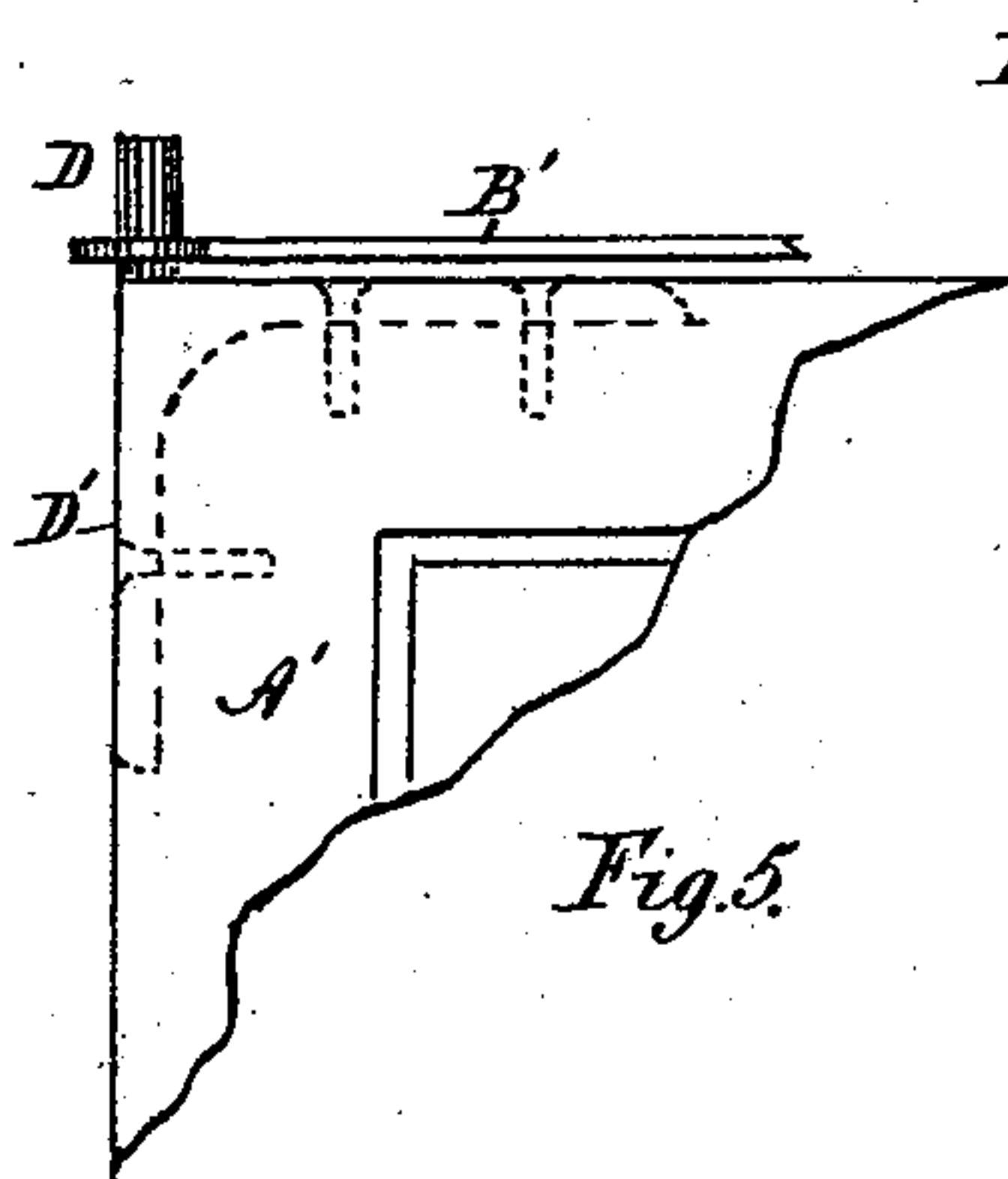
