

W. D. CARTER.
TELEPHONE BOOTH.

APPLICATION FILED APR. 16, 1910.

1,043,043.

Patented Oct. 29, 1912.

3 SHEETS—SHEET 1.

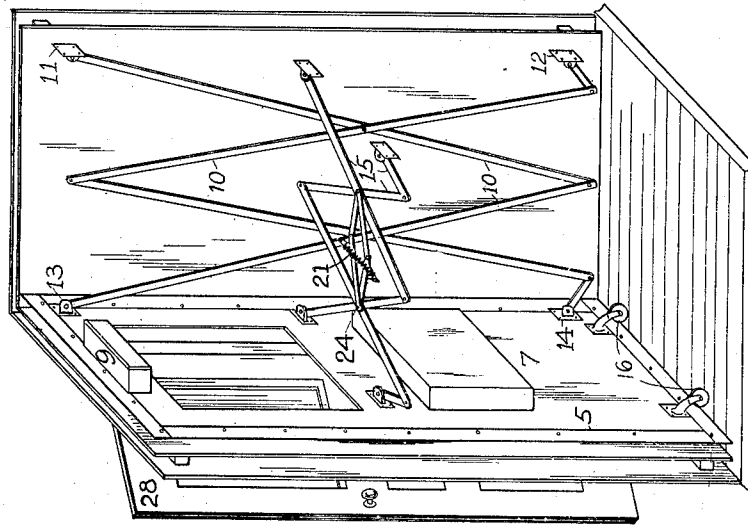


Fig. 2.

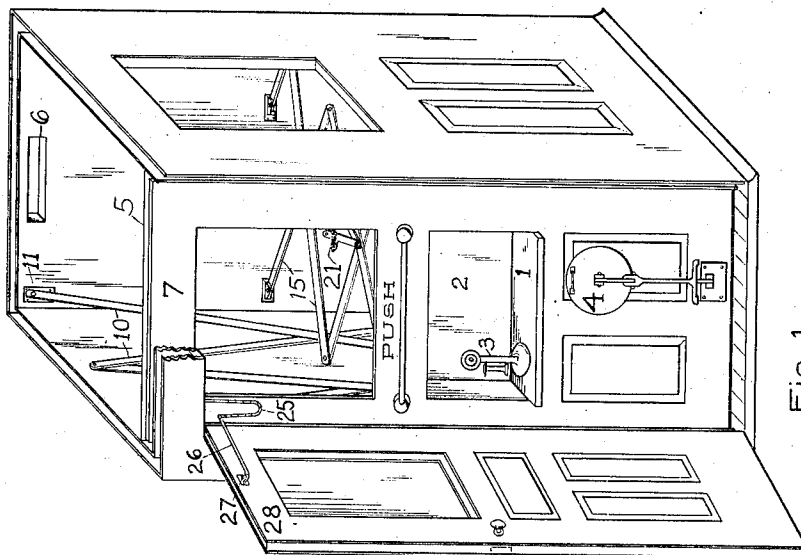


Fig. 1.

WITNESSES:

INVENTOR

Otto Bauman
G. A. Bauman

William Douglas Carter

W. D. CARTER.
TELEPHONE BOOTH.
APPLICATION FILED APR. 16, 1910.

1,043,043.

Patented Oct. 29, 1912.

