

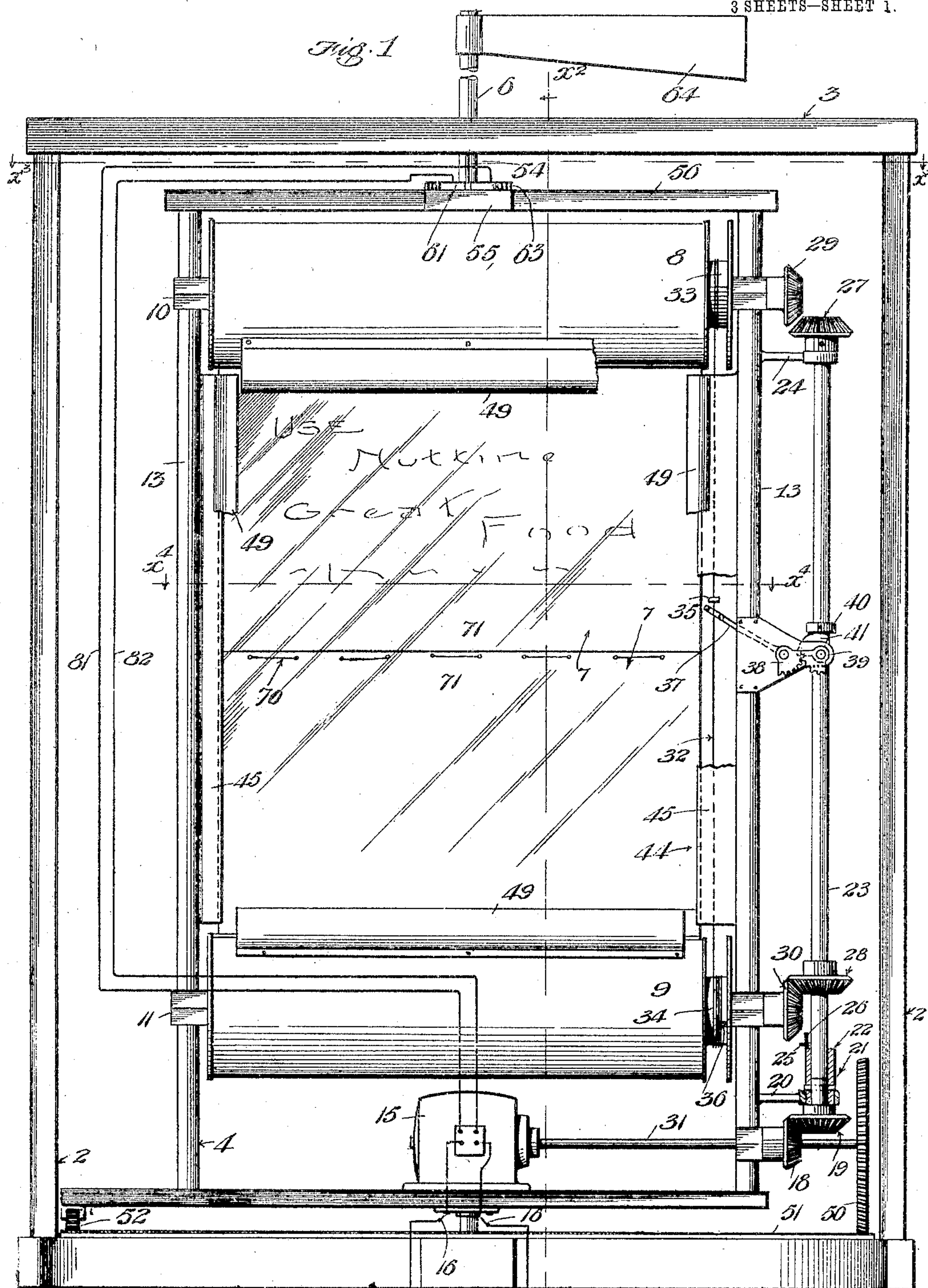
No. 797,097.

