

No. 773,127.

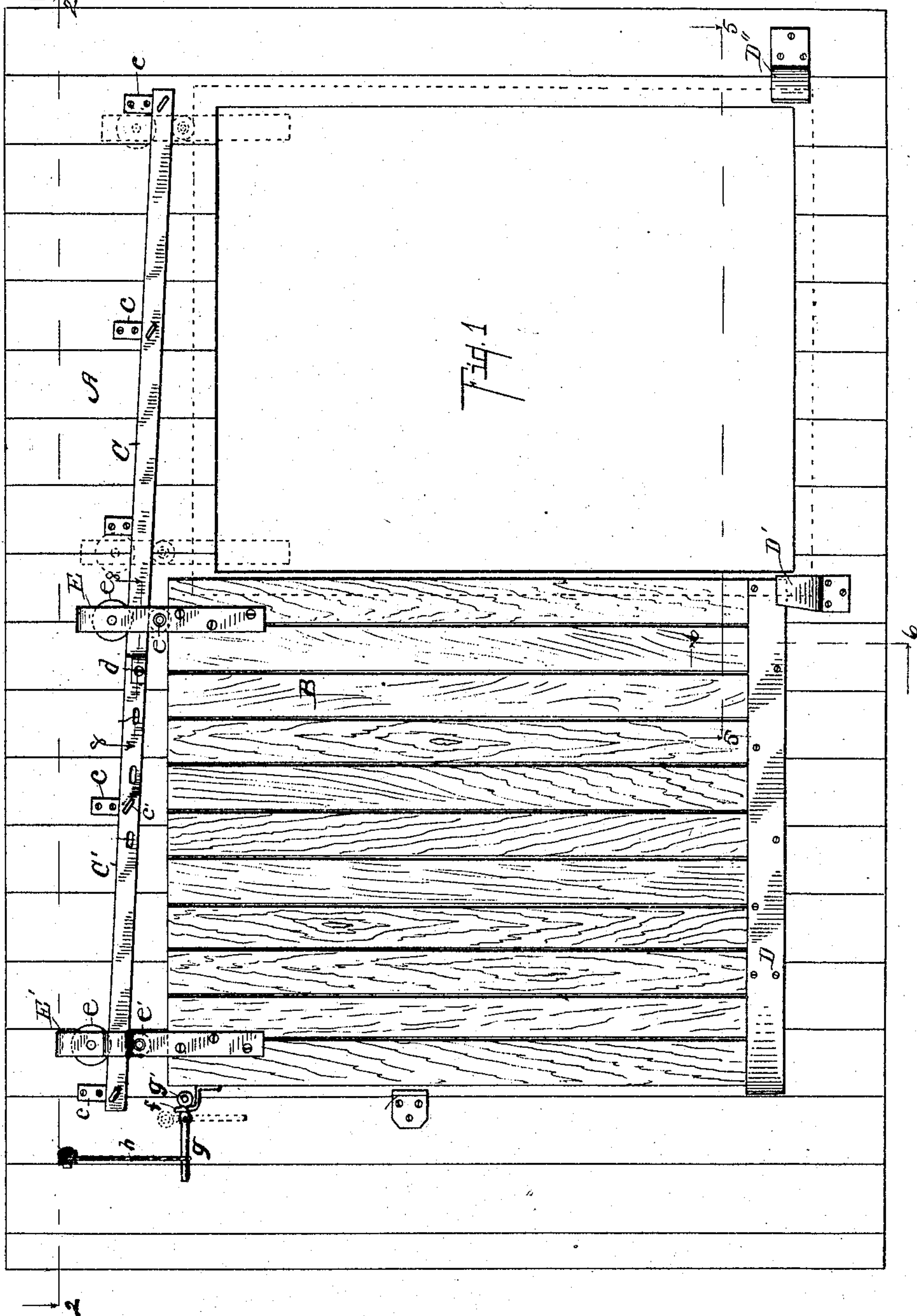
PATENTED OCT. 25, 1904.

F. DENTLER.
SLIDING DOOR.

APPLICATION FILED MAR. 26, 1904.

NO MODEL.

2 SHEETS--SHEET 1.



Witnesses:

Ethel A. Teller
O. W. Earl

Inventor,

By Frank Denton
Fred L. Chappell
Att'y.

