Jan. 17, 1967 A. I. BODKINS 3,298,172

ILLUMINATED DISPLAY MEANS

Filed Dec. 31, 1964 5 Sheets-Sheet 1

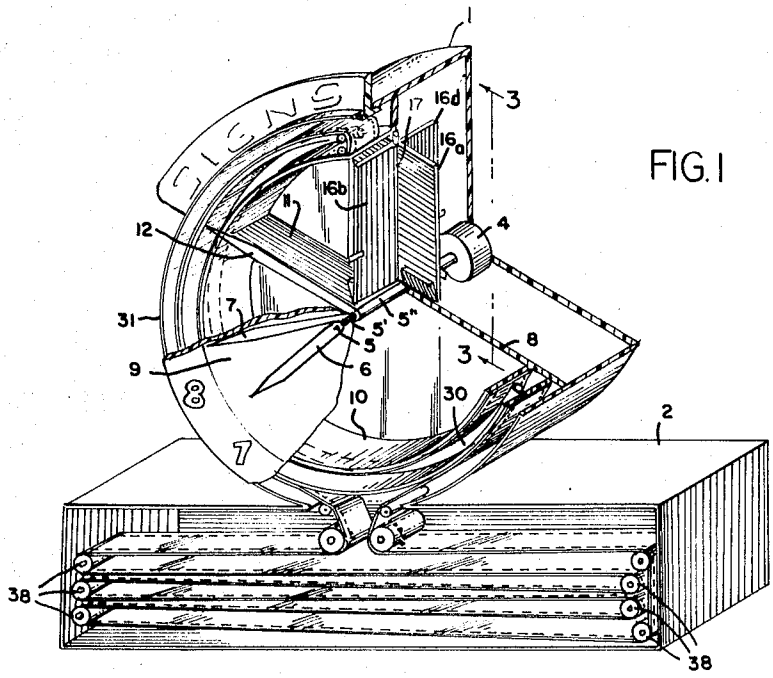


FIG. 1

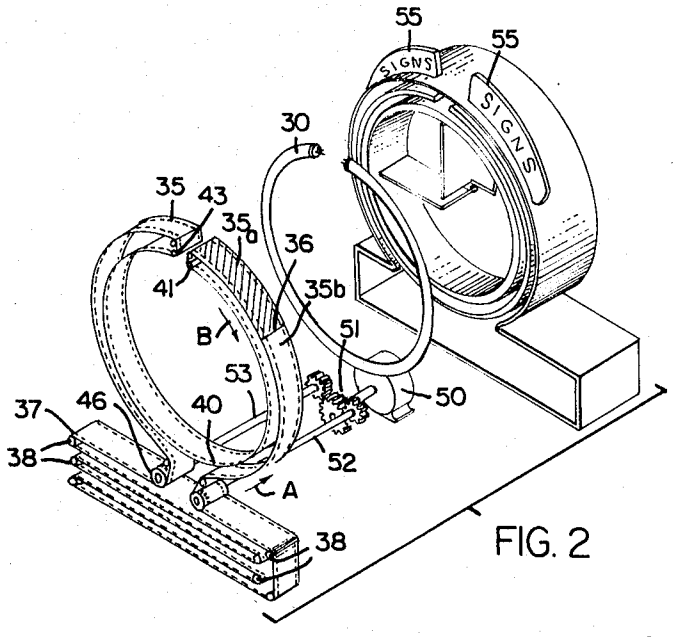


FIG. 2

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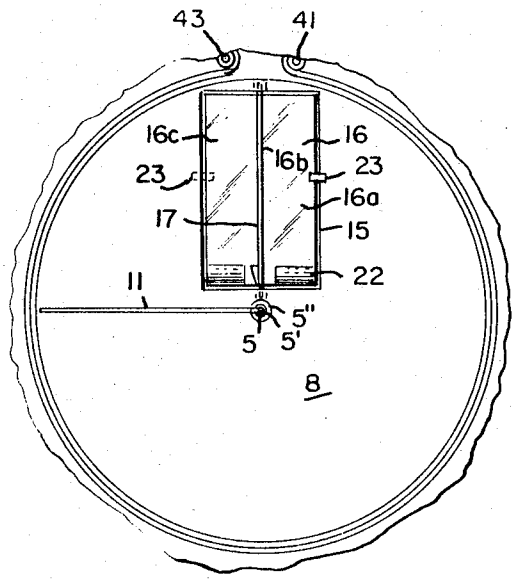


FIG. 4

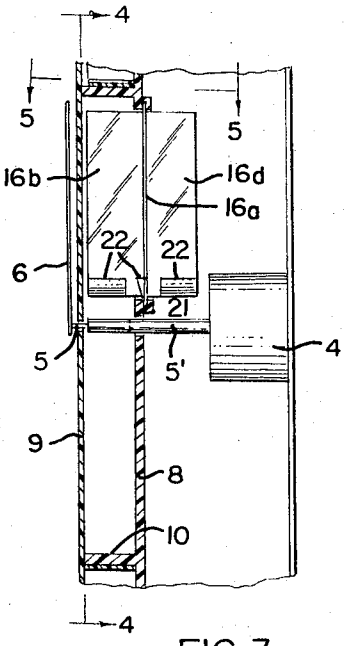


FIG. 3

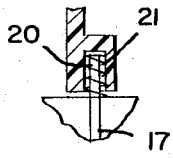


FIG. 6

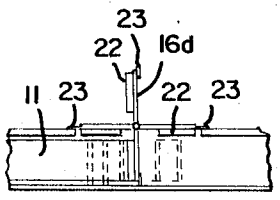


FIG. 5

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ILLUMINATED DISPLAY MEANS

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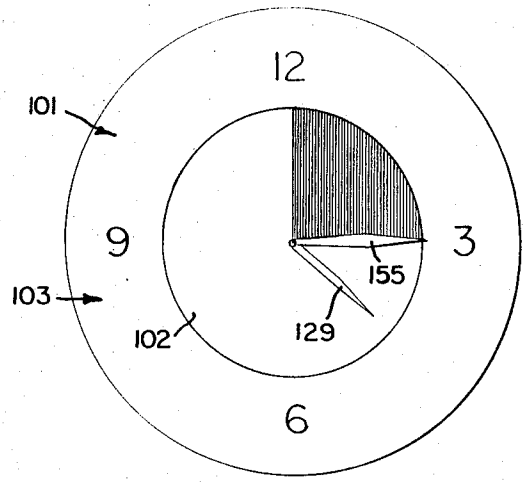


