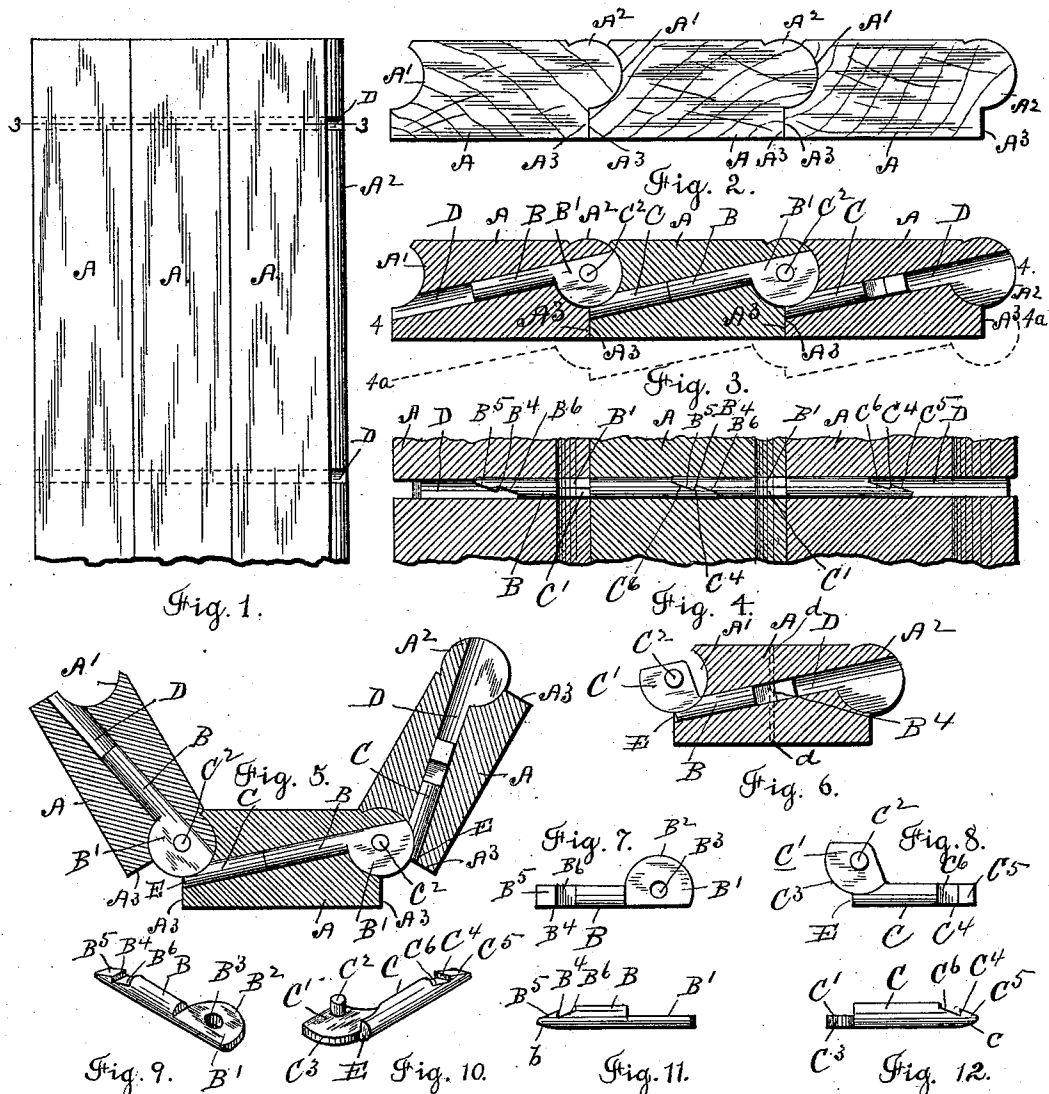


(No Model.)

A. S. SPAULDING.
FLEXIBLE DOOR.

No. 531,227.

Patented Dec. 18, 1894.



Witnesses.
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UNITED STATES PATENT OFFICE.

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FLEXIBLE DOOR.

SPECIFICATION forming part of Letters Patent No. 531,227, dated December 18, 1894.

Application filed March 2, 1892. Serial No. 423,461. (No model.)

To all whom it may concern:

Be it known that I, ALGENON SEADON SPAULDING, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Flexible Doors, of which the following is a specification, reference being had to the accompanying drawings, representing such portions of a flexible door as are necessary to illustrate the nature of my invention, and in which—

Figure 1 denotes a portion of the body of the door shown in front elevation. Fig. 2 is an end view of the same. Fig. 3 is a transverse sectional view on line 3, 3, Fig. 1. Fig. 4 is a vertical sectional view taken in the plane 4, 4, Fig. 3 of one row of the hinge bolts, the form of said section being indicated by the broken line 4^a, 4^a, Fig. 3 drawn parallel to the section 4, 4. Fig. 5 shows the same sectional view as represented in Fig. 3, but with the leaves forming an angle with each other. Fig. 6 is a transverse sectional view of one of the leaves and showing one of the hinge bolts in position. Fig. 7 represents the underside of one of the hinge bolts. Fig. 8 represents the upper side of the other hinge bolt the bolts shown in Figs. 7 and 8 forming a pair. Figs. 9 and 10 are perspective views of the two hinge bolts forming a pair, and Figs. 11 and 12 represent edge views of the bolts B, C, and flattened heads B', C'.

Similar letters refer to similar parts in the different figures.

My invention relates to the body of a door or curtain consisting of a series of parallel bars or leaves hinged together at their edges and adapted to close a door, or window opening, for the flexible curtains of roll top desks and the movable partitions of rooms and for similar purposes and it relates particularly to the method by which the parallel leaves are hinged together and united at their edges.

