July 16, 1940. P. H. SHERRON 2,208,166

TELEPHONE BOOTH DOOR STRUCTURE

Filed Jan. 13, 1937 3 Sheets-Sheet 1

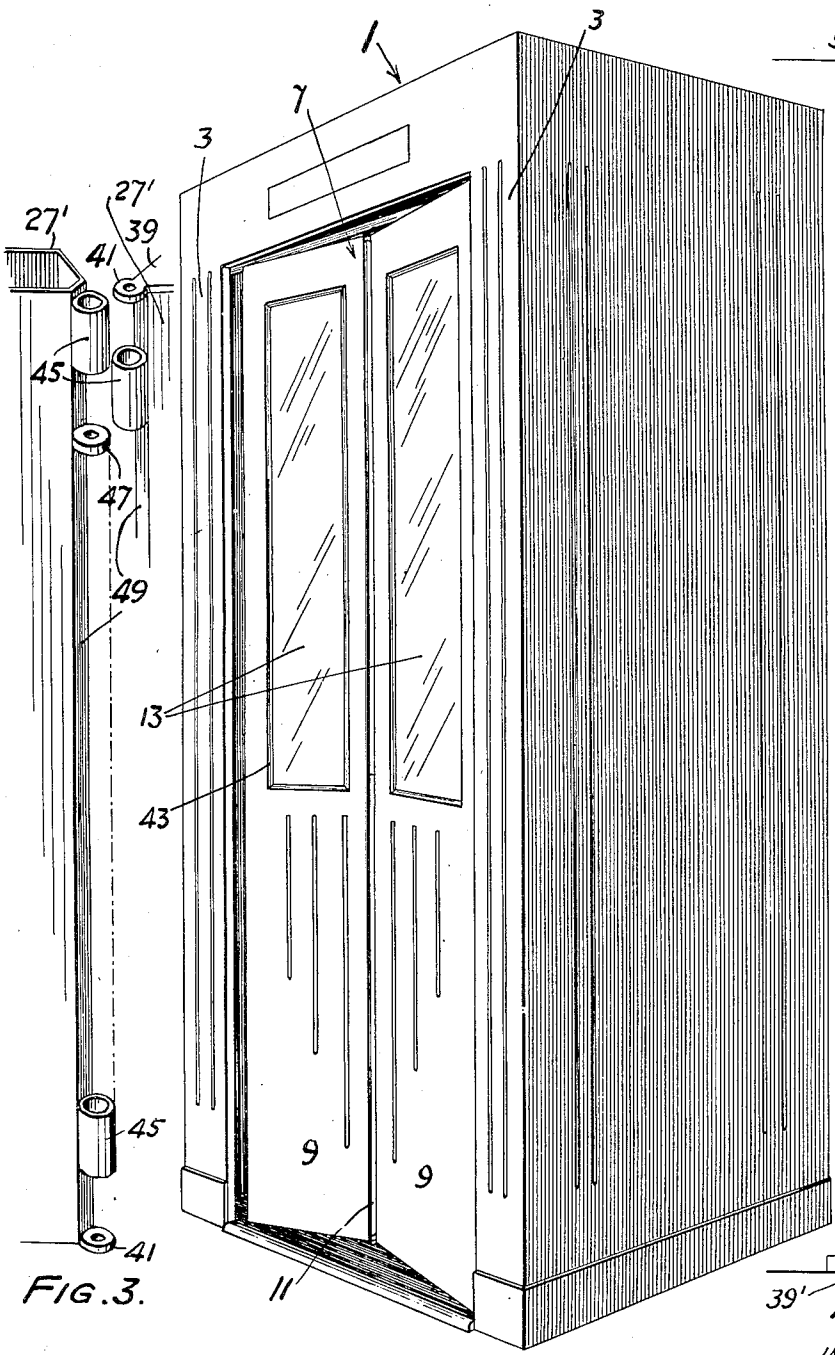

FIG. 1.

