C. H. TOWNSEND.

CARD DISPLAY APPARATUS.

APPLICATION FILED OCT. 12, 1908.

946,288.

Patented Jan. 11, 1910.

2 SHEETS—SHEET 1.

FIG. 1.

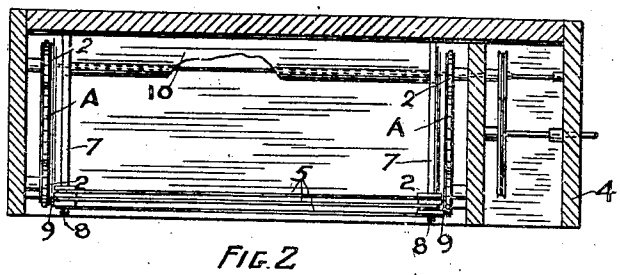


FIG. 4

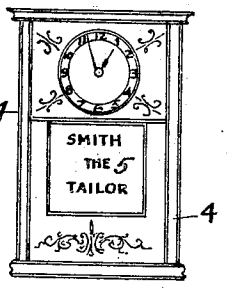


FIG. 2

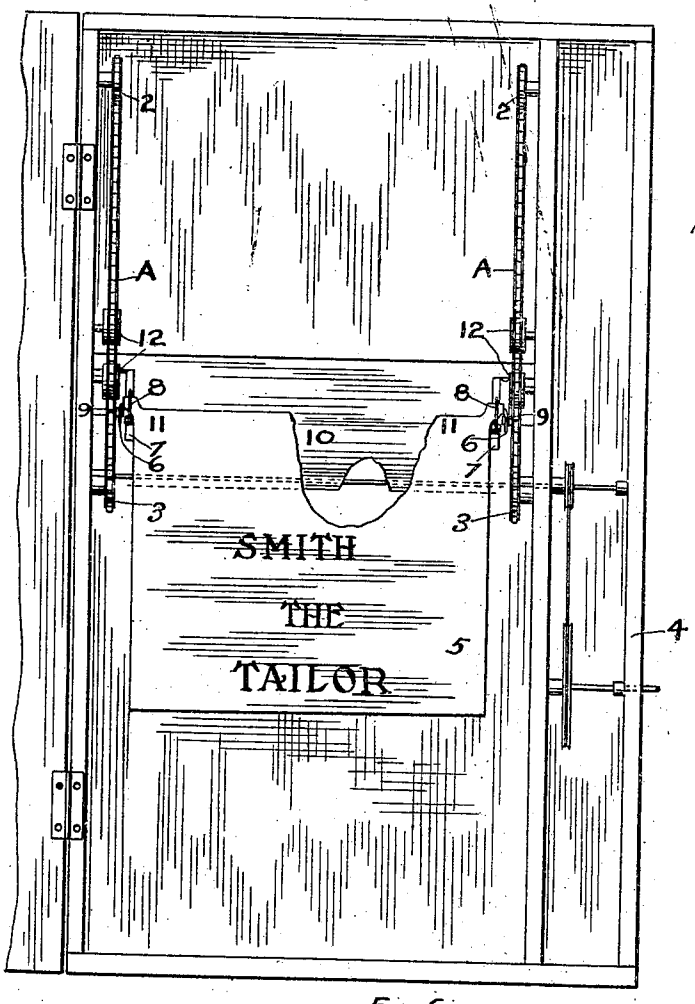


FIG. 3

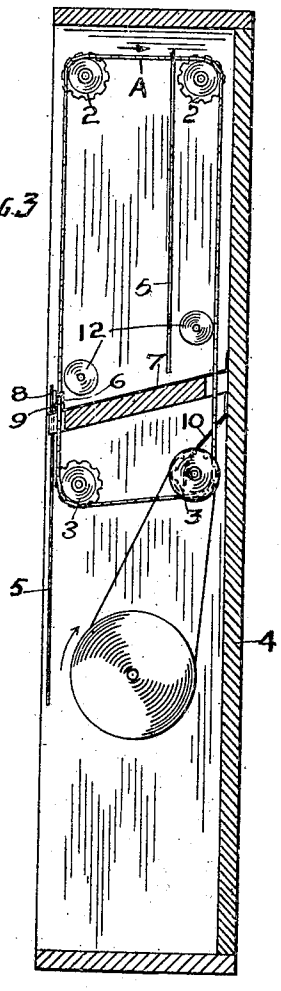
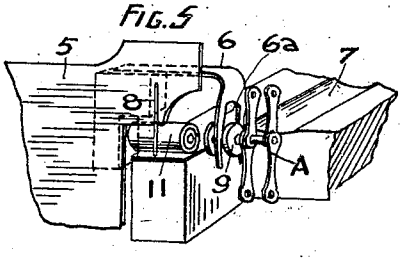


FIG. 5



WITNESSES

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CARD DISPLAY APPARATUS.

