

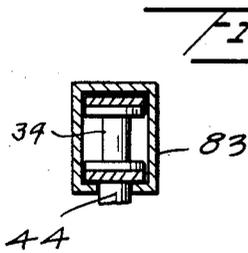
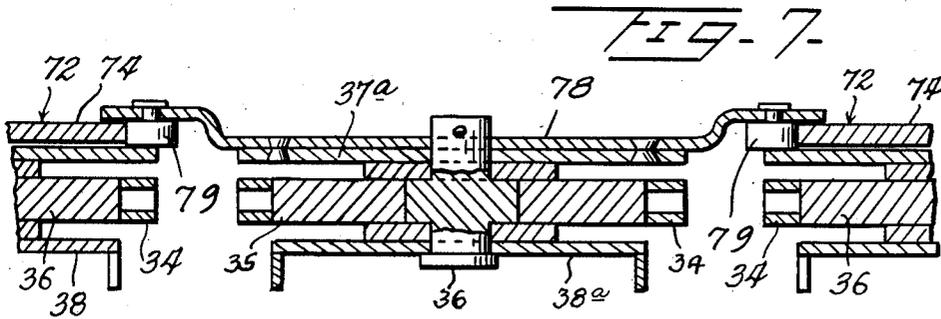
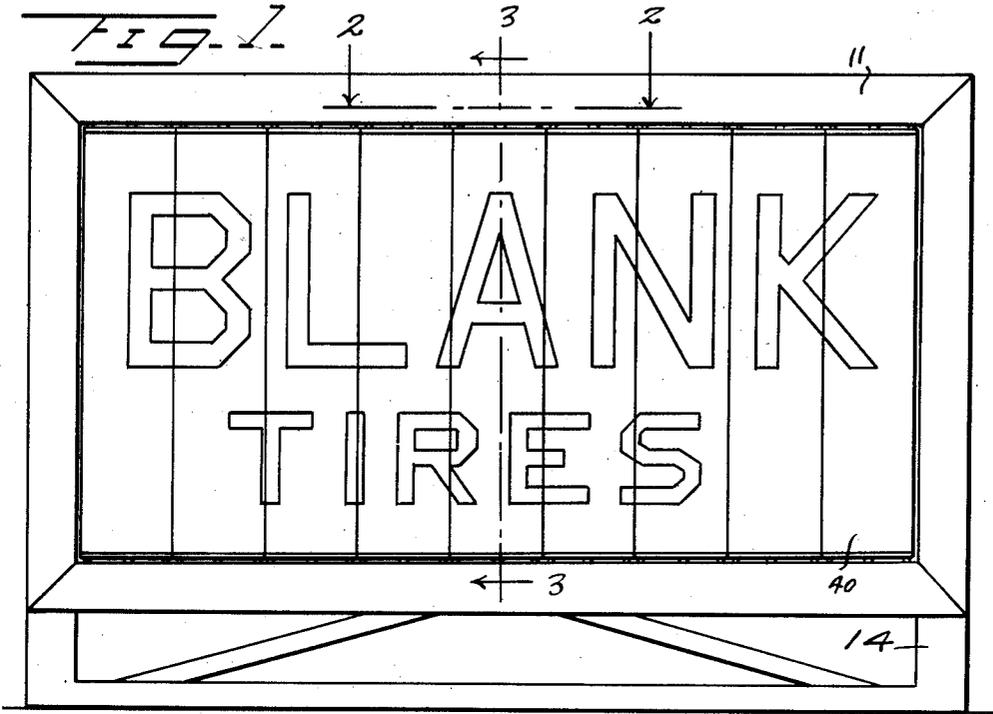
March 27, 1951

