

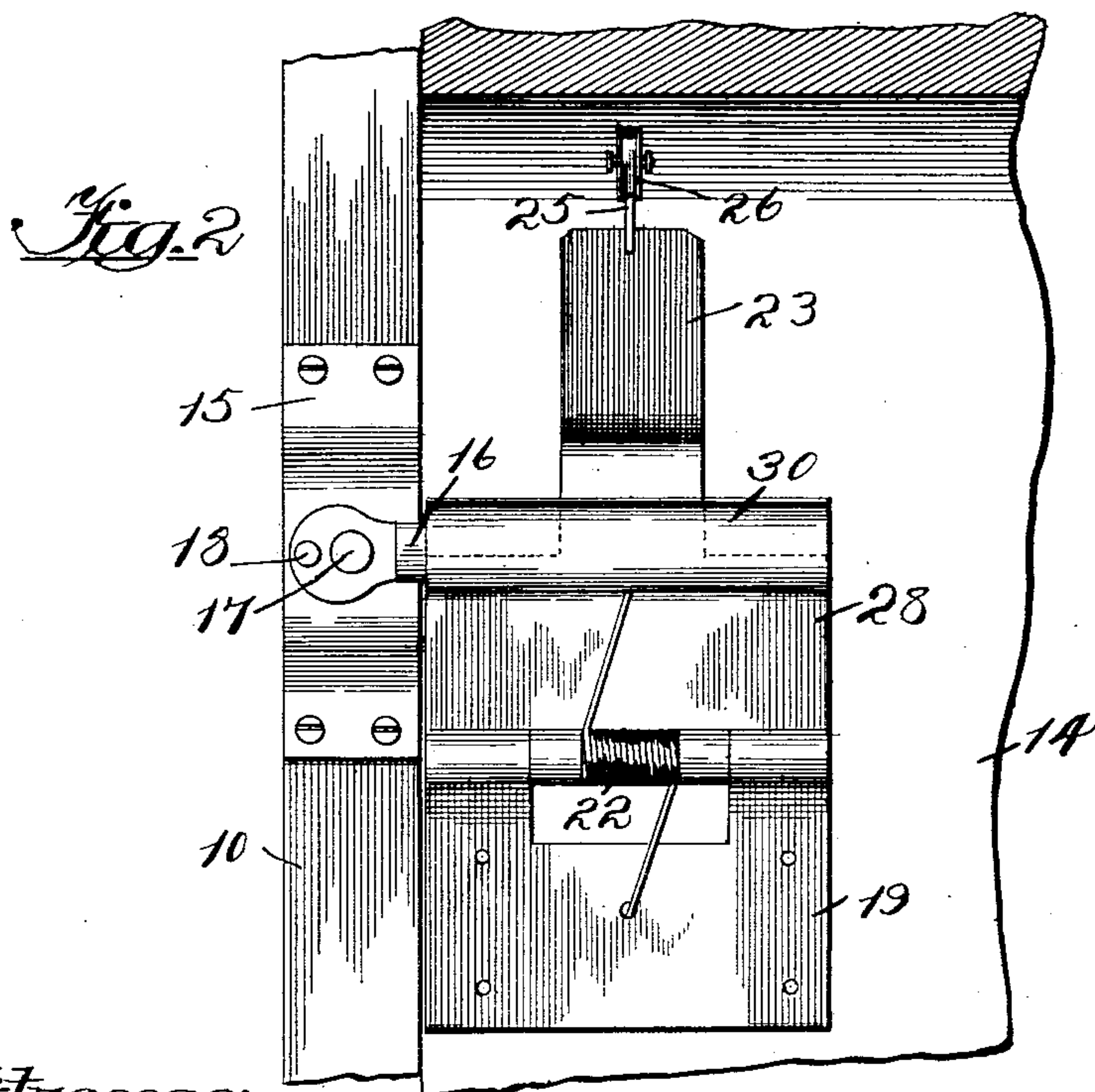
