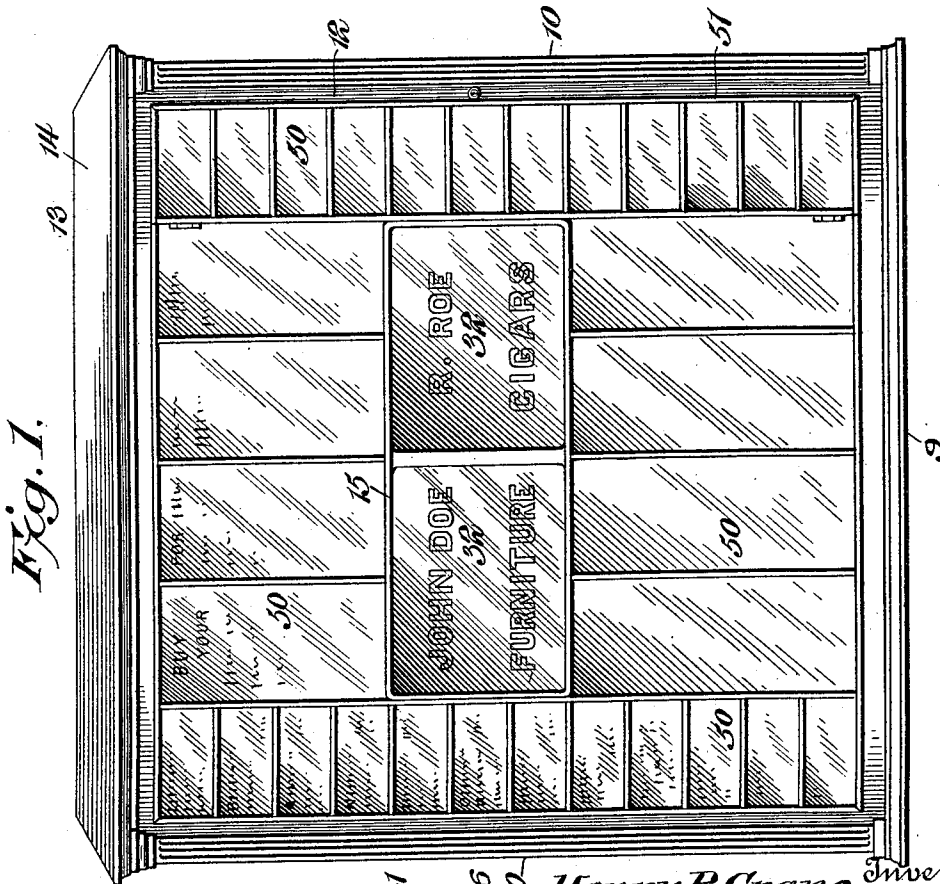
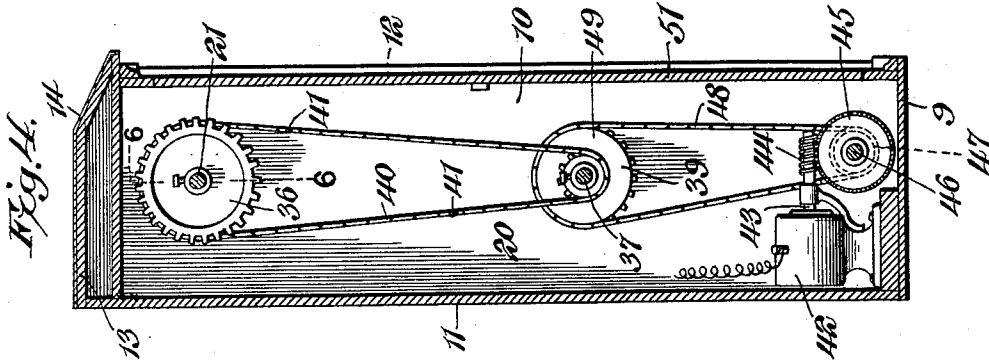


H. R. CRANE.
 DISPLAY APPARATUS.
 APPLICATION FILED JULY 28, 1909.

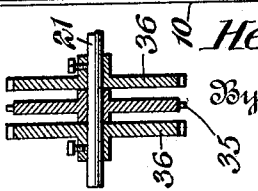
1,012,989.

Patented Dec. 26, 1911.
 2 SHEETS—SHEET 1.



Witnesses
Howard D. Orr.
George J. Talbot.

Fig. 6.