PATENTED AUG. 15, 1905.

F. C. CHAPMAN.  
ADVERTISING CURTAIN DEVICE.

APPLICATION FILED AUG. 19, 1904.

3 SHEETS—SHEET 1.



Witnesses  
*Edmund C. Straube*

*A. P. Knight*

*by Townsend & Bros atty.*

Inventor  
*Frank C. Chapman*

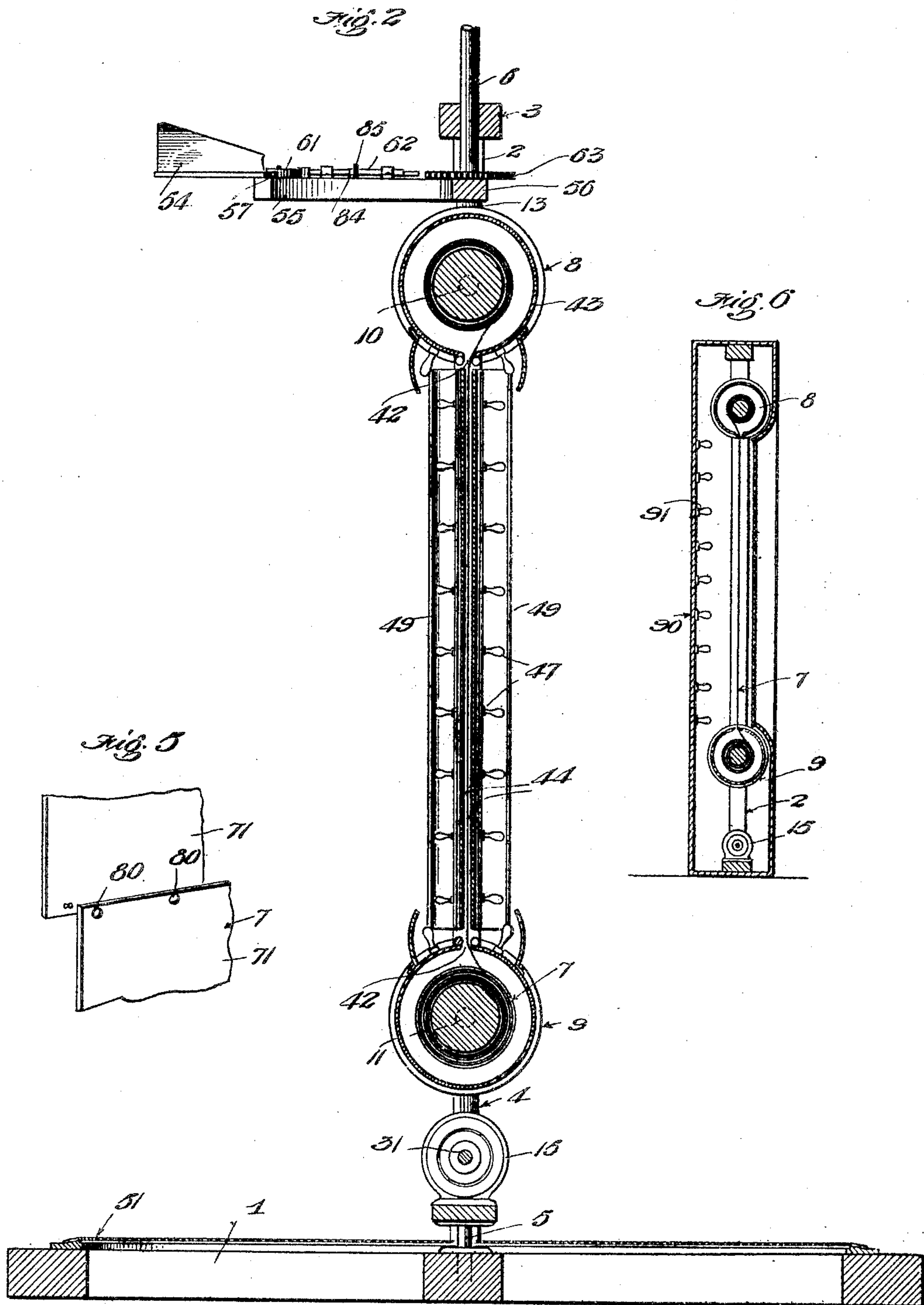
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3 SHEETS—SHEET 2.