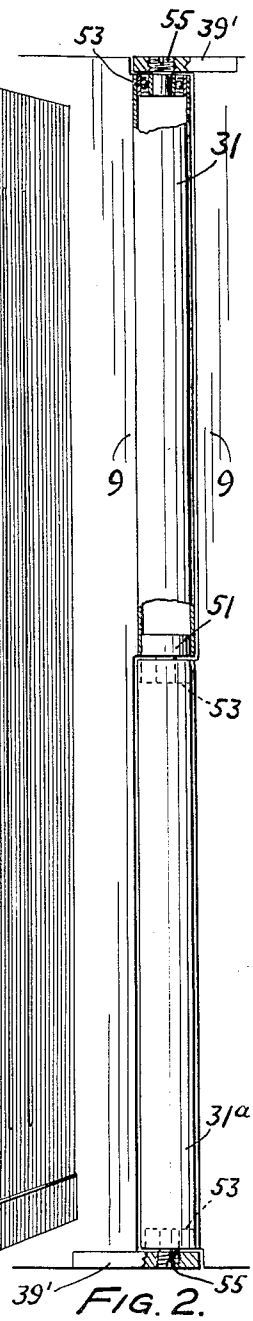

FIG. 2.

FIG. 3.

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WITNESS:

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TELEPHONE BOOTH DOOR STRUCTURE

Filed Jan. 13, 1937 3 Sheets-Sheet 2

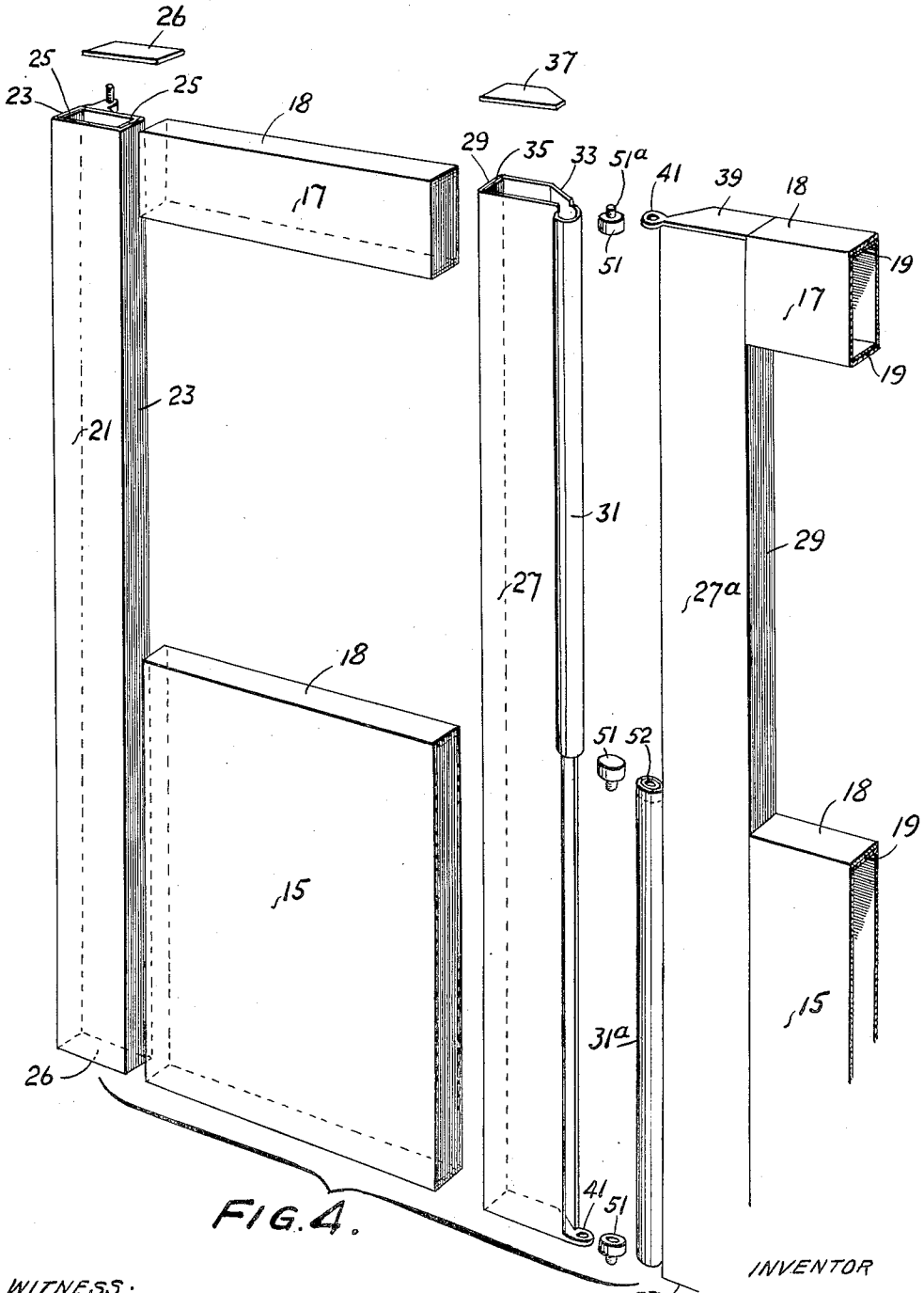

FIG. 4.

