

No. 778,228.

PATENTED DEC. 27, 1904.

C. O. DODGE & G. MILLER.

FLEXIBLE DOOR.

APPLICATION FILED JUNE 24, 1904.

2 SHEETS—SHEET 1.

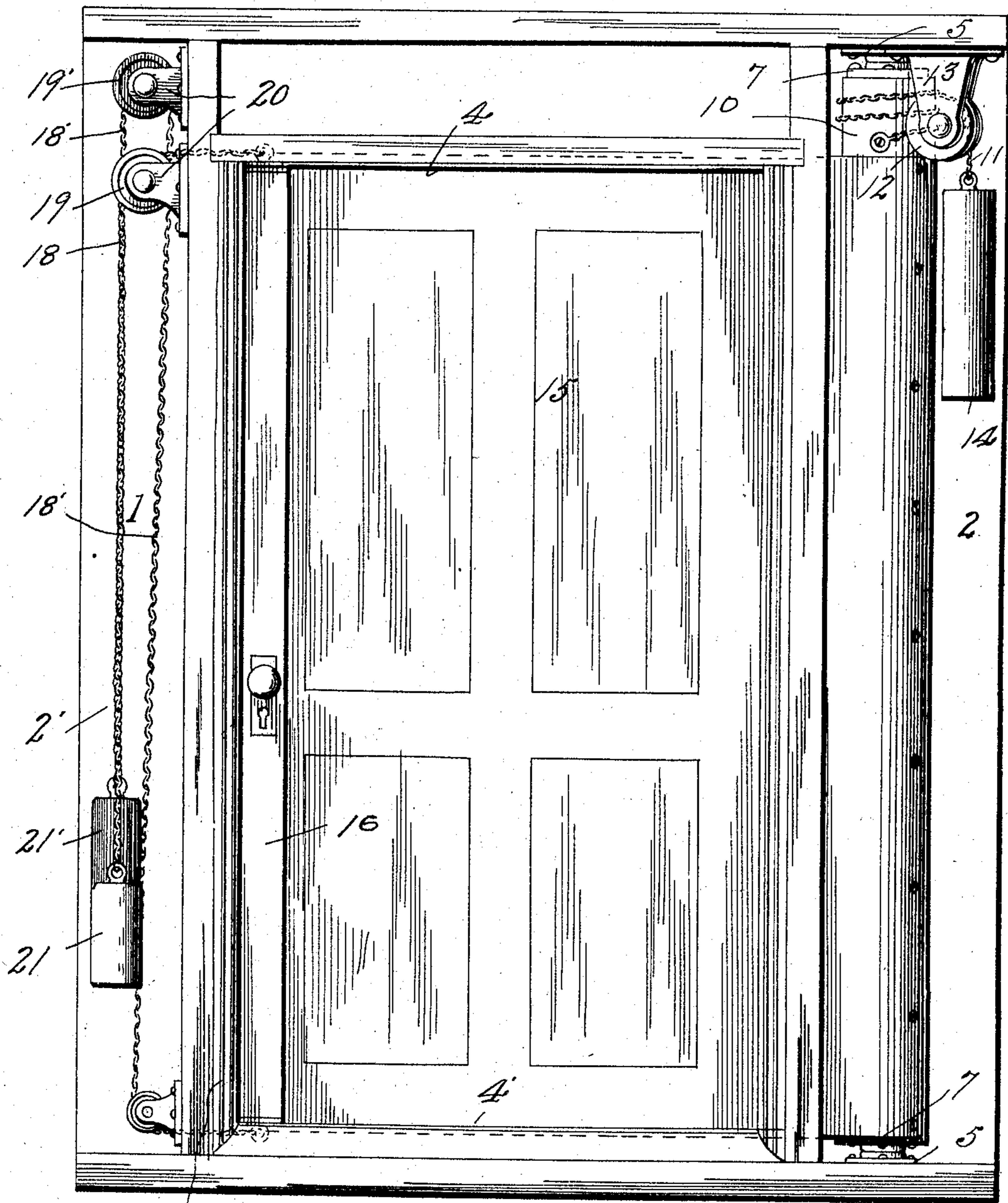


FIG. 1.

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INVENTORS

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2 SHEETS—SHEET 2.