In Fig. 1 I have shown a small portion of the body of the door consisting of the ends of three of the parallel bars, or leaves of which the body of the door is comprised; and in Fig. 2 I have represented an end view of the same, showing the alternate convex and concave edges which are made to fit each

other forming an articulated joint between the edges of adjacent leaves, preferably provided with a shoulder by which the several leaves can be maintained in the same plane. 55

Referring to the drawings, A denotes the leaves of which the body of the door is formed provided with concave edges A' and upon the opposite edge with a convex bead A² fitting the concave edge of the next adjacent leaf, each being provided with a shoulder A³, which is made to abut when the leaves are extended in the same plane, as represented in Figs. 1, 2 and 3, and allowing the leaves to be turned in one direction as represented in Fig. 5. If desired, however, the shoulders A³ can be omitted and the convex beads A² be formed in the central section of the leaves, allowing the leaves to be bent in either direction. 60 65 70

The parallel leaves A are hinged together at their edges by means of the hinge bolts B and C represented in Figs. 7 to 12, which are inserted in holes D, bored transversely to the leaves A and obliquely to the plane of the leaves. The bolt B is provided with a flattened head B' half the thickness of the bolt and bounded on one side by a circular arc B² corresponding with the curvature of the bead A². The flattened head B' is provided with a concentric hole B³ to receive the pintle of the opposite bolt, and the end of the bolt B is notched forming a shoulder B⁴ and provided with the inclined surfaces B⁵ and B⁶. 75 80 85

The hinge bolt C has at one end a flattened head C' half the thickness of the bolt and having a projecting stud C² forming the pintle. The head C' is bounded upon one side by a circular arc C³ concentric with the pintle C² and corresponding with the arc B². The opposite end of the bolt C is notched in the same manner as the bolt B having a shoulder C⁴ and inclined surfaces C⁵ and C⁶. The transverse holes D are bored to fit the diameter of the bolts B and C which are inserted in the leaf upon opposite sides, so that when the bolts are in position to bring the hole B³ and pintle C² concentric with the convex bead A² the notched ends of the bolts will overlap, causing the shoulder B⁴ to engage the shoulder C⁴ and the inclined surfaces C⁵ and C⁶ to lie against the inclined surfaces B⁵ and B⁶, 90 95 100

thereby locking the inner ends of the bolts and preventing them from being withdrawn from the leaves.

I prefer to slightly bevel the ends of the bolts B and C upon the sides opposite the notches as at *b, c*, Figs. 11 and 12 in order to prevent the ends of the bolts from engaging the leaf as they are driven by each other.

The bolts are inserted in the leaves as follows: One of the bolts C is inserted in the leaf as shown in Fig. 5. The bolt B is then hinged to the bolt C by entering the pintle C² in the hole B³, and the bolt B is inserted in the edge of the adjacent leaf. One of the bolts C is then inserted in the opposite edge of the leaf, the notched end of the bolt C being driven by the notched end of the bolt B by force applied to the shoulder E, the compressibility of the wood forming the leaf, allowing the shoulder C⁴ to slide over the shoulder B⁴ locking the two bolts together. Another bolt C is then hinged to the bolt B last inserted and inserted in the next adjacent leaf, and the process repeated until the several leaves are hinged together.

Instead of interlocking the notched ends of the bolts, pins, or screws can be inserted in the leaves in the plane of the holes D and in position to be engaged by the shoulders B⁴, C⁴, as indicated by broken lines *d, d*, Fig. 4.

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

1. The combination with a series of parallel bars, or leaves, forming the body of the door, said bars having their opposing edges provided alternately with a concave edge and a convex bead fitting said concave edge, of a series of hinge bolts held transversely in said leaves and arranged in pairs, one bolt of each pair having a flattened head B' bounded on one side by a circular arc corresponding with the curvature of the convex bead on the bar, or leaf, and having a concentric hole B³ to receive the pintle of the opposite bolt, and the opposite bolt of said pair having a flattened head C' bounded upon one side by a circular arc concentric with the axis of the hinge and corresponding with the curvature of the beaded edge of the bar, or leaf, and having a

projecting stud C² entering the hole B³ and forming the pintle of the hinge, substantially as described.

2. The combination with parallel leaves or bars forming the body of the door, of a series of bolts hinged together and held transversely in said leaves and provided with notched inner ends, which overlap and engage each other, whereby said bolts are locked together, substantially as described.

3. The combination with parallel leaves, or bars forming the body of the door, of a series of bolts hinged together and held transversely in said leaves and provided with notched and beveled ends which overlap and engage each other, whereby said bolts are locked together, substantially as described.

4. The combination with a series of parallel bars, or leaves forming the body of a flexible door, of a series of bolts held in said leaves with their inner ends arranged to engage each other, whereby said bolts are locked together, said bolts being hinged together at their outer ends, substantially as described.

5. The combination with a series of parallel bars, or leaves forming the body of the door, each of said leaves having a concave edge and upon the opposite edge a convex bead fitting the concave edge of the adjacent leaf, of a series of hinge bolts held in said leaves and hinged together at their ends concentrically with the convex beads, substantially as described.

6. The combination with a series of parallel bars, or leaves forming the body of the door, of the hinge bolts B, C, held in said leaves and having flattened and curved heads B', C', the head B' being provided with a concentric hole B³ and the head C' having a concentric pintle C² by which said heads are hinged together, the opposite ends of said bolts being provided with interlocking notches having shoulders B⁴, C⁴ and inclined surfaces B⁵, B⁶, C⁵, C⁶, substantially as described.

Dated this 25th day of February 1892.

ALGENON S. SPAULDING.

Witnesses:

RUFUS B. FOWLER,
EMMA KESTER.