

No. 684,297.

Patented Oct. 8, 1901.

O. NIEHAUS.  
HINGE.

(Application filed Mar. 5, 1901.)

(No Model.)

Fig. 1.

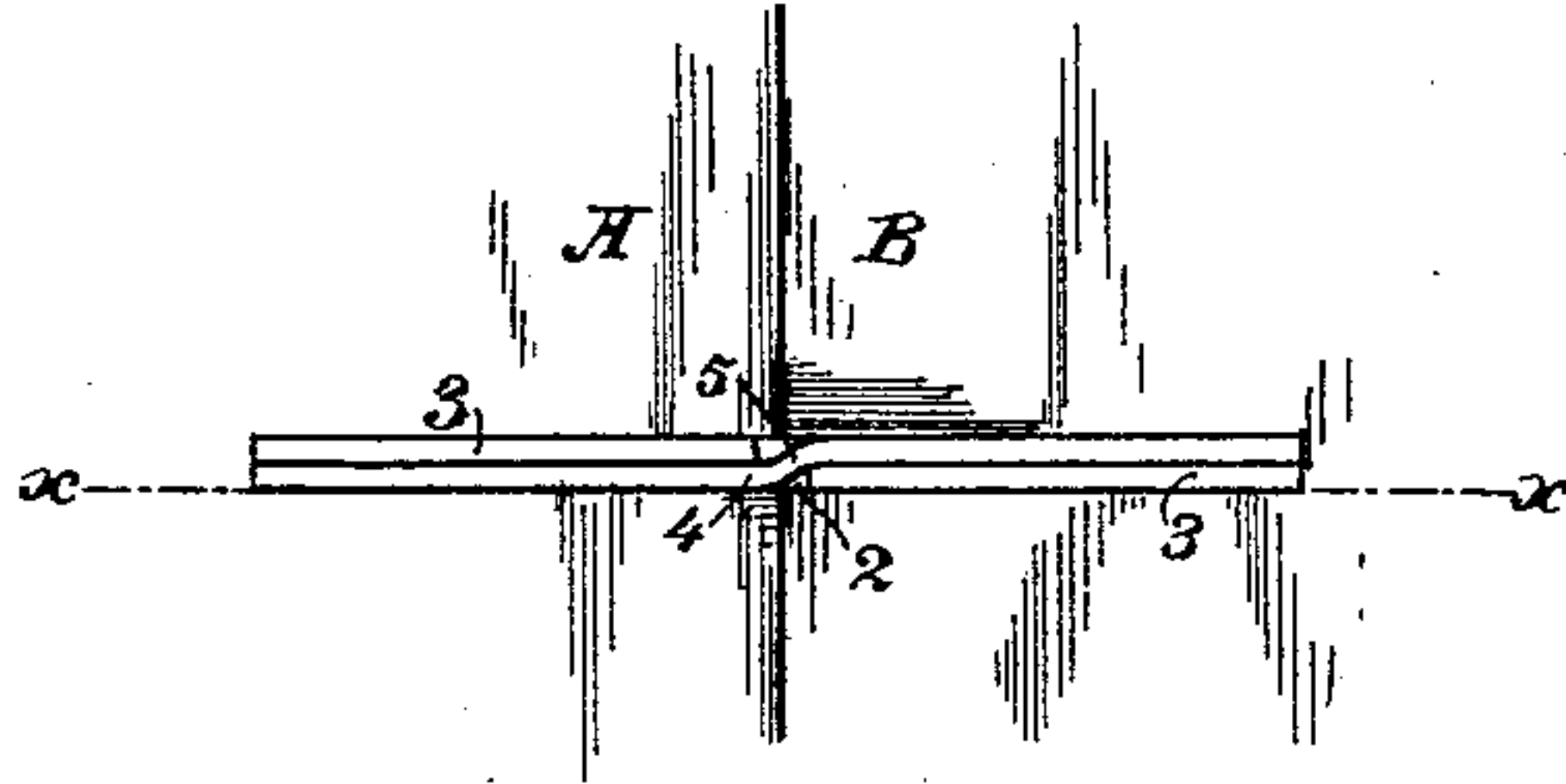


Fig. 2.

