

K. KOIKE.
 DISPLAY APPARATUS.
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1,026,214.

Patented May 14, 1912.

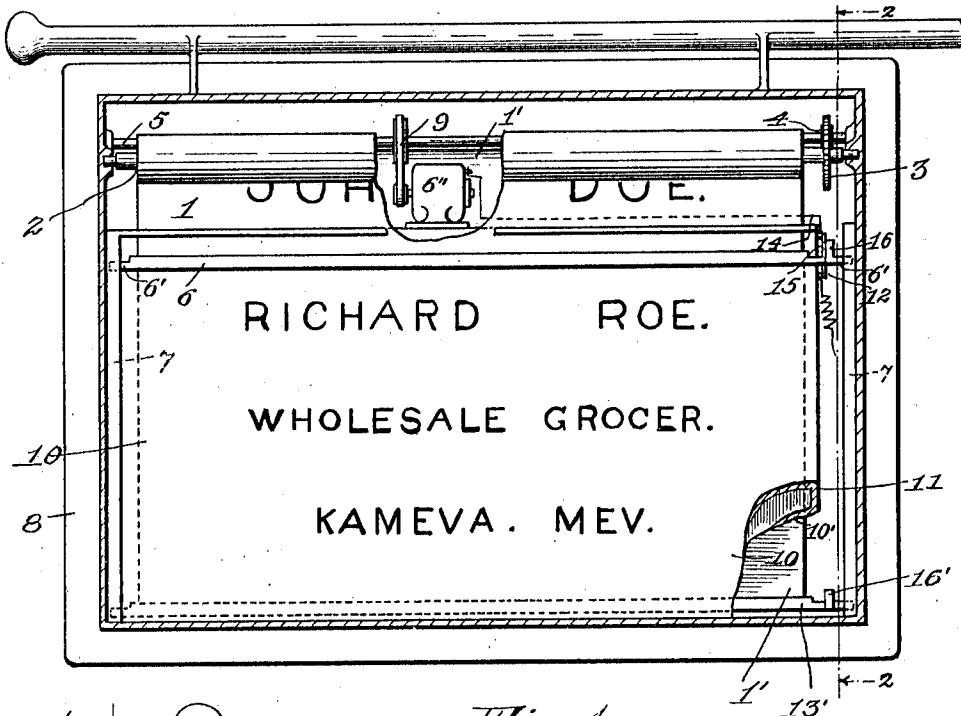


Fig. 1.

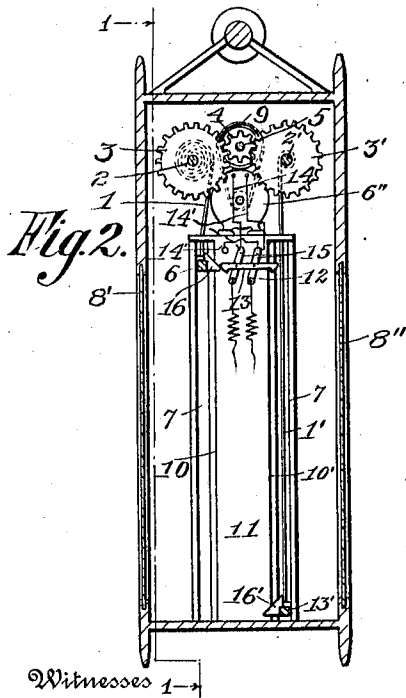


Fig. 2.

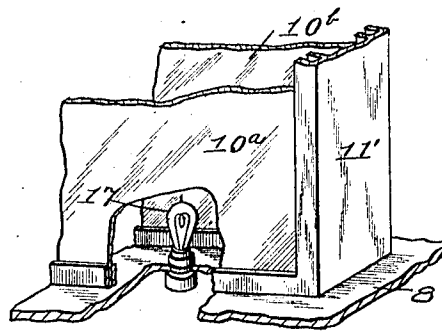


Fig. 3.

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DISPLAY APPARATUS.

1,026,214.

Specification of Letters Patent.