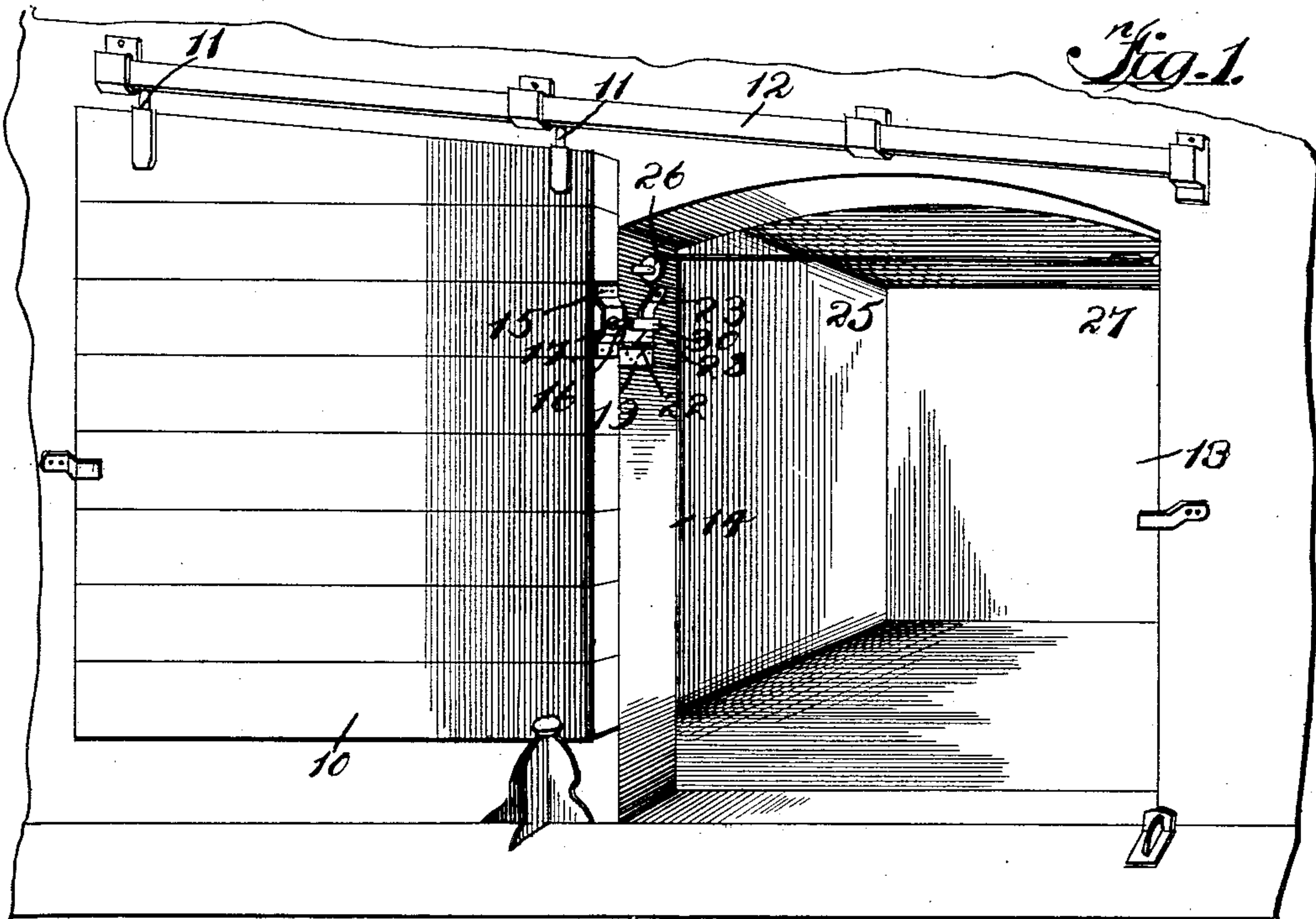
No. 751,593.