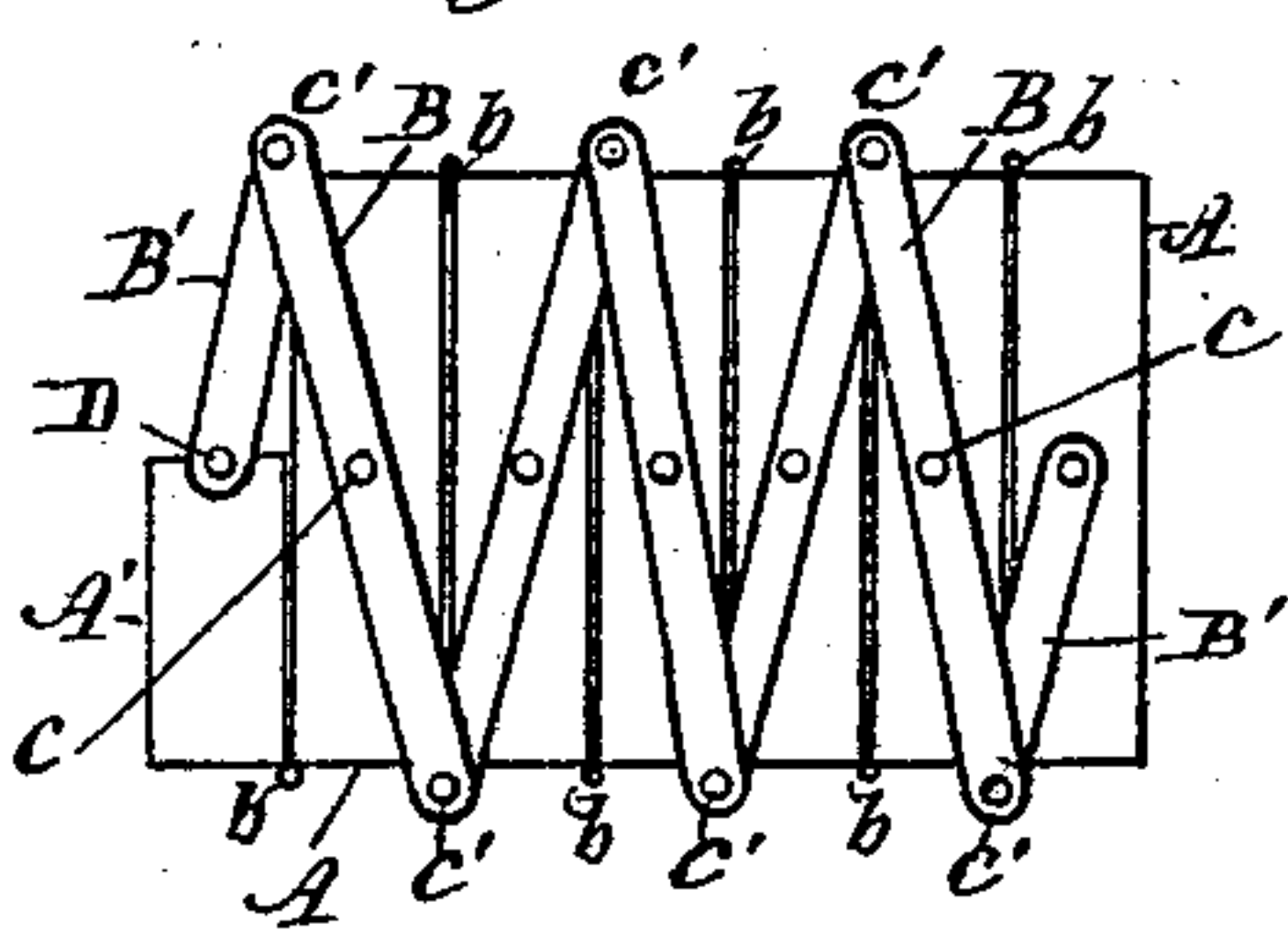
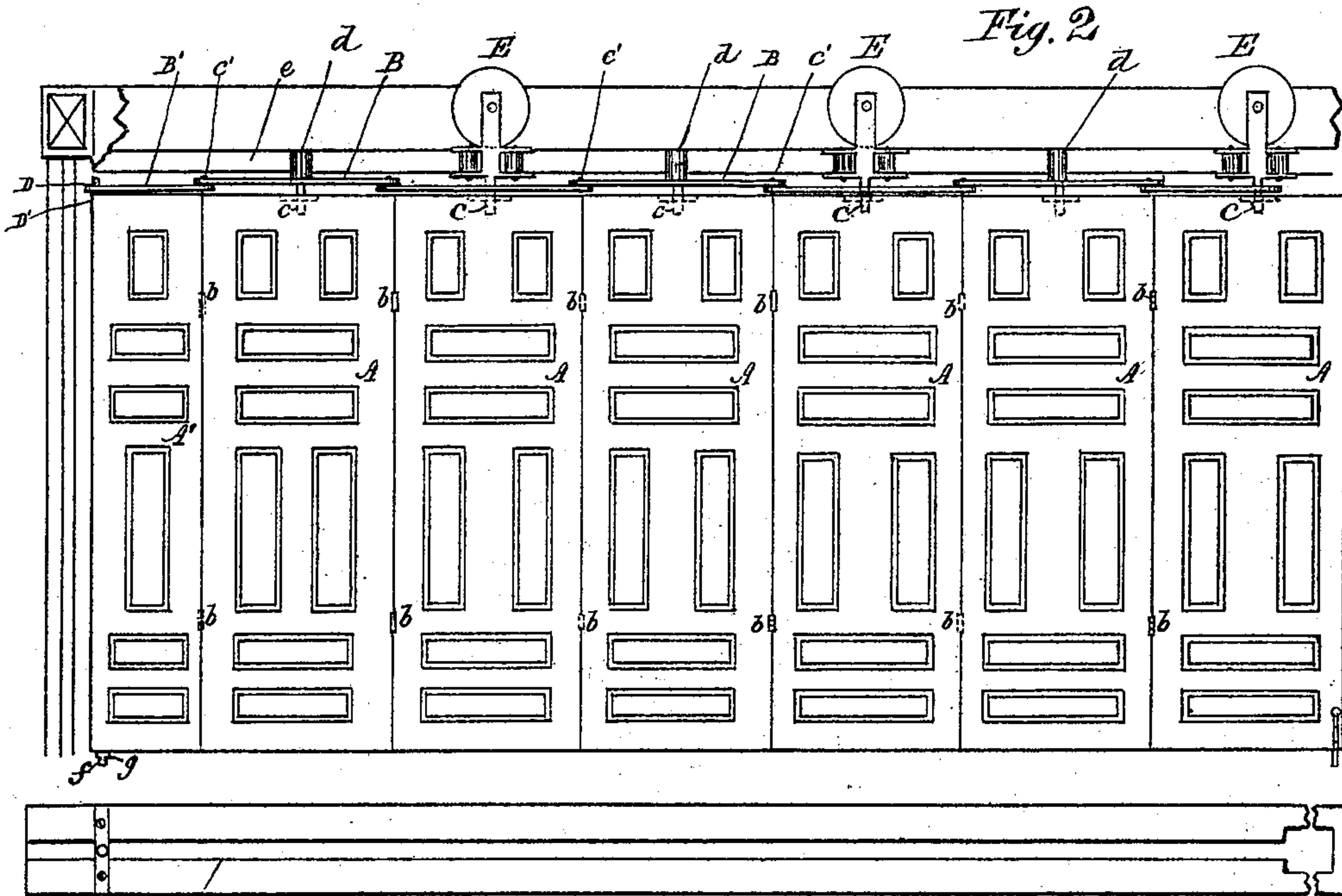
