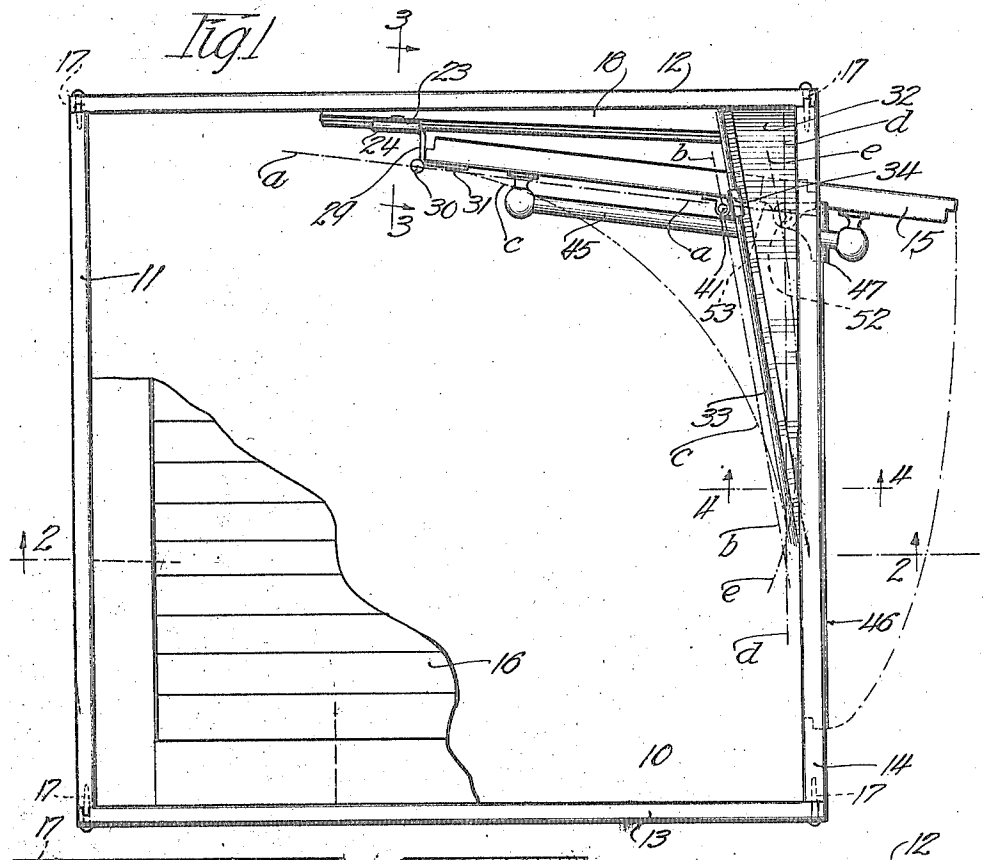
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Fig. 1



