(No Model.) 2 Sheets—Sheet 1.

C. W. JOHNSON.

APPARATUS FOR AUTOMATICALLY DISPLAYING SHOW CARDS, &c.

No. 267,538. Patented Nov. 14, 1882.

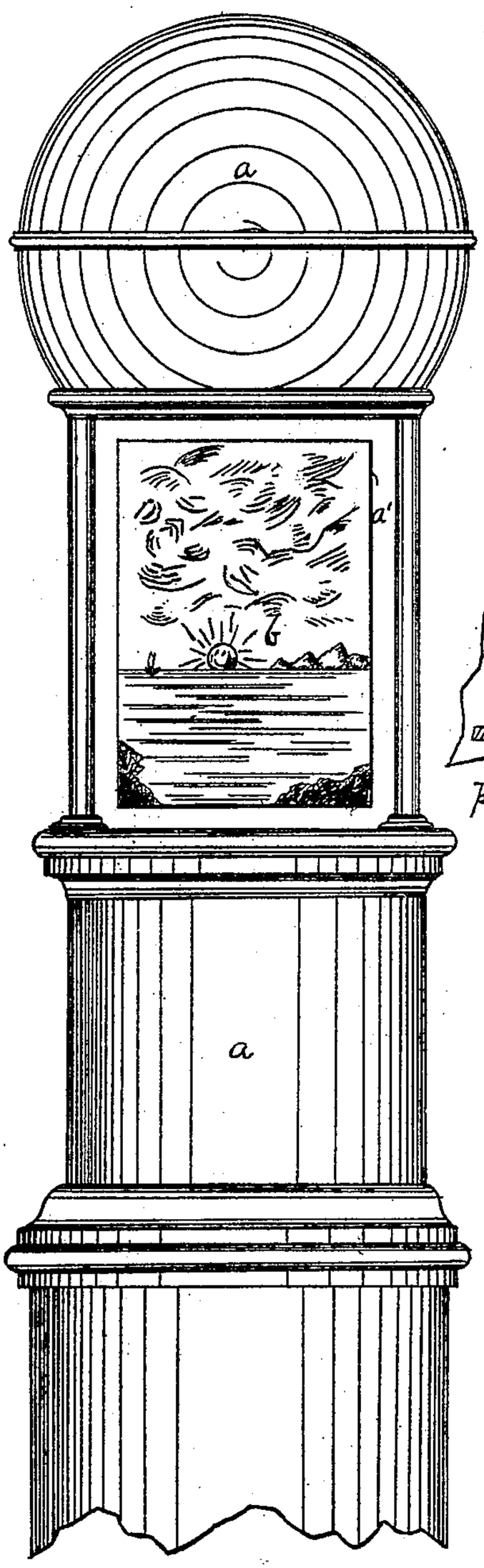

Fig 1

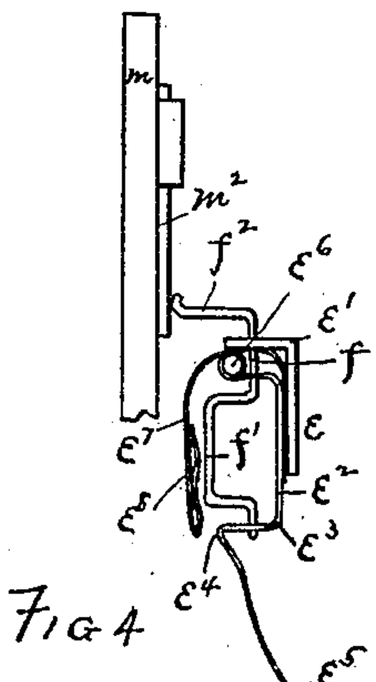