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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 relates to apparatus of the above type, having more particular reference to signs, and has for a primary object the provision of a novel construction including an apron which is adjustable for obtaining an intermittent display of advertising or other suitable subject matter.

With the above and other objects in view, to be referred to as my description progresses, my invention consists in the features of construction, arrangements and combinations of parts hereinafter described and succinctly defined in my annexed claim.

Referring now to the accompanying drawing, wherein like numerals of reference indicate like parts throughout the several views: Figure 1 is a section of a display device constructed in accordance with my invention, taken on line 1—1 of Fig. 2, with parts broken away. Fig. 2 is a cross sectional view taken on line 2—2 of Fig. 1, and Fig. 3 is a fragmentary perspective, illustrating a slightly modified construction.

In carrying out my invention I provide an apron or flexible strip 1, connected with a roller 2, on which it is adapted to be wound, the said roller 2 being provided with a gear 3 in mesh with a pinion 4, fixed to a drive shaft 5. As now considered, apron 1 has its free or lower end portion suitably weighted, as by a transversely disposed rigid member 6 secured thereto and provided with end extensions 6' slidably engaged in vertical guide grooves 7 in the adjacent end walls of a suitable casing 8, having a sight opening 8', in its front wall, across which said apron is movable for the display of its contents therethrough. Drive shaft 5, is connected by belt 9 with a suitable reversible motor 6'', which latter is controlled, as hereinafter set forth, to drive shaft 5 in opposite directions, and thereby, through gear 3 and pinion 4, effect an alternate winding and unwinding of apron 1.

I preferably employ in conjunction with apron 1 a sign face 10, the latter conveniently comprising one side wall of a hollow partition 11 of casing 8 and being ar-

ranged at the inner side of the apron so as to be exposed when the apron is wound up and consequently withdrawn from the field of display. By this arrangement I am enabled to provide a construction, wherein sign face 10 can be employed alone for reception of the display matter, or conjointly with apron 1, in the latter instance the said apron forming a second sign face while in the former merely serving as a curtain.

For reversing the direction of rotation of motor 6'', I have shown a reversing switch 12, of a well known type, the same consisting of a pair of pivoted arms 15 connected by a bar 13, of insulating material, the said arms when switched moving alternately into engagement with contacts of respective leads 14, 14' of the motor, as shown and thus changing the direction of the armature current. The end portions of bar 13 are suitably extended and one thereof projects into the path of a cam strike part 16, consisting of a projecting lug of member 6 and having its active face suitably inclined for effecting a shifting of the switch arms, as hereinbefore set forth, when apron 1 approaches the upper end of its limit of travel. A second strike part 16', movable simultaneously with strike part 16, but in a relatively reverse direction is adapted to engage the opposite end portion of bar 13 and thereby serve to control the reversing of the direction of travel of apron 1 as the latter reaches its other or lower limit of movements.

In producing a double sign, as shown, I provide a second apron 1' which is movable across a sight opening 8'' and over a sign face 10', the latter conveniently consisting of the opposite side wall of partition 11. Apron 1', which is identical in construction to apron 1, carries strike part 16' on its bar 13', and is fixed to a roller 2', driven from shaft 5 through a gear 3' of said roller meshing with pinion 4, the said roller 2' controlling its apron to move the same simultaneously with apron 1, but in a relatively reverse direction.

In Fig. 3, I have shown a slightly modified construction wherein the side walls of a partition 11' constitute transparent sign faces 10^a, 10^b between which suitable illuminating means, as 17, can be arranged.

Having thus described my invention what I claim as new, and desire to secure by Let-

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ters Patent of the United States of America,
is:—

In display apparatus, two aprons, means
supporting said aprons for movement to-
ward and from a displaying position, means
5 for operating said aprons simultaneously in
relatively opposite directions, movably
mounted controlling means for said last
named means for changing the direction of
10 movement of said aprons, and means on

said aprons each arranged for operating
said controlling means in a respective direc-
tion by and during movement of said aprons
in one direction.

Signed at Seattle, Washington, this 24th 15
day of January 1911.

KIHEI KOIKE.

Witnesses:

STEPHEN A. BROOKS,
ARLITA ADAMS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