J. L. PFLUEGER  
ADVERTISING APPARATUS

2,546,236

Filed Sept. 20, 1948

5 Sheets-Sheet 1



Inventor

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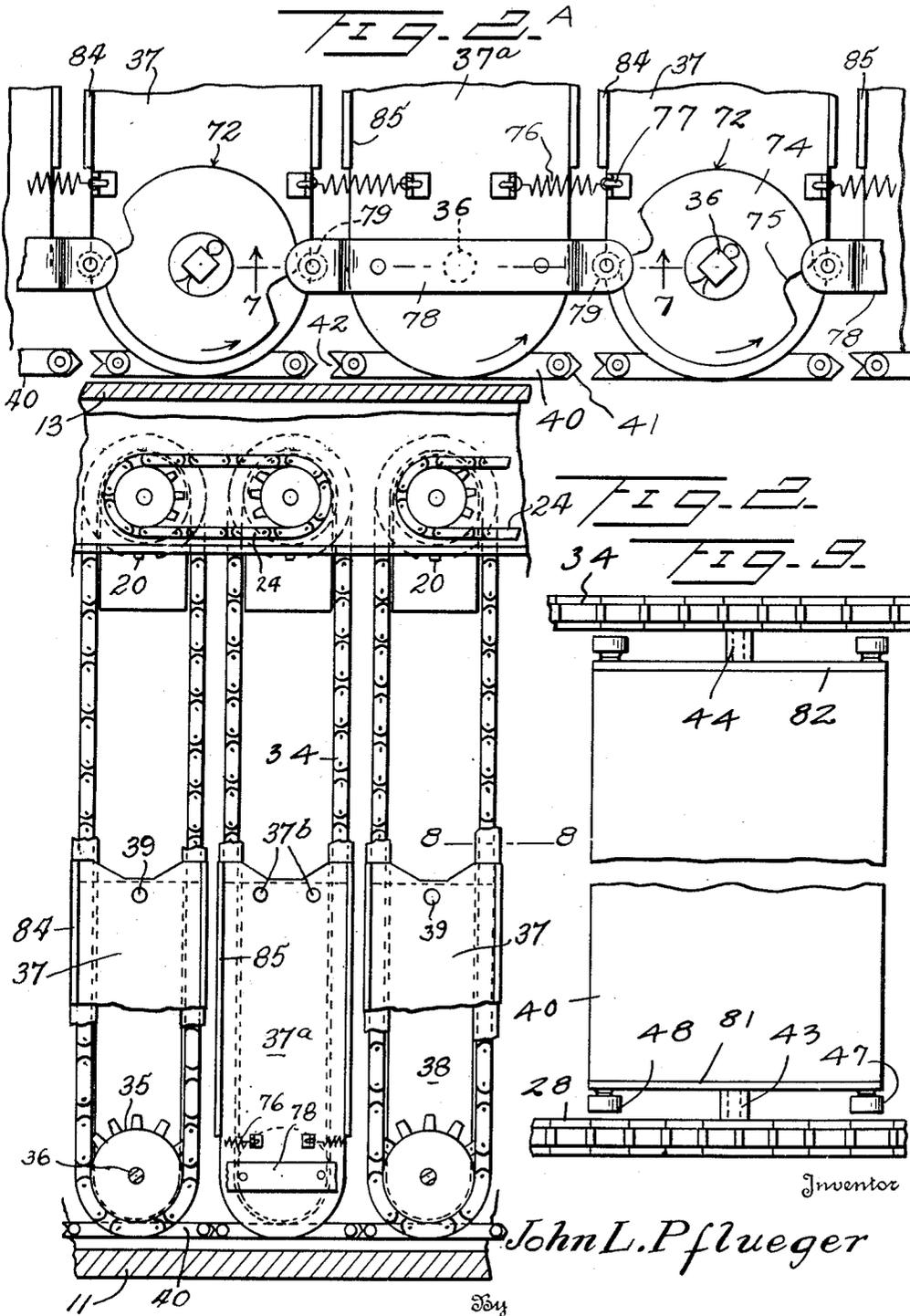