3 SHEETS-SHEET 2.

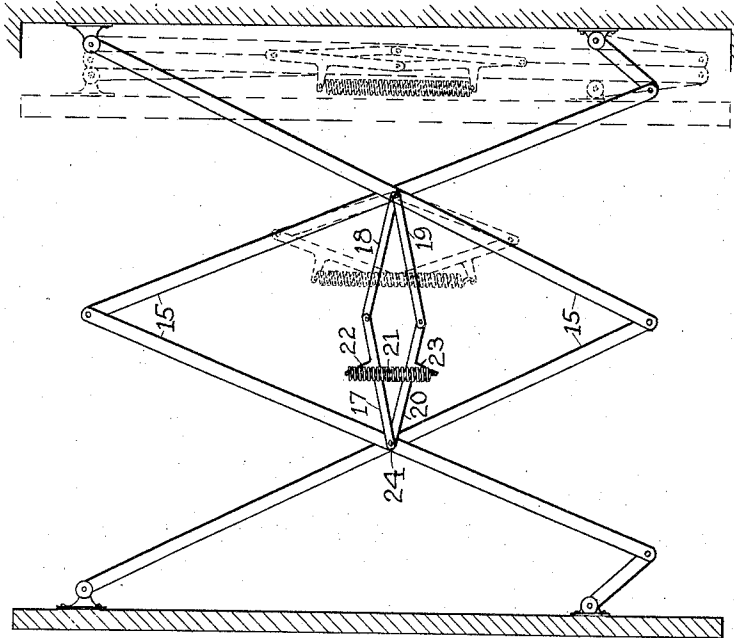


Fig. 4.

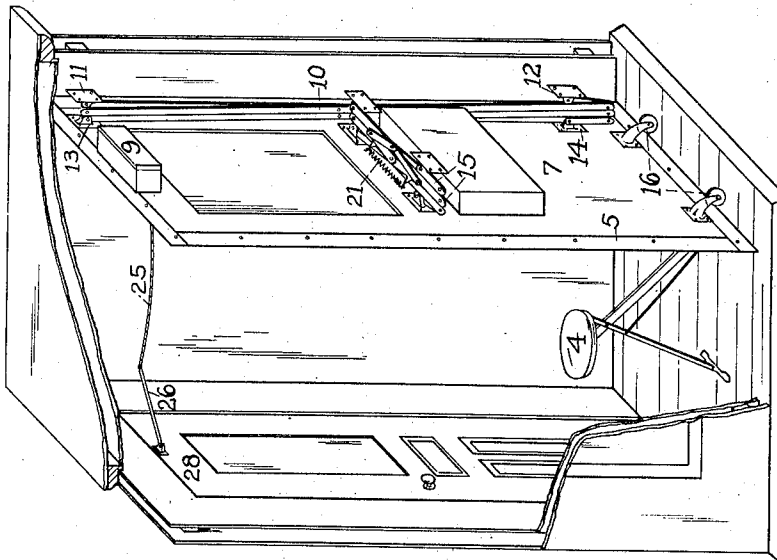


Fig. 3.

WITNESSES:

INVENTOR

Otto Bauman
G. A. Bauman

William Douglas Carter

W. D. CARTER.
TELEPHONE BOOTH.
APPLICATION FILED APR. 16, 1910.

1,043,043.

Patented Oct. 29, 1912.

3 SHEETS—SHEET 3.

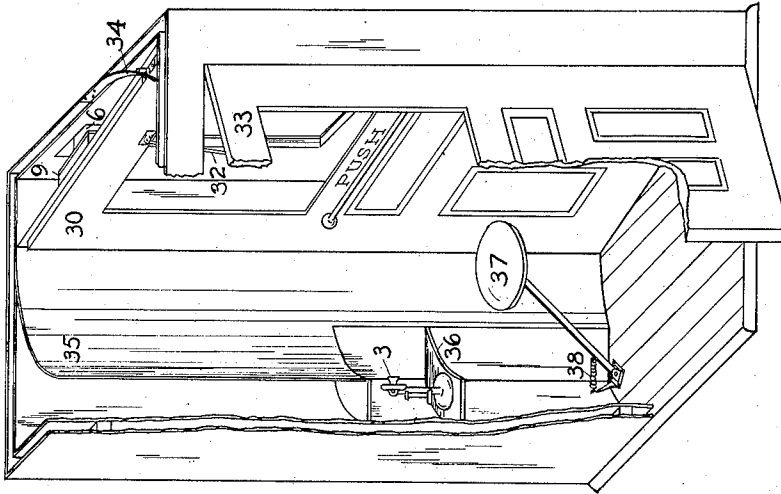


Fig. 6.