Fig 4

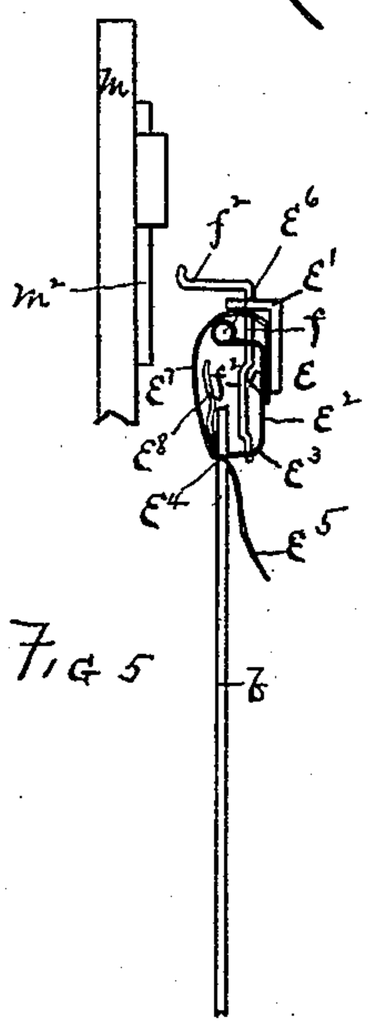

Fig 5

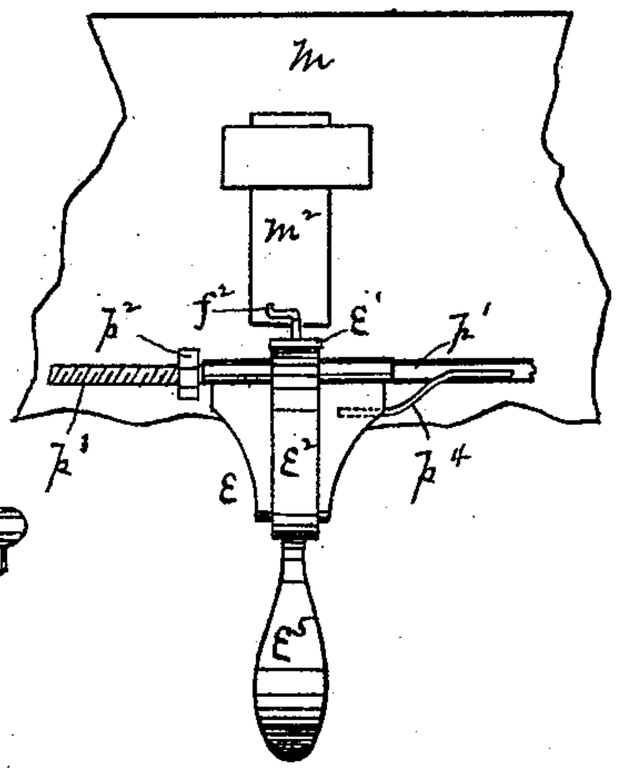

Fig 6

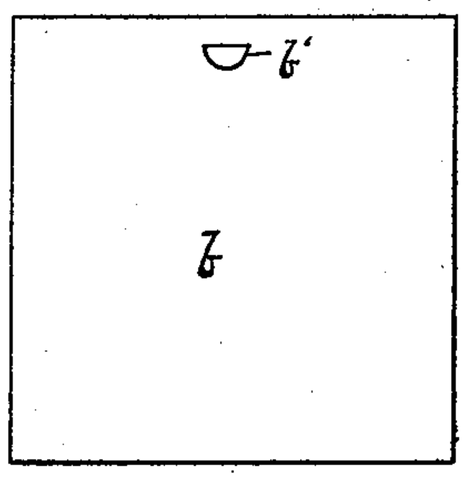

Fig 9

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(No Model.) 2 Sheets—Sheet 2.