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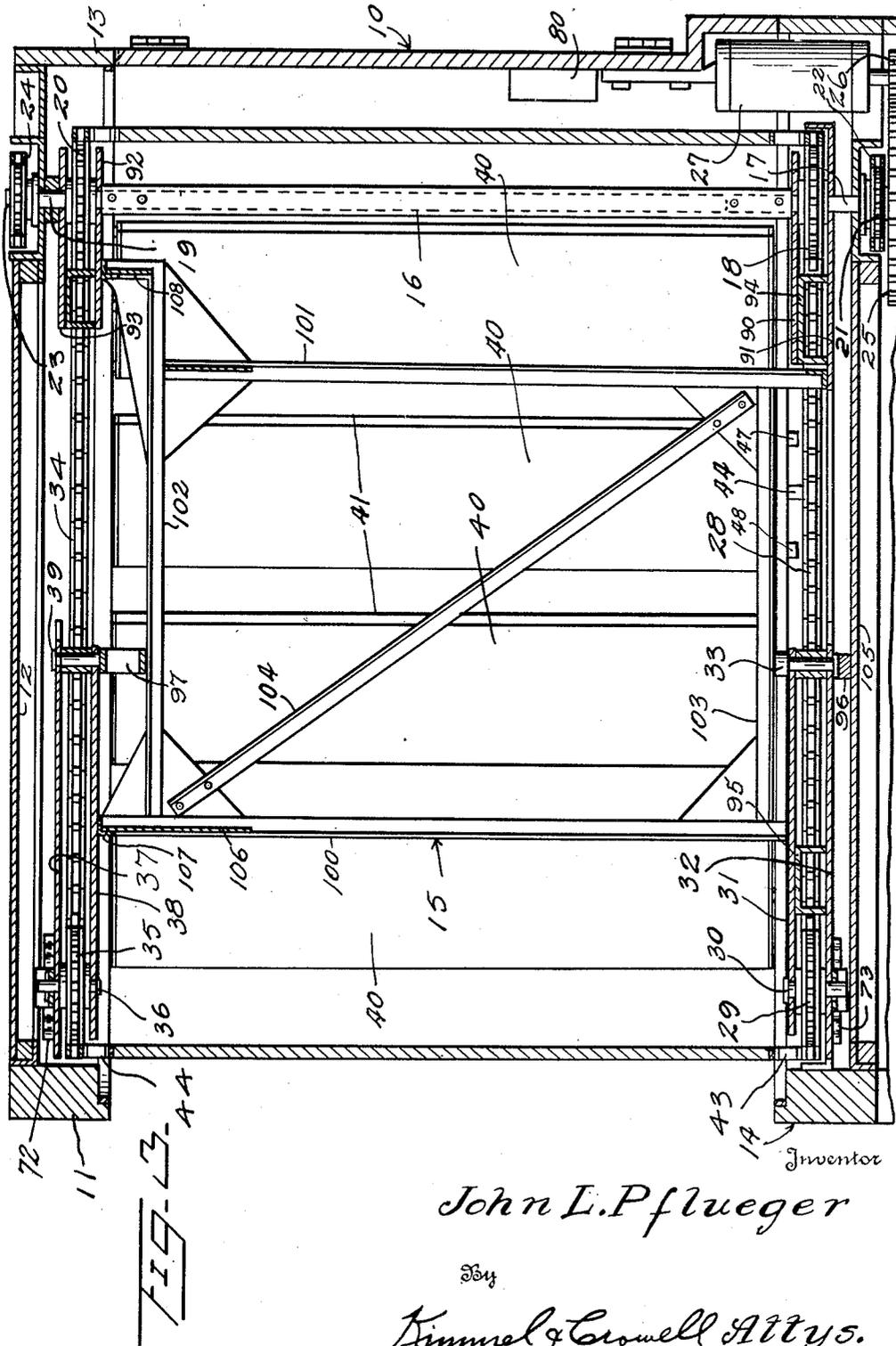
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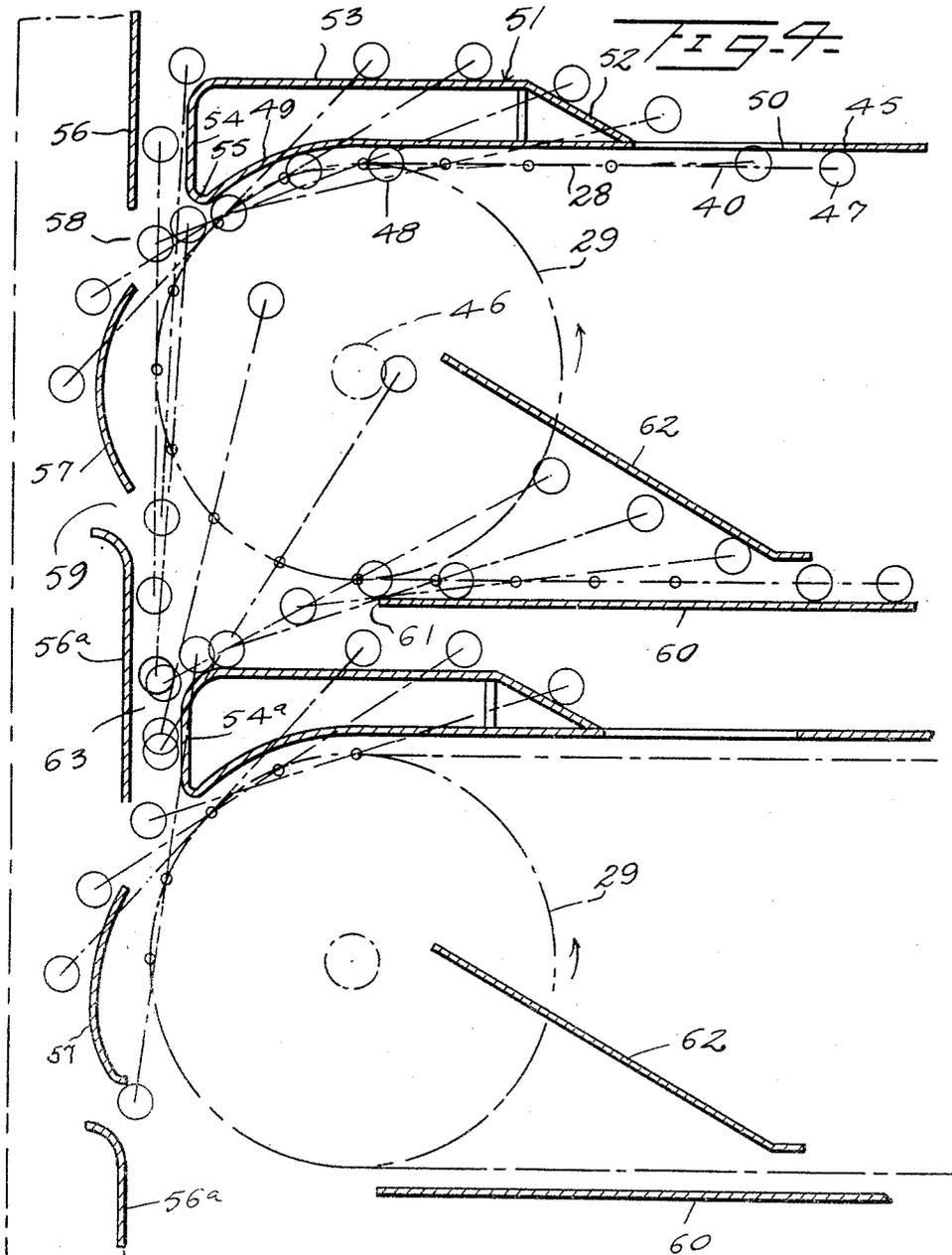
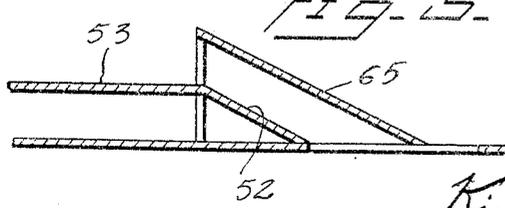