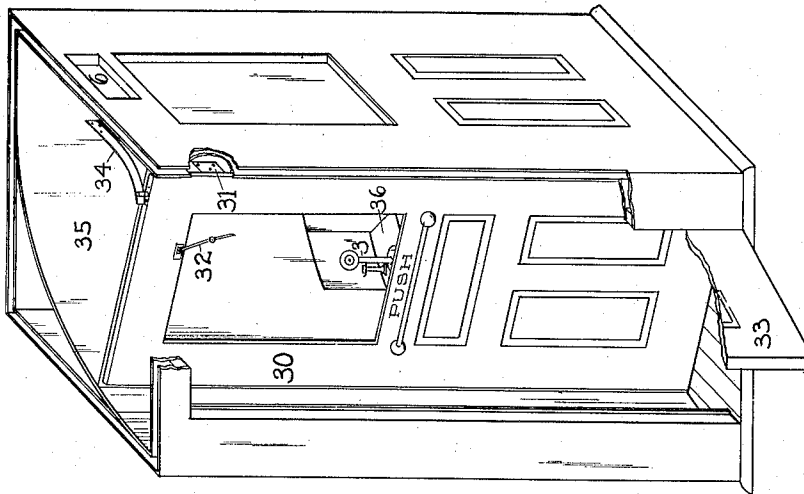


Fig. 5.

WITNESSES:

Otto Bauman
G. A. Bauman

INVENTOR

William Douglas Carter

UNITED STATES PATENT OFFICE.

WILLIAM DOUGLAS CARTER, OF QUINCY, ILLINOIS.

TELEPHONE-BOOTH.

1,043,043.

Specification of Letters Patent.

Patented Oct. 29, 1912.

Application filed April 16, 1910. Serial No. 555,879.

To all whom it may concern:

Be it known that I, WILLIAM DOUGLAS CARTER, a citizen of the United States, residing in Quincy, in the county of Adams and State of Illinois, have invented a certain new and useful Improvement in Telephone-Booths, of which the following is a specification.

This invention relates to a telephone booth containing within it a door or movable partition so mounted as to effect by its movement a change of air in the booth before and after each occupancy; and to do so without interfering with the acoustic requirements of the telephone booth. This result may be accomplished in different ways without departing from the spirit of the invention. The principle may be explained best by making an analogy to the operation of the piston head of an air-compressor, which admits air on one side and expels it on the other as it moves in one direction, and reverses the operation as it moves in the opposite direction.

For convenience in the following description, the ventilating door or movable partition above referred to will be designated as a fan door to distinguish it from the entrance door of the booth.

The annexed drawings and the following description set forth in detail arrangements and operation of this invention.

Figure 1 is the front view of a telephone booth with top removed, showing fan door in the forward position which it assumes when the booth is unoccupied. Fig. 2 is a view of the booth with one side, the back, and top removed; showing the fan door in its forward position, and the supporting and guiding mechanism therefor. Fig. 3 is a similar view of the booth with back and parts of side and top removed, showing fan door in its position in the back of said booth as when booth is occupied; and with the guiding and supporting mechanism in folded position. Fig. 4 shows enlarged view of horizontal parallel motion mechanism with spring arranged to operate same; and folded position assumed when booth is occupied. Fig. 5 is a view similar to Fig. 1, but showing a modified construction. Fig. 6 is a view with parts broken away, showing modified construction with fan door in position as when booth is occupied.

Like numerals refer to same parts in the several figures.

Referring to Fig. 1; 1 is a shelf built into the fan-door and forming the bottom of the box-like recess 2 in which is contained a telephone 3. 4, Fig. 1, represents a folding stool which is held flat against the fan-door 7 by a spring when not in use, but which may be pulled out into the position shown in Fig. 3 when desired. 5 is a rubber or cloth strip fastened to the edges of the fan door to make it fit snugly against the sides of the booth. Rollers 16 support the weight of said fan-door. Fan door 7 is so guided that it always remains parallel to the front and back of the booth. This result is attained as follows: The links or levers 10 comprising the parallel motion mechanism,—attached at 11 and 12 to the back of the booth and at 13 and 14 to the fan-door—prevent said fan-door 7 from moving out of a vertical position; and the similar horizontal parallel motion mechanism 15 (shown in detail in Fig. 4) prevents said fan-door from taking an angular position with reference to the front or back of the booth.