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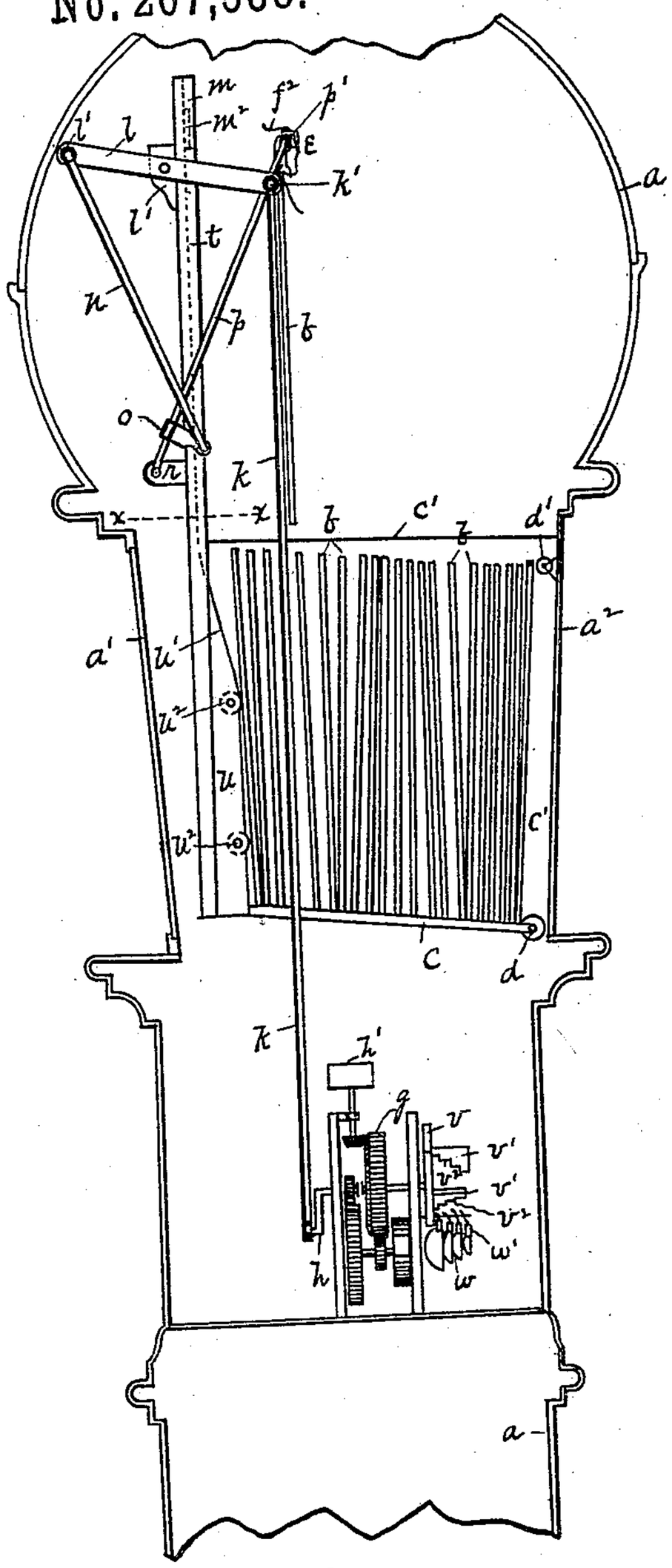

