

June 30, 1925.

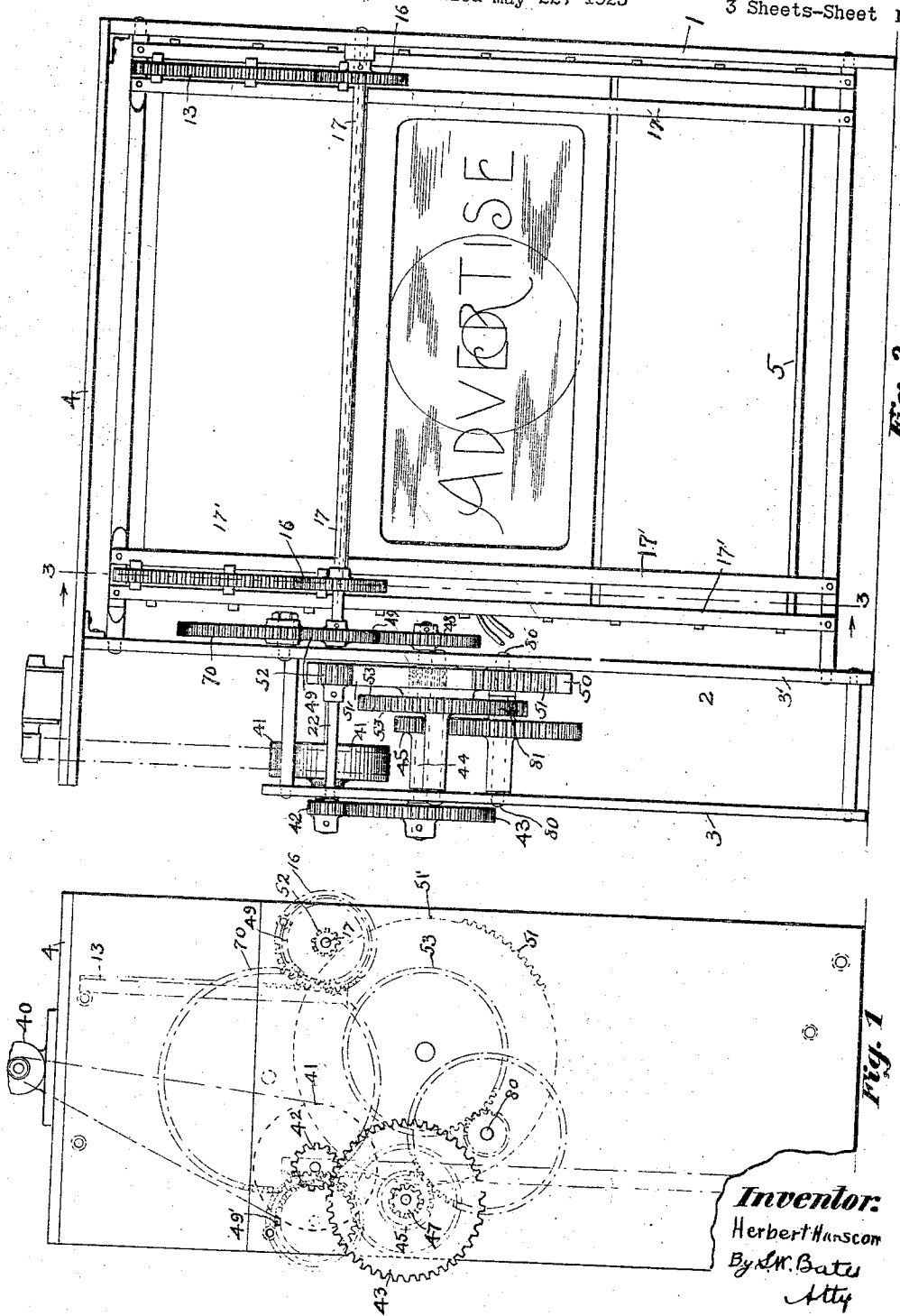
H. HANSCOM

1,543,852

ADVERTISING DEVICE

Filed May 22, 1923

3 Sheets-Sheet 1



Inventor:
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By *Mr. Bates*
Atty