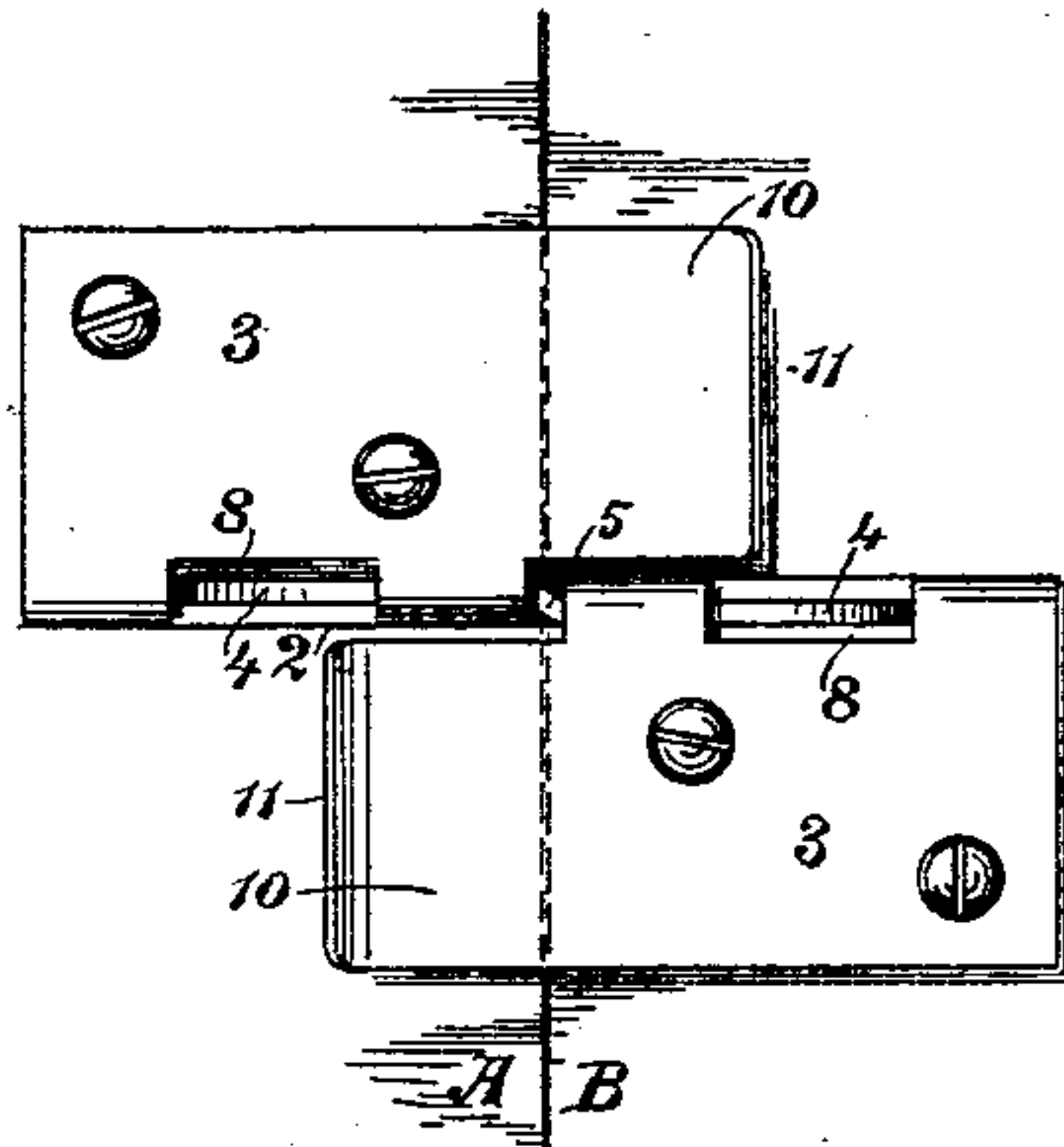


Fig. 4.