PATENTED FEB. 9, 1904.

G. WIDEMAN.
SELF CLOSING FIRE DOOR.
APPLICATION FILED MAY 22, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:
J. B. Weir
G. V. Somers.

Inventor
Gustavus Wideman,
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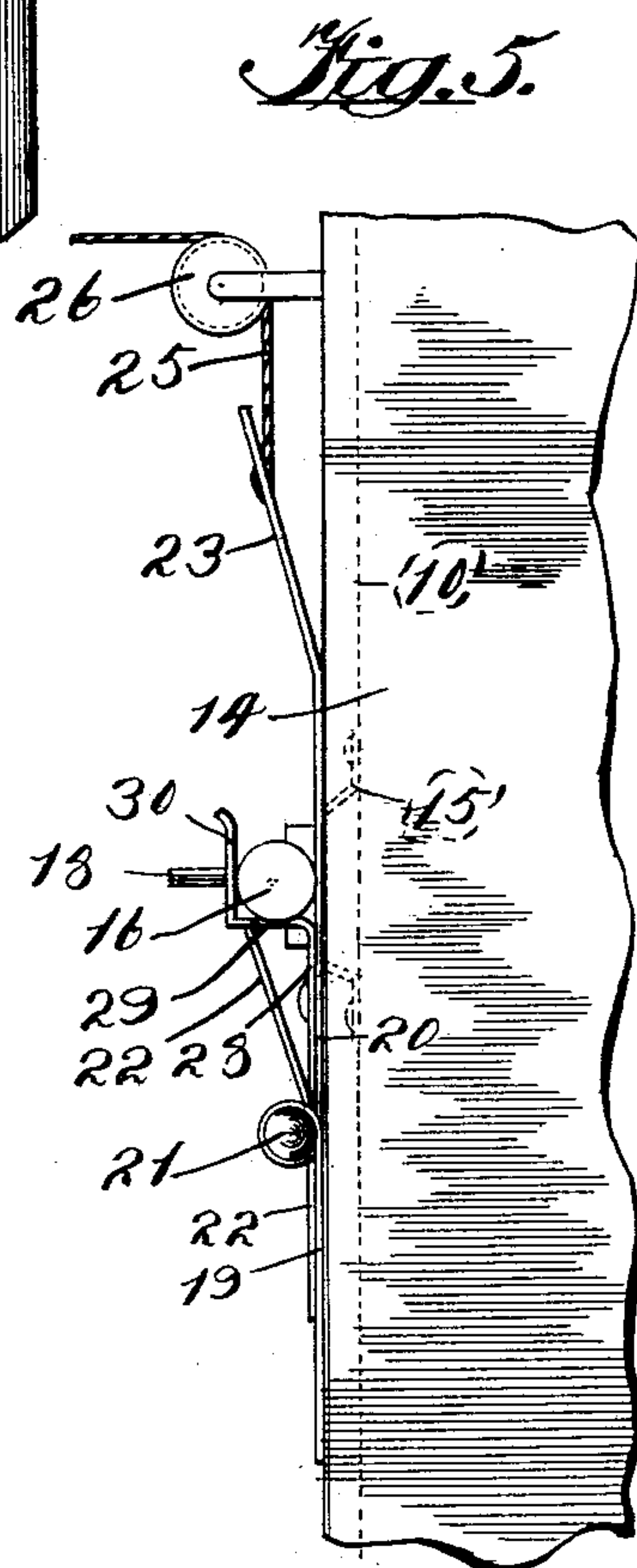
