

June 12, 1956

H. E. LOHNES
ANIMATED CARD

2,749,657

Filed Sept. 8, 1953

4 Sheets-Sheet 1

Fig. 1.

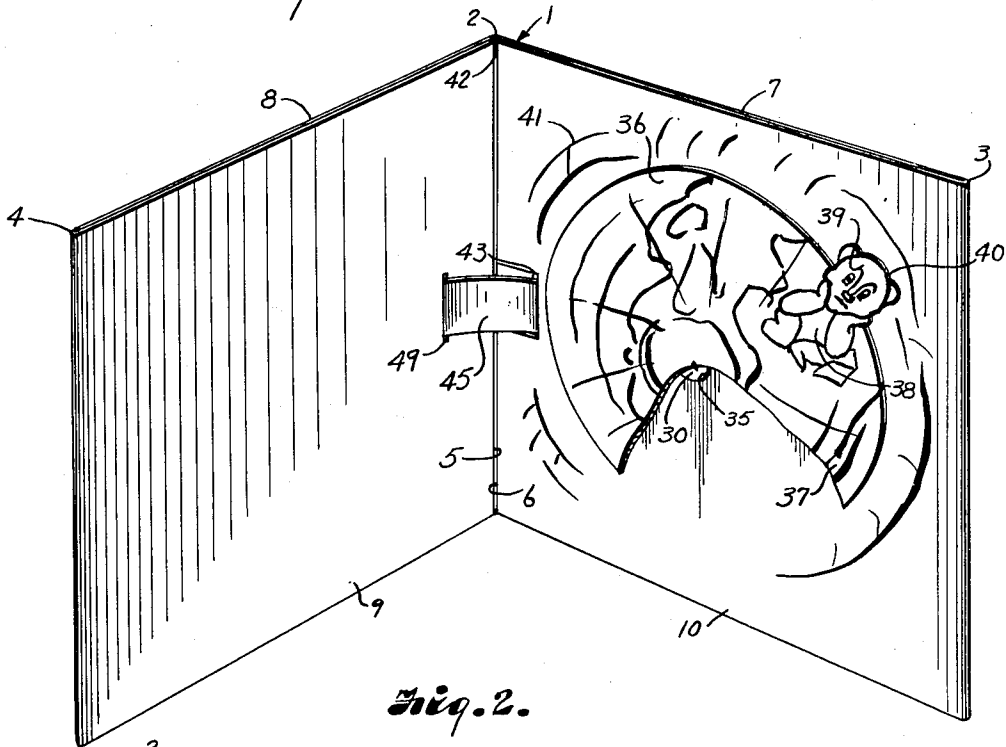
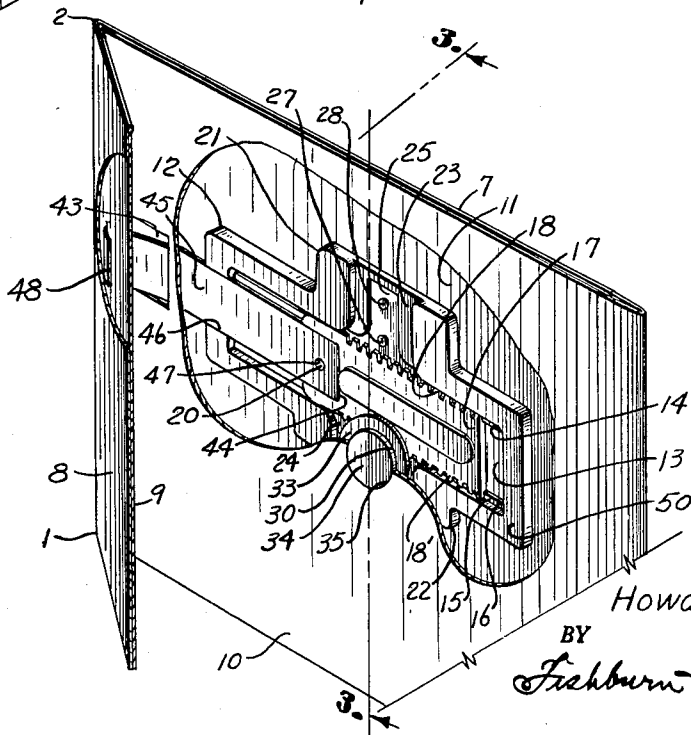


Fig. 2.