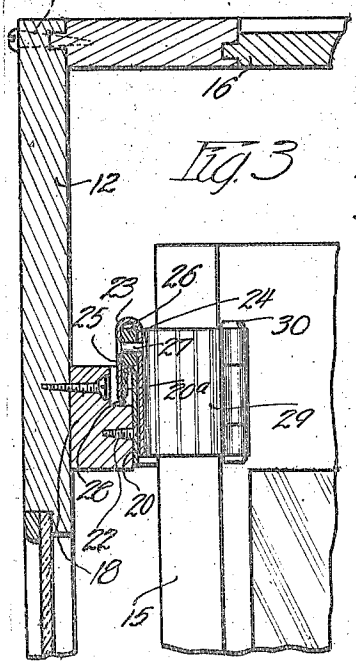


Fig. 3

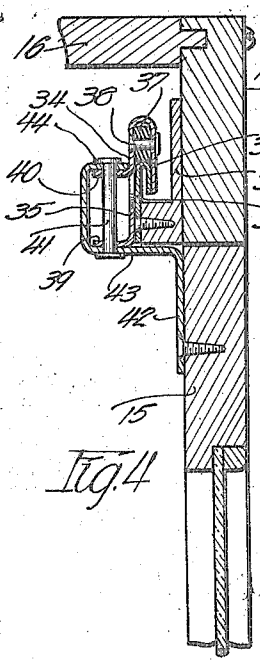


Fig. 4

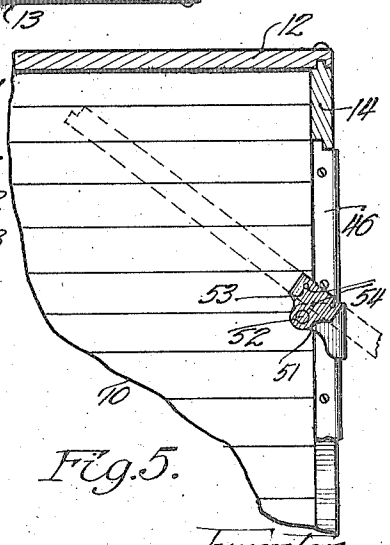


Fig. 5.

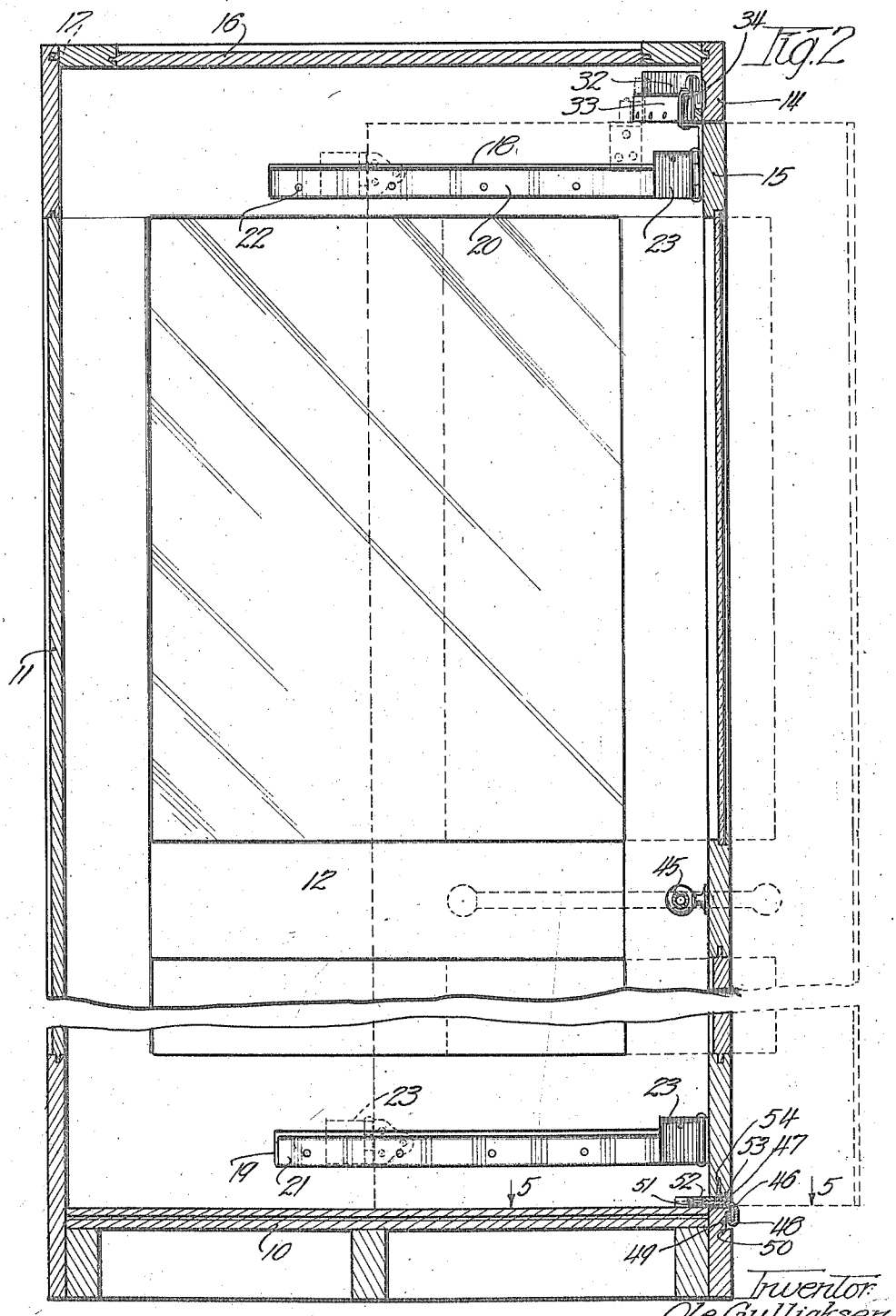
Inventor
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Jan. 23, 1923. 1,442,942