Henry R. Crane, Inventor,

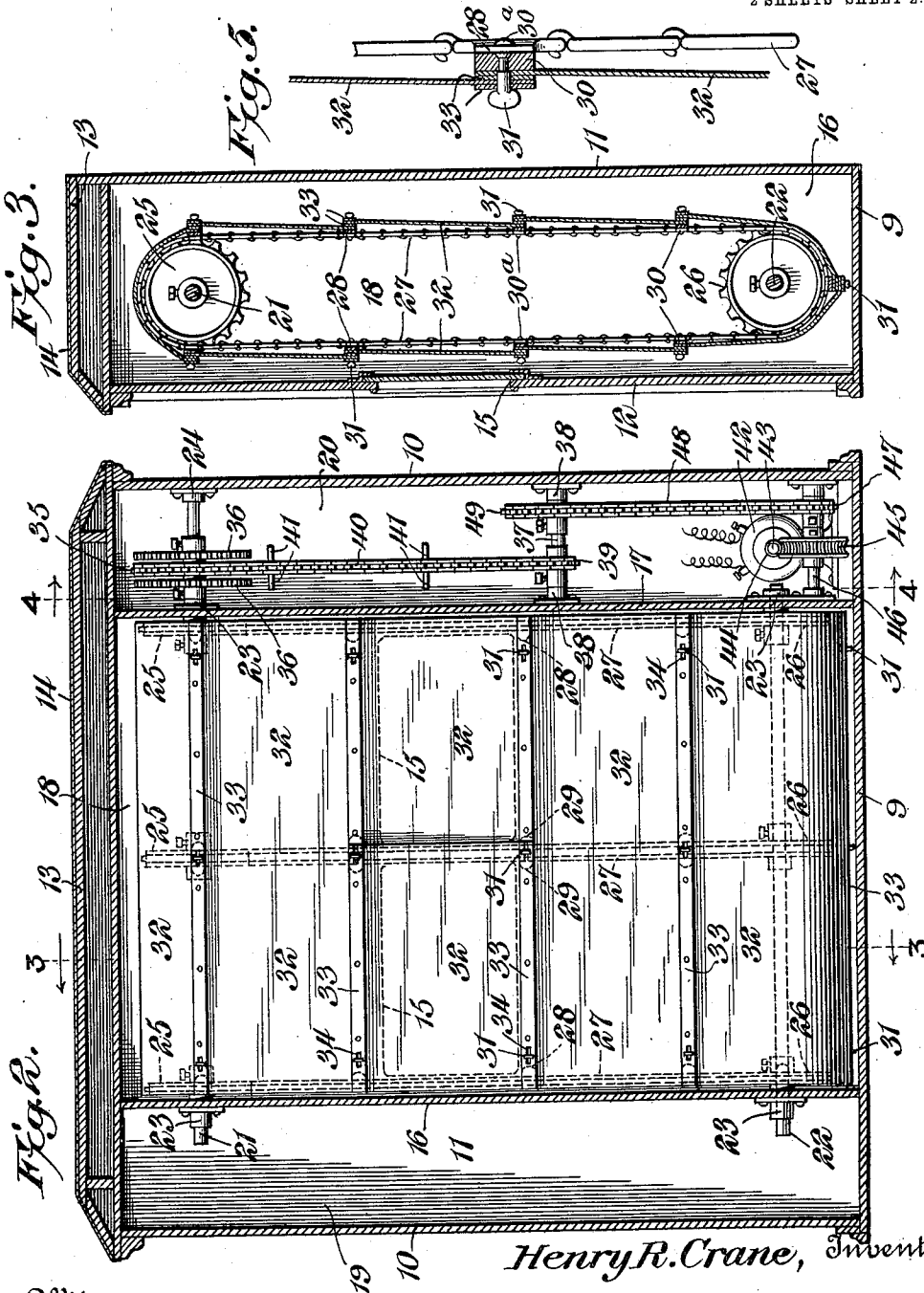
E. G. Siggers.
 Attorney

H. R. CRANE.
 DISPLAY APPARATUS.
 APPLICATION FILED JULY 28, 1909.

1,012,989.

Patented Dec. 26, 1911.

2 SHEETS—SHEET 2.



Witnesses
 Howard D. Orr
 George T. L.

Henry R. Crane, Inventor,

By

C. G. Siggers

Attorney

UNITED STATES PATENT OFFICE.

HENRY R. CRANE, OF LOS ANGELES, CALIFORNIA.

DISPLAY APPARATUS.

1,012,989.

Specification of Letters Patent.

Patented Dec. 26, 1911.