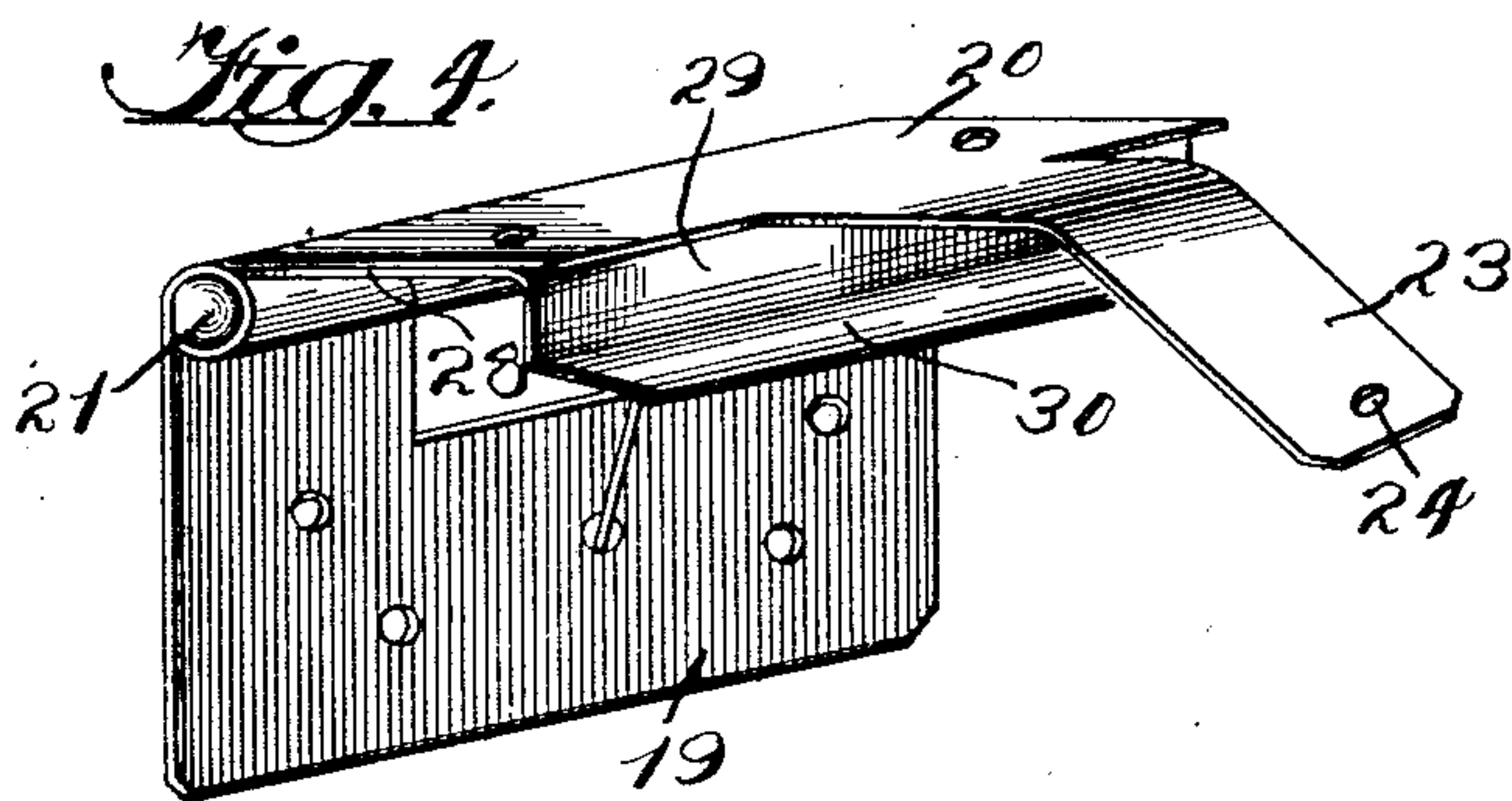
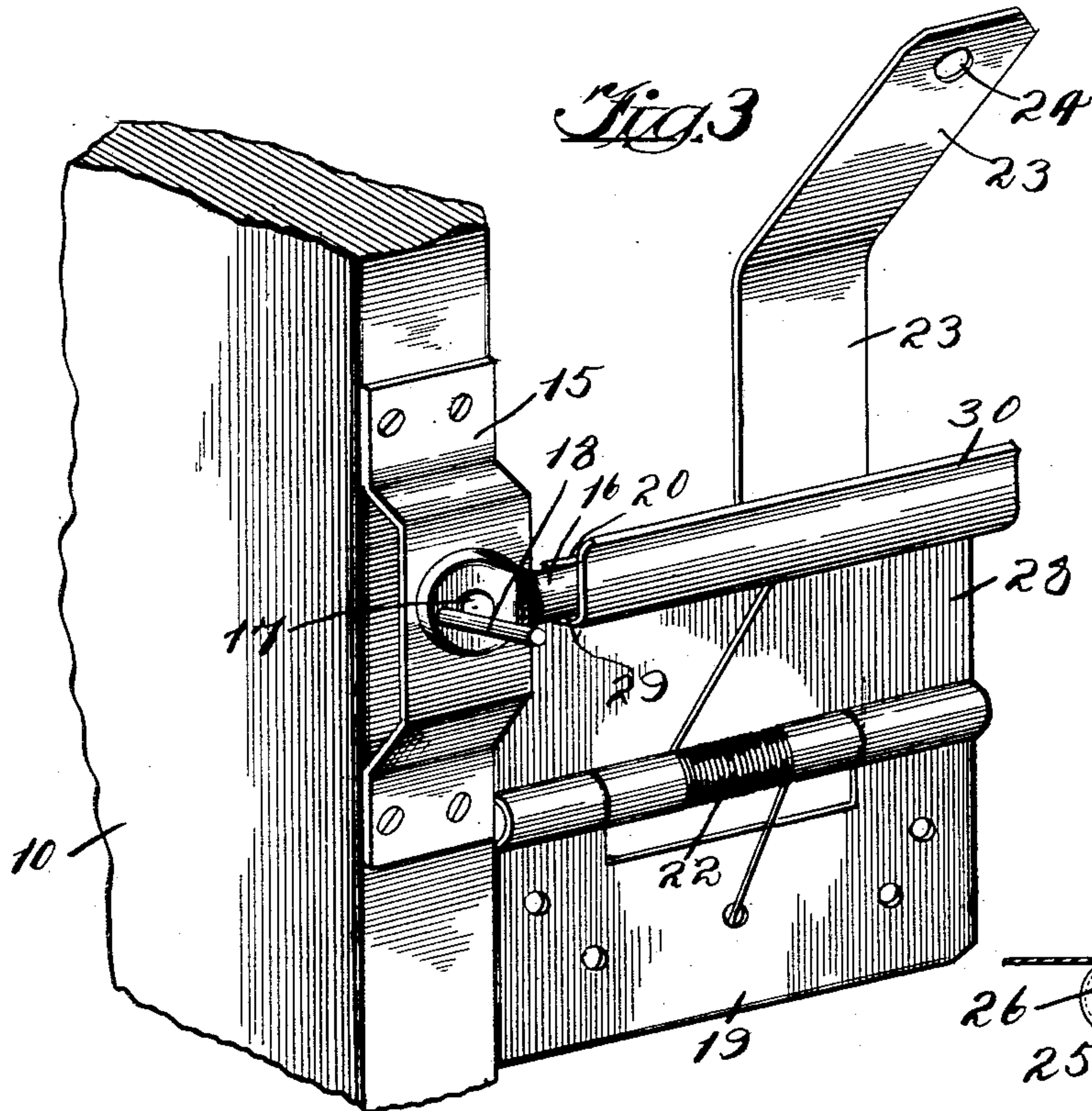
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L. V. Hornum