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2 SHEETS—SHEET 2.

FIG. 6.

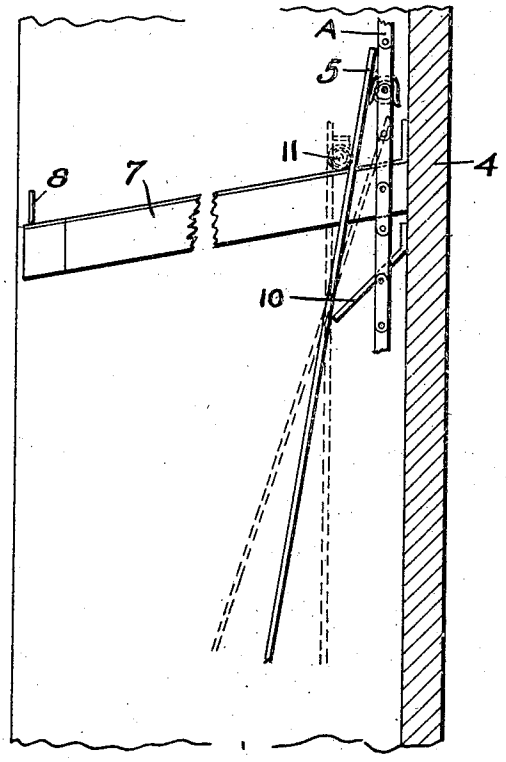
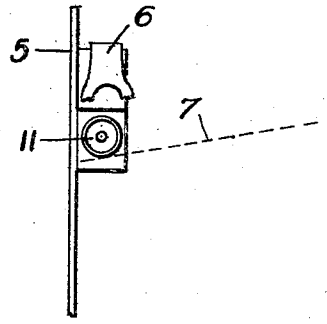


FIG. 7.



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CARD-DISPLAY APPARATUS.

946,288. Specification of Letters Patent. Patented Jan. 11, 1910.

Application filed October 12, 1908. Serial No. 457,372.

To all whom it may concern:

Be it known that I, CHARLES H. TOWNSEND, citizen of the United States, residing at Berkeley, in the county of Alameda and State of California, have invented new and useful Improvements in Card-Display Apparatus, of which the following is a specification.

My invention relates to a device which is especially designed for successively exposing advertising or like sheets or plates.

It consists in a combination of mechanism, and in details of construction which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a horizontal section of case. Fig. 2 is a front elevation of the open case. Fig. 3 is a vertical section of same. Fig. 4 is a front view of case. Fig. 5 is an enlarged detail of working parts. Fig. 6 is a sectional detail showing one of the inclined bars 7, a portion of one of the chains with its plate or sheet, and the inclined guide plate 10, the full and dotted lines illustrating the action of the guide plate upon the sheet carrying the advertising matter. Fig. 7 is an end view showing the location of the rollers 11 relative to the arm 6.

It is the object of my invention to provide a means for exposing sheets or plates, upon which advertising or other matter is carried, and to transfer said plates from front to rear so that the exposed plates may be continuously changed.

In the construction of my apparatus I employ endless traveling chains A which pass over sprockets 2 and 3. These sprockets are journaled and turnable inside of a case or equivalent structure 4. The sprockets 2 are disposed in the upper part of the case, and are separated horizontally to any desired distance and the sprockets 3 are in like manner carried in the lower part of the case and separated so that one pair of the sprockets, as 2 and 3, will carry the chain substantially parallel with the front of the case, and the other pair of the sprockets will carry the vertical portion of the chain at the rear portion of the case; the intermediate portion extending between the upper sprockets 2, and between the lower sprockets 3, so that the outline of the chains as they lie upon the sprockets is in the form of a parallelogram or trapezoid. In the present case I have shown the rearmost sprockets 3 as a little higher than the foremost ones so that the lower line of the chains between the sprockets 3, inclines downward.

