

No. 883,731.

W. H. MITCHELL.

PATENTED APR. 7, 1908.

SLIDING DOOR.

APPLICATION FILED MAY 6, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

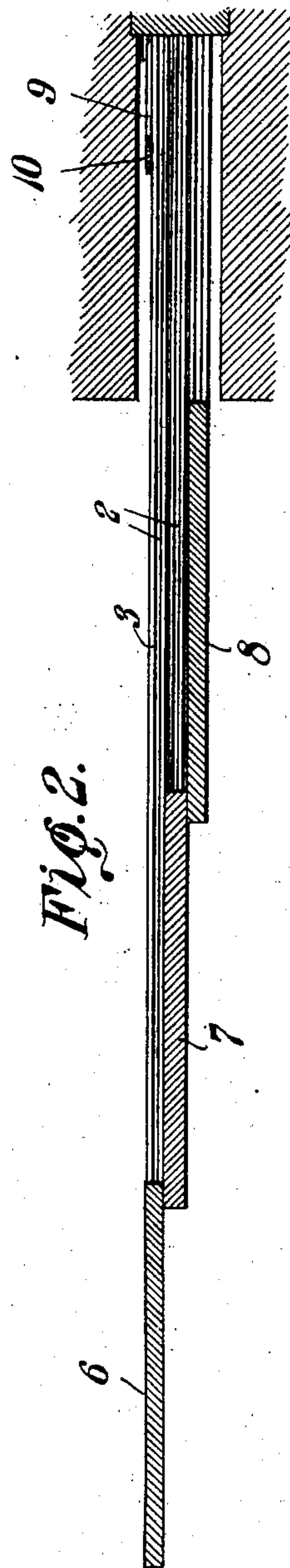
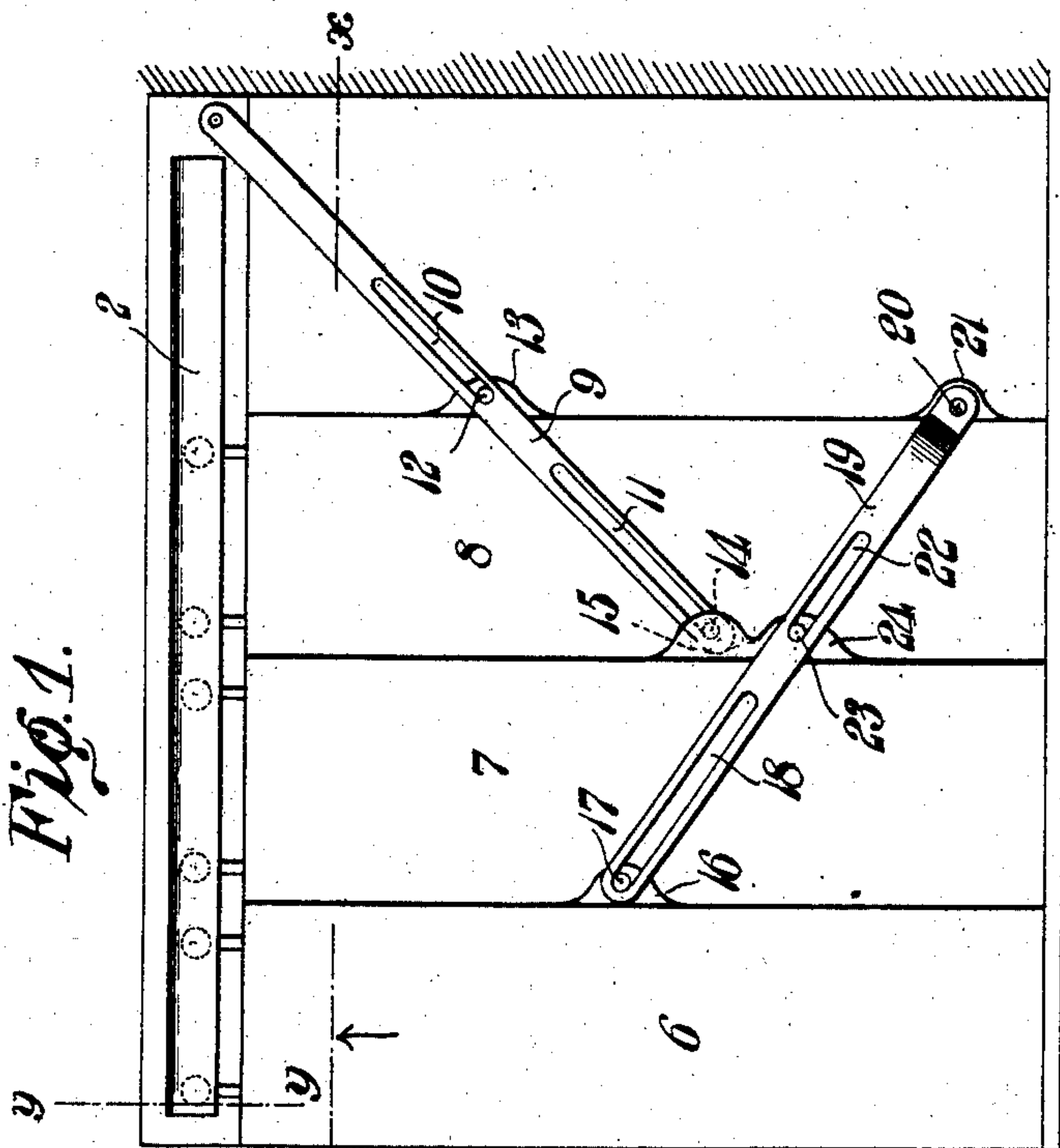