*Witnesses*

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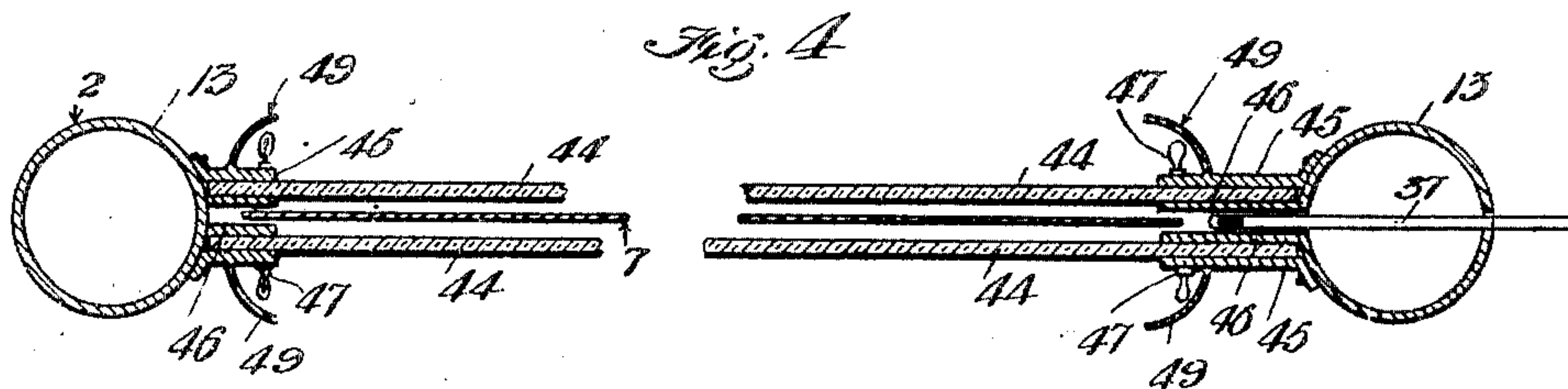
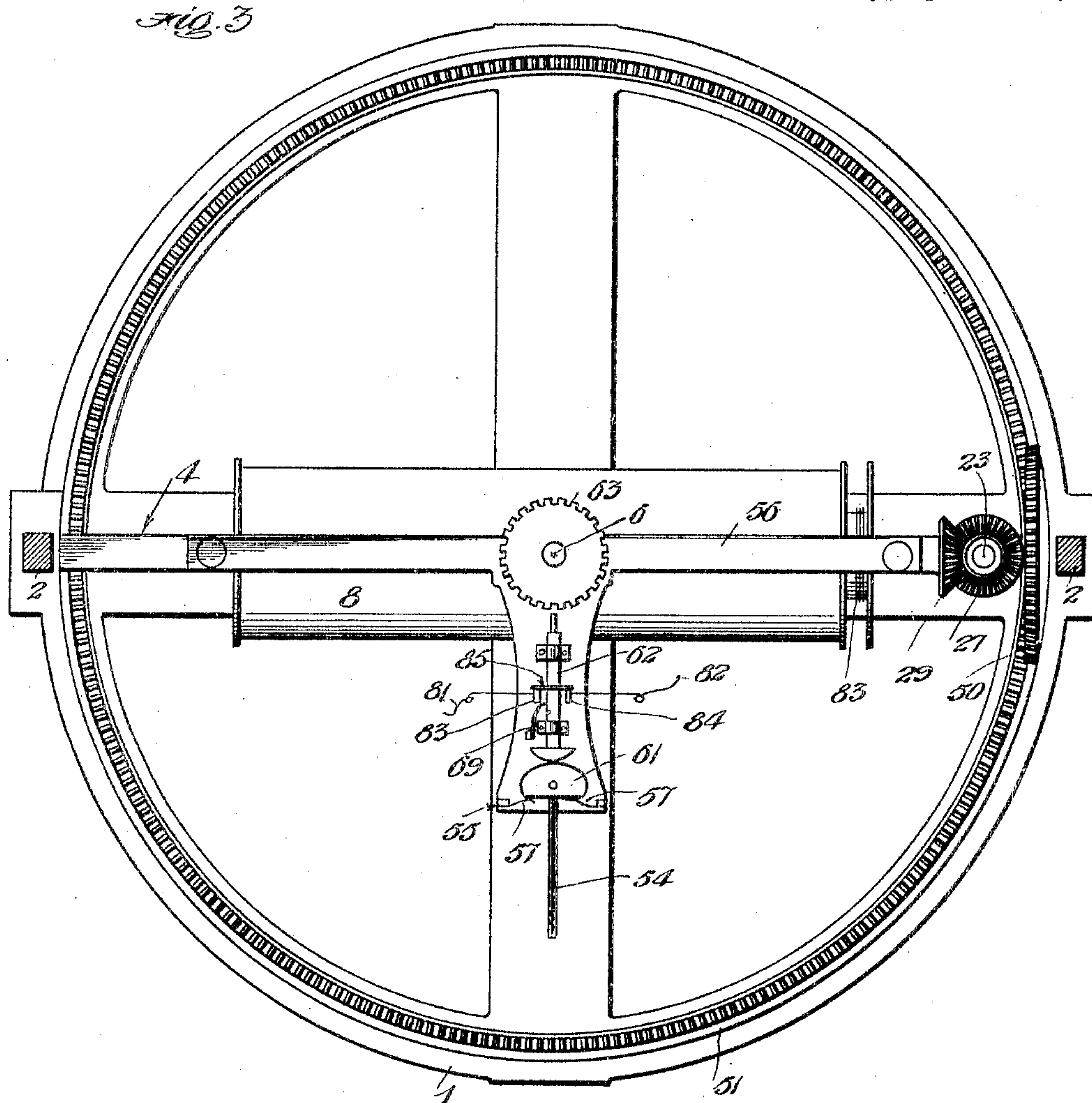