The front 4 of the case has an opening made in it through which the plates or sheets 5 carrying the advertising or other matter may be exposed. These plates or sheets 5 have arms 6 projecting from each end at the top, the outer ends of the arms being turned downwardly and forked as shown at 6^a.

7 are inclined bars located upon each side of the case and just inside of the lines of travel of the chains. These bars serve to support the arms 6 which project outwardly from the upper edges of the plates 5, and the inclination of the bars 7 is sufficient, so that the plates will slide down the bars to the front end, where they are arrested by stop pins 8. Pins or spools 9 project inwardly from the chains, and are of such length that when the chains are traveling around their sprockets, the pins will engage the slotted down-turned end 6^a of the arms, which are fixed to the plates, one at a time; the plate nearest the front being thus engaged and lifted by the chain. The pins may have washers or ends which make a spool-like form, and which may prevent any undue shifting of the parts with relation to each other. The plates may be of such width that they will be properly guided between the inclined supporting arms 7.

Any suitable or desired power may be applied through necessary pulleys, belts or gearing to revolve one of the sprocket-shafts. In the present case I have shown the shaft on which the rear sprockets 3 are mounted, as serving for this purpose. The chains will then travel, and having engaged one of the plates as previously described, will lift it up until the lower edge is above the level of the remaining plates. At this point the pins or spools 9 from which the plate is suspended, travel rearwardly over the upper sprockets 2, and the plate is transferred to the rear of the case; thence passing over the rear sprockets 2, the chains pass substantially vertically behind these sprockets, and with them the pins from which the plate is suspended. The plate then descends and the lower edge is thrown toward the front by passing over a curved or forwardly inclined guide plate or equivalent device or devices 10. The lowermost sprockets 3 are located below the inclined bars 7, and as the chain passes downwardly at the rear, the projectng arms 6 will rest upon the inclined bars 7, and the con-

tinued movement of the chain carries the suspending pins below these bars on their way to the lower sprockets. The plate being thus suspended upon the inclined bars 7, and released from the pins by which it is transferred from the front to the rear, will immediately slide down the bars, and take its place at the rear of the plates which are already suspended upon the bars.

In order to insure the plates traveling freely, I have shown anti-frictional bearing rollers 11 journaled upon or just below the projecting arms 6, and these rollers turning freely, together with the forward inclination of the bottom of the plate by the action of the inclined plate 10, insure the plate moving to its proper position as soon as it is released from the suspending pins 9 of the chain. When these pins 9 have passed around the lower sprockets and again moved up the front vertical portions of the chain, they will pick up another plate and transfer it in the same manner as above described. Thus each of any number of plates will be successively transferred from front to rear.

If used for advertising purposes, the front plate will be normally exposed through the opening in the front of the case, and as soon as this plate is withdrawn by the actions of the chains, the plates in the rear will slide down, and the next one behind the one just lifted, will take its place and be exposed. In this manner any number of advertisements or equivalent matter will be exposed successively through the openings, and the length of time and intervals of exposure will depend upon the rate of travel of the chains, and the number of plates which may be in use.

The chains may be steadied in their movements by guiding rollers 12 journaled in such relation as to keep the chains in the proper position as they approach and leave the plate-supporting bars.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

1. The combination in a card display apparatus, of a case having rectangularly disposed sprockets journaled therein, endless chains movable around the sprockets, rollers carried by the chains, plates or cards with arms projecting into the path of travel of the rollers, inclined bars with stops against which the cards are arrested with their arms in position to be successively engaged and lifted by the chain rollers, and transferred to the top of their travel from front to rear of the case, and a projecting plate below the inclined bars, forming a fulcrum to project the cards forward when released from the chains.

2. In an endless traveling chain apparatus for the successive display of cards, inclined bars located above the lower end of the chain travel, said bars acting to arrest the cards and disengage them from the carrying chains, and a plate located in the path of travel of the bottom of the card to throw the bottom of the cards outward, and form a fulcrum from which the cards are projected forward upon the bars when disengaged.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CHARLES H. TOWNSEND.

Witnesses:

THOS. COPE,

MARY B. CAMP.