FIG. 7

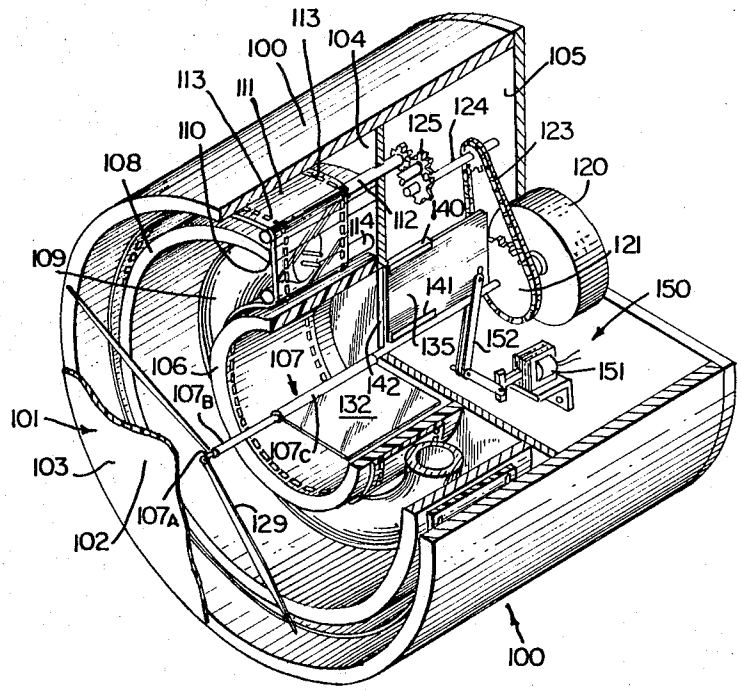


FIG. 8

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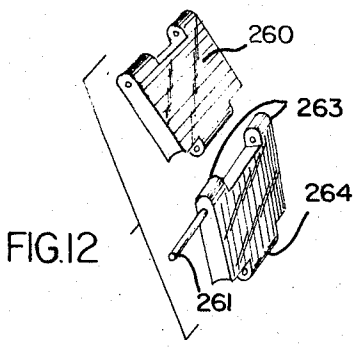