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Fig. 4.

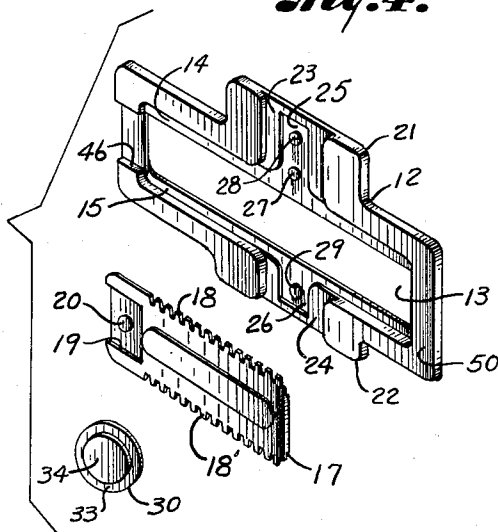


Fig. 5.

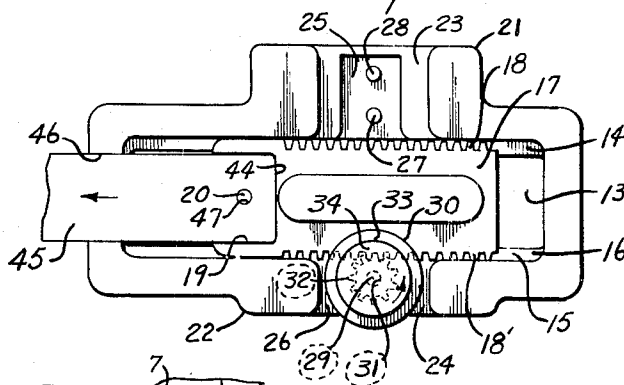
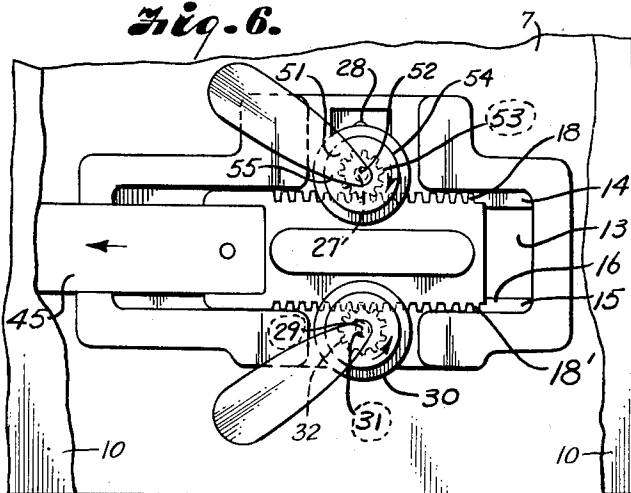


Fig. 6.