O. GULLICKSEN.
TELEPHONE BOOTH.
FILED JULY 9, 1921.

3 SHEETS-SHEET 2

Fig. 2



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TELEPHONE BOOTH.
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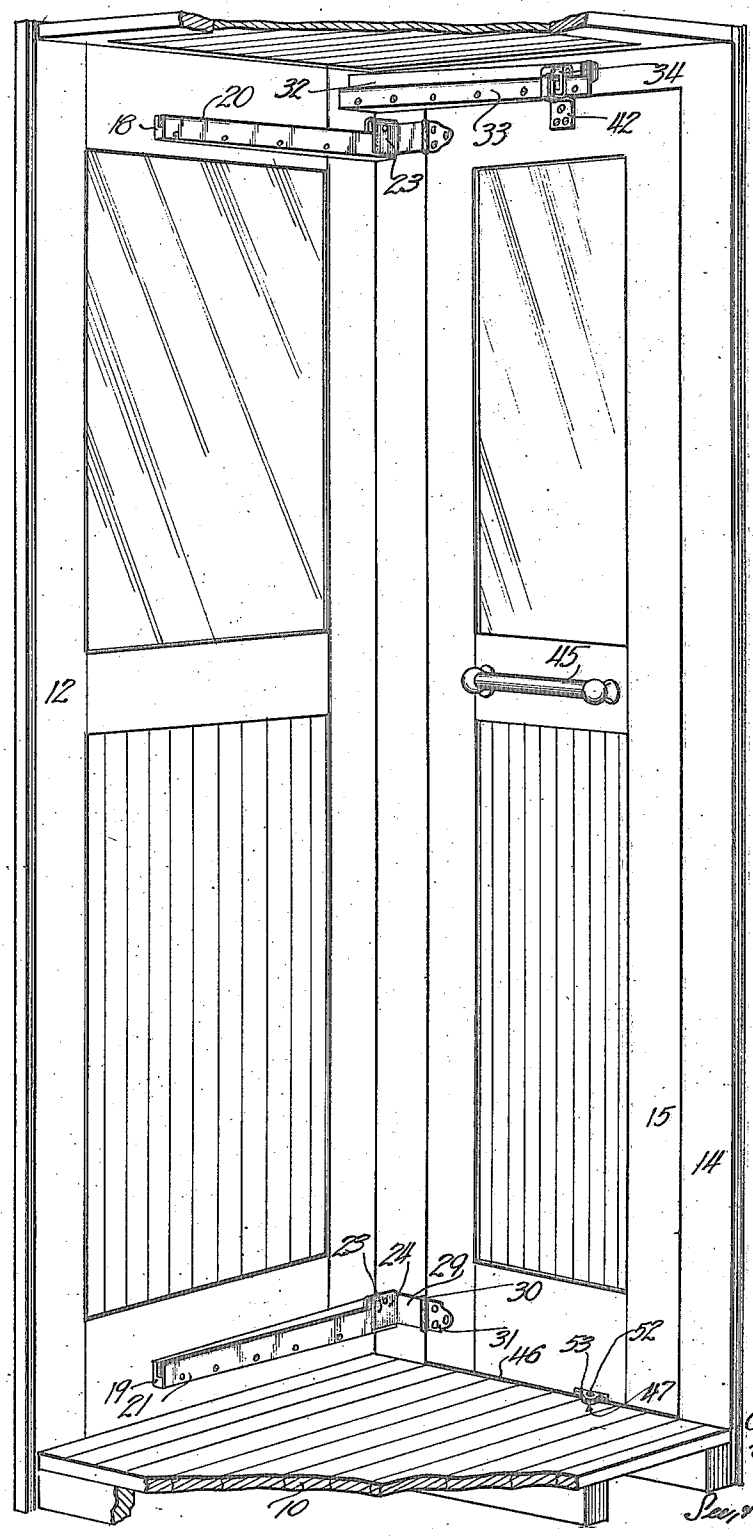