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UNITED STATES PATENT OFFICE.

GUSTAVUS WIDEMAN, OF AURORA, ILLINOIS, ASSIGNOR TO WILCOX MANUFACTURING COMPANY, OF AURORA, ILLINOIS, A CORPORATION OF ILLINOIS.

SELF-CLOSING FIRE-DOOR.

SPECIFICATION forming part of Letters Patent No. 751,593, dated February 9, 1904.

Application filed May 22, 1903. Serial No. 158,301. (No model.)

To all whom it may concern:

Be it known that I, GUSTAVUS WIDEMAN, a citizen of the United States, residing at Aurora, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Self-Closing Fire-Doors, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to self-closing fire-doors, and has particular reference to improvements in the means employed for locking such doors in place when moved back away from the doorway or opening.

This invention has for its object to provide a cheap, simple, and effective mechanism the movable bolt of which is secured upon and movable with the door, which bolt is capable of being moved by hand into engagement with a spring-actuated holder that is suitably supported at one side of the doorway; to provide improved means for permitting the automatic closing of the door in the event of a fire; to provide means for so securing the movable bolt to the door that upon being released from its holder the bolt will automatically move into such position as not to interfere with the full and complete closing of the door; to provide means whereby upon the automatic releasing of the door from its locked position the door will be given a sudden positive push in the direction in which it moves when closing the doorway, thus obviating the possible tendency of the door to stick or lag by reason of any slight obstruction in or upon the track or for any other reason, and generally to improve the construction and operation of devices of this character. I accomplish these objects by the devices and the combinations of devices shown in the drawings and hereinafter fully described.

In the drawings, Figure 1 is a perspective view of a fire-door suspended from an inclined trolley-track and provided with my improvements. Fig. 2 is a front elevation, being an edge view of a portion of a door with the swinging bolt pivotally attached thereto, such bolt

being shown in engagement with its holder. Fig. 3 is a perspective view of the parts shown in Fig. 2 and in the same relative position. Fig. 4 is a perspective view of the holder in the position it assumes to release the sliding door in case of fire, and Fig. 5 is a side elevation with the parts in position to hold the door open.

Referring to the several figures of the drawings, in which corresponding parts are indicated by the same reference characters, 10 indicates a fire-door of ordinary construction suspended by suitable hangers 11 from an inclined track 12, the door 10 being of a size to suitably cover the doorway or opening 13 in the wall-14.

15 indicates a plate attached by screws, as shown, or otherwise to the forward edge of the door 10, such plate in the form of construction shown being bowed at its central portion.

16 indicates a bolt, which in the construction shown is flattened at one end, through which flattened portion a short distance from the end passes a pivot 17, that is secured to the central bowed portion of the plate 15. Beyond this pivot 17 and near the extreme end of the flattened portion of the bolt is a projecting pin 18, by the use of which the bolt can be readily turned by hand on its pivot 17.

19 indicates a plate adapted to be secured to the side of the doorway, which, as shown in the drawings, is the wall 14. 20 indicates another plate pivotally attached by a pintle 21 to said plate 19, and 22 indicates a coiled spring wrapped around the central portion of the pintle 21 and having its ends in engagement with the two plates 19 and 20 and tending to force the plate 20 down into the position shown in Fig. 4.

23 indicates an arm preferably formed with the plate 20, as shown, which arm extends out from the central edge portion of such plate 20. It is provided in its upper end with a hole 24 for the engagement of a cord or other flexible connection 25, which connection 25, as shown in Fig. 1, passes over a suitable pulley 26,

secured to the wall 14 above the plate 19, and from thence passes across the upper portion of the doorway or opening 13 and is suitably secured to the opposite wall. This cord is 5 provided, as is usual with devices of this character, with a fusible link 27.

28 indicates a plate riveted or otherwise secured to the inner face of the plate 20, which plate 28 is bent outward, as shown, to form a 10 shelf 29 and again bent upward to form a wall 30, against which the bolt 16 is adapted to bear when resting on said shelf.