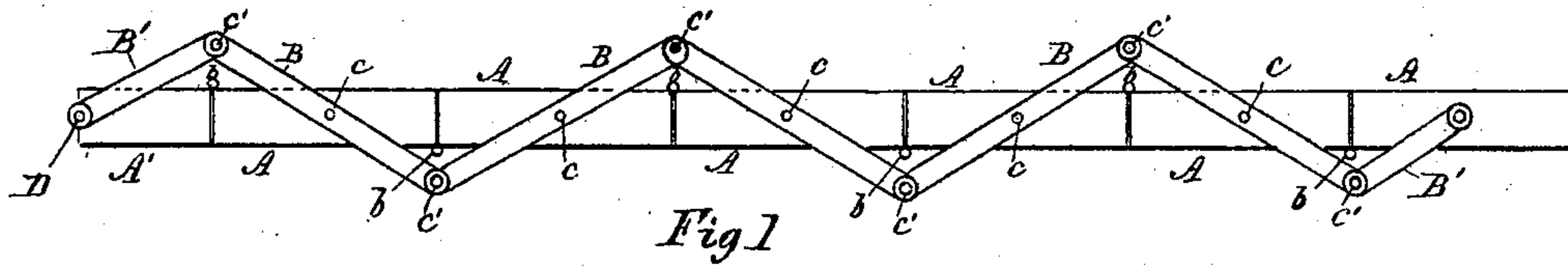