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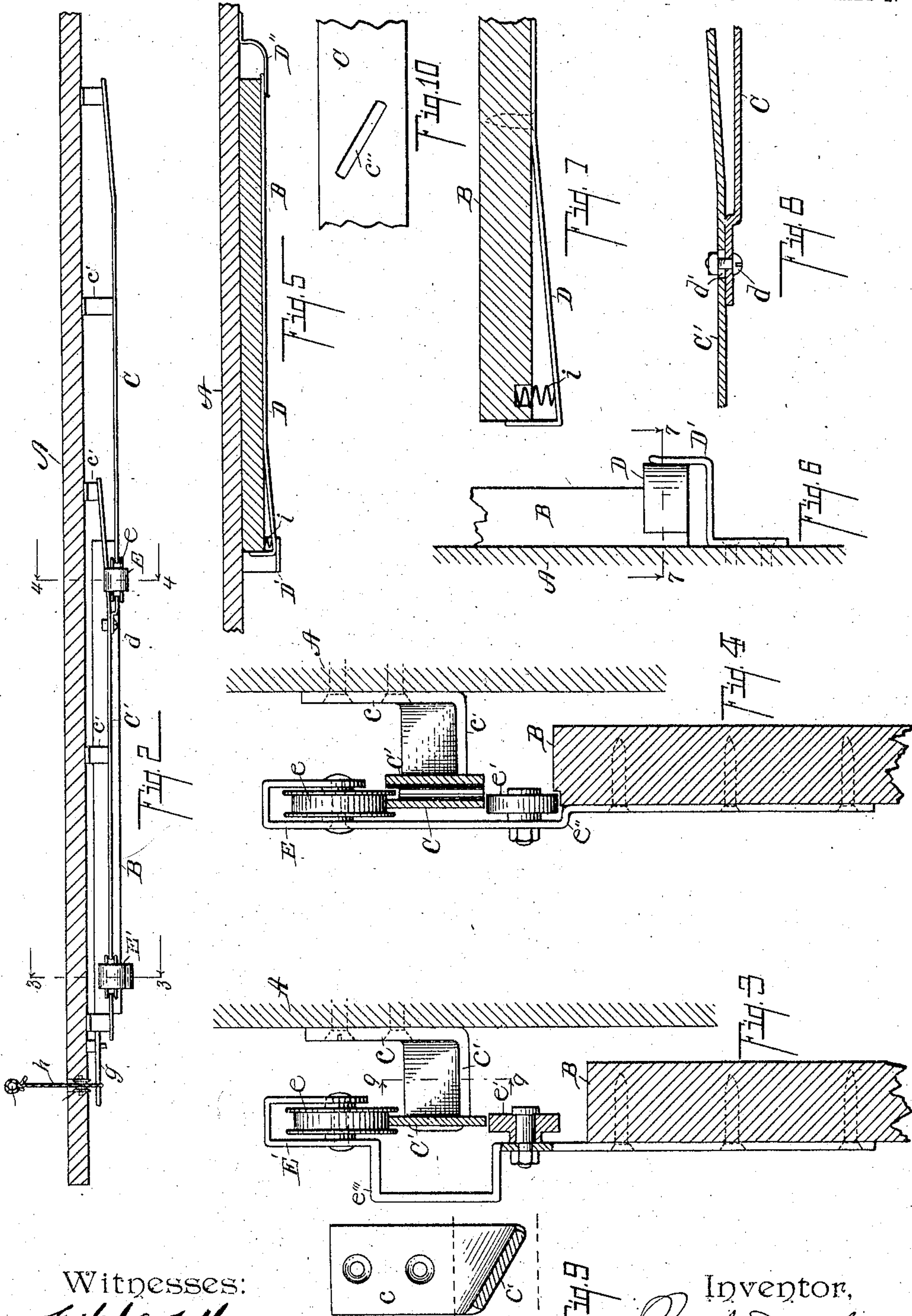
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NO MODEL.

2 SHEETS—SHEET 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

FRANK DENTLER, OF VICKSBURG, MICHIGAN.

SLIDING DOOR.

SPECIFICATION forming part of Letters Patent No. 773,127, dated October 25, 1904.

Application filed March 26, 1904. Serial No. 200,196. (No model.)

To all whom it may concern:

Be it known that I, FRANK DENTLER, a citizen of the United States, residing at the village of Vicksburg, county of Kalamazoo, State of Michigan, have invented certain new and useful Improvements in Sliding Doors, of which the following is a specification.

This invention relates to improvements in sliding doors.

The objects of this invention are, first, to provide an improved sliding door which is adapted for use as an automatically-closing fire-door, which is simple in structure and effective in use; second, to provide an improved sliding door which is adapted to seal a door-opening comparatively tight when closed, which is easily and quickly manipulated; third, to provide an improved sliding door adapted to accomplish these results, which is economical to produce and durable in use.