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3 SHEETS—SHEET 3.



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# UNITED STATES PATENT OFFICE.

FRANK C. CHAPMAN, OF LOS ANGELES, CALIFORNIA.

## ADVERTISING CURTAIN DEVICE.

No. 797,097.

Specification of Letters Patent.

Patented Aug. 15, 1905.

Application filed August 19, 1904. Serial No. 221,345.

*To all whom it may concern:*

Be it known that I, FRANK C. CHAPMAN, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Advertising Curtain Device, of which the following is a specification.

This invention relates to advertising devices of the class wherein a curtain is provided with means for continuously operating it in such manner that a long curtain mounted on rollers is alternately wound on each of the rollers and unwound from the other, so that a great length of curtain can be used in a comparatively small device.

An object of the invention is to provide means for moving or rotating the curtain to different angular positions, so as to enable it to be displayed in any desired direction, and in this connection I prefer to so arrange the device that the curtain will be automatically rotated on a vertical axis, exhibiting in all directions successively.

A further object of the invention is to provide an advertising device of this character suitable for outdoor use; and a special object of the invention in this connection is to prevent injury to the curtain by the wind by providing means for bringing and holding the curtain to the wind when the force thereof becomes excessive.

The accompanying drawings illustrate the invention.

Figure 1 is a front elevation of the device. Fig. 2 is a vertical section thereof on line  $x^2 x^2$  in Fig. 1. Fig. 3 is a horizontal section on line  $x^3 x^3$  in Fig. 1. Fig. 4 is a horizontal section on line  $x^4 x^4$  in Fig. 1, the parts below the plane of section being omitted. Fig. 5 is a fragmental view showing another method of fastening the sections of the curtain together. Fig. 6 is a cross-sectional view through the device, showing a modification comprising a backing carrying lights and a transparent curtain.

The working parts of the device are mounted on a suitable frame comprising a base 1, standards 2, rising therefrom, and a cross-bar 3 at the top of said standards. Within this frame is rotatably mounted an inner frame 4, which is carried by a pivot-bearing 5 at the bottom and is centered at the top by rotating freely around a pivot or arbor 6, supported in the frame member.

The curtain 7 is wound at its respective ends on two rolls or drums 8 9, mounted, respec-

tively, at the upper and lower end of the rotatable frame 4 on shafts 10 11, journaled to rotate in the side bars 13 of said frame.

The drums are operated to wind the curtain by a motor 15, mounted on frame 4, said motor being, for example, an electric motor having a supply connection 16 with an energizing-circuit 17, and the shaft 31 of said motor carrying a bevel-gear 18, meshing with a bevel-gear 19, rotatably mounted in a bracket 20 on a side bar 13 of the frame 4. The shaft or arbor 21 of said bevel-gear 19 has a sleeve 22 pinned thereto, the upper end of said sleeve forming a socket to receive one end of an upright shaft 23, which is mounted to turn and slide vertically in a bracket 24 on the said side bar 13 and is suitably connected to the arbor 21 to rotate therewith, as by means of pins 25 26 on said shaft and arbor, which engage one another to cause the arbor to carry the shaft around with it, but enable relative longitudinal movement of the shaft within the arbor. The shaft 23 carries bevel-gears 27 28, engaging, respectively, but dissimultaneously, with bevel-gears 29 30 on the respective drum-shafts 10 11. When the shaft is in its lowermost position, the gears 28 30 will be in engagement and the gears 27 29 will be free of engagement; but when the shaft is raised the gears 27 29 will be engaged and the gears 28 30 will be free. For causing this vertical movement of the shaft means are provided operated by or in accordance with the movement of the curtain. For this purpose I have provided a cord or flexible connection 32, winding at opposite ends on spools 33 34, mounted on and turning with the respective drum-shafts 10 11, said cord being provided with tappets 35 36 near the respective ends thereof and adapted to engage a pivot arm or lever 37, secured to and operating a segment-gear 38, which in turn operates a segment-gear 39 to cause the cam 41 to engage a collar 40 on shaft 23 to raise said shaft, thereby disengaging the driving connection with the lower drum and establishing driving connection with the upper drum to cause the curtain to be wound onto the latter.

The curtain 7 is desirably inclosed in such a manner as to protect it from the weather, thereby adapting the apparatus for use outdoors. For this purpose each of the drums 8 9 may be inclosed in a casing 43, preferably cylindrical, said casings being attached to the frame 4 and having slots 42 in the vertical plane of the curtain to permit passage of the



curtain through the walls thereof, the said slots also serving as means for guiding the curtain and holding it in a definite vertical plane. To protect the part of the curtain which is being exhibited, it may be covered on each side with a glass plate 44, said glass plate being attached to uprights 13 of the frame 4, as by means of outer and inner ribs or flanges 45 46 on said uprights, the glass plate being embraced between said outer and inner flanges and the inner flanges forming between them a slot on each side of the curtain for receiving and guiding the respective edges of the curtain. In connection with this casing means may be provided for illuminating the screen—for example, electric lamps 47, secured on the casings 43 and flanges 45 and provided with reflectors or screens 49, which serve to hide them from direct view and also to reflect the light therefrom onto the curtain. These electric lamps may be energized by the same supply connection that supplies the motor 15.