Fig. 2.

WITNESSES:

E. H. H. H.
Albert D. Lawson

William H. Mitchell

INVENTOR

By

C. A. Snow & Co.

ATTORNEYS

No. 883,731.

W. H. MITCHELL.
SLIDING DOOR.

PATENTED APR. 7, 1908.

APPLICATION FILED MAY 8, 1907.

2 SHEETS—SHEET 2.

Fig. 5.

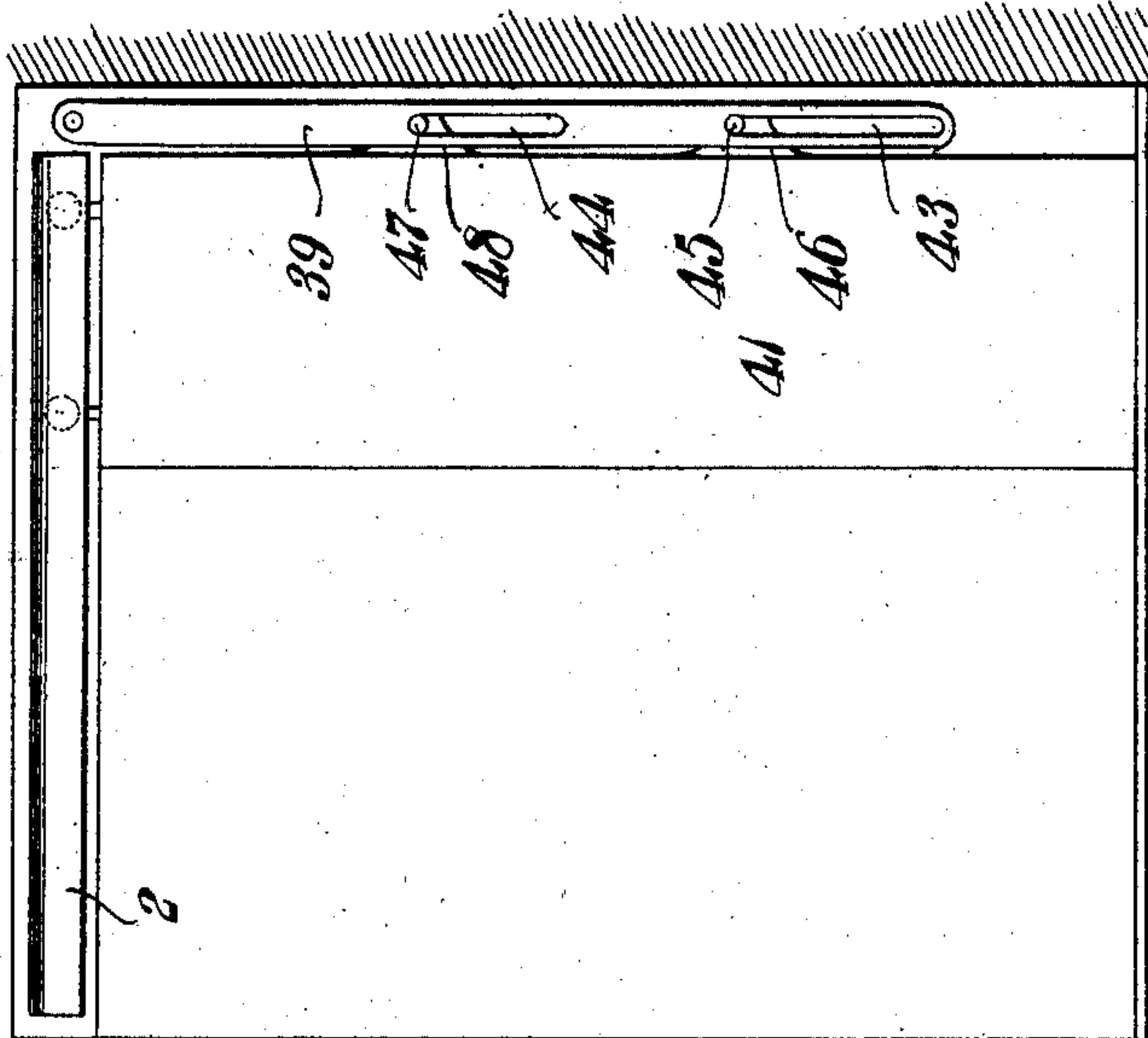


Fig. 3.