Further objects and objects relating to structural details will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined, and pointed out in the claims.

A structure embodying the features of my invention is clearly illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation view of a structure embodying the features of my invention, the door being illustrated open, its closed position being indicated by dotted lines. Fig. 2 is a horizontal sectional view taken on a line corresponding to line 2 2 of Fig. 1. Fig. 3 is an enlarged detail vertical sectional view taken on a line corresponding to line 3 3 of Fig. 2, showing structural details of the rear hanger E' for the door. Fig. 4 is an enlarged detail sectional view taken on a line corresponding to line 4 4 of Fig. 2, showing the structural details of the front hanger E, portions being shown in full lines. Fig. 5 is a detail horizontal sectional view taken on a line corresponding to line 5 5 of Fig. 1, showing the door in its closed position. Fig. 6 is an enlarged detail view taken on a line corresponding to line 6 6 of Fig. 1,

showing the means for holding the bottom of the door against the wall or door-casing when closed. Fig. 7 is a detail sectional view taken on a line corresponding to line 7 7 of Fig. 6. Fig. 8 is an enlarged detail sectional view taken on a line corresponding to line 8 8 of Fig. 1, showing the relation of the track-sections C C'. Fig. 9 is a detail sectional view taken on line 9 9 of Fig. 3, showing the structural details of the brackets or track-hangers c.

In the drawings the sectional views are taken looking in the direction of the little arrows at the ends of the section-lines, and similar letters of reference refer to similar parts throughout the several views.

Referring to the drawings, A represents a wall having a door-opening, and B the door. Secured to the wall above the door-opening is a forwardly-inclined track made up of sections C C', (see Figs. 1 and 2,) the section C being the front section, and C' the rear section. The forward ends of the track-sections C C' are deflected inwardly, and the front section overlaps the forward end of the rear section and is secured thereto by a bolt, as d. (See Figs. 1 and 2.) The door B is supported by a front track-hanger E, which is adapted to travel on the track-section C, and a rear track-hanger E', which is adapted to travel on the rear track-section C'. The track-sections are supported by brackets c. These brackets c are formed with outwardly-projecting arms c', which are riveted in suitable slots c'' in the tracks. The brackets are formed from strips of flat bar-iron, the arm portion being bent obliquely to the body, thereby very greatly adding to its strength. The slots in the tracks are formed diagonal to receive the arms, which are, as before remarked, riveted therein. I am thus enabled at a very slight cost to provide a very rigid bracket and one which is very much less liable to become broken than if the same were a casting and can be formed of much lighter material. The bracket thus secured to the track serves as a brace for the same.

The forward ends of the track-sections are deflected inwardly, so that when the door is closed it is carried inwardly against the wall

or door-casing and when open is carried outwardly away therefrom, so that it has a free movement and does not come into contact with the wall or door-casing except as it is about to close.

The door-hanger E is formed with an offset at the base, as e'' , so that the door is evenly supported on the track-sections. The hanger E' is formed with an offset e''' opposite the track to permit the inward movement of the door in closing. Suitable grooved carrying pulleys or wheels e are provided. Guard or retaining rollers e' are provided. These guard-rollers are arranged beneath the track, so that it is impossible for the carrying-pulleys e to leave the track. The pulleys e are carried by the door-hangers E and E', as clearly appears in Figs. 3 and 4. The track is, as before remarked, inclined, so that the door travels freely down the same. At the bottom of the door is a horizontally-arranged spring D, which is adapted to be engaged by the bracket D' when the door is closed, thus holding the door firmly against the wall or casing.

A coiled spring i is arranged under the spring D for adding to its tension and durability. When closed, the forward edge of the door is engaged by the outwardly and rearwardly projecting spring D'', (see Figs. 1 and 5,) which engages the forward edge of the door and holds it firmly against the wall or door-casing.

When the door is adapted for use as an automatic fire-door, it is retained in its open position by the pivoted lever g , which is provided with a small roller g' on its forward end, which is adapted to engage the upwardly and rearwardly projecting catch on the rear edge of the door. A cord h is secured to this lever. When this cord is broken or released, the lever drops down, and the door by its own gravity rolls into place. By this particular catch arrangement the action of the door when the lever is leased is positive, as the pull of the door would release the lever-catch. With the parts thus arranged the door may be readily opened, as it is only necessary to push the same rearwardly. When in its closed position, it is held firmly against the wall or casing, thus sealing the same sufficiently tight for all practical purposes.

