March 24, 1931. F. W. HOBAN 1,797,773

CHANGEABLE EXHIBITOR

Filed Aug. 27, 1928 2 Sheets-Sheet 1

Fig. 1.

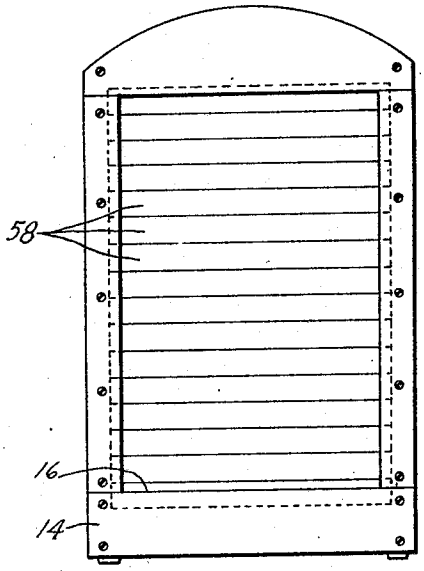

Fig. 3.

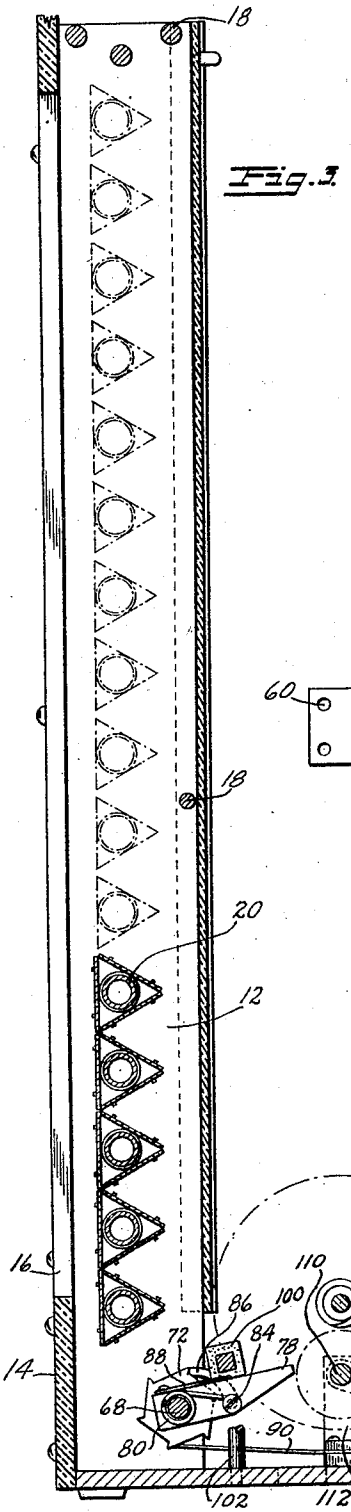

Fig. 8.

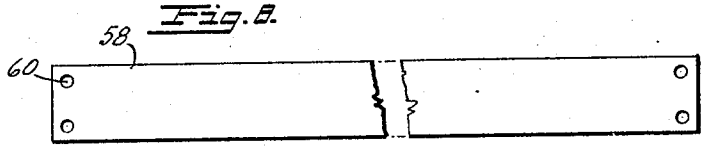

Fig. 7.

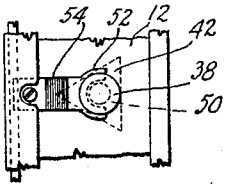

Fig. 2.

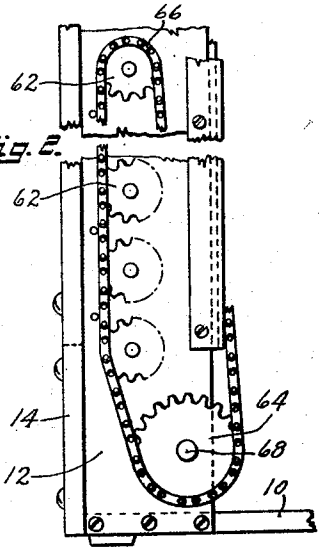

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Fig. 4.