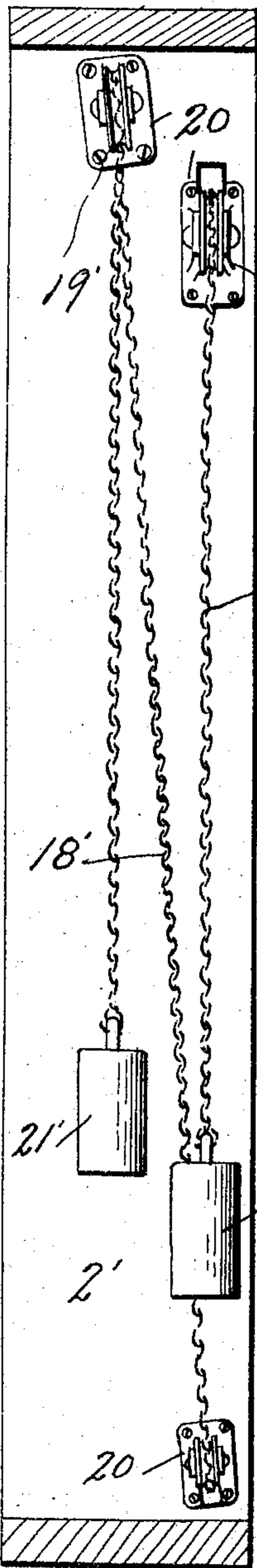


FIG. 2.

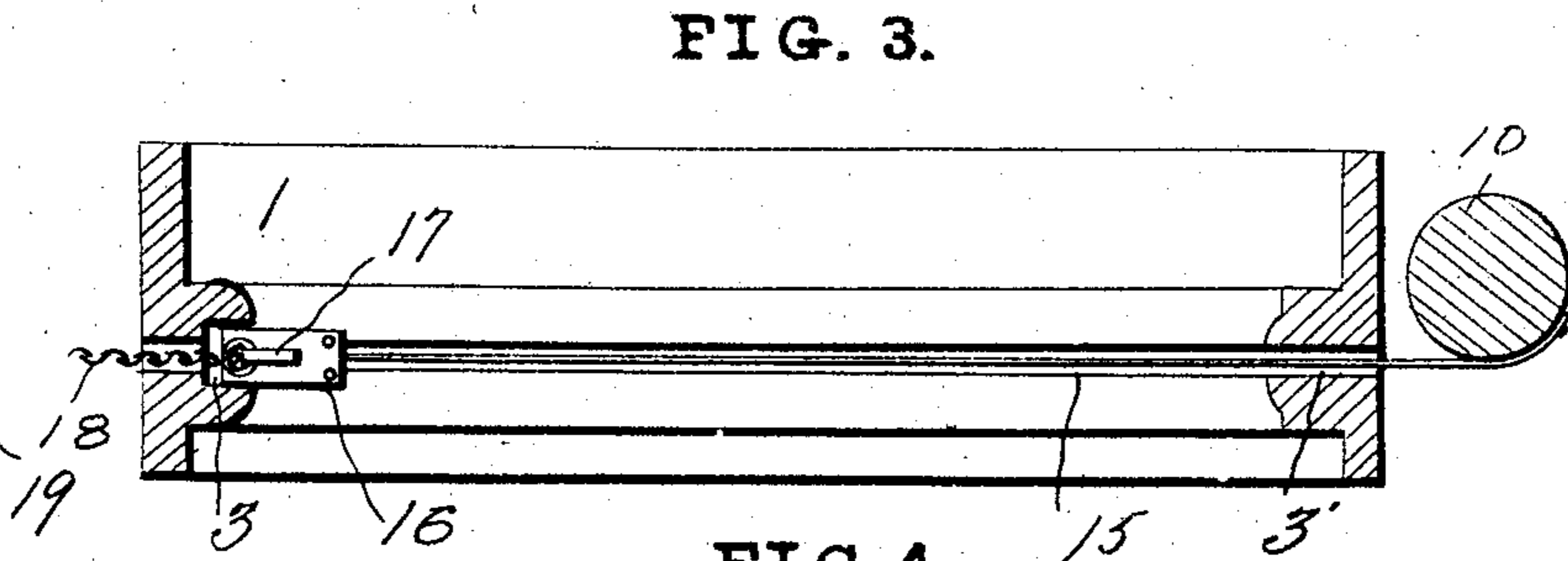


FIG. 3.