FIG.12

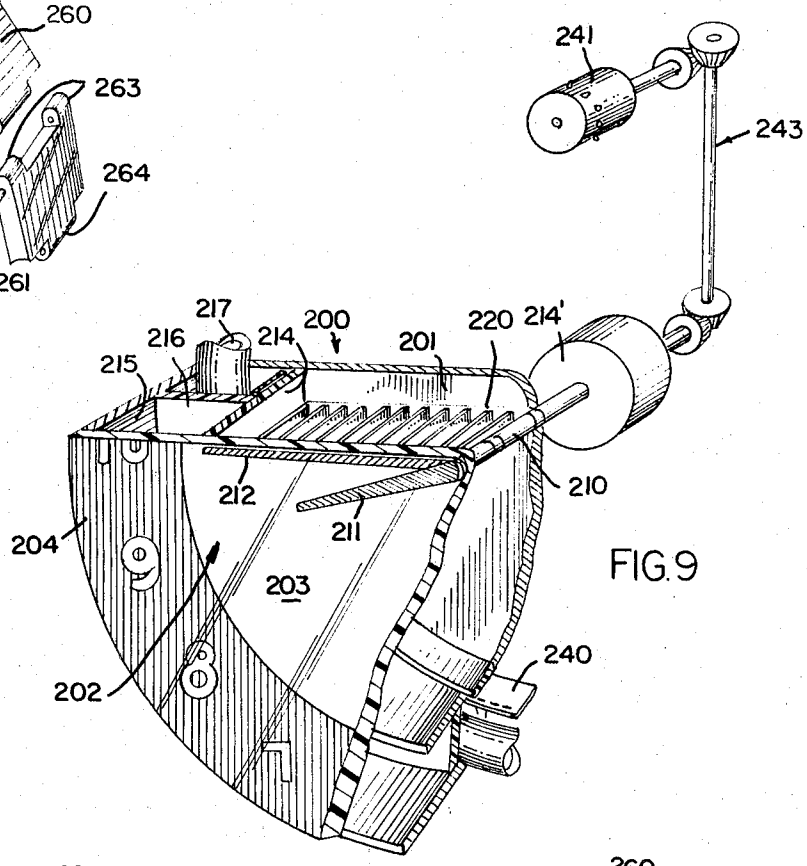


FIG.9

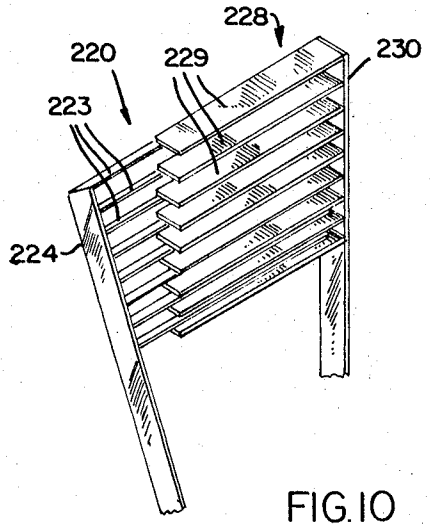


FIG.10

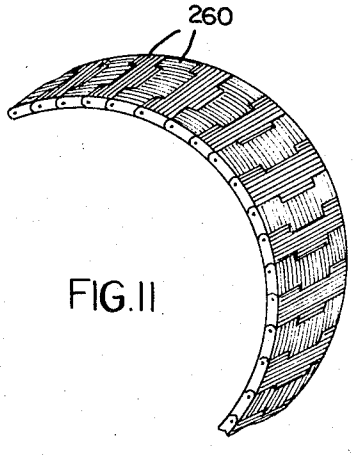


FIG.11

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ILLUMINATED DISPLAY MEANS

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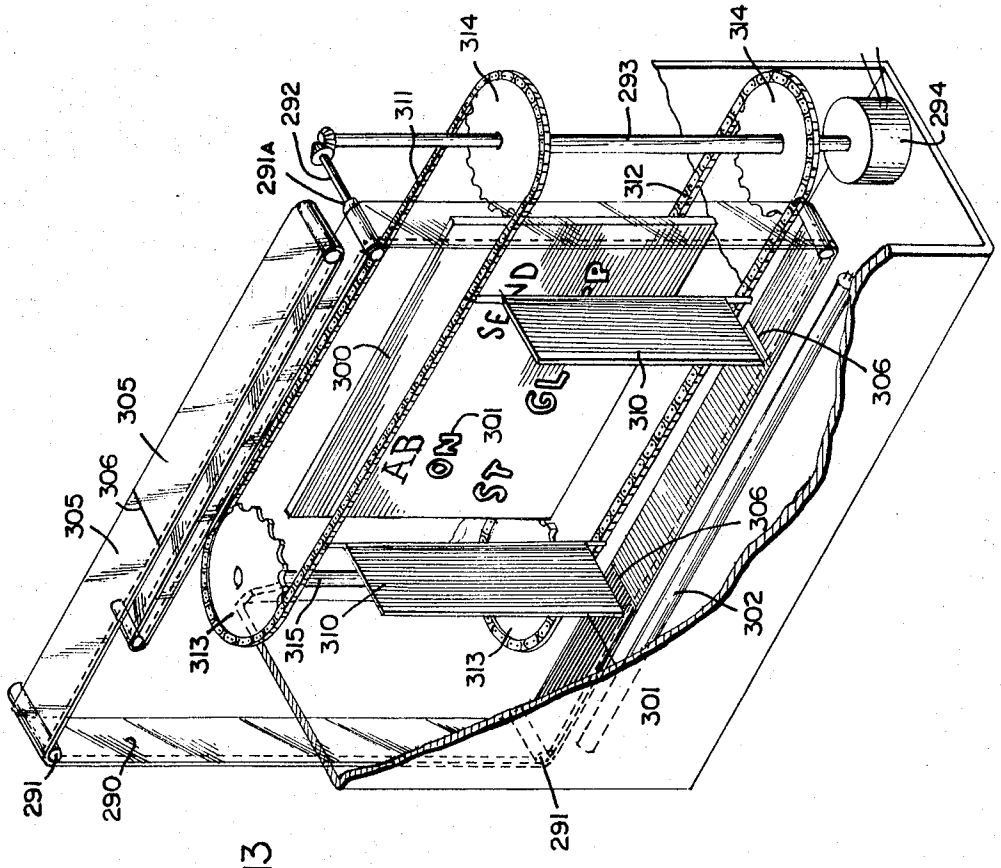


FIG. 13

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Patented Jan. 17, 1967

3,298,172

ILLUMINATED DISPLAY MEANS

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Filed Dec. 31, 1964, Ser. No. 422,849
18 Claims. (Cl. 58—50)

The present invention relates to a display means and more particularly to a display having dynamic chromatic effects.

The present invention provides means for displaying signs, messages and time utilizing color changes and other dynamic indicia in a novel and unique construction. The present invention is particularly adapted for use in connection with advertising flash signs and display clocks.

Thus, it is a particular object of this invention to provide a sign or clock for display purposes which has a light transmitting, preferably translucent, face. Dynamically changing segments of contrasting chromatic light are projected through the face for illustrating, indicating or emphasizing particular messages or time. The invention may be embodied in a clock to indicate chromatically the minutes past the hour or the hour or both. In a simple embodiment of this invention, as embodied in a clock, the hour is chromatically displayed, but, the minutes past the hour are not. In such an embodiment the hour may be indicated by conventional means by an hour hand moving over the translucent face of the clock. The minutes past the hour are indicated by a continuously growing pie-shaped segment with a fixed edge of the segment aligned with 12 o'clock and an advancing edge indicating the minute of the hour. This pie-shaped segment may be formed of any brilliant color desired which is illuminated from the back of the clock through the translucent face. The balance of the clock face is also illuminated but in chromatic contrast to the pie-shaped segment. As the minutes of the hour advance, the pie-shaped segment grows larger and larger until the minute hand reaches 12 o'clock at the end of the hour. At this point the entire clock face is illuminated in the color of the original segment. During the sequential hour a new segment may be formed of a still different contrasting color. This process may be continued throughout the day with a different color for each hour, or may be varied from one color to a second color only, depending upon the specific embodiment utilized.

The present invention also contemplates means for chromatically indicating the minutes past the hour in a clock arrangement. In such an embodiment a clock mechanism is provided with a conventionally actuated hour hand. The face of the clock over which the hand travels is translucent. Behind this face there is provided a thin baffle means aligned with the 12 o'clock radius of the clock. A movable baffle is actuated by the minute hand mechanism to rotate about the axial center of the clock face. A translucent continuous strip of material segmented into successively contrasting chromatic portions is arranged behind the translucent face. Light means are also positioned behind the clock face to project light rays through the translucent strip on both sides of the moving baffles and onto the rear surface of the clock face. Means are provided to move the translucent strip longitudinally so that successive chromatic portions pass around the clock face on the rear side of it. The lines defining one chromatically contrasting portion from another of the strip are arranged to move in synchronism with the movable baffle so that the light passing through this one portion of the strip will fall on one side of the movable baffle and light passing through an adjacent portion of the moving strip will project onto the other side of the movable baffle. Thus there is provided an illuminated clock with a face having a growing pie-shaped segment which enlarges in synchronism with the advancement of the minute hand.