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TELEPHONE BOOTH DOOR STRUCTURE

Filed Jan. 13, 1937 3 Sheets-Sheet 3

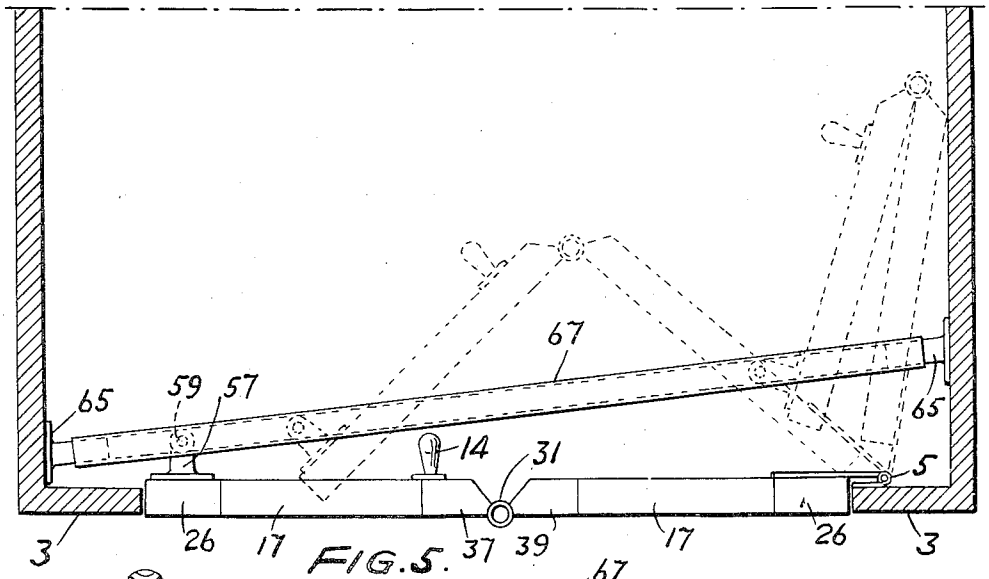
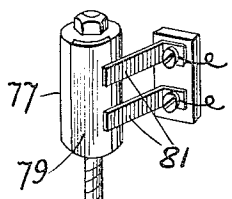


FIG. 5.



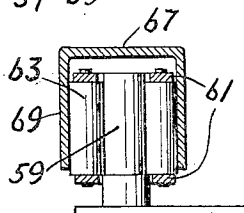


FIG. 6.