The frame 4, with the parts carried thereby, above described, may constitute a sufficient embodiment of my invention for some purposes, and the said frame may be mounted in fixed position or, as shown, may be capable of rotation, so as to enable it to be moved to any desired angular position according to the direction in which it is desired to display the advertisement.

Means may be provided for continually rotating the frame 4 and the curtain carried thereby when so desired, such means consisting, for example, of a bevel-gear 50 on the shaft 31 of motor 15 engaging with and rolling on a large gear-ring 51, fixed on the base 1, so that the rotation of the motor-shaft will cause the bevel-gear 50 to roll around on the gear 1, and thereby carry the frame 4, with the attached curtain mechanism. An idler-gear 52 may be provided at the other side of the frame 4, also rolling on the gear-ring 51 to steady the frame.

In case this apparatus is used out of doors it will generally be desirable to provide means for preventing injury to the curtain apparatus during a high wind by allowing or causing the curtain-frame 4 and the curtain to come to rest in a plane parallel to the direction of movement of the wind. For this purpose a vane 54 may be provided, pivoted to a bracket 55, extending laterally from the top bar 56 of the frame 4, said vane 54 normally extending at right angles to the plane of the frame 4 and being held in that position by springs 57. A cam 61 is connected to said vane and engages with a sliding bolt 62 in such manner that when the said vane is displaced from normal position to a sufficient extent said cam will operate said bolt to cause engagement thereof with a toothed wheel 63, which is fast on the upper centering pin 6. The frame 4 is freely rotatable with regard to said centering pin, and the latter carries a

large vane 64, which is rigidly connected thereto. This large vane stands or shifts continually with the wind, being normally independent of the operation of the mechanism, and the curtain device is normally carried around continually independent of the direction of the wind; but on the occurrence of an extremely high wind the small vane 54 will act to unclutch the driving connection for rotating the frame and simultaneously clutch the frame to the large vane in the following manner: As the frame 4 is swung around in normal operation the pressure on the small vane will vary in each revolution, being at a maximum when the vane is held at right angles to the wind, the frame 4 being at that time in the plane of the wind. When the wind exceeds a certain velocity and the vane comes around to the position referred to, it will be deflected sufficiently to cause cam 61 to throw the bolt 62 into engagement with the toothed wheel 63, thereby clutching the frame 4 in connection with the large vane 64, which at that moment will of course be in the plane of the frame 4 and curtain 7. Thereafter during the continuance of the high wind the large vane will control the movement of the frame 4 and hold the latter at all times parallel with the wind.

The curtain 7 may be of any material which is sufficiently flexible to be wound upon the rollers or drums and which is otherwise suitable for the purpose. Said curtain is preferably formed in sections (indicated at 71) which are fastened together by lacings or other detachable flexible connections 70, so that any one or more sections may be removed and substitute sections inserted, and the curtain as a whole may be lengthened or shortened as regards the number of sections contained therein, according to the requirements.

The use of the device will be understood from the above, advertising or display matter of any kind being printed or arranged upon the curtain 7 on both sides thereof and the continual movement of the curtain bringing all of the display matter thereon successively into view through the glass cover-plates. In the form shown the curtain is assumed to contain display matter on both sides and to exhibit at both sides simultaneously; but it is apparent that only one side need be used, if so desired. When the curtain has been completely wound off of one roll and onto the other, so that all parts of its length have been brought into exhibiting position, the movement thereof is reversed, as above explained, and the curtain is rewound onto the other roll, thereby again exhibiting the same matter in reverse order. If rotative as well as winding action is desired, the rotating gear is brought into operation and the frame 4 is caused to rotate on its vertical axis, causing the curtain to turn on said axis, thereby exhibiting the display matter successively in all different di-



rections, this being particularly desirable when the device is used out of doors. In that case also the protective devices will come into play, as above explained, to protect the device in case of a high wind. When rotation is not desired, the vane 54 may be turned to one side to stop the motor for the driving-gear and clutch the curtain-frame to the large vane. A spring 69 may be provided which serves to hold the controlling devices in this position whether they have been operated by the wind or by hand.