Application filed July 28, 1909. Serial No. 510,021.

To all whom it may concern:

Be it known that I, HENRY R. CRANE, 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 Display Apparatus, of which the following is a specification.

This invention relates to an improved display apparatus especially adapted for advertising purposes, although, as will be apparent, the same can be employed equally as well in other analogous arts, such for instance, as street-car indicators or the like.

The principal object of the invention is to provide an apparatus of the class described in which simple and novel means are provided for imparting an intermittent movement to an endless conveyer carrying display signs, whereby each sign will be displayed in succession for a certain period of time.

A further object of the invention is to provide simple and novel advertising signs or the like, each of said signs being adapted to be readily detached whenever it is desired to change the same.

A still further object of the invention is to provide an apparatus which is composed of a minimum number of parts, and is therefore simple in construction and cheap to manufacture and also positive in operation.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claim hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claim, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:—Figure 1 is a front elevation of the complete apparatus. Fig. 2 is a vertical longitudinal sectional view through the same. Fig. 3 is a vertical sectional view taken on line 3—3 of Fig. 2 in the direction of the arrows. Fig. 4 is a vertical sectional view taken on line 4—4 of Fig. 2 in the direction of the arrows. Fig. 5 is a detail view showing the connections of the chain and the advertising signs. Fig. 6 is a detail sectional view on the line 6—6 of Fig. 4.

Like reference numerals designate corresponding parts in all the figures of the drawings.

Referring to the drawings, the invention embodies a suitable casing comprising a bottom 9, side walls 10—10, a back 11 and a front 12. The top 13 of the casing is preferably inclined and provided with a waterproof covering 14 of any suitable material, and the front of the casing is provided with a sight-opening 15, preferably rectangular in form, for a purpose hereinafter described. Within the casing is arranged a pair or more of vertical and transverse partitions 16 and 17 respectively, thereby forming a central compartment 18 and end compartments 19 and 20 respectively. The partitions are spaced apart and arranged at either side of the sight-opening 15, and form supports for a pair of shafts 21 and 22 respectively, the shaft 21 being the driving shaft and the shaft 22 the counter or driven shaft, although it is obvious that they can be reversed, if desired. These shafts are respectively arranged near the top and bottom of the casing and are journaled in any suitable bearings 23. The driving shaft 21 is longer than the shaft 22 and extends through the partition 17 and into the end compartment 20, the end of the shaft being journaled in a suitable bearing 24 in the side wall 10 of the casing. A plurality of sprocket-wheels 25 are keyed to the shaft 21 and spaced apart, the outer ones being respectively arranged near the partitions. The driven shaft 22 is likewise provided with a plurality of sprocket-wheels 26 which are respectively arranged in line with the corresponding wheels 25 on the drive shaft. Sprocket-chains 27 of suitable construction are respectively carried by each corresponding pair of sprocket wheels. The outer chains are provided with a plurality of inwardly extending ears 28, which are spaced at suitable distances apart for a purpose hereinafter described. The intermediate chain is provided with a plurality of oppositely extending ears 29—29, which are likewise spaced apart, and are in a transverse line with the corresponding ears 28 of the outer chains. Arranged transversely between the chains, and carried by the ears thereof, are a plurality of slats 30, of any suitable material. The slats extend across the apparatus from one outside chain to the corresponding outside chain on the opposite

side and are connected to the ears of the outside and intermediate chains. The respective ends of the slats are secured to the said ears by rivets 30* or any other suitable
 5 fastening means. Each of the slats is provided with a series of upstanding buttons 31 of any suitable construction.

The invention further comprises a plurality of advertising signs 32, of canvas or
 10 other suitable material. These signs are especially adapted to be arranged between one pair of the chains and one pair of the slats. Both the top and bottom edges of each sign are respectively provided with a
 15 reinforcing strip 33, preferably of sheet-metal, and both of said edges are provided with eyelets 34, adapted to receive the buttons 31 of the slats and thereby hold the sign in position. These strips are preferably
 20 colored black, in order to serve as a division for the signs.

In practice, the signs are preferably arranged as shown by reference to Figs. 2 and 3 of the drawings, the reinforced edge 33 of
 25 one sign lying over the plain edge of the adjoining sign, and thereby securing both meeting edges of two signs to the slat by the buttons, the said buttons thus acting as a common fastening means for the adjoining
 30 signs. It will be readily apparent that should it be desirable to employ a larger sign, the sign may extend between the outside chains, and between either two or three of the slats. Should smaller signs be de-
 35 sired, it will only be necessary to increase the number of chains and of course the sprocket-wheels.