Fig. 6

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Steen & McCabe Attys.

Patented Jan. 23, 1923. 1,442,942

UNITED STATES PATENT OFFICE.

OLE GULLICKSEN, OF CHICAGO, ILLINOIS, ASSIGNOR TO CHURCHILL CABINET COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

TELEPHONE BOOTH.

Application filed July 9, 1921. Serial No. 483,425.

To all whom it may concern:

Be it known that I, OLE GULLICKSEN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Telephone Booths, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of the specification.

My invention relates to the construction of a telephone booth of the normally open type, and among its objects the invention contemplates:

First: A telephone booth having a door which is so mounted that it may be moved from open to closed position, or vice versa, with a maximum degree of safety, ease and facility;

Second: A telephone booth having a movable door supported by moving pivots which are arranged to co-operate with their respective guides in a manner such that the several points of door support are mutually compensating so far as lost motion between moving parts is concerned;

Third: A normally open telephone booth comprising a door that may be closed and opened with ease and without inconvenience, by a person within (or without) the booth, but which, when in open position, will not readily close under accidental impact from the outside;

Fourth: A telephone booth of the normally open type comprising a door which, although intended to be closed and opened from within the booth, may, if occasion requires, be easily pushed open from the outside by one unfamiliar with the operation of the door, despite the fact that the occupant of the booth may have fainted and thrown the weight of his body against the inside of the door;

Fifth: A telephone booth which has a door mounted on moving pivots, the pivot devices and the guides therefor being so constructed and arranged that the door and several walls of the booth may be assembled and disassembled with great facility.

Sixth: A telephone booth comprising a platform, top panel, and four side walls, one of which acts as the frame of the door, combined with a minimum amount of apparatus for controlling the movement of the door;

Seventh: A telephone booth comprising a door which operates within a very small area inside the booth;

Eighth: A telephone booth comprising a door that is mounted by and upon certain novel hardware which is particularly characterized by its simplicity and rugged construction.

These and other objects and advantages of the telephone booth of the construction of my invention will more fully hereinafter appear.

In the drawings:

Figure 1 is a top plan view of the booth of my invention, a portion of the top panel being broken away, revealing the door in its normally open position;

Figure 2 is a vertical transverse section taken on the line 2—2 of Figure 1, looking in the direction of the arrows;

Figure 3 is a vertical detail section taken on the line 3—3 of Figure 1;

Figure 4 is a vertical detail section taken on the line 4—4 of Figure 1;

Figure 5 is a detail horizontal section taken on the line 5—5 of Figure 2; and

Figure 6 is a perspective view of the booth with the rear and a side panel thereof removed and showing the door in its closed position.

The booth comprises a platform 10, back wall 11, side walls 12 and 13, front wall 14 which comprises a frame within which is supported the door 15, and a top panel 16. The sides of the booth are secured to one another and to the top panel by screws 17—17 and with the aid of tongue and groove construction which furnishes added rigidity and insures a more sound proof booth. Two tapering side rail supports 18 and 19 are secured in any suitable manner, preferably by wood screws, to the side wall 12, support 18 being somewhat below the top of the door and support 19 somewhat above the bottom of the door. As shown in Figures 1 and 3, support 18 is of L-shaped cross section, the leg of the L remaining of constant size, while the vertical part varies in thickness with the taper increasing in the direction of the door frame.

