

K. KOIKE.
 DISPLAY APPARATUS.
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1,031,125.

Patented July 2, 1912.

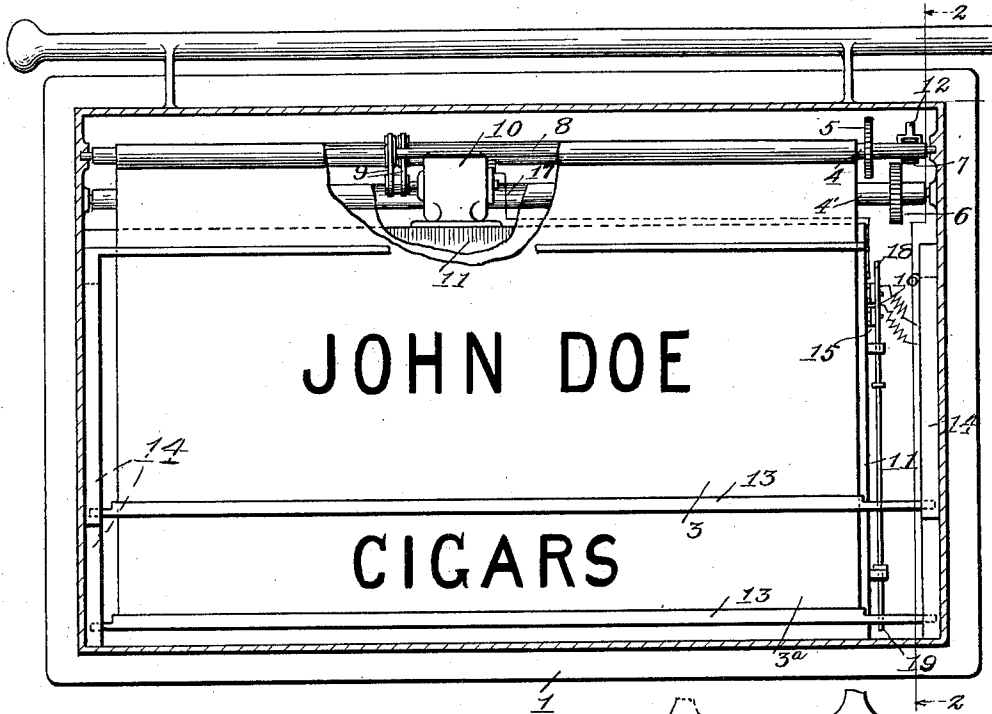


Fig. 1.

Fig. 2.

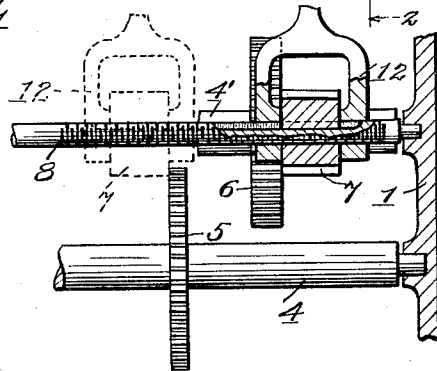
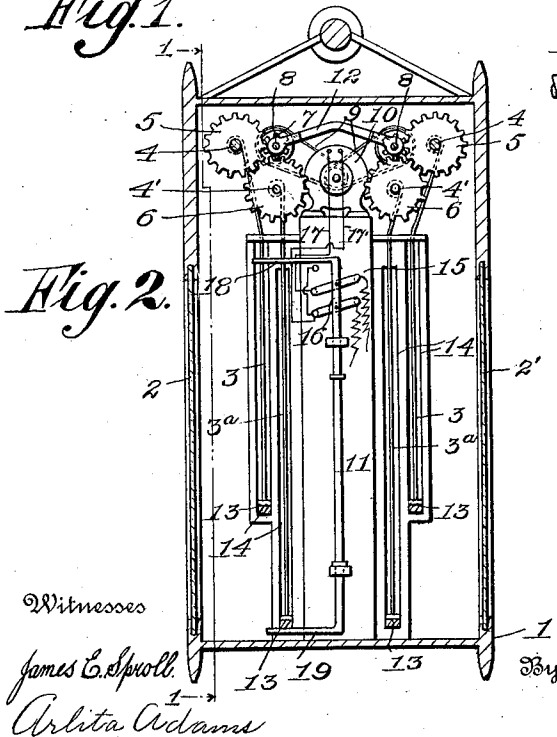


Fig. 3.

Inventor

Kihei Koike.

Adams & Brooks

Attorneys.

UNITED STATES PATENT OFFICE.

KIHEI KOIKE, OF SEATTLE, WASHINGTON, ASSIGNOR TO SHUICHIRO HIRAI, OF SEATTLE, WASHINGTON.

DISPLAY APPARATUS.

1,031,125.

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To all whom it may concern:

Be it known that I, KIHEI KOIKE, a citizen of Japan, and a resident of the city of Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Display Apparatus, of which the following is a specification.

My invention has for a primary object the provision of a novel apparatus of the above type wherein the sign face is formed of a plurality of adjustable sections, and it consists in the features of construction, arrangements and combinations of parts hereinafter set forth and succinctly defined in my annexed claims.

Referring to the accompanying drawing, illustrating a preferred embodiment of my invention, and wherein like numerals of reference indicate like parts throughout: Figure 1 is a vertical section of my apparatus taken on line 1—1 of Fig. 2, parts being broken away. Fig. 2 is a section taken on line 2—2 of Fig. 1, and Fig. 3 is a fragmentary section, illustrating more particularly the adjustable driving connection and its shifting device.