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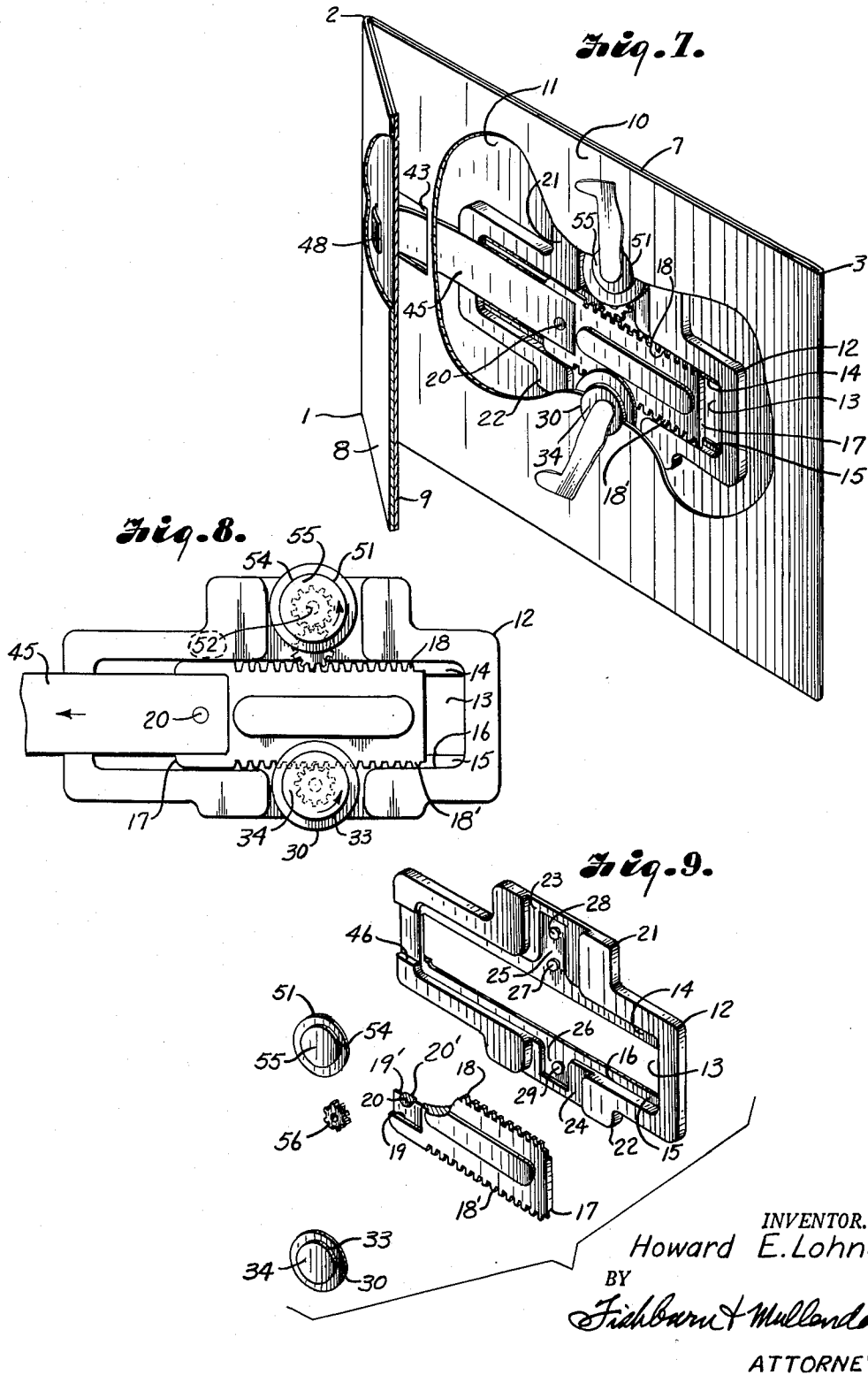
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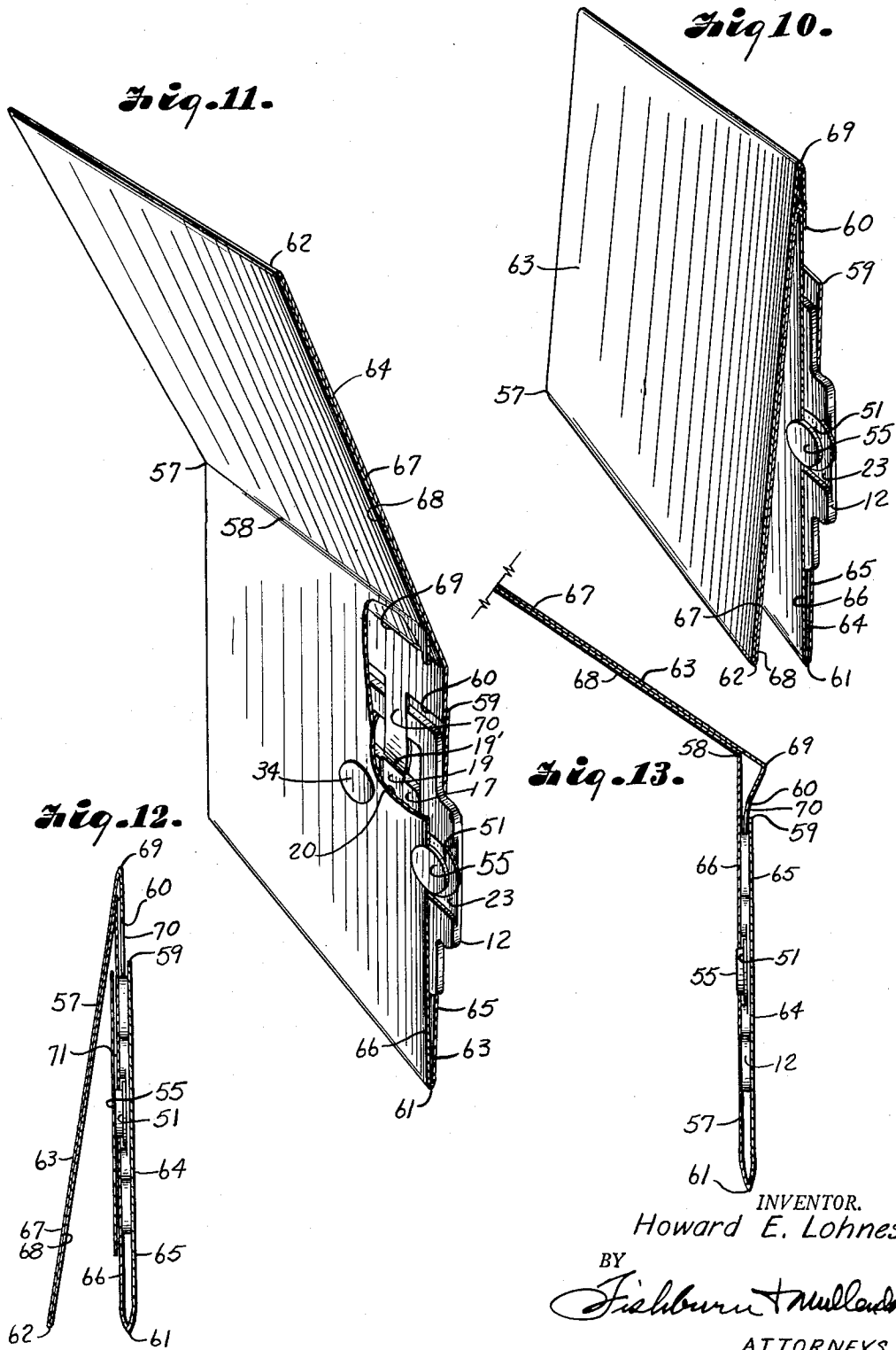
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2,749,657