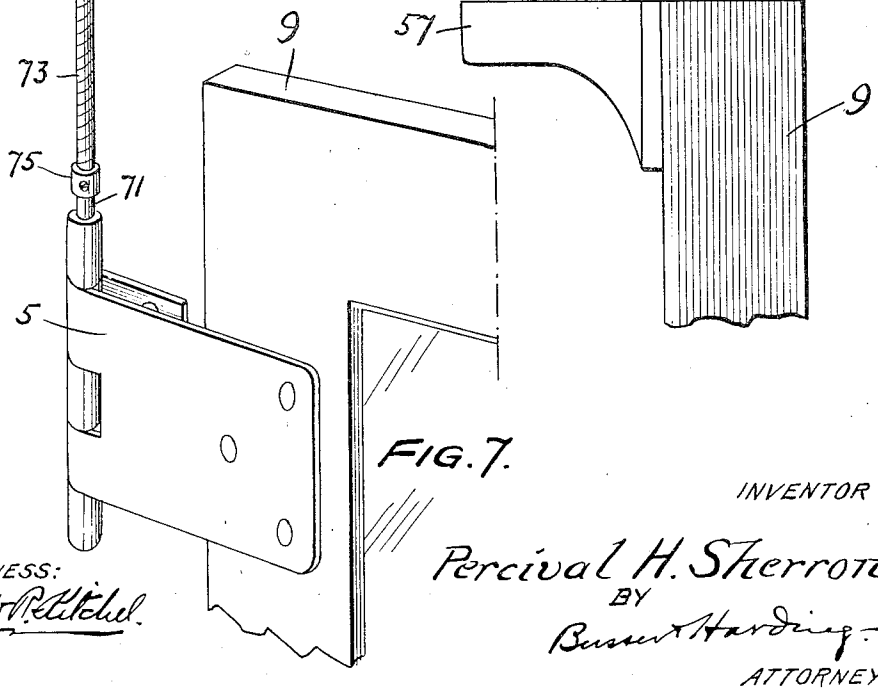


FIG. 7.

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Patented July 16, 1940

2,208,166

UNITED STATES PATENT OFFICE

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TELEPHONE BOOTH DOOR STRUCTURE

Percival H. Sherron, Jamaica, N. Y.

Application January 13, 1937, Serial No. 120,324

3 Claims. (Cl. 20—20)

This invention relates to an improved form of telephone booth door structure.

It has heretofore been customary to provide telephone booths with folding leaf doors in which the leaves were of unequal width. This was considered necessary because of the friction developed in the door pin and door hinge.

In accordance with this invention there is provided a telephone booth door structure which makes possible the use of even width leaves in the door with consequent greater ease of fabrication and assembly and improved appearance. Many other advantages in appearance, ease of operation and cost and ease of fabrication are possessed by the improved door assembly in accordance with this invention.

These advantages and the details of construction by means of which they are obtained may best be described in connection with the accompanying drawings, which show preferred embodiments of my invention.

In the drawings:

Fig. 1 is a perspective view of a telephone booth in which the invention is embodied.

Fig. 2 is a detail view, partly in section, showing one form of hinge construction in accordance with my invention.

Fig. 3 is a detail view of a modified form of hinge construction.

Fig. 4 is a perspective view, partly in section, shown, partly disassembled, the several structural elements of which my improved door is formed.

Fig. 5 is a vertical sectional partial view through a booth showing the door assembly.

Fig. 6 is a detail view showing the guiding means for the door, and

Fig. 7 is a detail view of a door hinge showing an electric switch connected thereto.

A telephone booth 1, which may be of any conventional design, but which preferably will be of the type disclosed and claimed in my Patent No. 2,176,980, dated October 24, 1939, has front wall portions 3 forming door jambs to one of which is secured by means of hinges 5 the folding leaf door 7. This door, as shown in Fig. 1, has two leaves 9 of even width hinged together at 11 and carrying glass panels 13. Adjacent the hinge on the inner side of the door is a handle 14.

Each leaf 9, is shown in Fig. 4, is formed by securing together, preferably by welding, a plurality of preformed, double-walled hollow metal sections. The central portions of each leaf 9 consists of rectangular sections 15, 17, which are formed by bending flanges 18 at right angles around the edges of two panels of sheet metal, of suitable dimensions, telescoping the panels and welding the flanges together at 19. The hollow column members 21, forming the outer edge of each lead, are made in the same manner by telescoping two pieces of sheet metal of channel cross section and welding together the contacting flanges 23 at 25. Top and bottom plates 26 are then welded in place to close the open ends.

The column members 27, 27*a*, forming the inner or adjoining edge of each leaf, are formed by blanking out a single piece of sheet metal of suitable dimensions, forming right angle flanges 29 along the long edges of the blank, bending the blank centrally about its longer axis over a form, so as to form integral hinge pole sections 31, 31*a* and inset sections 33, until the flanges 29 are superimposed, and welding the flanges together at 35. Simple cover pieces 37 and cover pieces 39 carrying a bushing 41 are ultimately welded in place at the top and bottom of the column members to close them.

The various body sections are then assembled in the position shown in Fig. 4 and united by welding the contacting portions. A window frame 43 is secured in place bounding the opening between sections 15 and 17, and 23 and 27. If desired, the hollow spaces in the door assembly, particularly within sections 15 and 17, may be filled with a sound proofing material.

In Fig. 3 there is shown a modified form of door structure, in which the column members 27' at the adjoining edges of the leaves are formed without an integral hinge pole, and sections of cylindrical tubing 45 and bushing lugs 47' are welded to the face 49 of the columns to provide the hinge elements.