This invention also contemplates a structure such as set forth above except for modifications which permit color changes once a minute. In this construction the color variations are attained by synchronizing the movement of the elongated strip and the movable baffle with a second hand instead of a minute hand. In this arrangement both the minute and hour hands may be conventionally arranged and actuated.

In another embodiment of this invention, an annular ring concentrically arranged about the clock face is segmented in twelve portions corresponding to each numeral of the clock face. The particular hour is illustrated in a color by illuminating the ring from 12 o'clock to the particular hour in a color contrasting with the color of the balance of the ring. In another form numerals indicating the hour may be arranged about the clock with the numeral being sequentially illuminated to indicate the particular hour.

It is also an object of the present invention to provide a display sign in which various color sweeps are adapted to move across a translucent or transparent display sign face to dynamically form or illuminate a particular message. In such an arrangement messages imprinted in varying colors on the face of the sign will react with the color sweep depending upon the nature of the colors utilized.

In a preferred embodiment of this invention a display mechanism is utilized in combination with a clock. The clock itself consists essentially of a tranlsucent clock face behind which is located a light source. This light source may preferably comprise one or more fluorescent tubes arranged circumferentially about the clock face. Positioned behind the clock face and light source is a mirror which reinforces the fluorescent light rays passing through the clock face. A continuous strip of light transmitting film or linked panels for larger units having successive segments of contrasting colors is positioned behind the clock face. Each of these segments preferably should have a length equal substantially to the circumference of the clock face. This continuous strip lies partially outside and partially within the ring of fluorescent tubes with the portion within forming a loop which is guided close to the inner circumference of this fluorescent ring so that light from the fluorescent ring will pass inwardly through the loop to be reflected through the clock face. Means are provided for advancing the loop continuously in clockwise direction so that the light will pass through successive segments of the strip as it is moved.

Also provided is a baffle which is mounted for rotation about the clock axis immediately behind the clock face. This baffle moves in synchronism with the line of demarcation between successive segments of the continuous strip. Thus, as the baffle rotates once each time period, it will physically separate one color created by the light shining through one segment from the other color in the adjacent segment. A second baffle preferably is provided in alignment with 12 o'clock which acts as a permanently located baffle coincident with the point of origination of the changing color on the face of the clock. These baffles function to clearly define one color segment from another of the clock face. The time period for cycling each segment of the strip and the movable baffle about the clock axis is preferably one minute so that the changing color segment on the clock face acts as a second hand. If desired conventional minute and hour hands may be provided.

Other modifications of this invention as well as objects and advantages will be more clearly understood when considered in conjunction with the accompanying drawings in which:

FIG. 1 is a fragmentary perspective view of a preferred embodiment of the invention;

FIG. 2 is an exploded view of some of the essential components of FIG. 1;

FIG. 3 is a fragmentary elevational detail in cross section taken substantially along the line 3—3 of FIG. 1;

FIG. 4 is a fragmentary elevational cross section taken along the line 4—4 of FIG. 3;

FIG. 5 is a cross sectional detail taken substantially along the line 5—5 of FIG. 3;

FIG. 6 is a fragmentary cross sectional detail of a portion of the elements illustrated in FIG. 3;

FIG. 7 is a plan elevational view of the modification of the invention;

FIG. 8 is a fragmentary perspective partially cross sectional view of the embodiment shown in FIG. 7;

FIG. 9 is a fragmentary perspective of a modification of the embodiment illustrated in FIG. 1;

FIG. 10 is a detailed fragmentary perspective of elements shown in FIG. 9;

FIG. 11 is a perspective fragmentary view of a modification of elements shown in FIG. 9;

FIG. 12 is an enlarged exploded view of elements shown in FIG. 11;

FIG. 13 is a fragmentary perspective view of another modification of the present invention.

The preferred embodiment illustrated in FIGS. 1 and 2 comprises a display having a clock mechanism in which the clock face changes color once a minute. It should be understood, however, that this preferred embodiment may be modified so that the clock face will change colors over other periods of time. In this preferred embodiment, a case **1** is shaped and arranged to contain a clock mechanism. This case **1** is positioned above a second case **2** which forms a magazine for a moving tape. A clock motor **4** is positioned at the rear of the case **1**. This motor **4** may be of conventional design and is provided with an output shaft **5** adapted to rotate a minute, hour and, if desired, a second hand. An hour hand **6** is connected to the shaft **5** of the motor **4** and rotates once every twenty-four hours. The minute hand **7** is connected to a coaxial shaft **5'** and is adapted to rotate once an hour. A third shaft **5''** is also coaxial with shafts **5** and **5'** and is arranged to rotate once a minute. Shaft **5''** surrounds shafts **5** and **5'**. These coaxial shafts **5**, **5'** and **5''** extends through and intermediate plate **8** that is normal to the shafts **5**, **5'** and **5''**. This plate **8** preferably has a mirrored front surface and is positioned in parallel alignment with a translucent cover or face **9** on the forward side of the clock. The shafts **5**, **5'** and **5''** preferably extend through both the plate **8** and cover **9** and support the hands **6**, **7** and **12** on the outer side of the cover or face **9**. If desired, the second hand may be eliminated or one or more of the hands positioned on the inner surface of face **9** by suitable modification. The plate **8** and cover **9** are connected together by an annular collar **10** which is formed of a transparent plastic material. A baffle **11** is connected to shaft **5''** and rotates with it. The baffle **11** is connected along its inner edge to the shaft **5''** with its outer edge brushing in the inner surface of the annular collar **10**. The forward edge of the baffle **11** fits in close adjacency to the rear surface of the translucent cover or face **9** while the rear edge of the baffle **11** fits closely to the mirrored surface of plate **8**. Plate **8** is formed with a rectangular aperture **15** (FIG. 4) the vertical center axis of which is aligned with 12 o'clock. This aperture **15** is symmetrically positioned immediately above the shafts **5**, **5'** and **5''**. A rotatable baffle **16** is mounted in this aperture **15** and is adapted to be rotated by engagement with baffle **11** as baffle **11** is carried around on rotation of shaft **5''**. Baffle **16** comprises four panels **16***a*, **16***b*, **16***c* and **16***d*. Each panel is positioned at right angles to the adjacent panels and each is connected along a vertical center axis **17** coincident with the center axis of the aperture **15**. The baffle **16** is mounted for rotation in the aperture **15**. This baffle **16** is preferably mounted with an annular spring **20** coaxial with the shaft **17** and positioned within a journal **21** in the plate **8**. The spring **20** at the upper end of the axis **17** is designed to exert a downwardly directed force on the baffle **16**. The baffle panels are each preferably provided with a wedge **22** flared upwardly from the bottom edge of the panel. These wedges are adapted to successively engage the rotating baffle **11** each time that the baffle **11** rotates past 12 o'clock. Spring stops **23** at the side edge of each panel **16***a* to **16***d* are adapted to engage the side edges of the aperture **15** and spring tension the baffle **16** in the position illustrated in FIG. 5 until the next rotation of the baffle **11**. The baffle **11** is moved with sufficient force to overcome the resistance of spring **23** and cause the baffle **16** to rotate 90 degrees.