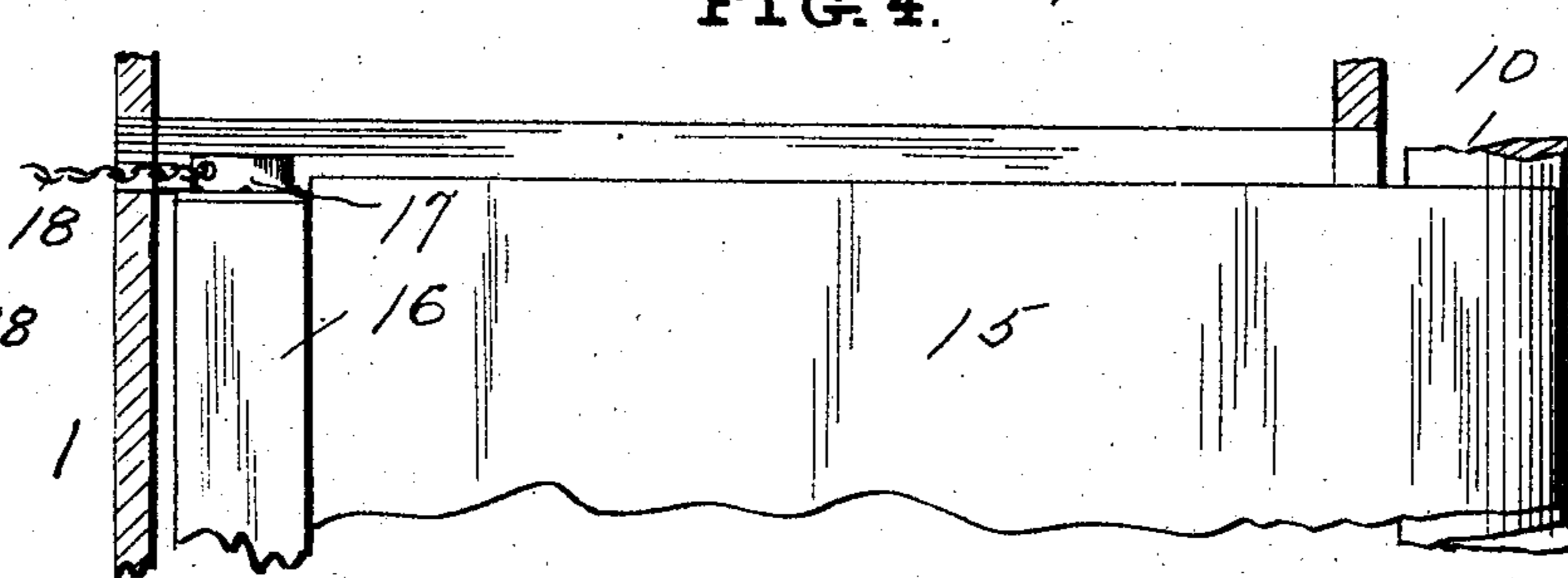


FIG. 4.