Each of the rails 20 and 21 is preferably formed of a strip of sheet metal, the upper portion being bent back upon itself longitudinally at 20^a to form a head portion for the rail which projects part way over the L projection of its support. These rails

are secured to the supports in any suitable manner, as by screws 22—22. Each of the carriages 23—23 which ride upon the rails 20 and 21 is in the form of an angle bracket, one plate 24 of which is bent back upon itself, forming a short leg 25 of a U-shaped hanger. An anti-friction roller 26 is pivoted on the pin 27 which passes between the parallel legs of the hanger at such height that the roller rides upon the head of the guide rail. An angularly disposed longitudinal portion 28 of the leg 25 passes somewhat under the short leg of the guide rail, thus preventing accidental upward displacement of the carriage with reference to the guide. At the outer end of the other plate 29 of the angle bracket is a pintle 30 which unites plate 29 with another plate 31 which is secured to the inside of the door at the left end (Figure 6). The angle bracket of the carriage and the plate 31 thus form leaves of a hinge which supports the left end of the door. The pivot 30 of the hinge, it will be noted from Figure 1, is spaced from the guide rail a distance somewhat greater than the thickness of the door. The guide rails 20 and 21 and their supports 18 and 19, as well as the carriages which ride thereon, are in all respects the same. As stated, the side guide rails 20 and 21 and their supports are supported wholly upon the side wall 12 of the booth.

Secured to the top rail of the door frame 14 is another tapering rail support 32 which is approximately of the same length but has a greater angle of taper than the supports 18 and 19. A top guide rail 33, similar to the side guide rails 20 and 21, is secured to the support 32 upon which is slidably mounted a carriage 34 comprising a side plate 35, the upper end of which is bent over to form a short leg 36 of a U-shaped hanger, between the legs of which is mounted an anti-friction roller 37 by means of a pivot pin 38. A small horizontal shelf 39 is bent up from the lower portion of plate 35 and a horizontal lug 40 is struck out of the central portion of plate 35, the two lugs being equipped with holes to form spaced bearings for a pintle 41.

Secured to the top rail of the door 15 a considerable distance in toward the center from the right end (Figure 6) is an angle bracket 42, the horizontal offset portion of which extends into the booth and is given a U-shaped turn at its end, forming the spaced bearings 43 and 44 which fit snugly over the spaced lugs 39 and 40 of the carriage 34. This allows a pivotal connection between the door and the carriage 34 of the top guide rail.

From the description thus far, it will be apparent from Figure 1 that the path of the left end of the door will be along the line *a—a* parallel to the guide rail 20, but spaced therefrom and at an angle to the side wall 12. The pivot 41 of the carriage 34 of the front guide rail 33 travels in a path indicated by line *b—b* and spaced from and parallel to the front guide rail 33, but at an angle to the front wall 14. It is clear then that the position of the door at all times is determined by the location of the pivots 30 and 41 on the lines *a—a* and *b—b*.

Although the door of the telephone booth of my invention is normally open, for the sake of clearness I shall describe the operation of opening the door by reference to Figures 1 and 6. By grasping a suitable hand rail 45 secured to the inside of the door, the operator, by a push to the left (Figure 6), combined with a little pull inward, (or, as might better be described as a slightly arcuate swing of the hand) causes the left end of the door, as governed by the pivots 30, to swing into the booth along the path *a—a*, while the midportion of the door travels toward the side of the booth and somewhat inward, as governed by the path *b—b*, until the outside of the door abuts the left upright rail of the door frame (Figures 1 and 2). As indicated by the dotted lines, the right end of the door describes a substantially elliptical path. By placing the front and side guide rails at an angle to their respective side walls 12 and 14 of the booth, the intersecting paths *a—a* and *b—b* are caused to form an obtuse angle. By making this angle considerably more than 90 degrees, as shown in the drawings, I have eliminated to a considerable degree the necessity for a twisting motion of the hand rail 45 by the operator in opening and closing the door as compared with that which would be required were the paths *a—a* and *b—b* at right angles.