Referring in detail to the horizontal parallel motion mechanism shown in Fig. 4, the dotted lines at the extreme right of the figure represent the position taken by said mechanism when the fan-door is in the back of the booth. The rhomb and spring mechanism shown in Fig. 4, consisting of the links 17, 18, 19, and 20, and spring 21 attached to lugs or projections 22 and 23, is so designed as to force the fan-door forward when said fan-door is in any position forward of the position of dead-center of said spring 21 and spring 21 is to the right of bearing 24. This position of dead-center is shown in the dotted lines immediately to the right of the rhomb and spring mechanism above mentioned, and may be described as the position of the spring when its line of action is directly over the bearing 24. When the fan-door is pushed back so that the line of action of spring 21 is to the left of bearing 24, then said spring operates to force said fan-door toward the back of the booth.

In Fig. 1, 6 shows an opening in the back of the booth through which air in the booth may escape when fan-door 7 is pushed inward, and through which air may enter the booth when it is forced forward. When the

booth is in use and the fan-door is in its extreme backward position, the felt covered stopper 9 is held against opening 6 by means of the spring 21, thereby preventing transmission of sound into or from the booth.

The chain 25 and arm 26 connecting the outside door 28 with the fan-door 7, are so adjusted as to permit said outside door 28 to be opened a few inches when the booth is occupied and the fan door is in its backward position. But when said outside door 28 is opened wide enough to permit a person to emerge from the booth, said fan door is pulled over the dead center of spring 21 so that said spring will act and continue to force said fan door in a forward direction. When said reciprocating door is in its forward position, as it is when the booth is unoccupied, the outer door 28 is free to swing wide open, or shut, and is not restrained by the chain 25 and arm 26. Arm 26 is held against outside door 28 by a spring 27 when fan-door is in its forward position, so that when outside door is closed arm 26 will not strike fan-door 7. Arm 26 projects beyond the inner vertical edge of entrance door 28, so as to form a cantaliver for closing said entrance door by means of the chain 25 attached to the end thereof.

The complete operation of this ventilating fan-door is as follows: A person entering the booth pushes the fan-door inward, thereby causing fresh air to flow into the booth through the open entrance door, and the air already in the booth to flow out through the opening in the back of the booth. As the fan-door is pushed inward, the entrance door is gradually closed, or brought to within a few inches of closing. The fan-door being pushed past the position of dead center of the spring 21, is now forced by said spring against the back of the booth, and the stopper closes the opening in the back of the booth. The folding stool may then be pulled out and the telephone used. When the occupant opens the entrance door to leave the booth, the chain and arm connecting the two doors pull the fan door forward until the spring 21 operates and continues to force it forward. This forward motion expels the air in front of the fan-door and admits fresh air to the interior of the booth through the opening in the rear.

Referring now to Figs. 5 and 6, I have shown a swinging fan-door used to expel and entrain the air from and into the booth. Swinging fan-door 30 is mounted on hinges, as at 31, on a front inside corner of the booth so that it may swing in approximately a ninety degree arc, from a position parallel to the front of the booth to one parallel to the side of said booth. Fan door 30 is provided with a stopper 9 so mounted as to cover opening 6 in the side of said booth when said fan door 30 is swung against said

side, as shown in Fig. 6. The hinged rod 32 connects fan-door 30 with entrance door 33, so that when fan-door 30 is pushed inward, entrance door 33 is closed (or nearly closed); and when entrance door 33 is opened, fan-door 30 is pulled toward its position in the front of the booth. But when said fan-door 30 is in said forward position against the front of said booth, then said entrance door 33 may be opened or closed—not being restrained by hinged rod 32. Leaf spring 34 operates to force fan-door 30 toward the front of the booth except when said fan-door is in a position close to the side of said booth as shown in Fig. 6; in which case it operates to force said fan-door against the side of said booth. The inside wall 35 is curved in the arc of a circle whose radius is the width of fan-door 30, so that the outer edge of said fan-door swings close to the concave surface of said curved wall 35 throughout its entire oscillation. A shelf 36 supporting a telephone 3 occupies part of a partly closed recess back of curved wall 35, the lower part of said recess being occupied by the hinged stool 37 when said stool is not in use. Fig. 6 shows stool 37 in position to be used. Spring 38 draws stool 37 beneath shelf 36 as soon as the weight of the occupant is raised, thus making room for fan-door 30 to swing in its path. In this method of constructing telephone booths the only area used by an occupant of said booth which is not swept by the fan door, is that of the recess above and below the shelf 36; and as fan-door swings past said recess twice between each occupancy of said booth, it is evident that the circulation of air within said recess is ample to ventilate thoroughly such recess area. The operation of this booth is the same as that of the one previously described except that the fan-door, instead of reciprocating from the front to the back of the inside area of the booth, swings from the front to the side of such area.