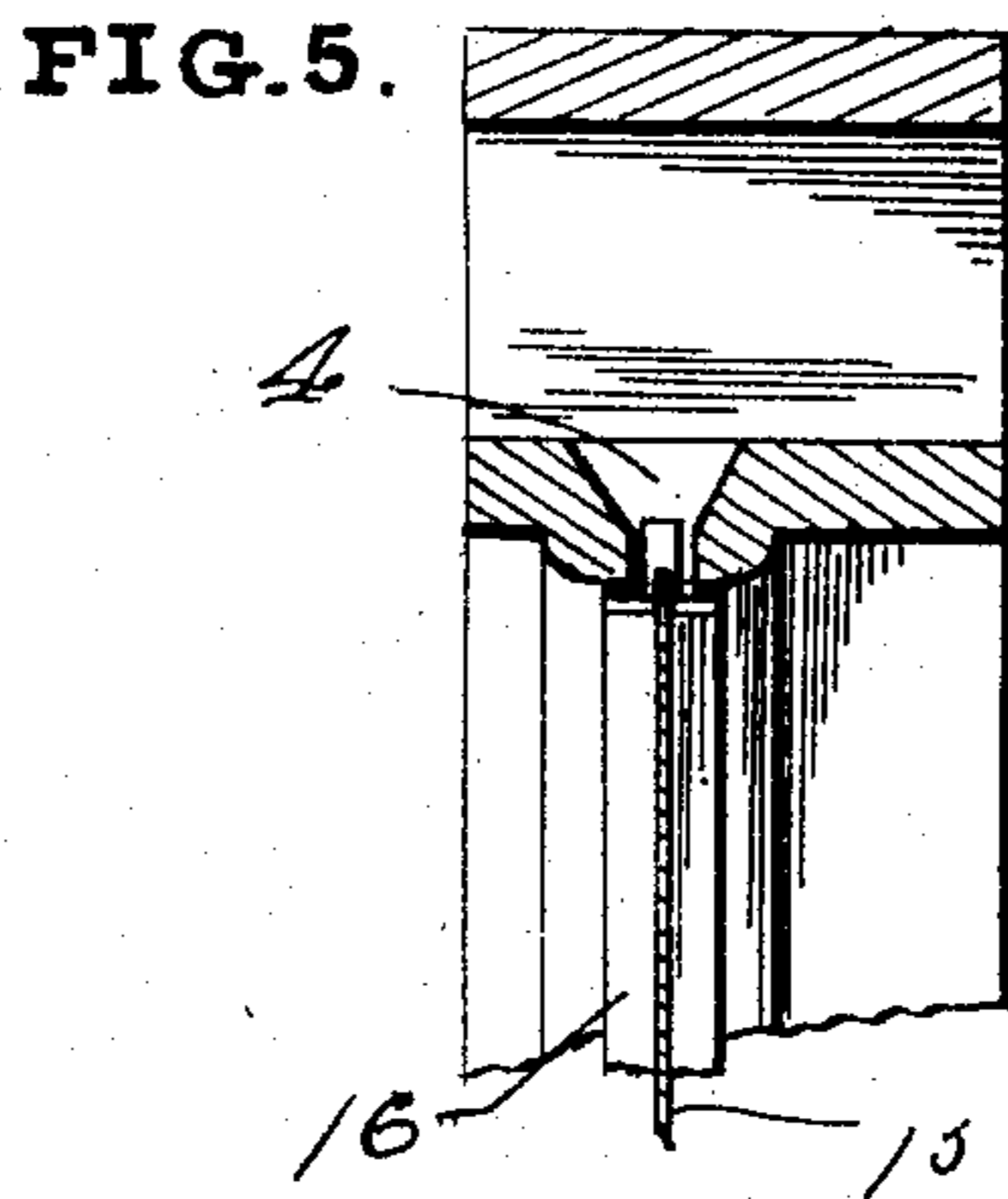


FIG. 5.

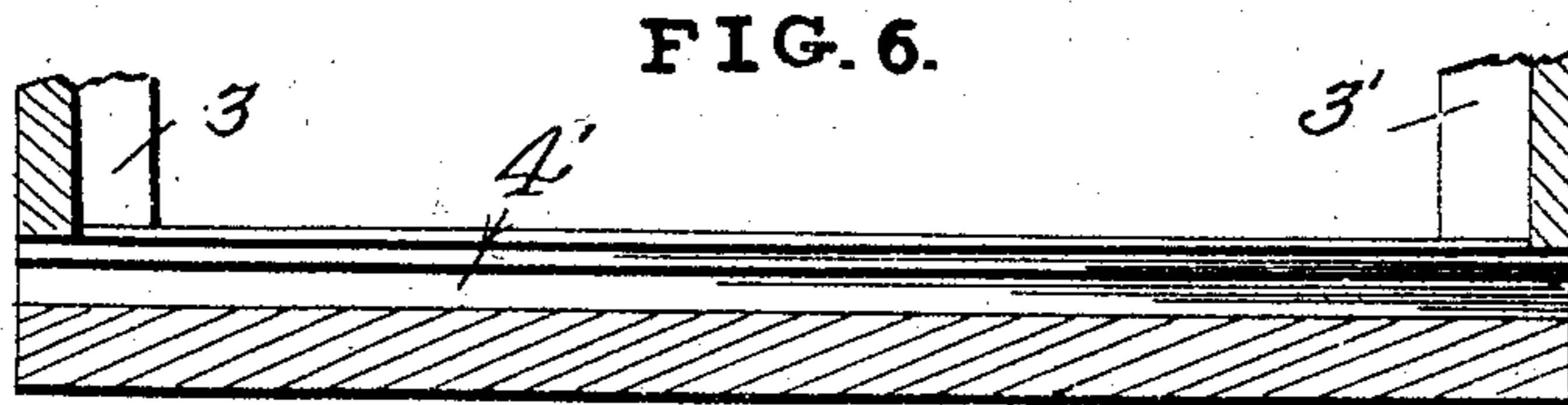


FIG. 6.