FIG 2

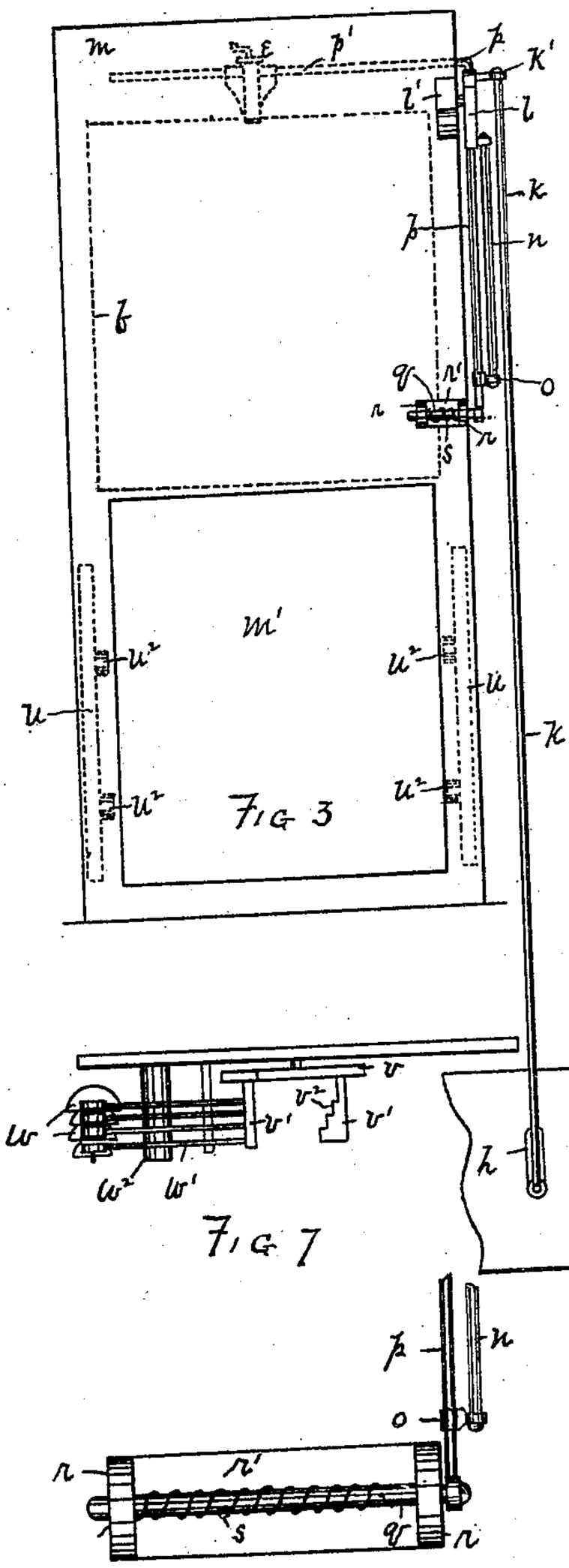

FIG 3

FIG 7

FIG 8

FIG 10

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UNITED STATES PATENT OFFICE.

C. WESLEY JOHNSON, OF BUFFALO, NEW YORK.

APPARATUS FOR AUTOMATICALLY DISPLAYING SHOW-CARDS, &c.

SPECIFICATION forming part of Letters Patent No. 267,538, dated November 14, 1882.

Application filed May 26, 1882. (No model.)

To all whom it may concern:

Be it known that I, C. WESLEY JOHNSON, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Apparatus for Automatically Displaying Show-Cards, Pictures, &c.; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to a peculiar arrangement and combination of mechanism for automatically displaying show-cards, pictures, &c., by means of which a series of cards or pictures are successively and continuously displayed at and removed from the point of sight, and a tone or musical sound produced at the proper time to attract the attention of observers to the card or picture being displayed.

The mechanism which I have employed to carry out my invention consists substantially of an inclined way down which the cards are passed, and a grab and its operating mechanism for successively transferring such cards from the bottom to the top of the inclined way. The operating mechanism and the cards are inclosed in a suitable casing provided with an opening or openings through which the cards or pictures are displayed. The production of the tones or musical sounds, which forms a part of my invention, is effected by suitable mechanism connected with the motor which is employed to operate the card-transferring apparatus.

In the drawings, Figure 1 is an exterior front view of the casing. Fig. 2 is a side view of the cards and operating mechanism in the interior of the casing, which is shown centrally sectioned, one of the side partitions being removed. Fig. 3 is a front view of the grab-operating mechanism. Figs. 4 and 5 are side views of the grab in open and closed position, respectively. Fig. 6 is a rear view of the grab. Fig. 7 is an enlarged detail view of the tone-producing mechanism. Fig. 8 is an enlarged detail view of a portion of the grab-operating mechanism. Fig. 9 is a front view of one of the cards; and Fig. 10 is a section of the partition, taken in the line $x\ x$ of Fig. 2.

Referring to the drawings, a is the casing which inloses the operating mechanism, and which may be of any suitable form. It is provided with the openings a' and a^2 in front and rear, in which a plate of glass or a magnifying-lens may be placed through which to view the displayed cards or pictures.

$b\ b$ are the cards or pictures, which in the operation of the device arrange themselves, substantially as shown in Fig. 2, upon the inclined way c, which extends downwardly across the casing a, near the bottom of the openings a' and a^2. This inclined way c is a plane surface a little wider than the cards, (a front view of one of which cards is shown in Fig. 9,) and has guiding walls or partitions $c'\ c'$ in each side to keep the cards in position as they travel down the inclined way. The inclination is made of sufficient degree to allow the force of gravity to assist in the operation of moving the cards without causing the cards to crowd together too much at the bottom of the inclined way. Otherwise, if the inclination were too steep, suitable devices would have to be employed to regulate the descent of the cards, such as springs located upon the guiding-walls at the sides of the inclined way.

In lieu of the permanent inclined way just described, an endless belt or carrier might be employed, which could be arranged either horizontally or slightly inclined. If arranged horizontally, mechanism might be arranged to assist in moving the cards; but I have found in practice that the inclined way shown and described is more simple and reliable in that it requires no operating mechanism, and consequently takes no power from the motor and performs its function in a perfectly-satisfactory manner.

The cards b are so placed upon the inclined way c that their front faces can be seen at the opening a' and their rear faces at the opening a^2, thus enabling both faces of the cards to be utilized.