(No Model.)

O. T. SPRINGER.
FOLDING DOOR.

No. 582,240.

Patented May 11, 1897.



Witnesses

L. J. Gully.
Jas. C. Gully.

Inventor

Oliver T. Springer
By H. Bruce
Atty

UNITED STATES PATENT OFFICE.

OLIVER TIFFANY SPRINGER, OF BURLINGTON, CANADA.

FOLDING DOOR.

SPECIFICATION forming part of Letters Patent No. 582,240, dated May 11, 1897.

Application filed December 14, 1896. Serial No. 615,592. (No model.)

To all whom it may concern:

Be it known that I, OLIVER TIFFANY SPRINGER, a citizen of the Dominion of Canada, residing at Burlington, in the county of Halton, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Folding Doors; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same.

The invention relates to a further improvement in folding doors or partitions for which Letters Patent of the United States were granted to me the 8th day of September, 1896, No. 567,570, the nature of which will be described as follows:

The improvement consists in applying a number of levers or what is known in mechanical terms as "lazy-tongs," pivoted to the top of the doors or one half-section of the levers, each pivoted to a door in the center and their ends pivoted together. The doors thus form the other half of the lazy-tongs. Only the width of each door will be a little shorter than the length of each section of the tongs.

The object of the device is, the doors when placed in the form of a partition will remain in a straight line when closed, they at the same time will open much more easily. They are also automatically locked when thrown in a straight line and the first door of the series bolted at its edge. The doors can be opened and closed without any tendency to bind against the sides of the track-groove. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents a plan or top view of the doors and one half-section of the lever attachment. Fig. 2 is a front elevation of the same. Fig. 3 is a top view of doors when folded back side by side. Fig. 4 is a top view of track. Fig. 5 is a section of top of half-door, showing hinge-pin plate attached thereto.

In the drawings, A represents the doors, connected alternately by hinges *b*.

A' is a half-width door (or more) at one end of the series.

B B, &c., represent a series of levers, each one pivoted by a pin *c* in the top center of each door and also the ends of each lever B, pivoted to one another by pivot-pins *c'*. The top of each pin *c* is provided with an anti-friction-roller *d* to remove friction when they are running between the tracks *e*.

B' is a half or short length of the lever, and one end of it is pivoted to a vertical hinge-pin D, affixed on the door A', which also acts as a hinge upon which the door turns.

E E E are rollers placed or attached to each alternate pin *c*. They may be placed on every door or every alternate one, and they run on the track *e* and carry the weight of the doors.

It may be observed that the hinge-pin D is cast to a plate D', which is countersunk in the corner of the half-width door A', as shown at Fig. 5, which figure also shows the pin passing through a corresponding hole in the short lever B'. A similar pin *f* may be affixed to the bottom of said door, as shown at Fig. 2, the same made to pass through a plate *g*, so that the door may be hinged at top and bottom.

It will be observed that the levers can be applied to the bottom of the doors as well as the top and control the motion just the same by simply inserting pins in the middle of the width of each door and pivoting the levers thereto, as well as to one another; but I prefer them on the top of the doors. It will further be observed that the levers may be applied to doors or sections of doors of equal width by constructing a short piece of track on the floor in which to operate a pin and roller to allow the door or section nearest the wall to move half or more of its width in line of the partition.

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

1. In combination with folding sliding doors, or movable partitions, of a series of levers jointed together at their outer ends, and each lever pivotally connected to the top width of each door, which are hinged or pivotally connected to each other at their edges, substantially as described.

2. In combination with folding sliding or

movable partitions, of a series of levers piv-
oted to the top or bottom of each door and to
each other, the doors being hinged or pivot-
ally connected at their edges, to form the
5 mechanical structure similar to that com-
monly known as "lazy-tongs" substantially
as and for the purpose specified.

Dated at Hamilton, Ontario, this 19th day
of November, 1896.

OLIVER TIFFANY SPRINGER.

In presence of—

WM. BRUCE,

L. M. NEILLY.