A light source preferably in the form of an annular fluorescent tube **3** is positioned between the collar **10** and the outer annular wall **31** of the casing **1**. This annular fluorescent tube is suitably wired and is adapted to illuminate the interior of the clock through the collar **10**. Light rays passing through the collar **10** are directed primarily to and through the cover or face **9** by use of the mirrored surface on plate **8**. A moving web or strip **35** is formed of a continuous length of transparent or translucent film material. This endless web is formed with successive segments of contrasting color **35***a* and **35***b* defined from each other by line **36**. Any number of successive segments of colors may be used but for illustrative purposes, six different successive color segments may be used for an arrangement in which the color of the clock face will change once a minute with the series of color changes repeating every six minutes. The endless web **35** has its major portion **37** positioned within casing **2** (FIG. 1) and is supported for continuous movement in and out of the casing **2** on suitably arranged rollers **38**, preferably positioned at each end of the casing **2** and providing means by which the endless web **35** may be stored in a relatively compact fashion by extending segments of the web back and forth between parallel rolls. The web **35** extends out of the casing **2** in the direction of arrow A shown in FIG. 2. When it moves in this direction, it moves preferably around and is driven by sprocket **40** having teeth adapted to engage successive slots in the endless web **35**. The web **35** preferably extends around the clock from the lowermost portion to the uppermost portion where it is threaded around the idler sprocket **41** and then in a clockwise direction around and in facing relation to collar **10** from one side to the other side of the 12 o'clock position of the clock. The portion of the web **35** on the other side of the 12 o'clock position is carried by idler sprocket **43** around one end of light source **30**. Suitable means (not shown) which may comprise an annular collar on the outer side of the light source **30** may be provided to support the portion of web **35** outside the light source. The web **35** extends down to sprocket **46** and into the magazine as illustrated in FIG. 2. The endless web **35** is driven with its innermost portion moving in a clockwise direction as indicated by arrow B by means of a suitable drive source such as schematically illustrated in FIG. 2. In this arrangement, the power source **50**, which may be a portion of the clock-motor mechanism, is connected by a suitable gear reduction train **51** to the shafts **52** and **53**. Shafts **52** and **53** rotate in a clockwise direction as viewed in FIG. 2. Shaft **52** carrying sprocket **40** moves the endless web **35** from the magazine and shaft **53** carrying sprocket **46** in a takeup operation.

It will be noted that the outer portion of the web **35** moves in a counter clockwise direction while the inner portion moves in a clockwise direction. Thus, if desired, the transparent member **55** may be mounted on the

clock casing **1** and may extend through it with the inner side of the member **55** facing the outer portions of the web **35**. Thus, as web **35** is formed of a film of successively contrasting colors, these colors will move counterclockwise on the outer portion. As a result a moving light will shine through the member **55** in a different color than in the clock face. In addition, the clock face will have a growing pie-shaped segment which moves from 12 o'clock in a clockwise direction in synchronism with the second hand mechanism. The member **55** on the other hand will change colors in a counterclockwise direction.

Lines **36** define successive segments **35***a*, **35***b* of the endless web **35**. This web **35** moves in synchronism with the second hand mechanism of the clock mechanism so that a line **36** reaches the 12 o'clock position of the clock face at the same instant as the second hand. Baffle **11** is keyed to radially align with successive lines **36** each time it reaches the 12 o'clock position. The color projected onto cover **9** from baffle **16** to the trailing surface of the moving baffle **11**, as it moves in a clockwise direction, thus will be uniform in color.

Referring now to FIGS. 7 and 8, there is illustrated a further modification of the present invention which may be useful in larger displays or mechanisms. In this arrangement, the case **100** is provided with a face **101** having a translucent center portion **102** and an outer portion **103** which may, if desired, be opaque and which may bear transparent or translucent numerals of the clock face. An intermediate wall **104** parallel to the rear wall **105** and the face **101** extends across the entire diameter of the casing **100**. This wall **104** preferably has a mirrored forward face. Positioned between the wall **104** and face **101** is an annular transparent member **106** which extends from the wall **104** preferably to and in close relationship with the inner surface of the face **101**. The front member **106** is shown as extending short of the face **101** in FIG. 8 for clarity in illustrating other elements. This annular member **106** is preferably coaxial with the axis of the casing and the shafts generally indicated at **107**. A second annular member **108** is coaxial with and surrounds the annular member **106**. This member **108** also extends from the intermediate wall **104** to the face **101**, but is provided with a slot at the 12 o'clock position parallel to the axis of the member. The light emitting source, preferably an annular fluorescent tube **109**, is positioned between the members **106** and **108**. The light source **109** is suitably energized by means not shown. Endless film **111** is looped about and lies in facing relation with the outer surface of member **106**. This loop extends through the slot **110** of member **108**, and extends about the outer surface of the second annular member **108**. The endless web **111** is adapted to move continuously about the annular member **106** and the annular member **108**. This web is driven in a clockwise direction as viewed from the face of the clock about the member **108** by means of a drive shaft **112**. This drive shaft **112** is provided with sprockets that are adapted to engage the chain of slots **113** formed at one side of the web **111**.