FIG. 5



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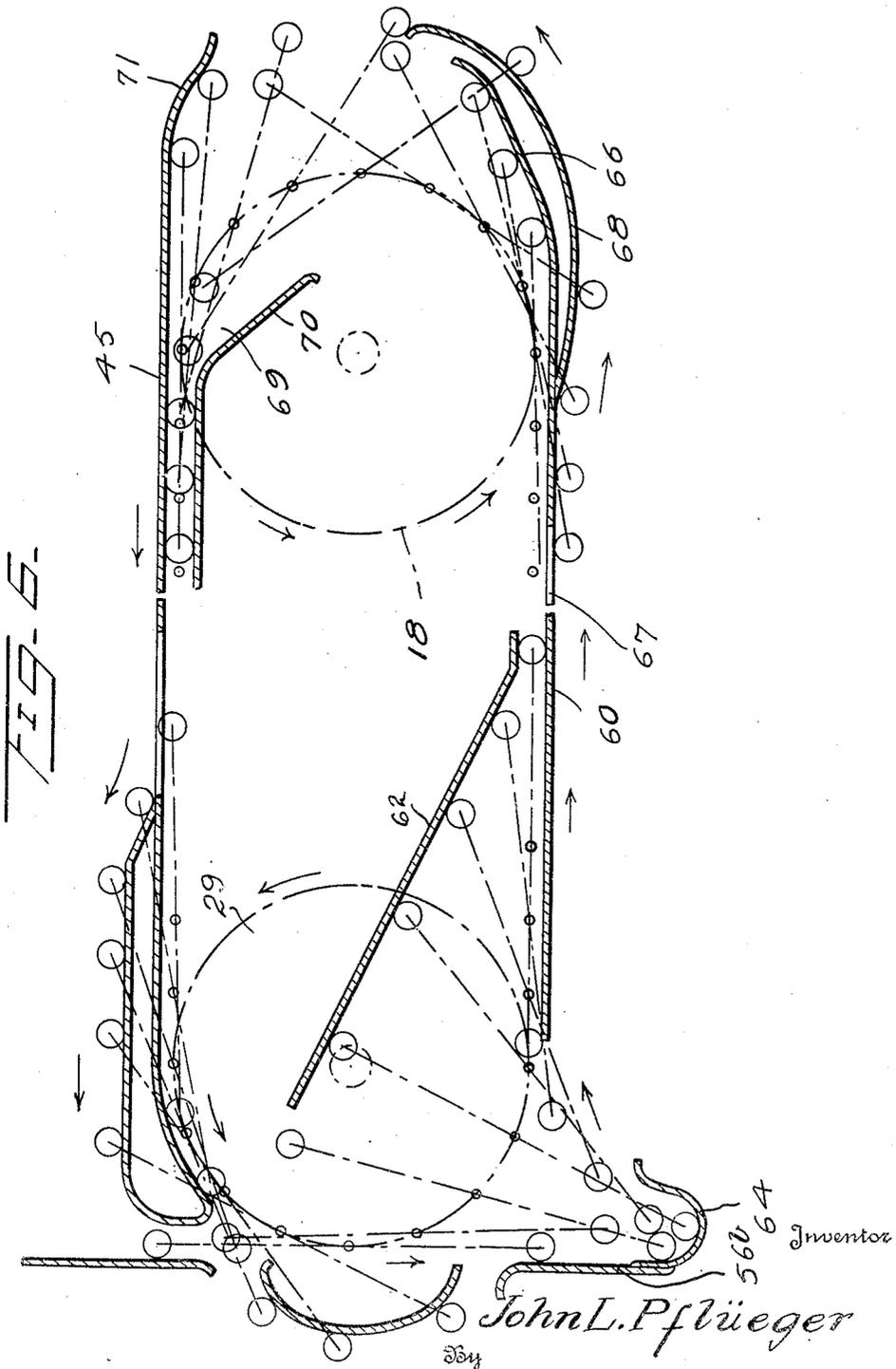
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5 Sheets-Sheet 5



