13.

Two flanges 30 extend down from plate 23 and have the shaft 31 pivotally secured through them. Shaft 31 terminates in the clamp 32 which secures the gear head reversible motor 33 in it. Motor 33 drives the transverse shaft 34 on which there is mounted the traction drum 35 having a ribbed rubber cover 36 of the same material as the strips 22. A spring 37 may be provided to urge drum 35 against the strips 22 by pivoting motor 33 with shaft 31. If the weight of motor 33 behind the axis of shaft 31 is sufficiently great, spring 37 may not be needed.

As shown in FIGURES 1 and 4, curtain 20 is supported from track 10 by the elements 15. The leading edge of curtain 20 is attached to a bracket fixed to one side of plate 23. Bracket 38 is best bent to extend under the center of track 10. Thus device 21 may pull or push the leading edge of a curtain 20 along a track 10 to draw it open or closed as motor 33 rotates drum 35 which engages the strips 22. Motor 33 is a reversible motor activated by means of a standard control 39 and powered from a current source 40. The wires 41 extending to motor 33 may be secured by tape 42 at intervals to the back of curtain 20. If building or safety codes require it, current carried in wires 41 may be stepped down to a low and safe voltage by a conventional transformer (not shwon).

While I have shown one type of standard curtain track used in the practice of my invention, any curtain track having an unused outer surface which may be engaged by a drive drum 35 after being covered with a strip 22 may be used. In addition, while I have shown and described my invention in the best form known to me, it will nevertheless be understood that this is purely exemplary and that modifications may be made without departing from the spirit of the invention except as it may be more limited in the appended claims wherein I claim:

1. A motor drawn curtain comprising, in combination, a curtain supporting track having a top wall, side walls, and inwarly extending bottom walls, transversely corrugated rubber strips glued below said bottom walls, curtain supporting elements having wheels rolling on said bottom walls and having a support member supported by said wheels hanging below said bottom walls, a curtain having an upper edge fixed to said support members, a plate, at least one flange extending upward from said plate between said bottom walls of said track, wheels rotatably mounted on said at least one flange rolling on said bottom walls, a reversible electric motor, a transverse shaft extending from and driven by said motor, means pivotally securing said motor to said plate with the weight of said motor urging said shaft upwards, a traction drum on said transverse shaft, said drum having a transversely corrugated rubber cover engaging said strips, and a bracket extending from said plate, said curtain having a leading edge attached to said bracket.

2. The combination according to claim 1 with the addition of spring means urging said drum against said strips.

3. The combination according to claim 2 with the addition of a roller disposed at each end of said plate holding said wheels mounted on said at least one flange downward against said bottom walls, said rollers rolling against said strips.

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