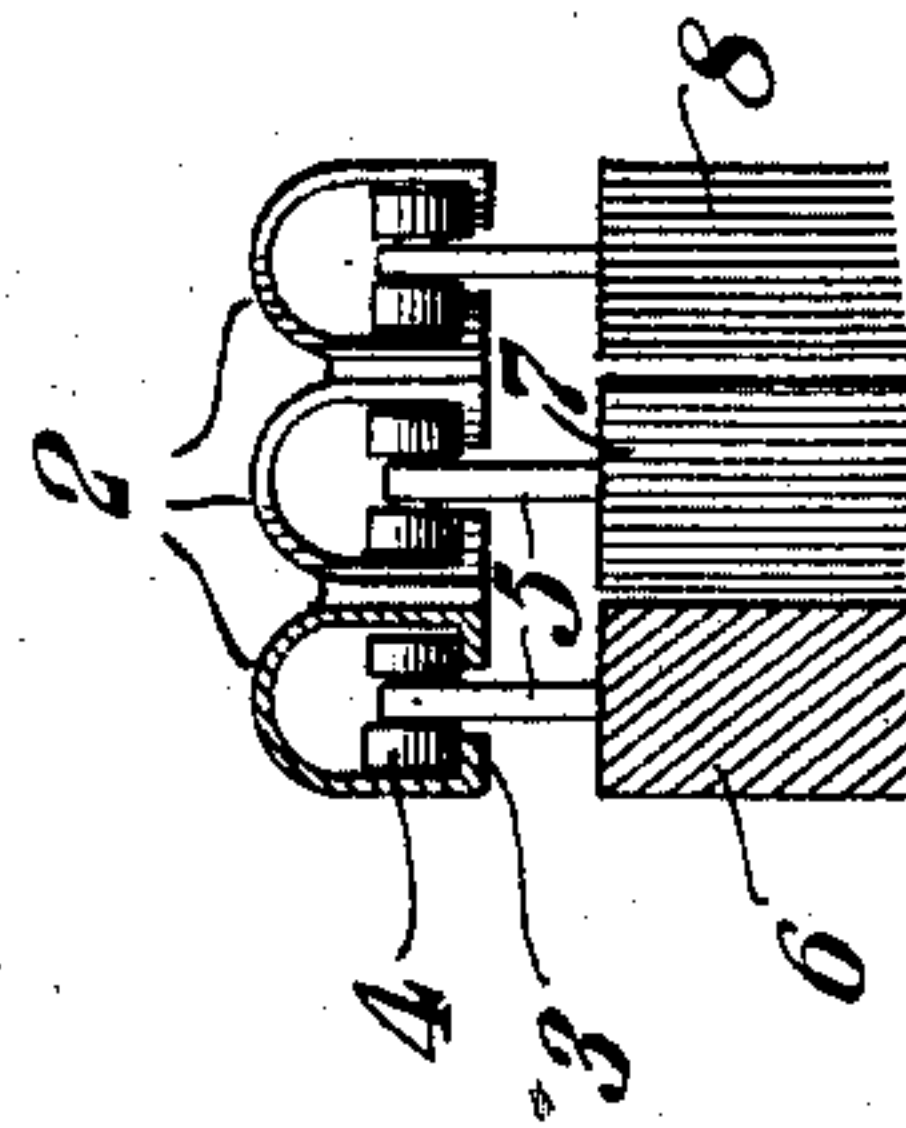