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# UNITED STATES PATENT OFFICE

2,546,236

## ADVERTISING APPARATUS

John L. Pflueger, New Orleans, La.

Application September 20, 1948, Serial No. 50,209

7 Claims. (Cl. 40—32)

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This invention relates to changeable signs, and is an improvement over the construction embodied in my prior Patent No. 2,231,590, issued February 11, 1941, for Advertising Apparatus.

An object of this invention is to provide a changeable sign structure employing a plurality of exhibiting panels with an improved means whereby both sides of the panels may be used.

Another object of this invention is to provide an improved panel turning means at one end of the exhibitor for reversing the face of the panel, and means at the other end of the exhibitor for holding the panels against reversing.

A further object of this invention is to provide an improved means for disposing the panels in edge abutting relation when the panels are in exhibiting position so as to provide a substantially solid exhibiting surface.

With the above and other objects in view, my invention consists in the arrangement, combination and details of construction disclosed in the drawings and specification, and then more particularly pointed out in the appended claims.

In the drawings:

Figure 1 is a detail front elevation of a changeable sign constructed according to an embodiment of my invention,

Figure 2 is a fragmentary sectional view taken on the line 2—2 of Figure 1,

Figure 2A is a fragmentary plan view of the upper front portion of the device,

Figure 3 is a sectional view taken on the line 3—3 of Figure 1,

Figure 4 is a sectional view partly diagrammatic, showing the forward turning cam rails or tracks,

Figure 5 is a fragmentary horizontal section of the inner portion of one end turning cam,

Figure 6 is a fragmentary horizontal section of the turning cam at the opposite end of the device,

Figure 7 is a fragmentary sectional view taken on the line 7—7 of Figure 2A.

Figure 8 is a fragmentary sectional view taken on the line 8—8 of Figure 2 showing one of the chain guiding channels,

Figure 9 is a detail side elevation, partly broken away, showing one of the sign panels between the upper and lower chains.

Referring to the drawings, the numeral 10 designates generally a housing embodying an open front frame 11, a top wall 12, a rear wall 13, and a supporting base 14. The housing 10 has mounted therein a plurality of upright parallel frame members 15, there being as many frame

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members 15 as there are pairs of panel carrying chains.

In Figure 3 there is disclosed the driving chain structure for driving all of the chain carrying panels, and the frame 15 which is the intermediate or middle frame has mounted in the rear portion thereof an upright tubular shaft 16 on the lower end of which is secured a shaft 17 carrying a sprocket 18. Shaft 17 rotatably engages through plates 90 and 91 which are fixedly carried by frame 15 and are secured together by a U-shaped member 94. The tubular shaft 16 has secured in the upper end thereof an upper stub shaft 19 on which a sprocket 20 is secured. Shaft 19 rotatably engages through plates 92 and 93 which are fixedly carried by frame 15. The shaft 17 has fixed on its lower end below the sprocket 18 a lower sprocket 21 about which a chain 22 engages.