The web **111** is divided into a series of successive segments of contrasting color. Each segment has a length equal to the outer circumference of annular member **106**. By selectively proportioning the various components in this clock, two or more segments of different colored film may be used. The web **111** is held in close adjacency to the outer surface of the annular member **106** by suitable rollers such as roller **114**, journaled between the intermediate wall **104** and a projecting pin or boss or other suitable means (not shown) projecting from the outer surface of the annular member **106**. Shaft **112** is driven from a suitable power source such as motor **120** which may also serve as a power source for the clock hands. In this embodiment, the hour hand may carry a gear **121** connected by a sprocket and chain arrangement **123** to a shaft **124** in turn connected by gear train **125** to the shaft **112**. Other suitable arrangements may also be used.

The shaft assembly **107** preferably comprises three coaxial shafts including an inner shaft **107***a*, intermediate shaft **107***b* and outer shaft **107***c*. Inner shaft **107***a* preferably carries the hour hand **129**. The outer shaft **107***c* has attached to it a baffle **132** which extends from the forward surface of the intermediate wall **104** to the inner surface of the translucent face **101**. Baffle **132** has its outer edge parallel to shaft **107** and in brushing relation with the inner surface of annular member **106**. This baffle **132** moves the second hand shaft **107***c*.

A second baffle **135** is vertically positioned and is aligned with 12 o'clock on the clock face. This baffle extends from the shaft assembly **107** to the inner surface of annular member **106**. The shaft is supported in guides **140** and **141** for reciprocal movement between a position within the annular member **106** and a position rearward of the intermediate wall **104**. The baffle **135** has a length such that it extends from the intermediate wall **104** to the rear surface of translucent portion of face **101** when it is positioned within the annular member **106**. And when it is withdrawn from within the annular member **106**, it is positioned entirely rearwardly of the intermediate wall **104**. A slot **142** in the intermediate wall is provided to permit the reciprocating movement of the baffle **135**. The reciprocating movement of the baffle **135** is effected by an actuating means generally designated at **150**. This arrangement may comprise a solenoid **151** suitably mounted on the rear wall **105** of the casing connected by a linkage system **152** to the baffle **135**.

In the operation of this embodiment, the minute and hour hands operate in a conventional fashion. The web **111** moves in synchronism with the second hand shaft **107***c*. The defining lines of the tape are synchronized to move around the annular member **106** in radial alignment with baffle **132**. Thus, as the baffle **132** reaches 12 o'clock position, a new segment of the color tape begins to move in a clockwise direction about the annular member **106**. As the web advances in a clockwise direction about the annular member **106**, the portion of the web leaving a facing relation position with the annular member **106** will be of a color contrasting to the new segment. Thus, the color of the portion of the web around the annular member **106** will gradually change. The light from the light source **109** will shine through the web **111** and the annular member **106**. The colored light passing into the center portion of the clock within the annular member **106** will be colored, with the color from 12 o'clock in a clockwise direction to the position of baffle **132** being of a color contrasting to the remaining color. This color differentiation will show up on the translucent face of the clock as a growing pie-shape.

The baffle **132** will rotate within the annular member **106** until baffle **132** approaches a 12 o'clock position. When it reaches a 12 o'clock position, it will actuate solenoid **151** by a suitable switch means (not shown) to cause the withdrawal of baffle **135** allowing baffle **132** to pass the 12 o'clock position. When it is past, a time delay means will cause solenoid **151** to reactuate and reposition the baffle **135** within the annular member **106**.

Referring to the embodiment of the invention shown in FIGS. 9–12, there is illustrated an arrangement which is particularly useful for very large clocks and displays. In this arrangement, there is provided a casing **200** having a rear wall **201** with a forward surface that is preferably polished and reflective. The face **202** of the casing is a light transmitting and preferably translucent member. If desired, this face **202** may be formed of a center portion **203** of a material having different light transmitting characteristics than the annular or outer portion **204**. Shaft means **210** extends through and preferably normal to the wall **201** and the face **202**. This shaft

means comprises at least a pair of coaxial shafts. If two coaxial shafts are used, the inner shaft has an end engaging the hour hand **211** and the other shaft may have an end engaging a minute hand **212**. If three coaxial shafts are used, the outer one is rotatable at 60 rotations per minute and may have a second hand (not shown) attached to its end. The hands **211** and **212** are adapted to be rotated adjacent to the face **202** by a suitable drive means such as a clock mechanism **214'**. The shaft supporting the hour hand **211** preferably extends through the minute hand shaft of the shaft means **210**. Collar **214** of light transmitting material extends between the rear wall **201** and the face **202**. The forward edge of this collar **214** is preferably aligned with the junction of the annular portion **204** and the center portion **203** of the clock base. This collar **214** defines the annular portion **215** within the casing. This annular portion **215** is preferably divided into a forward and rear annular compartment by the continuous annular member **216**. The member **216** may be formed of a light transmitting material of a color different from the color of the light transmitting material forming the annular member **214**. A light generating means such as an annular fluorescent light **217** is positioned in the rearmost section of the member **215**. Suitable means are provided to support and actuate this light means **217**. Light from the light emitting means **217** projects through the members **216** and **214**.