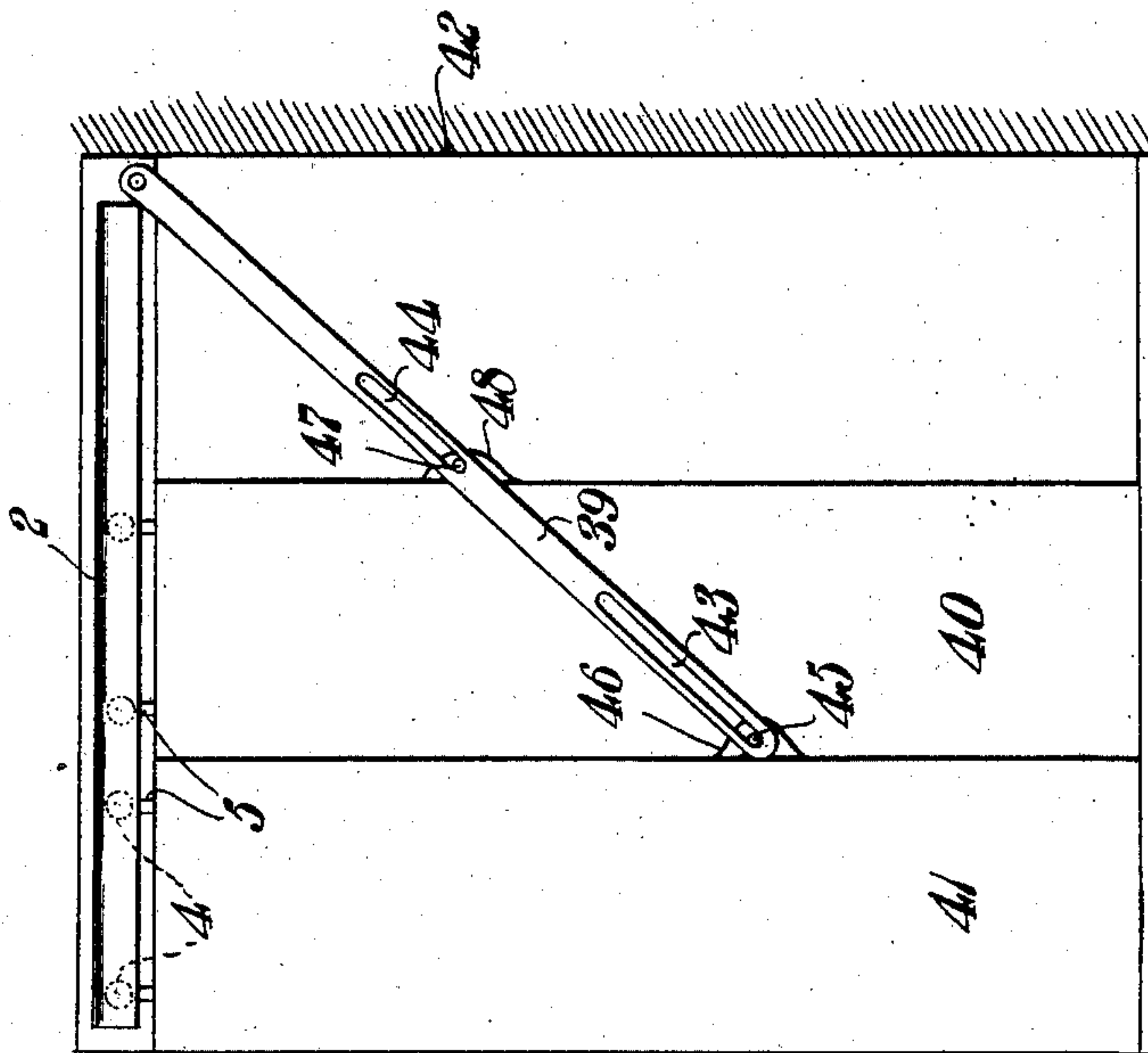