The chain 22 extends laterally to the next adjacent lower sprocket 21 and an upper sprocket 23 is fixed to the upper end of the stub shaft 19 and has a chain 24 engaged thereabout which extends in the opposite direction from the chain 22. A driven gear 25 is fixed to the lower end of the stub shaft 17 and meshes with a driving gear 26 connected to an electric motor 27 which is secured to the rear wall 13.

The sprocket 18 has engaged thereabout a panel carrying chain 28 which extends forwardly and is trained about a forward sprocket 29. The sprocket 29 is fixed to a shaft 30 which is journaled between a pair of horizontal swingable plates 31 and 32 carried by a pivot 33 which is fixed to frame 15 as at 96, and plates 31 and 32 are secured together by a U-shaped member 95. The sprocket 29 has engaged thereabout an equal panel carrying chain 34 which at its forward end is trained about a forward sprocket 35. The forward sprocket 35 is fixed to a stub shaft 36 rotatably carried by a pair of horizontal swingable plates 37 and 38 mounted on an inner pivot 39 which is fixed to frame 15 as at 97.

A plurality of exhibitor or sign forming panels 40 are swingably disposed between the chains 28 and 34. Each panel 40 is formed of an elongated rectangular plate which, as shown in Figure 2A, is formed on one edge with a V-shaped bevel 41, and a V-shaped groove 42 on the opposite edge thereof. The panels 40 are pivotally mounted at their upper and lower ends as indicated at 43 and 44 on the links of the chains 28 and 34, and with the pivot members 43 and 44 being disposed in the transverse median of each panel. On the straight and parallel runs of the panel carrying

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chains 28 and 34, the adjacent vertical edges of adjacent panels will be disposed in spaced apart relation, as shown in Figure 3. The frame 15 comprises upright angle bars 100 and 101 connected together by horizontal upper and lower angle bars 102 and 103 with a bracing bar 104 between the uprights 100 and 101. Bar 101 is fixed to plate 91, and plate 91 is fixed to bottom 105 by block 96. The upper portion of bar 100 has a vertical plate 106 fixed thereto and a horizontal angle bar 107 is fixed to the upper end of plate 106 and slidably supports plate 33. The rear end of upper bar 102 is bent right-angularly upwardly as at 108 and plate 92 is fixed to extension 108.

In order to provide for turning or reversing of the panels 40, I have provided at the forward end of the housing 10, turning cam means as shown in Figures 4, 5 and 6. When a panel as shown in Figure 4, is disposed closely adjacent the front of the housing 10, the panel is rocked or pivoted with respect to the pivots 43 and 44. This is accomplished by means of a turning rail 45 disposed along the outer portion of the chain 28. The turning rail 45 extends forwardly in a straight line to a point substantially in line with the transverse vertical plane of the pivot 46 of an adjacent front sprocket 29.

Each panel 40 is provided at its trailing edge with a depending roller 47 and at its leading edge with a leading depending roller 48. The rollers 47 and 48 engage along the inner side of the rail 45 and at the forward portion of the rail 45 the rail is bent inwardly, as indicated at 49, with the axis of pivot 46 as a center. When the leading roller 48 bears against the inwardly curved forward portion 49, the trailing roller 47 will be swung outwardly passing outwardly through an elongated opening 50 which is formed in the rail 45.

An outer rail 51 is disposed in spaced relation to the rail 45, extending forwardly initially on an obtuse angle to the length of the rail 45, as indicated at 52, and then extending parallel with the rail 45 as indicated at 53. The forward end of the parallel rail member 53 is bent at right angles to the rail 53 as shown at 54, and the forward rail portion 54 is disposed parallel with the front wall of the housing 10. The inner end of the front rail portion 54 is connected with the curved forward end portion 49 of rail 45 by a curved connecting portion 55. An outer rail 56 is disposed forwardly of the rail 54, being parallel therewith and designed to hold the panels in parallel position with respect to the front of the housing.