At each side of the inclined way c, at its lower or rear edge, is placed a friction-roller, d, against which the lower sides of the rear card rest. d' are similar rollers, which support the top of the card. These friction-rollers assist the operation of the grab in remov-

ing the rear card from the rest. This grab *e*, which is clearly shown in Figs. 4, 5, and 6, consists of a light metal structure rigidly secured to the stiff frame-piece *e'*. Of this metallic structure e^2 is the rear portion, which is bent at right angles at e^3, and again at e^4, where it tapers down to a narrow neck and gradually enlarges again toward the bottom e^5, which is bent rearwardly, as shown, and forms a guide in directing the card to its position in the grab. The angle e^4 forms a projection which enters a slot in the top of the card *b*. In the upper part of the grab is the cylindrical socket e^6 for the reception of the arm which carries the grab.

e^7 is the front spring portion, projecting downwardly to meet the neck e^4. Its end is bent inwardly to form the auxiliary spring e^8. The spring portion e^7 serves to retain the card upon the projection e^4 until the proper time for releasing such card. The auxiliary spring e^8 serves to throw back the releasing device after it has performed its function. This releasing device *f* (see Figs. 4 and 5) consists of a wire bent as shown, and pivoted in the grab at its upper and lower parts. The central part within the grab is bent outwardly, forming the angular projection *f'*, which serves, when the device *f* is turned, to push out both the card and the spring portion e^7, which holds it in place, and thereby releases the card from the grab. The auxiliary spring e^8 throws the disengaging device *f* back, so as not to interfere with the next card to be received by the grab. The releasing device is operated through the bent arm f^2, as will more fully hereinafter appear.

The mechanism for operating the grab is arranged as follows:

g is the motor, which may be of any suitable character. In this instance it consists of an ordinary clock mechanism, having the crank-arm *h* and the fan-balance *h'*, which are revolved thereby.

To the crank *h*, is pivoted the lower end of the pitman *k*, the upper end of which is pivoted at *k'* to the walking-beam *l*. This walking-beam is pivoted in a bracket, *l'*, secured to the vertical partition *m*, a front view of which partition is shown in Fig. 3 as extending down to the inclined way *c*, and provided with the rectangular opening *m'*, so as not to obstruct the view of the cards to be displayed.

n is a connecting-arm pivoted at its upper end to the end *l'* of the walking-beam *l*, and at its lower end to an adjustable sleeve, *o*, adapted to be rigidly secured to the grab-carrying arm *p*, bent at right angles to form the extension *p'*, upon which the grab is placed, as clearly shown in dotted lines in Fig. 3. The lower end of this carrying-arm *p* is rigidly secured to a rod, *q*, which is loosely held in the lugs *r* of the plate *r'*, secured to the partition *m*. The spring *s* encircles the rod *q*, having one of its ends rigidly secured to the rod and the other end to one of the lugs.

A counter-weight could be employed in lieu of the spring by extending the carrying-arm beyond its attaching-point and placing the counter-weight at the end of the extension; but I prefer the spring herein shown as giving the best results, its object being to assist in lifting the suspended card.

The partition *m* is recessed on its rear side, as shown at *t* in Fig. 10, to assist in guiding the released cord to its place upon the inclined way *c*.

u u are guiding-cleats secured on each side of the rectangular opening *m'*. Their upper ends are beveled at *w'* to meet the bottom of the recess *t* in the partition *m*. w^2 are friction-rollers secured to the cleats *u*.

In the rear of the motor *q* is a revolving disk, *r*, having the perpendicular extensions *r' r'*. These extensions are each provided with a series of steps, r^2, running in opposite directions.

w is a series of bells of different tones, and *w'* a series of pivoted hammers, the ends of which are raised and released in succession to strike the bells by the revolving steps v^2 upon the extensions *v'*, first across the hammers in one direction, and then back in the other direction to vary the scale of tones. w^2 is an elastic cushion for raising the hammers from the bells after the stroke.

The operation of transferring the cards and producing the musical sounds is as follows: The cards having been placed upon the inclined way, the grab is adjusted upon the carrying-arm, and held in position by the nut p^2, which works upon the screw-threaded end p^3. It fits loosely upon the carrying-arm, and is thereby permitted to remain in a vertical position during its entire travel. The motor being set in motion, the pitman *k*, as it ascends, causes the grab upon the carrying-arm, by means of the intervening mechanism described, to descend to the rear card, near the opening or window a^2. As it reaches the top of the card the guide e^5 upon the grab serves to properly direct it to the slot *b'* in the cord, and the arm p^4, upon the carrying-arm *p p'*, also serves to keep the grab from swinging out of the way as it approaches the card. As the grab descends still farther the card is pushed up between the projection e^4 and the spring portion e^7 until the projection e^4 enters the slot *b*. The card is then lifted up as the pitman *k* descends until it reaches the partition *m*. The projecting arm f^2 of the releasing device *f* then strikes against the surface of the plate m^2 upon the partition *m*, having a hard polished surface, and as it turns the angular portion *f'* pushes out the card *b* and spring portion e^7 until the card is released therefrom. The card then drops down the recess *t* in the partition *m* until it reaches the beveled cleats *u u*, by means of which it is thrown forward, and as it settles into place its momentum pushes the cards before it down the inclined way *c*. By means of this operation just described the cards are successively and continuously transferred from rear to front, and