I have illustrated and described my improved sliding door in the form preferred by me. I am, however, aware that it is capable of considerable variation in structural details without departing from my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a door; a track consisting of front and rear sections having their forward ends deflected inwardly, said front section overlapping said rear section; supporting-brackets therefor formed of flat bars

having body portions and outwardly-projecting obliquely-arranged arms secured in suitable diagonal slots in said track; a front hanger for said door, having an offset therein at its base; a rear hanger for said door, having an offset therein opposite said track; grooved carrying sheaves or rollers for said hangers; guard-rollers carried by said hangers arranged beneath said track; a horizontally-arranged outwardly and rearwardly projecting spring at the bottom of said door; a bracket adapted to engage said spring when the door is closed; a rearwardly and outwardly projecting spring adapted to engage the forward edge of said door when closed; all coacting for the purpose specified.

2. The combination of a door; a track consisting of front and rear sections having their forward ends deflected inwardly, said front section overlapping said rear section; supporting-brackets therefor formed of flat bars having body portions and outwardly-projecting obliquely-arranged arms secured in suitable diagonal slots in said track; a front hanger for said door having an offset therein at its base; a rear hanger for said door having an offset therein opposite said track; grooved carrying sheaves or rollers for said hangers; a horizontally-arranged outwardly and rearwardly projecting spring at the bottom of said door; a bracket adapted to engage said spring when the door is closed; a rearwardly and outwardly projecting spring adapted to engage the forward edge of said door when closed; all coacting for the purpose specified.

3. The combination of a door; a track consisting of front and rear sections having their forward ends deflected inwardly, said front section overlapping said rear section; a front hanger for said door having an offset therein at its base; a rear hanger for said door having an offset therein opposite said track; grooved carrying sheaves or rollers for said hangers; guard-rollers carried by said hangers arranged beneath said track; a horizontally-arranged outwardly and rearwardly projecting spring at the bottom of said door; a bracket adapted to engage said spring when the door is closed; and a rearwardly and outwardly projecting spring adapted to engage the forward edge of said door when closed, all coacting for the purpose specified.

4. The combination of a door; a track consisting of front and rear sections having their forward ends deflected inwardly, said front section overlapping said rear section; supporting-brackets therefor formed of flat bars having body portions and outwardly-projecting obliquely-arranged arms secured in suitable diagonal slots in said track; a front hanger for said door having an offset therein at its base; a rear hanger for said door having an offset therein opposite said track; grooved carrying sheaves or rollers for said

hangers; and guard-rollers carried by said hangers arranged beneath said track, all co-acting for the purpose specified.

5 The combination of a door; a track con-
sisting of front and rear sections having their
forward ends deflected inwardly, said front
section overlapping said rear section; sup-
porting-brackets therefor formed of flat bars
10 having body portions and outwardly-project-
ing obliquely-arranged arms secured in suit-
able diagonal slots in said track; a front
hanger for said door having an offset therein
at its base; a rear hanger for said door hav-
ing an offset therein opposite said track; and
15 grooved carrying sheaves or rollers for said
hangers, all coacting for the purpose speci-
fied.

6 The combination of a door; a track con-
sisting of front and rear sections having their
20 forward ends deflected inwardly, said front
section overlapping said rear section; sup-
porting-brackets therefor formed of flat bars
having body portions and outwardly-project-
ing obliquely-arranged arms secured in suit-
25 able diagonal slots in said track; a front
hanger for said door having an offset therein
at its base; a rear hanger for said door hav-
ing an offset therein opposite said track;
grooved carrying sheaves or rollers for said
30 hangers; and guard-rollers carried by said
hangers arranged beneath said track, all co-
acting for the purpose specified.

7 The combination of a door; a track con-
sisting of front and rear sections having their
forward ends deflected inwardly; suitable 35
door-hangers; a horizontally-arranged spring
at the bottom of said door; a bracket adapted
to engage said spring when the door is closed;
a rearwardly and outwardly projecting spring
adapted to engage the forward edge of said 40
door when closed; all coacting for the pur-
pose specified.

8 The combination of a door; a track con-
sisting of front and rear sections having their
forward ends deflected inwardly; suitable 45
door-hangers; a horizontally-arranged spring
at the bottom of said door; and a bracket
adapted to engage said spring when the door
is closed, all coacting for the purpose speci-
fied. 50

9 The combination of a door; a track con-
sisting of front and rear sections having their
forward ends deflected inwardly; suitable
door-hangers; and a spring adapted to engage
said door to force the bottom thereof in- 55
wardly when closed, for the purpose specified.

In witness whereof I have hereunto set my
hand in the presence of two witnesses.

FRANK DENTLER.

Witnesses:

ETHEL A. TELLER,
OTIS A. EARL.