A baffle **220** is supported within the center portion of the casing with one edge adjacent to the rear wall **201**, another edge adjacent to the inner surface of the face **202**, a third edge brushing against the inner surface of the collar **214**, and the fourth edge integrally connected to the shaft of the shaft means **210**. The baffle **220** is preferably formed of a series of slats best illustrated in FIG. 10. These slats **223** are connected together at one end by a continuous arm **224** which in turn is connected to the outermost shaft of the shaft means **210** which in one embodiment drives the minute hand **212** and in another rotates as a second hand. Fixed baffle **228** is positioned at the 12 o'clock position of the clock. This fixed baffle comprises a series of slats **229** each connected together by an elongated member **230** which is positioned on the side of the clock casing opposite to the side at which the arm **224** is connected. Slats **229** of baffle **228** are adapted to be aligned with the spaces between the slats **223** of baffle **220** as baffle **220** is rotated by shaft means **210** past the 12 o'clock position.

Synchronized with movement of the minute hand **212** and the shaft of the shaft means **210**, which drives it, is an endless web **240** of successive segments of contrasting light transmitting characteristics. The web may take the form of a conventional plastic film having segments preferably equal to the circumference of collar **214** and with each segment having light transmitting characteristics different from those of adjacent segments. This film is driven by a sprocket drive **241** suitably positioned within the casing and engaging the web **240**. The sprocket **241** may be connected to the motor means **214'** by a suitable gear and shaft linkage generally indicated at **243**. The film may be provided with a storage section equivalent to that illustrated in FIG. 1 so that continuously changing segments may be introduced and rotated about the shaft means **210** in synchronism with the baffle **220**. The portion of the film within the casing **200** may be positioned between the fluorescent tubes **217** and the outer surface of the collar **214** and between the rear wall **201** and the member **216**.

The web may also be made of a series of successive links illustrated in FIGS. 11 and 12. This construction is particularly useful for very large signs. In this arrangement, a series of links **260** of suitable light transmitting materials may be linked together by pins **261** extending through tabs **263** of one link into pivoting engagement with a tongue **264** of an adjacent link.

In the arrangement of FIG. 10, a light transmitting face or screen **300** is formed preferably of a translucent plastic on which opaque or colored letters **301** may be printed or cut. Disposed behind this sign and within a casing of suitable design is an endless film or web **290**. This film is suitably supported on a plurality of sprocket wheels **291** with one sprocket wheel **291***a* connected to a drive shaft **292** in turn connected through a shaft **293** to a motor **294**. The film **290** extends at least along a portion of one edge of the sign immediately behind the translucent light transmitting face **300** and in a plane angular and preferably normal to the plane of the face **300**. A light source preferably formed of fluorescent lights **302** is positioned immediately below the portion **301** and is arranged to project light rays upwardly through the portion **301** onto the rear surface of the translucent member **300**. The film **290** is formed with a plurality of successive segments **305** of contrasting colors with these segments defined from one another by lines **306**. The length of each segment may be varied but preferably should comprise at least the length of the member **300** although in certain embodiments a length shorter than the length of the member **300** may be desirable. Thus, the light emitted from the fluorescent light **302** and directed onto member **300** changes color with the movement of the web or film **290**. A plurality of baffles **310** are mounted on and between opposite endless conveyor chains **311** and **312**. These chains are mounted on and carried by pairs of sprockets **313** and **314** in turn mounted respectively on shafts **315** and **293**.

Since shaft **293** is a driven shaft, it will in turn rotate the sprockets **313** and **314** and the endless chains **311** and **312**. These chains will in turn carry the baffles **310** behind the wall **300**. The baffles **310** are positioned apart a distance equal to the distance between the lines **306** and are adjusted in relation to the film **290** so that they are vertically aligned with dividing lines **306** as they move behind the face **300** and over the light source **306**.

What is claimed is:

1. A display clock comprising a casing having light transmitting face, at least one of an hour hand and a minute hand, means supporting said hands for rotation about a common axis over a surface of said face, means for rotating said hands about said axis with said hour hand making a complete revolution in an hour and said minute hand making a complete revolution in a minute, a cylindrical member of light transmitting material coaxial with said axis and positioned rearward of said face with one end of said cylinder terminating close to the inner surface of said face, an elongated endless light transmitting web having a plurality of successive segments of contrasting colors with said segments each having a length equal to the outer circumference of said cylindrical member and with a portion of said web looped about said cylindrical member, means for moving said web longitudinally about said cylindrical member in a clockwise direction as viewed from said face whereby said segments will successively encircle said cylindrical member, light generating means positioned outside of and substantially encircling said portion of said web whereby light may be transmitted through said portion and said cylindrical member, a pair of baffle means disposed within said cylindrical member and lying in planes passing through said axis, means for rotating one of said baffle means about said axis in synchronism with one of said hands, means supporting the other of said baffle means in a position coincident with twelve o'clock, and means for permitting the passage of one baffle means past the other as said one baffle means moves past twelve o'clock.

2. A device as set forth in claim **1** wherein said other baffle means comprises four wings connected together at a common edge and lying in planes normal to the adjacent wings, means mounting said other baffle means for rotation on an axis coincident with said common edge and radially aligned with said twelve o'clock position and lying in a plane no further forward then the plane in

which the rearward edge of said one baffle means moves.

3. A device as set forth in claim 1 wherein said other baffle means comprises a flat member having a width at least substantially the radius of said cylindrical member, means for supporting said flat member for reciprocal movement in the plane in which said flat member lies, means for reciprocating said flat member between a position within said cylindrical member extending radially from said axis in a plane coincident with the twelve o'clock position and a position outside of said cylindrical member.

4. A device as set forth in claim 1 wherein said baffle means each comprise slotted members with the slots in one baffle means parallel and relatively displaced from slots in the other baffle means whereby said other baffle means may pass through said one baffle means as said other baffle means is carried past twelve o'clock.