ANIMATED CARD

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Application September 8, 1953, Serial No. 378,730

5 Claims. (Cl. 46—34)

This invention relates to an animated card, and more particularly to apparatus for attachment to cards of the greeting type for movement of a portion of the face of the card.

It is a principal object of the present invention to provide a greeting card with a frame and gear mechanism whereby opening of the card will cause animation of a part of the card on the inside face thereof when the card is opened and closed.

Other objects of the invention are to provide a frame and gear mechanism for rotation of the animated part of the card in one direction; to provide for rotation of two parts of the card in opposite directions on the face thereof; to provide mechanism having gears for rotation of two animated parts of the card in the same direction; to provide a connection with the gear rack to the opposite portion of the card whereby opening the card will cause movement of the rack and gears to animate the card; to provide means for securing the frame, rack and gears to the card; to provide means for securing the animated part of the card to the gear disks of the mechanism; and to provide a device of this character, simple and efficient in operation.

In accomplishing these and other objects of the invention, I have provided improved structure, the preferred form of which is illustrated in the accompanying drawings wherein:

Fig. 1 is a perspective view of my invention with a part of the card broken away to better illustrate the invention.

Fig. 2 is a perspective view without the animated portion of the card with a part of the card broken away to better illustrate the operating mechanism.

Fig. 3 is an enlarged cross-sectional view taken on a line 3—3, Fig. 2, and including the animated portion.

Fig. 4 is a perspective view of the frame and gear mechanism shown in disassembled relation.

Fig. 5 is an elevation view of the frame and gear mechanism with a portion of the operating lever.

Fig. 6 is a modified form of my invention showing two gear disks for engagement with the gear rack and two movable members thereon.

Fig. 7 is a perspective view of another modified form of my invention with parts broken away to better illustrate the operating mechanism.

Fig. 8 is an elevational view of the operating mechanism with a part of the operating lever shown therewith.

Fig. 9 is a perspective view of the frame and gear mechanism shown in disassembled relation and parts of the gear rack broken away to better illustrate the invention.

Fig. 10 is a cross-sectional view illustrating a further modified form of my invention without the animated portion being shown.

Fig. 11 is a cross-sectional view partly in perspective with parts broken away to better illustrate the invention and without the animated portion.

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Fig. 12 is an end view of Fig. 10 with the animated portion added thereto.

Fig. 13 is an end view of Fig. 11.