An arcuate rail 57 is disposed between adjacent front rails 56, providing spaces 58 and 59 through which the leading rollers 48 may pass. On the return side of the chain 28 there is a rail 60 engaging in the outer side of the rollers 47 and 48 and having the forward end 61 thereof spaced rearwardly from the front of the housing so that the panels may readily turn 180 degrees. An inner cam rail 62 projects forwardly and inwardly with respect to the parallel sides of the chain 28, diverging inwardly from the forward end of the rail 60. This rail 62 is adapted to engage the trailing roller 47 and to move this roller rearwardly to a leading position so that the trailing roller 47 on the forwardly moving side of the chain 28 will be reversed and become the leading roller on the next pass of the chain. When the leading roller 48 passes through the opening 58 and engages about the outer convex side of rail 57 and

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then passes through opening 59, this roller will enter the space 63 between the adjacent front rail 56a and the parallel rail 54a associated with an adjacent chain.

In Figure 6, the front rail 56b which is a lateral or end rail at the right end of the side, as viewed in Figure 1, has fixed thereto a U-shaped rail 64. At the left end of the side, as viewed in Figure 5, the outer turning rail or cam 53 has associated therewith an outer rail 65 which is parallel with the inclined rail 52. The rail 65 is provided so that the trailing roller will be confined in its initial outward swinging and will not strike the adjacent side wall of the housing.

At the rear of each chain there are a series of rails which are designed to engage the two rollers 47 and 48 so as to maintain the panels in their position with respect to their exhibiting side obtained by the front turning cam rails. The rail 60 extends rearwardly to the rear sprocket 18 and is formed with a curved rear portion 66 diverging from the periphery of the sprocket 18. The rail 60 is formed with an opening 67 forwardly of the sprocket 18 so that when the leading roller engages the curved cam rail portion 66 the trailing roller may swing outwardly through the opening 67. As the chain progresses the trailing roller is adapted to engage a curved cam rail 68 which is fixed at its forward end to the rail 60 rearwardly of the opening 67.

The rail 68, as shown in Figure 6, projects inwardly and beyond the end of the curved rail 66 and is adapted to hold the trailing roller against forward swinging until the leading roller enters into a forwardly converging space 69 disposed between an angularly disposed and inwardly projecting rail 70 and the side rail 45. The rear end of the side rail 45 is reversely curved and projected inwardly as indicated at 71, to provide for the smooth operation of the chain and smooth movement of the rollers as the panels are moved from the rearwardly moving side to the forwardly moving side of the chain 28.

In order to provide for interlocking engagement of the panels 40 at the forward open side of the housing 10, I have provided upper and lower cam wheels 72 and 73 which are fixed to the stub shafts 36 and 30 respectively. The cam members 72 and 73 are of like construction and each includes a circular plate 74 which is formed with a pair of diametrically opposed notches or cam slots 75. The front shaft 36 associated with the driving chain 34 and the front shaft 30 associated with the driving chain 28 extend through pairs of plates 37a and 38a (Figure 7) which are fixed relative to the frame 15. The adjacent shafts 36 and 30 are rotatably mounted in pairs of swinging plates 37-38 and 31-32 respectively.

A spring 76 is fixed at one end to the stationary plate 37 associated with the upper driving chain 34, and the spring 76 is secured as at 77 to the next adjacent plate 37 swingably mounted on pivot 39. An elongated roller carrying bar 78 is fixed to the stationary plate 37a on the upper side thereof and has a roller 79 fixed to each end thereof adapted to bear against the periphery of the adjacent cam member 72. Plate 37a is fixed to the frame by means of securing members 37b. Plates 37 and 37a are formed with up-turned marginal flanges 84 and 85, respectively, for reinforcing these plates. When a cam notch 75 confronts roller 79, spring 76 will swing the plates 37 and 39 with the forward end of the adjacent driven chain toward the driving chain, and the panels 40 which at this time are in par-

allel relation with respect to the front of the housing 10, will move toward each other so that the V-shaped edges 41 will engage in the V-shaped grooves 42. At the time the panels 40 are in interlocking exhibiting position, motor 27 is cut off by means of a conventional time switch 80 which is carried by the rear wall 13 of the housing and connected to motor 27.

Each panel 40 has a pair of rollers 47 and 48 at its lower and upper ends, and the rollers 47 and 48 together with the pivots 43 or 44 are secured to plates 81 and 82 which are fixed by suitable fastening means to the lower and upper ends of the panel 40. The chains 28 and 34 between the ends thereof slidingly engage in channel shaped guide members 83 as shown in Figure 8, so as to keep the chains from sagging.

In the use and operation of this sign, the panels 40 are adapted to have suitable indications on each side thereof for progressively or successively exhibiting at the front of the housing 10. The motor 27 will rotate the driving shaft 16 and the driving chains 28 and 34 and the remaining driven chains will rotate simultaneously therewith.