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3 Sheets-Sheet 2

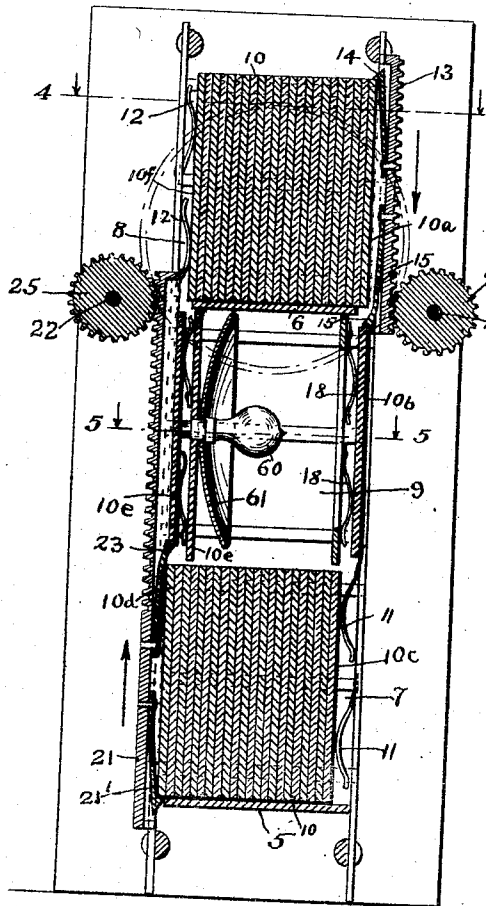


Fig. 3

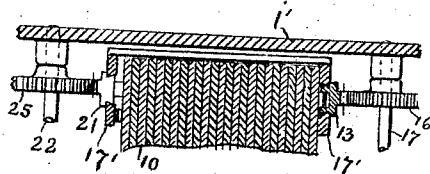


Fig. 4

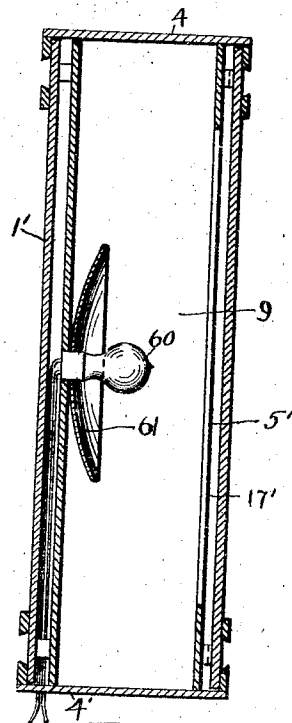


Fig. 5

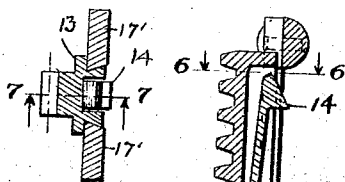


Fig. 6

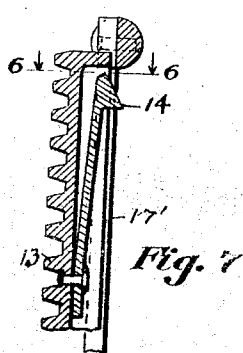


Fig. 7

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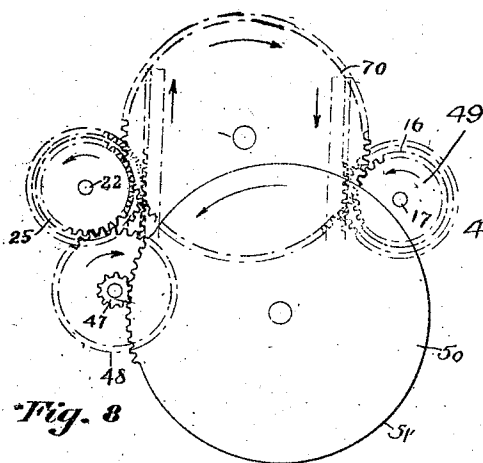


Fig. 8

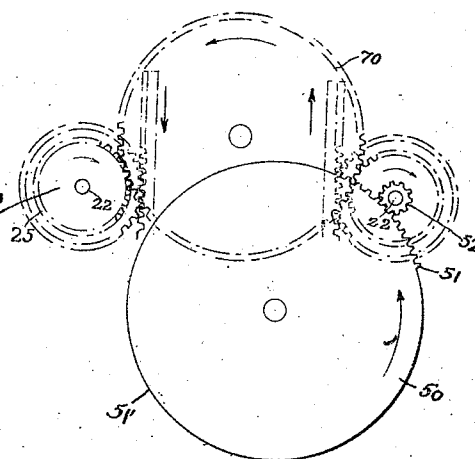


Fig. 9

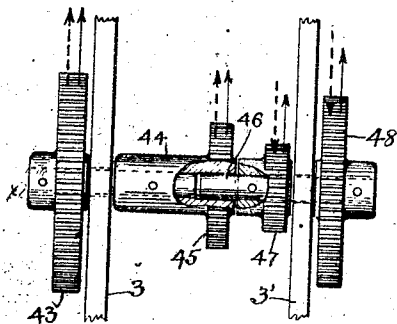


Fig. 10

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UNITED STATES PATENT OFFICE.