Referring now to the drawing by numerals of reference, 1 indicates a casing provided in its opposite side walls with display openings 2, 2', with each of which is associated a respective display face, each conveniently consisting of a pair of aprons 3 3^a, the displaying portions of the latter or inner aprons normally projecting below the former and thereby combined as extensions thereof, as clearly shown in Figs. 1 and 2. These pairs of aprons are mounted and operated in identically the same manner, and a description of one will therefore suffice. Aprons 3, 3^a are secured at their upper end portions to respective rollers 4, 4', one of which is spaced forwardly of the other and provided with gears 5 and 6 respectively which are of relatively different widths and arranged one beyond the other in the path of a pinion 7, forming an adjustable driving connection for transmitting motion thereto alternately.

Reference numeral 8 indicates a screw shaft, driven, as by a belt 9 from a reversible motor 10 mounted on a suitable support 11, and on this shaft pinion 7 is splined, a feather on the bore of the pinion being engaged in a longitudinal groove of the shaft, (see Fig. 3), whereby said pinion is held for

simultaneous rotary movement while being free for relative lengthwise movement.

Reference numeral 12 indicates a shifter having screw threaded engagement with shaft 8 and carrying pinion 7. Shifter 12 conveniently extends between screw shafts 8 and has its end portions bifurcated for reception of the adjacent pinions 7 and formed with threaded apertures or nut parts receiving shafts 8.

Reference numeral 13 indicates weights which are provided on the free lower end portions of aprons 3, 3^a, said weights consisting of bars having extended end portions engaged in guide-ways 14 of casing 1.

Shafts 8 are rotated simultaneously and in the operation of lowering aprons 3, 3^a, shifter 12 is fed outwardly to thereby bring its pinion 7 successively into mesh with the adjacent gears 5 and 6 and thereby drive the latter to unwind aprons 3, 3^a, aprons 3^a being lowered subsequently to aprons 3. When the direction of rotation of shafts 8 is reversed, as hereinafter set forth, aprons 3, 3^a are moved upwardly in a relatively reverse order, aprons 3^a, the last to be exposed, being the first to be removed from a display position, thereby enabling matter on aprons 3, which, for example, may be a desired portion of an advertisement, being exposed for a relatively long period.

For reversing the direction of rotation of motor 10, I have shown a reversing switch 15, of a well known type, the same consisting of a pair of pivoted arms connected by a bar 16, of insulating material, the said arms when switched moving alternately into engagement with contacts of respective leads 17, 17' of the motor, as shown, and thus changing the direction of the armature current.

For controlling switch 15 from one pair of aprons, I have provided strike parts, 18, 19, these comprising angular extensions of switch bar 16 and each lying in the path of the projecting end portion of the weight bar 13 of a respective apron, the strike part 19 projecting into the path of apron 3^a adjacent its lower end portion while strike part 18 projects into path of apron 3 adjacent the upper end portion thereof, as clearly shown.

Having thus described my invention what I claim as new, and desire to secure by Letters Patent of the United States of America, is:

1. In display apparatus, a display face

comprising a plurality of sections, means supporting said sections for movement one beyond the other, and means for automatically advancing said sections successively
 5 and retracting the same in relatively reverse order to thereby provide display periods of different length for the respective sections.

2. In display apparatus, a plurality of aprons, rotatably mounted rollers carrying
 10 said aprons, a rotatable driving means adjustably supported for axial movement to effect a driving connection with said rollers alternately, and means for rotating said
 15 driving means and simultaneously adjusting the same axially.

3. In display apparatus, a plurality of aprons, rotatably mounted rollers carrying said aprons, a screw shaft, means for operating said shaft, a rotatable driving means on
 20 said shaft connected therewith for simultaneous rotary movement and free for relative movement lengthwise thereof, means coacting with the screw of said shaft for shifting said driving means axially, and means on
 25 said rollers arranged in the path of said driving means to be alternately engaged thereby to communicate rotary movement thereof to said rollers.

4. In display apparatus, a plurality of
 30 aprons, rotatably mounted rollers carrying said aprons, a screw shaft, means for operating said shaft, a rotatable driving means on said shaft connected therewith for simultaneous rotary movement and free for relative
 35 movement lengthwise thereof, means coacting with the screw of said shaft for shifting said driving means axially, means on said rollers arranged in the path of said driving means to be alternately engaged
 40 thereby to communicate rotary movement thereof to said rollers, and controlling means for automatically reversing the direction of rotation of said shaft.

5. In display apparatus, a plurality of aprons, rotatably mounted rollers carrying
 45 said aprons, a screw shaft, means for operating said shaft, a rotatable driving means on said shaft connected therewith for simultaneous rotary movement and free for relative
 50 movement lengthwise thereof, means coacting with the screw of said shaft for shifting said driving means axially, means on said rollers arranged in the path of said driving means to be alternately engaged
 55 thereby to communicate rotary movement thereof to said rollers, and means operated by and during movement of said aprons for automatically reversing the direction of rotation of said shaft.

6. In display apparatus, a plurality of
 60 aprons, rotatably mounted rollers carrying said aprons, a screw shaft, means for operating said shaft, a gear splined on said shaft, a shifter having threaded engagement with said shaft and connected with said gear for
 65 shifting the same axially, gears on said rollers arranged in the path of said first gear to be engaged thereby, and means for reversing the direction of rotation of said shaft.

7. In display apparatus, a plurality of
 70 aprons, rotatably mounted rollers carrying said aprons for projection of one beyond the other to provide a display face, means for operating said rollers successively in op-
 75 posite directions, and controlling means for said first means operated by and during movement of said aprons for changing the direction of rotation of said rollers.

Signed at Seattle, Washington this 24th
 80 day of January 1911.

KIHEI KOIKE.

Witnesses:

STEPHEN A. BROOKS,
 ARLITA ADAMS.