By the use of my improved construction, the space inside the booth which is cut off during the opening and closing of the door is reduced to a very small fraction of the area of the booth, this fraction being located entirely in the far corner from the telephone. In this way the occupant is not in the least discommoded by the door projecting into the booth in closing. The line *c—c* of Figure 1 indicates the points beyond which the door does not pass in opening and closing.

It is known to all who are familiar with the operation and maintenance of booth telephones that especially in warm weather the lack of ventilation in telephone booths is often the cause of occupants fainting during long calls. In other models, especially where the door folds in two parts, the opening of the door from the outside to rescue the occupant necessitates the pushing of the hinged ends of the folding doors against the weight of the occupant's body. The difficulty of opening the door under these conditions often leads to serious inconven-

ience and annoyance. With my construction, however, the door would be moved away from, rather than toward, the body of an occupant who had fainted and fallen against the door, almost as easily as though there were no weight pressing against the door from within.

As a further aid in insuring tight fitting of the door in its frame in its closed position so that the ship lap edges of the door will closely mate similar ship lap edges in the side of the door frame, and also to prevent undue strain on the other guide members through the careless operation of the door, I have provided an auxiliary floor guide for the right end of the door. This floor guide comprises a rail member 46 in the form of an angle strip which is secured to the top of the bottom rail of the door frame extending from one side of the frame to the other and serving also as a threshold plate. A sliding member 47 is mounted upon the rail 46, the forward part 48 of which extends down and around the downwardly projecting portion of the angle strip 46, the portion 48 being bent back upon itself at 49 to form a U-shaped channel fitting over the downwardly projecting portion of the rail 46 which prevents lateral displacement of the slide member 47. A groove 50 is cut along the front side of the lower rail of the door frame near its top to allow for the free movement of the portion 49 of the slide. A rearwardly projecting portion 51 of the slide 47 is provided with a pin 52 which pivots a horizontal plate 53 upon the slide 47, the plate 53 being secured to the bottom of the bottom rail of the door in any suitable manner, such as by the screws 54—54. From Figures 1 and 6 it will be noted that the pivot 52 is located somewhat nearer the right end of the door than the upper pivot 41, this difference being approximately equal to the width of the front rail support 32 at the point occupied by pivot 41 in Figure 1.

It is apparent that this third pivot point 52 will travel in a path as indicated by the line *d—d* of Figure 1 spaced a slight distance from and parallel to the transversely extending guide rail 46 and, hence, parallel to the front wall of the booth.

While in theory the position of the pivot 52 would always be determined by the positions of the pivots 30 and 41 upon their respective paths *a—a* and *b—b* and hence the pivot 52 would travel in a path which would be substantially a portion of an ellipse, as indicated by the line *e—e* of Figure 1; still the straight line *d—d*, as will be seen from an inspection of Figure 1, approximates the elliptical curve *e—e* with but comparatively small divergence and thus the inevitable lost motion in the guides 23 upon the side rails and the guide 34 on the front top rail 33, together with the lost motion of the slide 47 on the threshold rail 46, will allow of enough movement out of the theoretical path *e—e* to permit the moving parts to slide with sufficient freedom for an easy operation of the door. The fact that the pivot 52 travels somewhat out of its theoretical path insures a certain rigidity of the parts at all times by absorbing the lost motion, which would not be possible were the guide rail 46 curved as line *e—e* rather than a straight strip. By placing the rail 46 along the threshold of the door frame, it is not necessary to have any grooves or indentations in the floor of the booth, thus leaving no room for dust and dirt to collect which would clog the working parts, and also allowing the booth to be swept out thoroughly with great ease.

The ease of assembly and disassembly, which is a salient feature of my invention, is quite apparent when it is considered that the side guide rails 20 and 21 and their supports 18 and 19 are supported by and secured to the side wall 12 only; that the upper front guide rail 33 and its support 32 are secured entirely to the door frame, as is also the threshold rail 46; and that the walls of the booth, as well as the platform and top panel, are secured together only by the screws 17—17. Thus all that is necessary in order to disassemble the booth for transportation is to remove these screws 17—17, the tongue and groove fit of the walls then being easily pulled apart, and the guide carriages 23—23 being disassociated from the guide rails 20 and 21 on the side wall 12 by lifting the door 15 with its frame 14 in reference to the side wall 12. In this way the door 15 can be transported while held in its closed position within the door frame, or, if preferred, the pivot pins 41 and 52 may be driven out and the door taken from its frame 14 and transported as a separate unit.