HERBERT HANSCOM, OF FRYEBURG, MAINE.

ADVERTISING DEVICE.

Application filed May 22, 1923. Serial No. 640,766.

To all whom it may concern:

Be it known that I, HERBERT HANSCOM, a citizen of the United States, residing at Fryeburg, in the county of Oxford and State of Maine, have invented certain new and useful Improvements in Advertising Devices, of which the following is a specification.

My invention relates to advertising devices of that class in which display cards or the like, designed for advertising purposes are assembled in two adjacent chambers with means for conveying the cards one at a time from one chamber to the other so as to bring the cards successively into view for advertising purposes.

In these devices, it is designed to keep each chamber completely filled with the cards in the form of packs, the rear card of one pack being moved to the rear of the adjacent pack by intermittent motion, the front card of the last named pack being conveyed to the front side of the opposite pack.

Means are provided by which the body of each pack is moved along to make room for the newly arriving cards and means are also provided for an open space where each card as it comes into position can be seen from the outside, remaining long enough in the displaying space for purposes of advertising.

The object of my invention is to construct a machine of this general character and a further object is to provide an illuminating chamber between the two card-holding chambers whereby the card may be illuminated or may, if desired, be projected at a distance and thrown upon a screen.

My invention is illustrated in the accompanying drawing in which a machine is shown with three adjacent chambers, the central chamber being an illuminating chamber for the more conspicuous display of the cards.

Referring to the drawings:—

Fig. 1 shows an end elevation of my device,

Fig. 2 is a front elevation with one of the cards displayed in the intermediate or illuminated chamber,

Fig. 3 shows a vertical section taken on the line 3—3 of Fig. 2 looking toward the right,

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

Fig. 5 is a section taken on the line 5—5 of Fig. 3,

Fig. 6 is a detail section taken on the line 6—6 of Fig. 7,

Fig. 7 is a detail section taken on the line 7—7 of Fig. 6,

Fig. 8 is a diagrammatic view taken on one end of the machine showing the sectional gear which effects the intermittent motion in one position,

Fig. 9 is a like view of the same with the intermittent gear and the adjacent gears in the opposite position to that shown in Fig. 8, that is, with the sectional gear turned a little less than one-half revolution and,

Fig. 10 is a front elevation of a portion of the gearing shown in Fig. 2 with certain parts broken away and with arrows to indicate the reverse motions of the gears.

Referring to the drawings, like letters of reference indicate like parts in all the figures.

The operative mechanism is contained in a casing of which 1, 2 and 3 are upright plates connected at the top by the top plate 4, plate 1 forming one end of the machine. An upright plate 1' forms the back of the machine. A horizontal plate 5 near the bottom of the machine and a horizontal plate 6 at the upper portion of the machine divides the casing into a lower chamber 7, an upper chamber 8 and an intermediate chamber 9.

The forward portion of the intermediate chamber is cut away or left open so that a card located in the front portion of the intermediate chamber can be plainly seen from the front as illustrated in Fig. 2. The cards or display plates 10 are contained in the upper and the lower chambers and are conveyed back and forth between the two, passing downward in the front portion of the intermediate chamber and upward in its rear portion. As here shown, the cards in passing between the upper and lower chambers are made to pause long enough to be shown for advertising purposes.

The cards are just enough in number to keep both an upper and lower chamber completely filled so that each time a card is added to either one of the chambers a corresponding card is removed, thus keeping both chambers completely filled at all times. The cards in the lower chamber rest on their edges on the partition 5 and a pair of elliptical springs 11 are secured to the front side of the casing pressing normally inward against the faces of the cards 10 near the ends and tending

to press them back toward the rear and hold them firmly in such position. The cards in the upper chamber 6 are held in position by elliptical springs 12 which tend to force the body of cards forward to the front portion of the chamber.

The cards are moved one at a time from the front portion of the chamber 8 down to the front portion or open space in the intermediate chamber 9 and thence to the forward part of the chamber 7 sliding in between the springs 11 and the forward plate 10^a in the lower chamber.