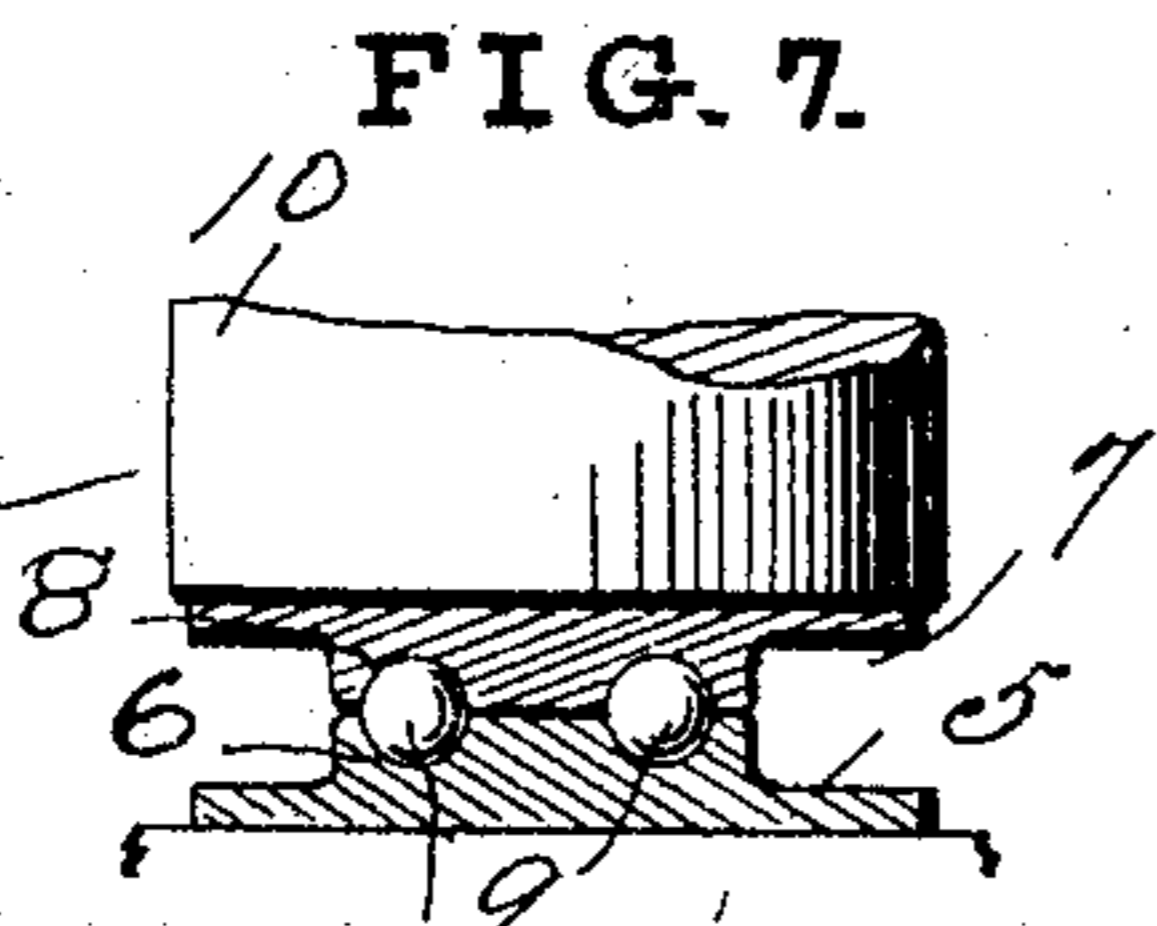


FIG. 7.

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# UNITED STATES PATENT OFFICE.

CHARLES O. DODGE AND GEORGE MILLER, OF CHIPPEWA FALLS,  
WISCONSIN.

## FLEXIBLE DOOR.

SPECIFICATION forming part of Letters Patent No. 778,228, dated December 27, 1904.

Application filed June 24, 1904. Serial No. 213,969.

*To all whom it may concern:*

Be it known that we, CHARLES O. DODGE and GEORGE MILLER, citizens of the United States, residing at Chippewa Falls, in the county of Chippewa and State of Wisconsin, have invented certain new and useful Improvements in Flexible Doors, of which the following is a specification.