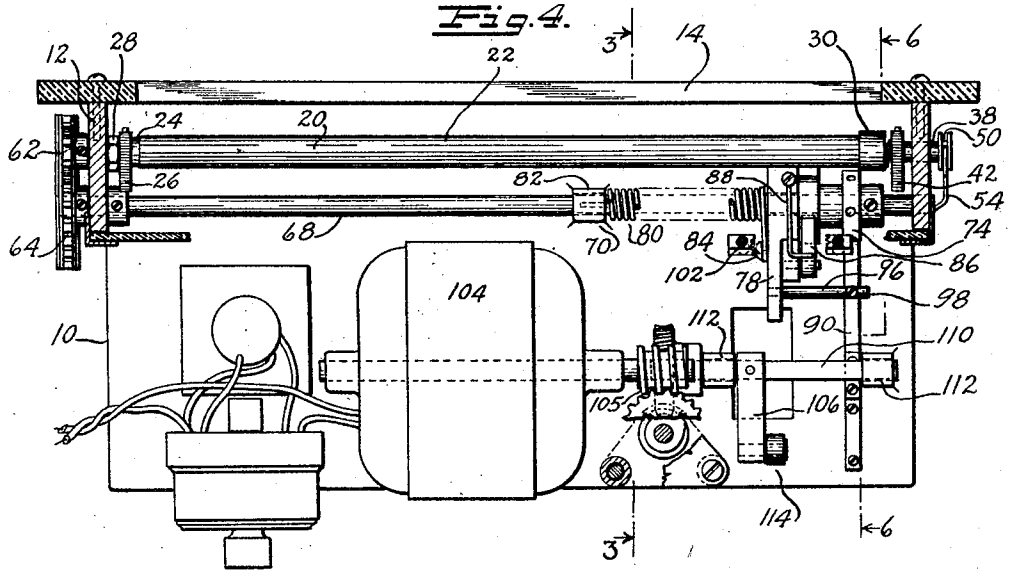


Fig. 5.

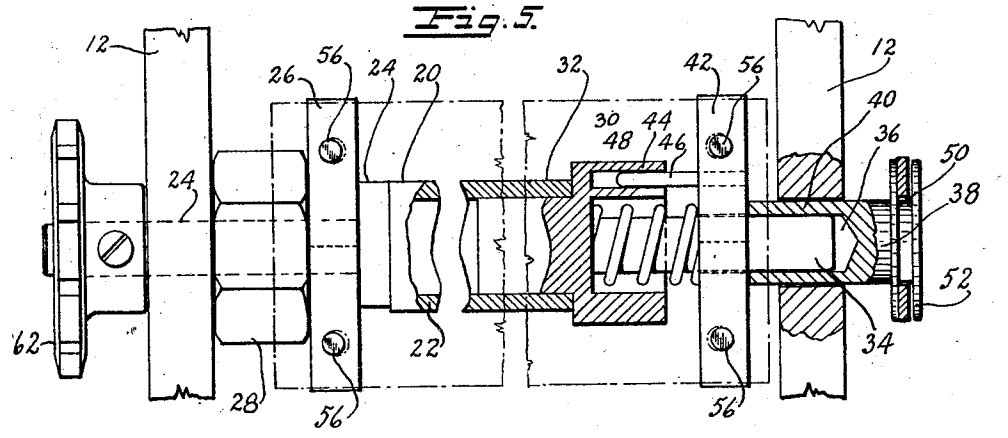
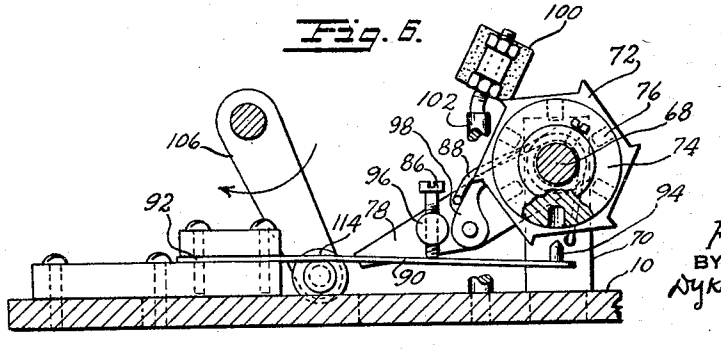


Fig. 6.



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UNITED STATES PATENT OFFICE

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CHANGEABLE EXHIBITOR

Application filed August 27, 1928. Serial No. 302,322.

My invention relates to improvements in means for presenting to view in succession pictures, advertisements or the like, and the same has for its object more particularly to provide a simple, efficient and attractive device which is quickly actuated intermittently to expose to view the pictures, advertisements or the like.

Further, said invention has for its object to provide a device of the character specified in which the several elements or drums thereof for supporting the pictures, advertisements or the like are actuated at intervals with a snap action and locked momentarily against movement in each position thereof.

Further, said invention has for its object to provide a device of the character specified in which a plurality of means are provided upon each of said supporting elements, drums or prisms for detachably receiving and retaining in position the strips constituting portions of the picture, advertisement, or other matter or representation to be displayed.

Other objects will in part be obvious and in part be pointed out hereinafter.

To the attainment of the aforesaid objects and ends, my invention consists in the novel features of construction hereinafter more fully described and then pointed out in the claims.