Fig. 4.



WITNESSES:

E. J. Blount
Albert D. Lawson

William H. Mitchell, INVENTOR.

By *C. A. Snow & Co.*
ATTORNEYS

UNITED STATES PATENT OFFICE.

WILLIAM H. MITCHELL, OF CAMBRIDGE, MASSACHUSETTS, ASSIGNOR OF ONE-THIRD TO ASA H. FIELD AND ONE-THIRD TO SAMUEL B. FIELD, OF CAMBRIDGE, MASSACHUSETTS.

SLIDING DOOR.

No. 883,731.

Specification of Letters Patent.

Patented April 7, 1908.

Application filed May 6, 1907. Serial No. 372,142.

To all whom it may concern:

Be it known that I, WILLIAM H. MITCHELL, a citizen of the United States, residing at Cambridge, in the county of Suffolk and State of Massachusetts, have invented a new and useful Sliding Door, of which the following is a specification.

This invention relates to sliding doors of that character made up of a plurality of lapping slidable panels.

The object of the invention is to provide simple and efficient means whereby the panels will be simultaneously moved in one direction when a pull is exerted upon any one of them.

A still further object is to provide means for moving the panels at different speeds whereby the door can be folded into a housing provided therefor or can be quickly extended therefrom.

Another object is to provide mechanism which will not readily get out of order and which will positively actuate the panels.

With these and other objects in view the invention consists of certain novel features of construction and combinations of parts which will be hereinafter more fully described and pointed out in the claims.

In the accompanying drawings is shown the preferred form of the invention.

In said drawings: Figure 1 is an elevation of a door embodying the present improvements, said door being shown formed with three panels and the housing of the door being illustrated in section; Fig. 2 is an enlarged section on line $x-x$, Fig. 1 and taken in the direction of the arrow; Fig. 3 is an enlarged transverse section on line $y-y$, Fig. 1. Fig. 4 is an elevation of a two-panel door of modified construction. Fig. 5 is an elevation of the door shown in Fig. 4 when collapsed or folded.

Referring to the figures by characters of reference, 1 designates a housing which may be formed in any suitable manner and which is of slightly greater depth than the width of any one of the door panels hereinafter described and which is of sufficient width to receive all of said panels when the door is folded. Supported within the upper end of this housing in any preferred manner and extending therebeyond and across the space to be closed are three rails each of which has been indicated by the numeral 2. These rails may be of any desired construction and

as shown in Fig. 3 may be of inverted U-shape and provided with inwardly extending flanges 3 designed to support rollers 4. Hangers 5 are supported between these rollers and are carried thereby and two sets of rollers and their hangers are supported by each rail although it is to be understood that one or more hangers and rollers may be carried by each rail, it merely being necessary to employ movable devices upon each rail which are sufficient to properly support a door panel. Each set of hangers shown in Figs. 1 and 3 is connected to a door panel 6, 7 and 8 respectively. As one of the panels is suspended below each rail it is obvious that they will move along parallel vertical planes.