5. A display mechanism comprising a casing having a light transmitting face, a continuous substantially planar light transmitting web having successive segments of contrasting color means supporting said web behind and with the plane of said web arranged to intersect and be angular to said face for movement about a center axis and in a direction longitudinal of said web, means for moving said web in said direction, and means for transmitting light through said web towards said axis and onto the rear surface of said face.

6. A display mechanism comprising a casing having a light transmitting face, a continuous light transmitting web having successive segments of different light transmission qualities, means supporting a portion of said web behind said face for movement about a center axis arranged at an angle to said face in a direction longitudinal of said web and with said support means constructed and adapted so that said portion of said web substantially forms a cylindrical light transmitting means, means for moving said web, and light generating means for generating light through said portion of said web towards said central axis and onto the rear portion of said face.

7. A display mechanism as set forth in claim 6 wherein said portion forming a cylindrical light transmitting means has a circumference equal to at least the length of one of said segments.

8. A display as set forth in claim 7 wherein said light generating means is positioned external of and substantially surrounding said cylindrical light transmitting means and is adapted to generate light therethrough.

9. A display mechanism comprising a casing having a light transmitting face,

a continuous light transmitting web having successive segments of different light transmission qualities,

means supporting a portion of said web behind said face for movement about a center axis in a direction longitudinal of said web and with said support means constructed and adapted so that said portion of said web substantially forms a cylindrical light transmitting means having a circumference equal to at least the length of one of said segments,

means for moving said web,

light generating means for generating light through said portion of said web and onto the rear portion of said face with said light generating means positoned external of said cylindrical light transmitting means and adapted to generate light therethrough,

and a baffle disposed within said cylindrical light transmitting means, and means for rotating said baffle about the axis of said cylindrical light transmitting means in synchronism with the movement around said cylindrical light transmitting means of successive segments.

10. A display as set forth in claim 9 including a clock mechanism having shaft means coincident with the axis of said cylindrical light transmitting means and supporting said baffle for rotation, a second baffle positioned at twelve o'clock, and means supporting said second baffle for movement from a position within said cylindrical means at twelve o'clock and a position external of said cylindrical means and means for moving said second baffle between said positions.

11. A display clock comprising a clock mechanism having rotatable shaft means including a pair of coaxial shafts with one shaft rotating once a minute and the other once an hour, a casing containing said shafts with said casing having a light transmitting face extending angular to said shaft means at one end thereof, a minute hand and an hour hand connected to said shaft means and positioned to rotate about said shaft means in close adjacency to said face, an elongated light transmitting web divided into a plurality of successive segments of different light transmitting characteristics, means supporting said web within said case behind said face with a portion of said web forming a substantially cylindrical element having an axis coaxial with said shaft means and with said cylindrical element having a circumference no greater than said portion, light emitting means positioned within said casing to project light through said cylindrical element onto said clock face, means for moving said web longitudinally and in a direction clockwise with respect to the front of said face and in synchronism with the movement of said hands.

12. A device as set forth in claim 11 wherein a second portion of said web continuous with said first portion is positioned within said casing in an area remote from said light transmitting face.

13. A display mechanism comprising a light transmitting face adapted to have information projected thereon, an endless substantially planar web having successive light contrasting segments, means for moving said web in a direction longitudinal of its length and adjacent and with the plane of said web angular to said face, and means for transmitting light through said web onto the rear surface of said face.

14. A display mechanism comprising a light transmitting face adapted to have information projected thereon,

an endless web having successive light contrasting segments,

means for moving said web in a direction longitudinal of its length and adjacent and angular to said face,

means for transmitting light through said web onto the rear surface of said face,

baffle means,

means supporting said baffle means for movement in a plane angular to and behind said face and angular to said web,

and means for moving said baffle means in synchronism with said web movement with one edge of said baffle means aligned with the junction of adjacent segments.

15. A device as set forth in claim 14 including a sign bearing a message positioned behind said face and light means for transmitting said message on said face.

16. A clock mechanism comprising shaft means having a pair of coaxial shafts, means for rotating one shaft once an hour and the other once a minute, a light transmitting clock face positioned angular to its said shafts, a plurality elongated light transmitting webs each having successive segments of different light transmitting qualities, each of said webs having portions substantially circumscribing said shafts in an area behind said face, and with one of said portions spaced from the other, means for moving said webs in said portions in a clockwise direction as viewed from said face with one web moving in synchronism with said one shaft and the other in synchronism with said other shaft, light emitting means for projecting light through each of said portions onto the rear surface of said face, and means attached to each said shafts to rotate, with one means moving in alignment with the junction of adjacent segments as they move through the portion of said one web and the other means moving in alignment with the junction of adjacent segments as they move through the portion of said other web.

17. A display device comprising a casing having a light transmitting face,

a cylindrical member of light transmitting material having a central axis positioned rearwardly of said face with one end of said cylindrical member terminating close to the inner surface of said face,

an elongated endless light transmitting web having a plurality of successive segments of contrasting colors with said segments each having a length equal to the outer circumference of said cylindrical member and with a portion of said web looped about said cylindrical member,

means for moving said web longitudinally about said cylindrical member in a clockwise direction as viewed from said face whereby said segments will successively encircle said cylindrical member,

light generating means positioned outside of and substantially encircling said portion of said web whereby light may be transmitted through said portion and said cylindrical member,

a pair of baffle means disposed within said cylindrical member and lying in planes passing through said axis,

means for rotating one of said baffle means about said axis,

means supporting the other of said baffle means substantially along a vertical line,

and means for permitting the passage of one baffle means past the other as said one baffle means moves past said line.

18. A device as set forth in claim 17 wherein said other baffle means comprises four wings connected together at a common edge and lying in planes normal to the adjacent wings,

means mounting said other baffle means for rotation on an axis coincident with said common edge and radially aligned with said line and lying in a plane no further forward than the plane in which the rearward edge of said one baffle means moves.

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