The sections of curtain may be fastened together by fasteners 80, as shown in Fig. 5, if desired, said fasteners being in the form of the usual two-pronged paper-fasteners and being inserted through perforations in the adjacent edges of adjoining sections, said edges being overlapped and then fastened together by the insertion of the fasteners through the perforations and the said fasteners being then bent in the well-known manner.

Wires 81 and 82 lead from the motor to the switch 83, located near the bolt 62, comprising two stationary contacts 83 and 84, the wire 81 being connected to contact 83 and wire 82 being connected to contact 84, a suitable blade 85 being carried by the bolt 62 and adapted to bridge the contacts 83 and 84, and thus close the circuit and permit the motor to run when the bolt 62 is out of engagement with the toothed wheel 63. Thus when the wind exceeds a certain velocity and the vane swings and throws the bolt 62 into engagement with the toothed wheel the blade 85 will be moved out of contact with the terminals 83 and 84, thereby breaking the circuit and stopping the motor.

If desired, a backing 90 may be provided to form a mounting for lights 91, and the curtain may be constructed of a transparent material, so that the light from the lamps 91 will shine through the curtain and illumine the same, thus enabling the curtain to be useful in the night, and this arrangement also secures artistic effects and provides a novel and pleasing presentation of the devices which the curtain carries. This latter arrangement is especially adapted for indoor exhibition or in show-windows.

What I claim is—

1. A device for the purpose set forth, comprising a curtain, means for longitudinal operation of said curtain, means for rotation of said curtain on a vertical axis, and a driving-motor connected to move both the means for longitudinal operation and the means for rotation of the curtain.

2. A device for the purpose set forth, comprising a curtain, a pivotally-supported frame whereon said curtain is movably mounted, a

driving-motor, gearing for moving said curtain on said frame connected to said driving-motor, and means for rotating said frame on its pivotal support, connected to be operated by said gearing.

3. A device for the purpose set forth comprising a rotatable frame, a plurality of rollers carried thereby, a curtain supported on said rollers, driving means connected to alternately operate said rollers to move said curtain on said frame, a motor connected to operate said driving means, a fixed gear and a gear connected to said driving means and running on said fixed gear to rotate said frame.

4. A device for the purpose set forth comprising a pivotally-mounted frame, a curtain carried by said frame, a vane pivoted to move independently of the frame and a clutch connecting the frame with the vane for holding the curtain parallel with the wind.

5. A device for the purpose set forth comprising a pivotally-mounted frame, a curtain carried by said frame, a vane pivoted to move independently of the frame, a clutch connecting the frame with the vane, and a second vane controlling said clutch to clutch the frame to the vane and hold the curtain parallel with the wind.

6. A device for the purpose set forth comprising a pivotally-mounted frame, means for rotating said frame, a curtain carried by said frame, a vane pivoted to move independently of the frame, a clutch connection between the vane and the frame, a second vane, and means controlled by said second vane and controlling the clutch connection.

7. A device for the purpose set forth comprising a frame mounted to rotate on a vertical axis, a curtain movable on said frame, means for moving said curtain on said frame, an electric motor for rotating the frame on its axis, a circuit-breaker for said motor, and a vane controlling said circuit-breaker.

8. A device for the purpose set forth comprising a frame mounted to rotate on a vertical axis, a curtain movable on said frame, means for moving said curtain on said frame, an electric motor for rotating the frame on its axis, a circuit-breaker for said motor, a vane pivotally mounted independent of, but concentric with, the frame, a clutch connection between said vane and frame, and a second vane pivoted to the frame and controlling said circuit-breaker and clutch.

In testimony whereof I have hereunto set my hand, at Los Angeles, California, this 11th day of August, 1904.

FRANK C. CHAPMAN.

In presence of—

GEORGE T. HACKLEY,  
A. M. HOLLY.