the advertisements or pictures placed upon the cards are displayed at the front and rear openings in the casing. While this operation is being carried on the revolving disk *v*, with its stepped extensions, causes the musical sounds to be produced, so as to attract attention to the cards being displayed.

My improved device is especially designed to be used as an advertising medium, and to that end is to be constructed of suitable height, and placed in a commanding position in the crowded thoroughfares of a city where the advertisements can be displayed to the most advantage, although it can be adapted by a suitable reduction in size for use in drawing-rooms to display pictures of various kinds. It is entirely automatic in its operation, and requires no care or attention as long as the motor continues to operate.

I claim—

1. An apparatus for automatically displaying cards, consisting substantially of the following instrumentalities, namely: an inclined way upon which the cards to be displayed are placed, a grab for catching, lifting, and releasing each card to be transferred from one end to the other of the inclined way, and mechanism for moving the grab in transferring the card, the whole provided with a suitable inclosure having an opening or openings through which the cards are displayed, all combined and operating substantially as shown and described.

2. An apparatus for automatically displaying cards, consisting substantially of the following instrumentalities, namely: an inclined way upon which the cards to be displayed are placed, a grab for catching, lifting, and releasing each card to be transferred from one end to the other of the inclined way, and mechanism for moving the grab in transferring the card and producing a tone or tones at intervals while the cards are being displayed, the whole provided with a suitable opening or openings through which the cards are displayed, all combined and operating substantially as shown and described.

3. A grab for catching, lifting, and releasing cards, having a projection to enter a slot in the card, a spring-arm to hold the card upon the projection, a releasing device for pushing the card away from the projection against the action of the spring-arm, and a socket for hanging the grab upon a carrying-arm, all combined and operating substantially as shown and described.

4. A grab for catching, lifting, and releasing cards, having a projection to enter a slot in the card, a spring-arm to hold the card upon the projection, a guide to direct the grab in catching the card, a releasing device for pushing the card away from the projection against the action of the spring-arm, a socket for hanging the grab upon a carrying-arm, and an auxiliary spring upon the spring-arm for throwing back the releasing device after it has performed its function, all combined and operating substantially as shown and described.

5. In a grab, in combination, the angular projection e^4, the spring-arm e^7, the releasing device *f*, and the cylindrical socket e^6, substantially as shown and described.

6. In a grab, in combination, the angular projection e^4, the spring-arm e^7, the guide e^5, the releasing device *f*, the socket e^6, and the auxiliary spring e^8, substantially as shown and described.

7. The mechanism for operating the grab, consisting of the pitman *k*, reciprocated by any suitable motor, the walking-beam *l*, the connecting-rod *n*, and the carrying-arm *p p'*, having the screw-threaded end p^3, and the adjusting-nut p^2 for holding the grab in position upon the carrying-arm, and the arm p^4 for steadying the grab as it approaches the card, all combined and operating to reciprocate the grab, as and for the purpose stated.

8. The combination of the grab and its operating mechanism, shown and described, with the partition *m*, having the recess *t*, the beveled cleats *u u*, and the friction-rollers u^2 u^2, as and for the purpose stated.

9. The combination of the grab and its operating mechanism with the disk *v*, having the stepped projections *v' v'*, the bells *w*, and the hammers *w'*, all operated by the motor *g* to transfer the cards from the front to the rear of the inclined way, and to simultaneously produce a tone or tones, substantially as shown and described.

10. The partition *m*, provided with recess *t*, and having the cleats *u u* on either side, and the friction-rollers u^2 u^2 u^2 u^2, as and for the purpose stated.

11. The combination of the revolving disk *v*, provided with the stepped projections *v' v'*, with the bells *w*, hammers *w'*, and elastic cushions w^2, the revolving disk being operated by the motor *q*, which moves the grab-operating mechanism, substantially as shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

C. WESLEY JOHNSON.

Witnesses:
J. H. MARLING,
W. T. MILLER.