Assuming that there are panels 40 in exhibiting position at the front of the housing when the motor 27 is energized by the time switch 80, the chains 28 and 34 will be moved and cam members 72 will rotate and move the exhibited panels 40 laterally and edgewise away from each other. As the chains continue their movement, the exhibited panels will be moved rearwardly, being turned as hereinbefore described by the turning cam rails at the front of the housing. When a succeeding panel is in the front of the housing in an exhibiting position, motor 27 will be stopped and the succeeding panels will be interlocked to provide a substantially solid panel bearing the desired advertising characters or figures.

With a sign as hereinbefore described, the exhibited sign may be varied according to the number of panels carried by the device and as each panel is exhibited on each side thereof there will be twice as many exhibiting surfaces as would be the case if the panels were not turned.

I do not mean to confine myself to the exact details of construction herein disclosed, but claim all variations falling within the purview of the appended claims.

What I claim is:

1. Advertising apparatus comprising a housing having an open front, a plurality of exhibiting units in said housing, each unit comprising upper and lower chains, a plurality of exhibiting panels pivotally secured between said chains, the edges of said panels being disposed in spaced relation, means for disposing the foremost of said panels in parallel relation with respect to the front of said housing, each panel having a groove in one edge thereof and having the other edge shaped to snugly fit into the groove of an adjacent panel, and means for moving the panels disposed in exhibiting position toward each other whereby the edges of adjacent panels will interlock with each other to thereby form a solid exhibiting surface at the front of said housing.

2. Advertising apparatus comprising a housing having an open front, a plurality of exhibiting units in said housing, each unit comprising upper and lower chains, a plurality of exhibiting panels pivotally secured between said chains, the edges of said panels being disposed in spaced relation, means for disposing the foremost of said panels in parallel relation with respect to the front of

said housing, means at one end of each unit for reversing the exhibiting side of each panel for each complete movement of said chains, each panel having a groove in one edge thereof and having the other edge shaped to snugly fit into the groove of an adjacent panel, and means for moving the panels disposed in exhibiting position toward each other whereby the edges of adjacent panels will interlock with each other to thereby form a solid exhibiting surface at the front of said housing.

3. Advertising apparatus comprising a plurality of exhibiting units disposed in upright parallel relation, each unit comprising upper and lower endless chains, exhibiting panels pivotally secured between said chains for periodic rotation about a vertical axis, means at one end of each unit for turning each panel 180 degrees, the panels of each unit being disposed in spaced relation to each other, means at one end of each unit for laterally shifting the foremost panels of said units into edge abutting relation whereby to provide a substantially solid panel assembly.

4. Advertising apparatus comprising a plurality of exhibiting units disposed in upright parallel relation, each unit comprising upper and lower endless chains, means supporting the forward portions of said units for horizontal swinging movement, spaced apart vertically disposed sign panels pivotally secured between said chains, and means for periodically swinging said units at the forward ends thereof toward each other whereby to dispose the foremost panels of said units in edge abutting relation to thereby provide a substantially solid panel assembly.

5. Advertising apparatus comprising a plurality of exhibiting units disposed in upright parallel relation, each unit comprising upper and lower endless chains, means supporting the forward portions of said units for horizontal swinging movement, spaced apart vertically disposed sign panels pivotally secured between said chains, means for periodically swinging said units at the forward ends thereof toward each other whereby to dispose the foremost panels of said units in edge abutting relation to thereby provide a substantially solid panel assembly, and cam means at the rear end of each unit engageable with said panels upon movement thereof for reversing said panels.

6. Advertising apparatus comprising a plurality of exhibiting units disposed in upright parallel relation, each unit comprising upper and lower endless chains, means supporting the forward portions of said units for horizontal swinging movement, spaced apart vertically disposed sign panels pivotally secured between said chains, means for periodically swinging said units at the forward ends thereof toward each other whereby to dispose the foremost panels of said units in edge abutting relation to thereby provide a substantially solid panel assembly, and stationary cam means at the rear end of each unit engageable with said panels upon movement thereof for reversing said panels.

7. Advertising apparatus comprising a plurality of exhibiting units disposed in upright parallel relation, each unit comprising upper and lower endless chains, means supporting the forward portions of said units for horizontal swinging movement, spaced apart vertically disposed sign panels pivotally secured between said chains, means for periodically swinging said units at the forward ends thereof toward each other whereby to dispose the foremost panels of said units in

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edge abutting relation to thereby provide a substantially solid panel assembly, cam rails at one end of each unit for reversing said panels, and a pair of rollers carried by one end of each panel for engagement with said rails.

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**REFERENCES CITED**

The following references are of record in the file of this patent:

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