While I have shown and described two embodiments of my invention I am aware that modifications can be made therein without departing from the spirit of the invention and I do not therefore limit the invention to the particular showings made.

I claim:

1. In a telephone booth provided with a ventilating window or opening and an entrance door, a fan door or movable partition mounted therein and adapted to be moved across substantially the whole area of said booth so as to expel and entrain air from and into said booth, and mechanism for operating same.

2. In a telephone booth provided with a ventilating window or opening and an entrance door, a fan door or movable partition mounted therein and adapted to be moved

across substantially the whole area of said booth so as to expel and entrain air from and into said booth, and mechanism for actuating same by means of the movement of said entrance door.

3. In a telephone booth provided with a ventilating window or opening and an entrance door, a fan door or movable partition mounted therein and adapted to be moved across substantially the whole area of said booth so as to expel and entrain air from and into said booth, and mechanism for operating same automatically.

4. In a telephone booth provided with a ventilating window or opening and an entrance door, a fan door or movable partition mounted therein and adapted to be moved across substantially the whole area of said booth so as to expel and entrain air from and into said booth, a spring operating on both sides of a dead-center so as to propel said fan door or movable partition in different directions depending upon the position occupied by said fan door or movable partition with relation to the position of dead center of said spring.

5. In a telephone booth provided with an entrance door and a ventilating window or opening, a stopper for opening and closing said ventilating window or opening, a fan door or movable partition mounted therein and adapted to be moved across substantially the whole area of said booth so as to expel and entrain air from and into said booth, and mechanism for operating said fan door or movable partition.

6. In a telephone booth provided with an entrance door and a ventilating window or opening, a stopper device for opening and closing said ventilating window or opening, mechanism for actuating said stopper device by means of the motion of a fan door or movable partition mounted in said booth and adapted to be moved across substantially the whole area of said booth so as to expel and entrain air from and into said booth, and mechanism for operating said fan door or movable partition.

7. In a telephone booth provided with an entrance door and a ventilating window or

opening, a stopper device for opening and closing said ventilating window or opening, mechanism for operating said stopper device, a fan door or movable partition mounted in said booth and adapted to be moved across substantially the whole area of said booth so as to expel and entrain air from and into said booth, and mechanism for operating said fan door or movable partition.

8. In a telephone booth, a fan door or movable partition mounted therein and adapted to be moved across substantially the whole area of said booth so as to expel and entrain air from and into said booth, a shelf mounted on or in said fan door or movable partition, and mechanism for operating said fan door or movable partition.

9. In a telephone booth, a fan door or movable partition mounted therein and adapted to be moved across substantially the whole area of said booth so as to expel and entrain air from and into said booth, a collapsible stool mounted on said fan door or movable partition so as to be foldable flat against said fan door or movable partition.

10. In a telephone booth, a movable wall mounted therein and adapted to be moved across substantially the whole area of said booth so as to expel and entrain air from and into said booth, and a telephone mounted in said booth.

11. In a telephone booth, a movable wall mounted therein and adapted to be oscillated bodily across substantially the whole area of said booth whereby air may be expelled from and entrained into said booth, and a telephone mounted in said booth.

12. In a telephone booth provided with a ventilating opening, a movable partition mounted therein, said movable partition being adapted to be moved across substantially the whole area of said booth so as to expel and entrain air from and into said booth, and a telephone mounted in said booth.

WILLIAM DOUGLAS CARTER.

Witnesses:

JOSEPH H. HAMPSON,
GEORGE F. HOLMAN.