1 designates a card embodying the features of my invention comprising a sheet of flexible paper folded vertically at substantially the center thereof as indicated at 2 (Fig. 1). The sheet of material also has fold lines 3 and 4 spaced substantially midway between the vertical fold line 2 and the outer free edges 5 and 6 so that the card may be folded and opened as is the usual practice. The card when folded comprises outside portions 7 and 8 and inside portions 9 and 10.

Mounted on the inside 11 on the back 7 by an adhesive material or other suitable means is a frame 12 made of plastic or other suitable material (Fig. 2). The frame may be located as desired, but in this application is at substantially the center of the back portion 7 and is provided with a longitudinal recess portion or opening 13 having inwardly directed flanges 14 and 15 on the respective sides thereof forming a trackway 16 for a gear rack 17 having teeth 18 and 18' on the respective sides thereof. One end of the gear rack is provided with oppositely facing recessed portions 19 and 19' having lugs or nibs 20 and 20' (Fig. 9) for a purpose later described.

The frame 12 has outwardly extending portions 21 and 22 on the respective sides thereof and is provided substantially midway thereof with recessed portions 23 and 24 which in turn are provided with grooves or cutaway portions 25 and 26. The groove 25 is provided with spaced upstanding lugs or nibs 27 and 28 and the recess 26 is also provided with an upstanding lug or nib 29.

A disk 30 is provided having a recess 31 in one side thereof for mounting of the disk on the nib 29 (Fig. 3). The disk includes gear teeth 32 on one side thereof, surrounding the recess 31 as best illustrated in Fig. 5. The teeth 32 are adapted to engage the teeth 18' on the rack gear 17. The opposite face of the disk 30 has an offset portion or boss as indicated at 33 which has a plane surface 34 on the outside of the disk for a purpose later described. If desired the disk 30 may be placed on the opposite side of the gear rack and will then engage the nib 27 and the teeth of the disk will then engage the teeth 18 of the gear rack 17.

The inside portion 10 of the card is provided with an opening 35 and the boss or offset portion 33 extends through the opening 35, the boss being of such thickness that the plane surface 34, thereof, is beyond the inner surface of the inside portion 10 (Fig. 3). An animated object 36, in Fig. 1 shown to be a flat sheet substantially circular and depicting, for example, the world 37, is adapted to be secured to the plane surface 34 of the disk 30 by adhesive or other suitable means. The animated part 36 may be provided with pictorial illustrations or other objects and in Fig. 1 there is shown a body portion 38 and a head of an animal 39 in illustration and a portion of the head 39 extending outwardly from the circular portion 36 as indicated at 40. Various illustrations or indicia as desired may be included on the inside face portion 10 of the card as illustrated at 41.

It will be noted the inside portions of the card 9 and 10 when in open position have their free edges 5 and 6 meeting at the substantial center or fold lines 2 of the card as indicated at 42. The inside face 10 of the card is provided with a cutaway portion or slot 43 adapted to receive the end 44 of a pull tab or lever 45. The end 44 of the tab engages in a groove 46 in the end of the frame 12, and is provided with an opening 47 adapted to receive the lug 20 of the gear rack 17 and is held in the recessed portion 19 by adhesive material or other suitable means. The opposite end 48 of the pull tab extends across the fold line of the card and engages in a slot 49 in the inside portion 9 of the card spaced a desired dis-

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tance from the edge 5. The end 48 is then folded along the opposite face of the portion 9 and secured thereto by adhesive or other suitable means (Fig. 2). The animation of the portion 36 of the card is regulated by the length of the pull tab and the distance of the slot 49 away from the edge 5 of the inside face 9 of the card. For instance, if the slot 49 is a greater distance from the edge 5 of the face 9 the more animation the animated portion 36 will have.

When the gear mechanism and pull tab are secured in place as above described the opposite side of the inside portion 10 of the card will be secured by adhesive or other suitable means to the front face 50 of the frame 12 and will hold the pull tab 45, gear 30 and rack gear 17 in place.

Animation of the card will be accomplished upon opening of the card, i. e., the pull tab having its end 48 attached to one face of the card will cause the gear rack to move turning the disk 30 through the gear 32 to cause the animated object 36 on the inside face of the card to move through its being secured to the plane surface 34 of the disk 30. Direction of movement of the animated object may be changed by use of the disk 30 on either side of the gear rack 17.