Many changes in the sizes of the signs can be readily made without departing from the
 40 spirit of the invention.

The end of the drive-shaft 21, which is located in the end compartment of the casing, is provided with a loosely mounted sprocket-wheel 35, and sprocket-wheels 36—
 45 36 keyed to the shaft, and respectively arranged on either side of the said sprocket-wheel 35, all of said wheels being of the same diameter and arranged in close proximity to one another, one-half of the cir-
 50 cumference of each wheel being the same length as the distance between a pair of slats 30. Arranged below the drive-shaft 21 and in alinement therewith, is a counter-shaft 37, the ends of which are respectively se-
 55 cured to the partition 17 and end wall 10 by suitable bearing 38—38. A sprocket-wheel 39, having a much smaller diameter than the sprocket-wheel 35 on the drive-shaft, is keyed to the said counter-shaft 39 directly be-
 60 low the said sprocket-wheel 35. A sprocket-chain 40 is arranged on the sprocket-wheels 35 and 39, and is provided with one or more pairs of outstanding pins 41, each pair of pins being formed integral with a link of
 65 the chain. A motor 42 is suitably mounted

in the base of the casing below the said sprocket gearing, and is provided on its shaft 43 with a worm 44, which is adapted to impart a rotary movement to a worm
 70 wheel 45 mounted on a counter-shaft 46 near the bottom of the said casing. The said counter-shaft 46 is also provided with a sprocket-wheel 47, keyed to the shaft, and adapted to impart movement to the counter-
 75 shaft 37 through a sprocket-chain 48, and gear wheel 49 which is keyed to the said counter-shaft 37.

The front 12 of the casing is preferably provided with a plurality of compartments
 80 50 of any suitable construction, each compartment being adapted to receive an advertising card or the like. The casing is furthermore provided with a door 51 which is hinged to the front 12 for permitting ac-
 85 cess to the motor and gearing.

From the foregoing, it will be evident that the motor 42 will transmit movement to the driving shaft 21 through the inter-
 90 mediate reducing gearing before described. The pins 41, carried by the chain 40, will simultaneously engage the teeth of the sprocket-wheels 36 and revolve the same, and consequently the shaft 21 and the adver-
 95 tising signs 32, until the said pins leave the said gear wheels 36 on the opposite side from which they make their initial engage-
 100 ment. When the said pins 41 become disengaged from the said sprocket-wheels 36, the chain 40 will continue to revolve on the loosely mounted sprocket-wheel 45, but, as
 105 is evident, the shaft 21 will become stationary immediately upon the pins 41 leaving the said gear wheels 36. The distance traveled by said pins 41 around the sprocket-
 110 wheels 36 is, as before explained, equal to the distance between any pair of slats, and thus, the advertising sign or signs as the case may be, will be brought into register with the
 115 sight opening 15 of the casing, and will remain in said exposed relation until the pins 41 again engage with the said sprocket-
 120 wheels 36, at which time the advertising sign which has been exposed, will be elevated, and the adjacent sign will be consequently brought into register with the said
 125 opening 15 of the casing. It is also evident that the length of time for exposing the advertising sign, depends upon the number and position of pairs of pins 41 employed, as will be readily apparent from inspection
 130 of the drawings, and particularly Figs. 2 and 4 thereof.

What I claim is:

In a display apparatus, the combination with the casing having a sight opening, of
 125 a horizontal drive shaft mounted in the casing and provided with three spaced sprocket wheels, a horizontal countershaft also mounted in the casing and provided with
 130 sprocket wheels corresponding in number

and relative positions with the sprocket wheels on the drive shaft, endless vertically movable sprocket chains connecting the wheels, said chains having certain of the links provided with ears, which are arranged at the center and terminate short of the couplings of the links, the ears of the links of the outer chains extending inwardly, while the ears of the links of the intermediate chain are oppositely extending, the ears of all three chains being in transverse alinement, transverse slats secured to the said ears and connecting the chains, each slat connecting the transversely alined ears of the three chains, outstanding buttons mounted on the slats, and a series of flexible

signs each arranged between one pair of the slats, the lower edge of one sign overlapping the upper edge of the next adjacent sign and bearing against the outer face of the slats, the said edges of each sign being provided with eyelets to receive the buttons projecting from the slats, whereby the joints of the sign are arranged between couplings of the links.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

HENRY R. CRANE.

Witnesses:

L. C. KOPP,

ELMER B. PAINE.

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