With the parts constructed as described and in the position shown in all of the figures, except Fig. 4, it will be noted that the bolt 16 15 rests upon the shelf 29 of the plate 28, with its end some distance from the inner edge of the arm 23. The body of the bolt is cylindrical, and the upper part of the wall 30 is 20 slightly curved, which precludes any possibility of the bolt not being promptly disengaged from its holder when the spring 22 is permitted to act to throw down the holder in the event of a fire destroying the fusible link 25 27. By the term "holder" I of course refer to the plate 20 and the parts attached thereto and moving therewith and that act to hold the bolt, as shown. With the parts in position, as shown, it is evident that the door will be 30 held back away from the doorway, as the pressure of the bolt 16 on the wall 30 in front of it prevents any movement of the door. In the event of a fire, however, which destroys the fusible link 27, the force of the spring 35 22 will act to throw down the plate 20 and attached parts, as represented in Fig. 4, and the plate 20 will push or shove on the bolt sufficiently to cause the door to start forward in the direction for closing, which action is a 40 very desirable one, as it will insure the closing of the door when under some circumstances a little rust or a little obstruction in the track might prevent gravity alone from causing the door to close. The bolt will very readily be 45 released from its engagement with the holder as the holder turns downward, owing to the cylindrical form of the bolt and to the fact that the upper portion of the wall 30 is rounded, as before described. As soon as the bolt 50 is released from its holder it will quickly turn on its pivot 17, owing to such pivot being near one end, and will therefore lie with its cylindrical end pointing downward, and consequently not in any way interfere with the 55 complete closing of the door, as it otherwise might if it extended beyond either face of the door.

Whenever it is desired to operate the bolt by hand for the purpose of allowing the door 60 to close or for the purpose of locking the opened door back in place, such bolt can very readily be turned by taking hold of the projecting pin 18.

It will be noted that the holder shown is

considerably wider than is necessary for retaining a bolt 16; but the holder is so made to adapt it for either right or left hand use. 65

That which I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination with a sliding door and 70 a bolt attached to said door, of a holder for said bolt, means for securing said holder in a position to hold the door open, and means for forcing said holder open and releasing the bolt and, through said bolt, imparting a push 75 to the door, substantially as specified.

2. The combination with a sliding door and a bolt attached to said door, of a holder for said bolt, means releasable by heat for securing said 80 holder in a position to hold the door open, and means for imparting a push to the door through said bolt when said holder is so released, substantially as specified.

3. The combination with a sliding door and a bolt pivotally attached to the edge of the door, 85 of a holder for said bolt, means releasable by heat for securing said holder in a position to hold the door open, and means for imparting a push to the door through said bolt when said holder is so released, substantially as specified. 90

4. The combination with a sliding door, of a bolt adapted to engage and secure the door, a holder adjacent to the door and adapted also 95 to be engaged by the bolt, and means for moving said holder and bolt, and, through said bolt, imparting a push to the door, substantially as specified.

5. The combination with a sliding door, of a bolt adapted to engage and secure the door, a holder adjacent to the door and adapted also 100 to be engaged by the bolt, means releasable by heat for retaining said holder in position to be engaged by the bolt, and means for forcing said holder open and at the same time imparting through said bolt a push to the door, sub- 105 stantially as specified.

6. The combination with a sliding door and a bolt attached thereto, of a holder for said bolt comprising a pivoted plate at one side of the 110 door-opening, means for holding said plate in position to retain the bolt, and means for forcing said holder open upon the release of said plate-holding means and at the same time imparting through said bolt a push to the door, 115 substantially as specified.

7. The combination with a sliding door and a pivoted bolt carried by the edge of the door, of a holder for said bolt comprising a pivoted 120 plate at one side of the door-opening, means for holding said plate in position to retain the bolt, and means for moving said plate upon the release of said plate-holding means and at the same time imparting through said bolt a push to the door, substantially as specified.

8. The combination with a sliding door and 125 a bolt pivotally attached to the edge of the door, of a holder therefor comprising a movable plate provided with a shelf on which said

bolt is adapted to rest, means releasable by heat for retaining said plate in position to be engaged by the bolt, and means for moving said plate when it is released to cause said plate to bear against the bolt and through the bolt impart a push to the door, substantially as specified.

9. The combination with a sliding door and a bolt pivotally attached to the edge of the door, of a holder therefor comprising a pivoted plate and a second plate attached thereto, between which plates said bolt is adapted

to rest, means releasable by heat for retaining said pivoted plate in position to be engaged by the bolt, and means for moving said pivoted plate when it is released to cause a disengagement therefrom of the bolt and at the same time to impart through the bolt a push to the door, substantially as specified.

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Witnesses:

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W. L. FERRIS.