As shown in Fig. 4, the hinge pole sections 31, 31*a* are offset on the adjoining edges of the leaves 9 of the door. In hinging the two leaves of the door, a phosphor bronze or other suitable pin bearing 51 is positioned in the upper end of hinge pole 31, in which it is a force fit, and in the lower end of hinge pole 31*a*. The pin members 51*a* of these bearings are received in bushings 41 carried on plates 39 ultimately secured at the top of column 27*a* and bottom of column 27. A similar bearing is forced in place in the lower end of hinge pole 31, while a bushing 52 is placed in the upper end of hinge pole 31*a* in which it is a force fit. These several bearings and bushings will, of course, be secured in place and the pins 51*a* positioned in bushings 41 before the plates 39 are welded in place.

In Fig. 2 there is shown a modified form of

hinge structure in which ball bearing assemblies **53** are placed in the upper end of hinge pole **31** and in the upper and lower ends of hinge pole **31***a*, in which they are force fits. The leaves **9** are centered and secured in place by pin bearing **51** in the lower end of hinge pole **31** and screw pins **55**, secured in plates **39'**, which frictionally engage the inner race of the ball bearing assemblies **53**.

Secured to the upper edge of the outer leaf **9** adjacent its free edge is a bracket member **57** (see Figs. 5 and 6). A pin **59** rises from bracket **57** above the level of the upper edge of the door and carries two flanges or collar members **61**, one adjacent its upper end, the other near its lower end. Secured between the collars **61**, but free to rotate are a plurality of rollers **63**. Secured on brackets **65** or by other suitable means fixed to the booth walls and extending across the front of the booth just above the level of the upper edge of the door is a track **67**, the direction of which is that of the motion of pin **59** as the door **7** moves from open to closed position. The track **67** is in the form of an inverted channel section and the flanges **69** thereof are spaced just sufficiently to receive the assembly of rollers **63**. Consequently as the door is opened or closed the roller assembly travels along the track **67**, the rollers **63** rotating freely and so minimizing friction.

Secured to one of the hinge elements of one of the hinges **5** so as to be rotatable by the opening and closing of door **7** is a stud **71**. Connected to said stud **71** by means of flexible coupling **73** and collar **75** so as to be rotatable therewith is a cylinder switch element **77** which is secured to a wall of the booth above the door level by means (not shown) which will permit its free rotation. The body of cylinder **77** is made of fibre or other non-conducting material, but an insert **79** of metal or other electrical conducting material extends over its outer surface throughout an arc of perhaps 45°. Mounted on the wall of the booth adjacent the element **77** are a pair of spring contact arms **81** which are interposed in one side of the electric circuit leading to the light, fan, etc. with which the booth may be provided.

With the booth door **7** in open position the contact arms **81** will rest on the non-conducting surface of the cylinder **77**, the circuit will be broken and the lights and fan will not operate. When, however, the booth door is closed, as it will be when the booth is in use, the cylinder **77** will have been rotated by means of hinge **5** and connector **73** so that the contact arms **81** rest on the metal insert **79**, as shown in Fig. 7, thus completing the circuit to the lights and fan.

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

1. A telephone booth door having two leaves hinged to each other, each leaf having an outer column and a hinge column, the outer columns being formed of two telescopic channel members, the flanges of the channels being welded to each other to form double thickness edge walls, the hinge columns being formed of a single sheet bent to form hinge pole sections, the ends of the sheet being bent to form overlapping flanges the full thickness of the column, said flanges being welded to each other to form double thickness walls, and upper and lower cross rails welded to the inner faces of the columns of each leaf.

2. A telephone booth door having two leaves hinged to each other, each leaf having an outer column and a hinge column, the outer columns being formed of two telescopic channel members, the flanges of the channels being welded to each other to form double thickness edge walls, the hinge columns being formed of a single sheet bent to form hinge pole sections, each of which extends approximately half the length of said hinge columns in complementary relationship to the other, the ends of said single sheet being bent to form overlapping flanges the full thickness of the column, said flanges being welded to each other to form double thickness walls, and upper and lower cross rails welded to the inner faces of the columns of each leaf.

3. A telephone booth door as described in claim 2, additionally characterized by the fact that the hinge pole sections are engaged with each other by an anti-friction bearing assembly.

PERCIVAL H. SHERRON.