Pivotally connected to the upper portion of the housing 1 is a bar 9 having longitudinal slots 10 and 11 therein and the upper slot 10 is designed to receive a stud 12 extending laterally from ear 13 upon the rearward edge of the inner panel 8. The other slot 11 is designed to receive a stud 14 extending laterally from an ear 15 which projects from the rear edge of the middle panel 7. The parts are so proportioned that the studs 12 and 14 simultaneously contact with the lower ends of the slots when the panels have been extended as far as possible without forming openings between the adjoining edges thereof. The third or outer panel 6 also has an ear 16 upon its rear edge and from which extends a lateral stud 17 which projects loosely into a slot 18 formed longitudinally within a connecting bar 19. The lower end of this bar is pivoted, as at 20, upon an ear 21 extending from the rear edge of panel 8 and another slot 22 is formed in the bar and receives a stud 23 extending laterally from an ear 24 upon the rear edge of panel 7. The pivoted end of the bar 19 is preferably offset so as to permit the panel 7 to work between the bar 19 and panel 8.

It is believed that the operation of the door will be fully understood from the foregoing description. When the panel 6 is pressed toward the housing the stud 17 swings the bar 19 upward upon its pivot 20 and said bar presses backward on stud 23 so as to cause an inward movement of the panel 7. The stud 14 will therefore swing the bar 9 backward into the housing and cause it to pull on stud 12 and draw the panel 8 into the housing. It is therefore apparent that upon the completion of the

inward movements of the panels they will have assumed positions side by side within the housing and with the bars 9 and 19 between the rear edges of the panels and the inner wall of the housing. When the panel 6 is drawn outward from the housing the forgoing operation is reversed and the door is extended as shown in Fig. 1.

In the construction shown in Figs. 4 and 5 a single bar 39 is provided for the purpose of causing the simultaneous movement of the two panels 40 and 41. This bar is pivoted to the upper end of the housing 42 and has longitudinal slots 43 and 44. Slot 43 receives a stud 45 extending laterally from an ear 46 upon the rear edge of panel 41 and slot 44 receives a stud 47 extending laterally from an ear 48 on the rear edge of panel 40. This bar operates in the same manner as does the bar 9 in Fig. 1.

What is claimed is:

1. The combination with lapping slidable panels and a housing disposed to receive the panels; of a bar pivoted within the housing and having spaced longitudinal slots therein, means upon certain of the panels for slidably engaging the respective slotted portions of the bar, a bar pivotally connected to one of said last mentioned panels, and means upon the remaining panels for slidably engaging said bar.

2. The combination with lapping slidable panels; of a bar pivotally connected to the rear edge of one of the panels and having longitudinal slots, and means upon the rear

edge of the adjoining panels disposed to work within the slots.

3. A door having two lapping panels, supporting tracks for the panels, a longitudinally slotted pivotally mounted bar, means extending laterally from one of the panels for slidably engaging the bar, and means in rear of the other panel for slidably engaging the bar, said bar being disposed in the path of the last mentioned panel.

4. A door having two lapping slidable panels, a pivoted bar in the path of one of the panels and having alining longitudinal slots, laterally extending means upon one of the panels movably mounted in one of the slots, and means in rear of the other panel and movably mounted in the other slot, said last mentioned panel and the bar being disposed in the same plane.

5. A door having lapping slidable panels, a housing, a bar pivoted within the housing and disposed in the same plane with one of the panels and movable along one side of the adjoining panel, laterally extending means upon one of the panels for slidably engaging the bar, and means in rear of the other panel for slidably engaging the bar.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM H. MITCHELL.

Witnesses:

ASA H. FIELD,
ORISON S. PHELPS.