Our invention relates to improvements in flexible doors—that is to say, a door made of some flexible material or fabric, and preferably of canvas—the main object being the provision of a door particularly adapted for inside use, such as where folding doors are employed, whereby a door is provided which is very light in weight and easily opened and closed, which occupies very little space and as a consequence saves much room, and which performs its functions of a door as perfectly as doors of solid construction.

Another object of our invention is the provision of a flexible canvas door with means for assisting in the opening and closing of such door, thus enabling the door to be easily opened and closed and avoiding the serious objection of the door sticking or binding, as is the case with folding or sliding doors in common and general use.

Another object of our invention is the provision of a flexible sliding door and mechanism for opening and closing the door which will be of simple, durable, and inexpensive construction, which door and means can be easily placed in position or removed, which may be readily accessible for purpose of repair, and which will be thoroughly practical in every particular.

With these objects in view our invention consists of a flexible door and opening and closing mechanism embodying novel features of construction and combination of parts, substantially as disclosed herein.

Figure 1 is a front elevation of our complete invention, the door being closed and the connected mechanism being in the position it occupies when said door is closed. Fig. 2 is a view of one end of our mechanism. Fig. 3 is a sectional view, in a horizontal plane, taken at the top of the door. Fig. 4 is a ver-

tical section also at the top of the door. Fig. 5 is a central transverse sectional view at the top of the door, more particularly to show the door and upper track or guideway. Fig. 6 is a detail sectional view of the lower track or slot, and Fig. 7 is a detail view to illustrate the ball-bearing construction on which the roller is mounted at its ends.

Referring by numerals to the drawings, the numeral 1 designates the frame or casing, which is adapted to be inserted bodily in the opening or recess where the door is to be placed, said casing having the side compartments 2 and 2', the vertical guides or channels 3 and 3', and the upper and lower slots forming tracks 4 and 4'.

In the compartment 2 and in the upper and lower walls thereof are secured the bearing-plates 5, having channels or annular grooves 6, which, in connection with the plates 7, having annular grooves 8, form the tracks or guideways for the balls 9, forming ball-bearings for the upper and lower ends of the roller 10.

Near the upper end of the roller is attached one end of the chain or cord 11, which passes from the roller over the guide-pulley 12, mounted in the hanger 13, and at its free end is connected to the weight 14, and the purpose of this weight and chain connection is to act as a counterbalance and to turn or revolve said roller to wind the flexible or canvas door 15 upon said roller. The canvas or flexible door is connected at one end to said roller and travels in the tracks 4 and 4' of the casing and is provided with the strip or edge rail 16, which carries at its upper and lower ends the guide-plates and keepers 17, which move in said upper and lower tracks. To the upper and lower ends of said plates are connected the ends of the pair of chains 18 and 18', which are guided by pulleys 19 and 19', mounted in the series of hangers 20, and to the ends of said chains are connected the weights 21 and 21'.

From the foregoing description, taken in connection with the drawings, the operation of our door will be readily understood, and it will be noted that the door slides or travels

upon the vertical roller and back and forth in the upper and lower tracks and that the weights serve to assist materially in the opening and closing of said door.

5 The numerous advantages of a door of this character will be readily understood and appreciated by all skilled in such matters, and it is evident that it can be ornamented to present the appearance of a heavy or massive  
10 wooden door, also that it can be manufactured at a very small price, also that it serves every purpose in an efficient and practical manner and possesses every requisite to commend it as useful, desirable, and practical.

15 We claim—

The combination with a frame or casing of an upright roller having a flexible door connected thereto and adapted to roll on and unroll therefrom, upper and lower guide-grooves  
20 in said casing, a vertical guide-strip on the

door adapted to move in said guide-grooves, a chain attached to each end of said strip, pulleys in the upper portion of said casing over which said chains pass and weights attached to said chains, a guide-pulley at the 25 lower end or portion of the casing for one of said chains; a chain attached to the roller passed therearound and over a pulley in the casing, and a weight attached to said chain, said weight being of a size to counterbalance 30 the two first-mentioned weights, whereby the door may be opened or closed with uniformity.

In testimony whereof we affix our signatures in presence of two witnesses.

CHARLES O. DODGE.  
GEORGE MILLER.

Witnesses:

W. H. STAFFORD,  
FRED OMSTED.