From Figure 1 it will be noted that, although one edge of the door extends out from the booth in its normally open position, it would be difficult for one in passing the booth to so move the projecting edge of the door that the door would be closed accidentally, while at the same time a person within the booth could close the door with a simple pull and with great ease.

What I claim is new and desire to secure by Letters Patent of the United States is:—

1. A telephone booth comprising a plurality of vertical walls, one of which constitutes a door frame, a door, means for limiting the movement of a point on the upper edge of the door to a straight path oblique

to and adjacent the front wall of the booth, means for limiting the movement of a point on the lower edge of the door, which is horizontally displaced from the first point, to a line substantially parallel with and adjacent the front wall of the booth, and means for limiting one of the lateral edges of the door to movement in a straight line adjacent the inner surface of a lateral wall of the booth.

2. A telephone booth comprising a plurality of vertical walls, one of which constitutes a door frame, a door, means for guiding the movement of a point on the upper edge of the door along a straight path lying adjacent the front wall of the booth, means for guiding the movement of a point on the lower edge of the door, which is horizontally displaced from the first point, along a path substantially parallel with the front wall of the booth said last-mentioned path lying without the vertical plane of said first-mentioned path and means for guiding one of the lateral edges of the door for movement in a straight line adjacent the inner surface of a lateral wall of the booth.

3. A telephone booth comprising a plurality of vertical walls, one of which constitutes a door frame, a door, means for guiding one of the lateral edges of the door for movement in a straight path adjacent a lateral wall of the booth, means for guiding movement of a point on the upper edge of the door along a path adjacent the front wall of the booth, and means for guiding a point on the lower edge of the door, which is horizontally displaced from the first mentioned point, along a straight line closely approximating the theoretical path in which said lower point travels as determined by the first mentioned and second mentioned means.

4. A telephone booth comprising a plurality of vertical walls, a door, reciprocating means for guiding one of the lateral edges of the door along a straight path, said means comprising a plurality of horizontal guide members spaced vertically apart and disposed substantially opposite the top and bottom of the door, and supported adjacent one of said lateral walls, reciprocating means for guiding a point at the top of the door along a second straight path, said means comprising a horizontal guide member supported above the door, and adjacent the front wall of the booth, and reciprocating means for guiding a point on the bottom of the door along a straight path substantially coincident with the path of said last mentioned point as would be determined by the before mentioned points, said last mentioned means comprising a horizontal guide member adjacent the front wall of the booth but not in the same vertical plane as the other guide members.

5. A telephone booth comprising a plurality of vertical walls, the front wall of which constitutes a door frame, a door, means for limiting the movement of a point adjacent the lateral edge of the door to a path adjacent one of the contiguous walls, means for limiting the movement of a point adjacent the upper edge of the door to a path adjacent the front wall of the booth, one of the two hereinbefore-mentioned means being disposed obliquely to its associated wall, and a threshold guide limiting the movement of a point adjacent the lower edge of the door and horizontally displaced from said second mentioned point to a path substantially parallel to the front wall.

6. A telephone booth comprising a plurality of vertical walls, a door, means for guiding the movement of a lateral edge of the door along a path adjacent a wall contiguous to the front wall, means for guiding a point adjacent the upper edge of the door along a path adjacent the front wall, a threshold guide strip of angular cross section, the offset portion of which is turned downwardly at the outer edge of the strip, a horizontally disposed slide member reciprocable on said strip and having a hook portion passing around the lower edge of said offset portion, said slide member being pivoted to the door adjacent its lower edge.

In witness whereof, I hereunto subscribe my name this 29th day of June, 1921.

OLE GULLICKSEN.

Witnesses:
EDNA V. GUSTAFSON,
EMILE J. BOURGEOIS.