The rear card 10^a in the lower chamber 7 is moved upward through the rear portion of the chamber 9 to 10^a and delivered between the springs 12 and the rear card in the upper chamber 8 at 10^a.

Thus, as a card is added to the front portion of the lower chamber, the entire body of the cards is forced backward and each time a card is added to the upper chamber, the body of the cards is moved forward the thickness of a single card so as to keep a continual line of cards moving downward in front and upward in the rear and passing from front to rear in the lower chamber and from the rear to the front in the upper chamber.

As here shown, the cards are moved from the front of the upper chamber 8 to the display space in front of the central chamber by a reciprocating rack 13 engaged by a rack gear 16 secured to a shaft 17 which extends from one end of the casing to the other being journaled in the plates 1 and 2. Suitable guides 17' (see Figs. 4, 6 and 7) are provided in which the rack reciprocates. Two racks 16 both alike are used one at each end of the machine and means are provided so that each card will be seized by the two racks, one at each end. For this purpose, each rack has a hook 14 at its upper end which is adapted to hook over the upper edge of the card and force it downward. The forward position of the forward card of those in the upper chamber is just forward of the edge of the partition 6 so that it is in position to be drawn directly downward into the intermediate chamber and thence into the lower chamber.

The function of the rack 13 is not only to draw the front card downward from the upper chamber but also to push downward a corresponding card as 10^b lodged in the intermediate chamber where it pauses to be exhibited. This motion is effected by a projection 15 on the lower end of the rack 13. Upon the descent of the rack 13, the card 10^b is pushed into the lower chamber between the springs 11 and the front card in the lower chamber indicated as 10^c.

The rear card in the lower chamber indicated by 10^a is moved to the upper chamber, passing through the intermediate chamber

by a rack 21 which reaches from the lower end of the lower chamber to the lower end of the upper chamber and is constructed in a similar manner to the rack 13 except that it has a blank portion on the lower end. The rack 21 has on its inside surface at the lower end a hook 21' for lifting the card 10^a and it also has a projection 23 for pushing another card as 10^c from the half-way position in the intermediate chamber up into the rear position in the upper chamber as indicated at 10^a. The rack 21 is engaged by a rack gear 25 mounted on a shaft 22 which is a duplicate of the shaft 17 except that it extends through and is journaled in the end plate 3.

The working mechanism shown in Fig. 3 is duplicated on the two ends of the machine, that is, there are two racks 13 one at each end of the machine and two gears 16 on the two ends of the shaft 17, each of the gears engaging one of the racks 13.

Thus, the two gears 16 lift and lower the two racks 13 at exactly the same time and with the same motion.

On the other hand, the two racks 21 are lifted and lowered by the two gears 25 on shaft 22 with exactly the opposite motion given to the racks 13, that is, when the racks 13 are coming down, the racks 21 are going up and so on vice versa.

Illuminating means as an electric light 60 with a reflector 61 are provided whereby the interior of the intermediate chamber may be lighted up so that the advertising cards if they are transparent will show readily with a brilliantly lighted background when looked at from the front or other means may be provided for illuminating the advertising cards as they are brought to rest in the intermediate chamber. The advertising cards used in my machine may be of any desired material as cardboard, metal, celluloid, and they may be transparent or opaque.

Means are provided by which the two rack gears 16 and 25 are made to rotate in the same direction.

This is accomplished by connecting the gears 49 and 49' by an intermediate gear 70 (see Figs. 8 and 9) journaled at a point between the two shafts 17 and 22, the gear 49 engaging one side of the intermediate gear 70 and the gear 49' engaging the opposite side (see Fig. 1). It will thus be seen that the rotation of the gear 16 which moves the rack 13 in one direction will rotate the gear 25 and a rack 21 will be moved in an opposite direction to the rack 13 owing to the position of the racks 13 and 21 with relation to the said gears. When one of the racks moves upward the other will move downward and vice versa.

Means are provided for reversing both the motions of the two racks at fixed inter-

vals so that one will move from its upper to its lower position, remain in that position a fixed interval of time and will then return to its upper position.

5 As herein shown, each rack moves from its upper or lower position to its central position in the intermediate chamber, thence back to its first position. In other words, each rack moves its length either up or down as the case may be, makes a pause and then moves back to its normal position.

10 The pause made at the end of each movement is sufficiently long for advertising purposes and for displaying the cards in the open space in the intermediate chamber.