In the accompanying drawings:

Fig. 1 is a front elevation of one form of device constructed according to and embodying my said invention;

Fig. 2 is a side elevation thereof with parts broken away;

Fig. 3 is a section on the line 3—3 of Fig. 4;

Fig. 4 is a sectional plan thereof;

Fig. 5 is an enlarged detail view, with parts broken away and parts in section, of one of the strip supporting elements or drums;

Fig. 6 is a section on the line 6—6 of Fig. 4;

Fig. 7 is a detail elevation of a friction spring for a drum; and

Fig. 8 is a plan of one of the strips adapted to bear a portion of a picture, advertisement or other printed matter or pictorial representation to be displayed.

Referring to the drawings, the device comprises a base 10, lateral uprights or standards 12, and a forward frame 14 having an opening 16 therein. The uprights 12 are braced by suitable cross rods 18. Supporting members or drums 20 are disposed one above the other in spaced relation between the standards 12 and rotatably supported at the ends thereof by said standards. Each supporting member 20 comprises a tube 22. One end of each tube 22 is closed by a trunnion member 24 projecting through the contiguous upright 12, and having a triangular or other polygonally shaped strip attaching member or support 26 secured thereon for rotation therewith and retained in position by the nut 28. The opposite end of the tube 22 is closed by a member 30 having a cup-shaped portion 32 extending into the end of the tube 22, and a trunnion portion 34 disposed axially within the cup-shaped portion and extending outwardly beyond the same. Each trunnion portion 34 extends into the recess 36 of the bearing 38 which is movably disposed in the opening 40 through the standard 12 thereof. A triangular or other polygonally shaped strip attaching member or support 42 cooperating with the support 26 is slidably mounted on the trunnion portion 34 and is normally retained against the inner end of the member 38 by the coil spring 44 disposed upon the trunnion portion 34 between the support 42 and the base of the cup-shaped portion 32. The member 42 is held against rotation upon the portion 34 by a pin or key 46 secured to the element 42 and sliding in the hole 48 of the member 30. The outer end of each bearing 38 is provided with an annular groove 50 receiving the forked end 52 of a leaf spring 54 secured to the upright 12. The springs 54 which are of less strength than springs 44 press the bearings 38 inwardly against the elements 42 and provide frictional resistance retarding the rotation of the drums 20.

The corresponding edges of each pair of members or elements 26, 42 are each provided with projections or studs 56 for securing the strips 58 having the stud receiving holes 60.

The device illustrated is capable of displaying in succession three pictures, advertisements or other representations. In applying the latter to the device, the card boards or

other material on which the pictures, advertisements or the like are printed or otherwise formed are cut into strips, such as shown at Fig. 8, and the ends thereof perforated. The strips of each set in proper order are secured on the drums 20, the perforations 60 of each strip receiving the studs 56, and the strips of each set being secured to the sides of the elements 26, 42 which face outwardly simultaneously. In order to secure the strips 58 in position each element 42 is pushed inwardly against the tension of the spring 44 and the strip placed in position. Upon release of the element 42 the strip 58 is drawn taut and firmly retained in position against disengagement.

The several drums 20 are interconnected by suitable transmission mechanism for rotation simultaneously in the same direction. In the embodiment of the invention illustrated, the trunnions 24 have secured thereto the gears 62 driven from the sprocket 64 by a chain 66. The sprocket 64 is secured to a shaft 68 rotatable in the standards 12 and in the bearing 70 on the base 10. A ratchet 72 is secured to the shaft 68 for rotation therewith and also a cylindrical locking member 74 having holes 76 disposed around the periphery thereof. A lever or arm 78 is pivoted upon the shaft 68 for movement relative thereto and is retained normally in elevated position by the actuating spring 80 disposed about the shaft 68 and secured at one end 82 to the bearing 70 and at its opposite end 84 to the arm 78. The arm 78 carries a pawl 86 cooperating with the ratchet 72. A spring 88 carried by the lever 78 retains the pawl 86 in engagement with the ratchet 72.

A leaf spring 90 secured at one end 92 to the base 20 normally bears at its opposite end against the cylindrical locking member 74, a projection or lug 94 on the free end of the spring serving to enter the holes 76 to lock the shaft 68 against movement. A transverse member 96 on the arm 78 is provided with an adjustable screw 98 adapted to engage the spring 90 upon downward movement of the arm to release the lock. A suitable shock absorber or buffer 100 supported from the base 10 by the uprights 102 is disposed above the arm 78 to receive the impact thereof and limit its upward movement.

The arm 78 is actuated at intervals by suitable motive power such as the electric motor 104, or other electro-magnetic device, actuating the cam or arm 106 when a motor is employed through the reducing gearing 108, the arm 106 being secured to a shaft 110 mounted in bearings 112, and provided with a roller 114.