In Fig. 6 I have shown a modified form of the invention wherein I have provided another disk 51 having an opening 52 in one face thereof adapted to engage the lug or nib 27 and having gear teeth 53 surrounding the opening which engage with the teeth 18 on the rack gear 17. The disk 51 has an offset portion as indicated at 54 and provided with a plane surface 55, the same as the disk 30. The plane surface 55 will extend through an opening (not shown) in the inside portion 10 of the card, and a second animated object may be secured to the plane surface 55 in the same way as in the preferred form of the invention.

In operation of this form of the invention, opening and closing of the card will cause animated objects secured to the disks 30 and 51 to be rotated in opposite directions.

In Figs. 7, 8 and 9 I have shown another modification wherein the disk 51 is also adapted to engage the lug or nib 28 on the frame 12 and an idler gear 56 is adapted to engage the lug or nib 27 and will engage the teeth 18 of the gear rack and the teeth 53 of the disk 51.

With this form of the invention and the gear and rack arrangement as described, opening and closing of the card will cause the animated objects on the plane surfaces 34 and 55 of the disks to be rotated in the same direction.

It will be obvious from the foregoing and from the illustrations of the drawings, Figs. 1 to 9 inclusive that the fold line of the card may be horizontal so that the card may be opened endwise instead of unfolding like a book without departing from the spirit of my invention. In such an instance the illustrations and animated part of the card would merely be rearranged.

Fig. 10, 11, 12 and 13 illustrate a further modified form of the invention showing a card made from a single sheet of material 57 having a horizontal fold line 58 at substantially the center thereof and then substantially equal distance between the respective ends 59 and 60 of the sheet the card is folded as indicated at 61 and 62 forming a bottom section 63 and a top section 64. With this form of the invention, the bottom and top portions 63 and 64 comprise double sheets of material 65 and 66 and 67 and 68, respectively, on each side of the fold line 58. Secured between the respective sheets 65 and 66 by adhesive or by other suitable means is the frame 12 with the end having the recessed portions 19 and 19' extending toward the fold line 58. As the frame and gear rack and disks are the same with this form of invention as in the previous forms, the various parts are given like numbers corresponding to such previous forms.

The sheet 67 of the top portion 64 of the card has a fold line 69 which lies apart from fold line 58 when the card is assembled to cause operation of the pull tab as

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later described. Near the edge 60 and extending from and integral with the edge 60 at substantially the center thereof, or in line with the gear rack of frame 17, is a tongue or pull tab 70 adapted to extend between the sheet 65 and 66 and having its end engaging in the recess portion 19' of the gear rack 17 and having an opening (not shown) near the outer end thereof which engages the nib or lug 21' in the recess 19' of the gear rack 17 for operating the gear rack when the card is opened and closed. The sheets 65 and 66 of the back portion are secured to the frame by adhesive or other suitable means and the tongue or pull tab 70 will be held in place on the gear rack 17.

In operation of a card assembled as described and shown in this form of the invention, the opening of the top 64 of the card will cause the tab 70 to be pushed downwardly moving the gear rack 17 therewith to rotate the disk 30 when only one disk is used or both disks 30 and 51 when both such disks are used depending upon the number of animated portions used with each card. In Fig. 12 there is shown an animated portion 71 secured to the plane surface 55 of the disk 51. When the card is closed the tab 70 will move upwardly moving the gear rack 17 in the reverse direction and the animated portion thereby moving in the opposite direction than the movement when the card is opened.

As in the preferred form of the invention the idler gear 56 may be used so that the animated portions on the disk 30 and 51 may be rotated in the same direction if desired, or as stated above either one or both disks may be used engaging the gear rack 17 and in such event the animated object on the disk will be rotated in opposite directions.

It will be obvious from the foregoing that I have provided an improved card for mounting animated objects thereon so that the animated portions will be moved upon opening and closing of the card, and more particularly a frame and rack and gear connection operated by a frame and rack and gear connection operated by a pull tab or lever secured to one face of the card for accomplishing this purpose.

It will further be obvious that while I have shown certain forms of the invention, other forms may be utilized without departing from the spirit of my invention.