15 The reversing mechanism by which both the gears 16 and 25 are reversed is effected by relatively large sectional gear 50 having a comparatively short gear section 51, the teeth of which extend beyond the blank portion 51' of the gear section 51. The sectional gear 50 (see Figs. 8 and 9) is journaled on the plate 2 and between the shaft 17 and the shaft 22. The short gear section 20 51 engages the pinion 52 (see Fig. 2) on the shaft 22 whereby direct motion is transmitted from the sectional gear 50 to the shaft 22, raising and lowering the rack 21 by means of the intermediate gear 70 and raising and lowering the rack 13 in the opposite direction as already explained.

25 The reverse motion is effected by the engagement of the geared section 51 with a pinion 47 which is the counterpart of the pinion 52 on the opposite side of the machine. The pinion 47 is journaled on a short stud 46 and secured to a sleeve on the end of which is a gear 48 in engagement with a similar gear 49 on the shaft 17. (See 30 Fig. 2.)

35 The pinion 47 is located on the opposite side of the gear 50 of the pinion 52 and as they both mesh with the gear 50 they will rotate in the same direction. The shafts 17 and 22 are rotated in reverse directions by reason of the gear 48 being interposed between the gears 50 and 25 and there being no gear interposed between the gears 50 and 52.

40 Thus, when the gear 50 in its rotation engages the pinion 52, the rack gears and the racks move in one direction and after the toothed section 51 reaches the other side of the gear 50 and comes into engagement with the pinion 47 the opposite rotation is effected and both the gears 16 and 25 and the corresponding racks 13 and 21 reverse their direction.

45 Thus, the rack moves downward its full length, pauses until the toothed section 51 moves around to engage the pinion 52 or 47 as the case may be. The motions are there reversed and the rack returns to its original position and hooks on the upper edge of the next card. The movements of the rack 21

on the opposite side are just the reverse of the movements of the rack 13. Movement is imparted to the train of gears by a suitable motor 40 belted to a pulley 41. On the same shaft with the pulley 41 is a pinion 42 which engages a gear 43 on the hollow shaft 44 (see Fig. 10) on the inner end of which is a gear 45. The gear 45 engages a gear 46 (see Fig. 1) on the shaft 80 upon which is the pinion 81 engaging the gear 53 rigidly connected with the sectional gear 50. The gear 50 as stated acts to rotate the two shafts 17 and 22 and their connecting gears which act to reciprocate the racks 13 and 21.

50 A machine such as I have described is an efficient device not only for advertising but it may be used with advantage for displaying the names of streets or railroad stations for the benefit of the passengers in trolley or railway cars.

I claim:—

1. In an advertising device the combination of an upper chamber and a lower chamber, both containing a pack of display cards, a middle chamber between the two, a reciprocating rack for conveying the cards one at a time from the upper chamber to the middle chamber and thence to the lower chamber on one side of the device, a reciprocating rack for conveying one at a time from the lower chamber to the middle chamber and thence to the upper chamber on the opposite side of the device, a rack gear for each rack, gearing connected with the rack gears for simultaneously rotating the same and for reversing the movement of the rack gears at intervals, including a sectional gear having a portion arranged to be carried into and out of mesh with the said gearing intermittently, and means for continuously rotating the sectional gear in one direction.

2. In an advertising device, the combination of an upper chamber and a lower chamber, both containing a pack of display cards, a middle chamber between the two, a reciprocating rack for conveying the cards one at a time from the upper chamber to the middle chamber and thence to the lower chamber on one side of the device, a reciprocating rack for conveying one at a time from the lower chamber to the middle chamber and thence to the upper chamber on the opposite side of the device, a rack gear for each rack, a sectional gear continuously rotating in one direction, gears spaced apart and connected with the rack gears and intermittently engaged by the sectional gear for rotating the rack gears simultaneously and for reversing the rotation of the same at intervals to reciprocate the racks, and an intermediate gear meshing with the said rack gears.

3. In an advertising device the combination of an upper chamber and a lower chamber, both containing a pack of display cards, a middle chamber between

the two, a reciprocating rack for conveying the cards one at a time from the upper chamber to the middle chamber and thence to the lower chamber on one side of the device, a reciprocating rack for conveying one at a time from the lower chamber to the middle chamber and thence to the upper chamber on the opposite side of the device, a rack gear for each rack, an intermediate gear meshing with the rack gears for causing the same to simultaneously rotate, a sectional gear continuously rotating in one direction and separate gears spaced apart and connected with the rack gears and arranged to be intermittently engaged by the sectional gear for reversing the rotation of the rack gears.

HERBERT HANSCOM.