In operation, the strips 58 are in place and one of the pictures, advertisements or other representation formed thereby is exposed to view through the frame 14, as shown at Figs. 1 and 3, with the edges of the strips in close relation to each other, providing a continuous surface. As the arm 106 rotates 360° in the direction of the arrow shown at Fig. 6, the roller 114 at intervals engages the arm 78 and depresses the same. As the arm 78 is depressed the spring 80 is tensioned and the pawl 86 rides over the ratchet 72 to engage a lower tooth thereof. The downward movement of the arm 78 also depresses the spring 90 and releases the pin 94 from one of the holes 76 to unlock the device. When the roller 114 disengages the arm 78, the latter is quickly elevated by the spring 80 until the arm engages the buffer 110. The releasing of the arm 76 causes the pawl and ratchet to rotate the shaft 68, the pin 94 riding over the cylindrical surface of the member 74 and finally entering the next hole 76. The action of the arm 78 under the tension of the spring 80 is in the nature of a snap action and the release of the arm instantly moves the several drums 20 to the next succeeding position to expose to view the strips forming the succeeding picture, advertisement or representation. As the next succeeding strips are presented to view the locking means becomes instantly operative to lock the drums against movement.

Each picture or advertisement remains in view during the time necessary for the arm 106 to travel from and to position releasing the arm 78, the period of rest being such as to enable the observer to fully appreciate or understand the matter exposed. The changing of the picture or advertisement, however, is instantaneous.

By my invention, the several representations presented to view are changed so quickly as to immediately arouse the interest of the passerby.

The strips are readily placed in position and removed, and the strips of each set when presented to view have the contiguous edges thereof substantially in contact to provide substantially a continuous or uninterrupted surface.

I claim:

1. A device of the character described comprising means for supporting pictures or advertisements movably mounted to expose the surfaces thereof to view successively, spring controlled snap action means for actuating said supporting means, locking means for retaining the same in each position, and means for tensioning and releasing said snap action means at intervals, and releasing said locking means.

2. A device of the character described comprising means for supporting pictures or advertisements movably mounted to expose the surfaces thereof to view successively, spring means for actuating said supporting means, locking means normally retaining the same in each position against movement, and controlled by said spring means, and an actuat-

ing member engaging said spring means at intervals for tensioning the same and releasing said locking means; said actuating member releasing said spring means to actuate said supporting means and permit of the return of said locking means to normal position.

3. A device of the character described comprising supporting means for pictures or advertisements movably mounted to expose the surfaces thereof to view successively, a spring controlled member, a connection between said spring controlled member and said supporting means; said connection being inoperative to move said supporting means upon tensioning movement of said spring controlled member, and means for tensioning and releasing said spring controlled member at intervals.

4. A device of the character described comprising a base, supporting means thereon for pictures or advertisements movably mounted to expose the surfaces thereof successively, a rotatable shaft connected thereto, a ratchet secured on said shaft, a perforated locking member secured to said shaft a spring disposed on said shaft and secured at one end to a fixed support, an arm movably mounted on said shaft and retained in elevated position by said spring, a pawl carried by said arm cooperating with said ratchet, a spring detent secured to said base and normally engaging said locking member to retain said shaft against rotation, means on said arm for releasing said detent, a rotatable cam adapted to periodically engage said arm to tension said spring and release said detent, and to release said arm for actuating said supporting means by said spring through said pawl and ratchet, and for permitting the return of said detent to locking position, and power means for actuating said cam.

5. A device of the character described comprising a plurality of drums rotatably mounted in superposed position, and each having a plurality of surfaces; each set of the corresponding surfaces of said drums being movable into exposed aligned position; transmission mechanism connecting said drums together for joint movement in the same direction, spring means for actuating said transmission mechanism including a unidirectionally operative connection, locking means for retaining each set of corresponding surfaces in exposed position as the sets are moved to said position, an actuating member for tensioning said spring means and releasing said locking means at intervals; said actuating member releasing said spring means to cause the actuation of said drums and the locking thereof in each exposed position, and power means for actuating said member.

6. A device of the character described comprising a plurality of superposed drums, each having a plurality of sides movable successively into exposed position to bring the corresponding sides of said drums into alignment, a plurality of sets of strips; the strips of each set forming when arranged in order edge to edge a surface for a picture or advertisement, a pair of strip engaging members on each side of each drum movable towards and away from each other, a spring normally maintaining said members in separated relation, and inter-engaging means on each strip and each pair of members for securing the strip in place in taut condition.

In testimony whereof, I have signed my name hereto.

FAIRFIELD W. HOBAN.