What I claim and desire to secure by Letters Patent is:

1. In a greeting card having a vertical fold line at substantially the center thereof forming backs and having end portions folded inwardly forming front faces, the free edges of the card meeting at substantially the vertical fold line, a frame having a trackway secured to one of the backs, a gear rack slidable in said trackway, said frame having side portions provided with recesses and having nibs spaced from each other and from said trackway, disks having teeth rotatably mounted on said nibs, said teeth engaging the gear rack, the front face of the card lying over the rack having spaced openings therein, said disks having offset shoulders forming plane surfaces extending through said openings, movable members secured to said plane surfaces of the disks, and a pull tab having one end engaging said gear rack and its opposite end the opposite face of the card, means on the inside of said front face to secure said frame to hold the pull tab, gear and rack gear in place whereby opening and closing of the card will rotate the movable members in opposite directions.

2. In a greeting card having a vertical fold line at substantially the center thereof forming backs and having end portions folded inwardly forming front faces, the free edges of the card meeting at substantially the vertical fold line, a frame having a trackway secured to one of the backs and to the back of one of the front faces, a gear rack slidable in said trackway, said frame having side portions provided with recesses and having nibs spaced from each other and from said trackway, disks having teeth rotatably mounted on said nibs, one of said disks being

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spaced from the gear rack and the teeth of the other disk engaging the gear rack, the front face lying over the rack having spaced openings therein, said disks having offset portions providing plane surfaces extending through said openings, movable members secured to said plane surfaces of the disks, a gear mounted on said frame having teeth engaging the gear rack and the teeth on the disk spaced from the gear rack, and means engaging said gear rack and the opposite face of the card whereby opening and closing of the card will animate the movable members to rotate the same in the same direction.

3. In a greeting card having a vertical fold line at substantially the center thereof forming backs and having end portions folded inwardly forming front faces, the free edges of the card meeting at substantially the vertical fold line, a frame having a trackway secured to one of the backs, a gear rack slidable in said trackway, said frame having a nib spaced to one side of the trackway, a disk having teeth rotatably mounted on said nib of the frame, said teeth engaging the gear rack, the front face lying over the rack having an opening therein, said disk having a plane surface extending through said opening, a movable member secured to said plane surface of the disk, said front faces having aligned slots therein spaced from the free edges of the faces, a pull tab having one end extending through one of said slots and engaging said gear rack and having its opposite end extending through the slot in the opposite face of the card, means securing the inside of said front face overlying the frame to said frame to hold the pull tab, gear and rack gear in place and means securing said last-named end to said face whereby opening and closing of the card will animate the movable member.

4. Apparatus for an animated card having a vertical fold line at substantially the center thereof forming backs and having end portions folded inwardly forming front faces, the free edges of the card meeting at substantially the vertical fold line, comprising a frame having an opening therein and sides and end portions, inwardly extending flanges on said sides forming a trackway, means securing said frame to one of the backs and to the back of one of the front faces, a gear rack slidable in said trackway, the sides of said frame having outwardly extending portions having recesses therein, nibs on said recesses spaced from each other and from said trackway, disks having teeth rotatably mounted on said nibs in said recesses, one of said disks being spaced from the gear rack and the teeth of the other disk engaging the gear rack, the front face

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lying over the rack having spaced openings therein, said disks having offset portions forming plane surfaces extending through said openings, movable members secured to said plane surface of the disks, a gear mounted on said frame having teeth engaging the gear rack and the teeth on the disk spaced from the gear rack, a pull tab engaging said gear rack and the opposite face of the card, and means holding said pull tab, gears and gear rack together whereby opening and closing of the card will animate the movable members to rotate the same in the same direction.

5. An animated card having a single sheet of material folded at substantially the center thereof and having fold lines spaced substantially equi-distant from the center fold line and the free ends of the material having a common meeting point and the sheet having a double thickness and two parallel portions in folded position, a frame having a trackway secured between the sheets of one portion, a gear rack movable in said trackway, said frame having sides offset from the trackway provided with nibs spaced from the trackway, gear means carried by the nibs on the frame and engaging said gear rack, one of said sheets having at least one opening through which one face of one part of the gear means extends and another part engaging the inside of said sheet for retaining the gear on the nib, a movable member mounted on the gear means extending through the opening, and a tab integral with the free end of the sheet of the parallel member opposite the member carrying the frame engaging the gear rack whereby opening and closing of the card will animate the movable member, said free end carrying the tab having a fold line spaced from the end thereof substantially parallel with the center fold line and the tab end of the sheet being underneath the other free end of the sheet when the card is opened.

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