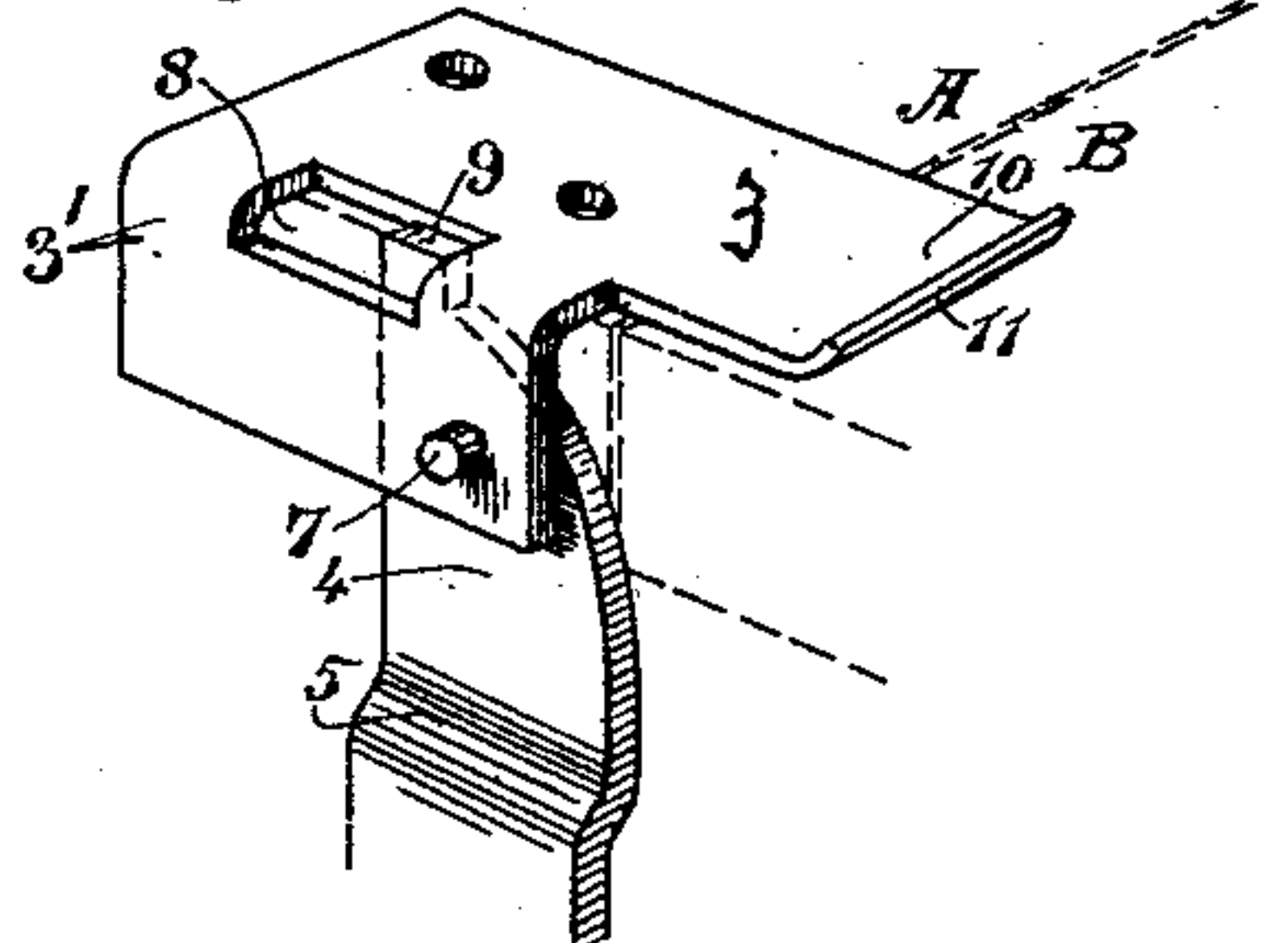
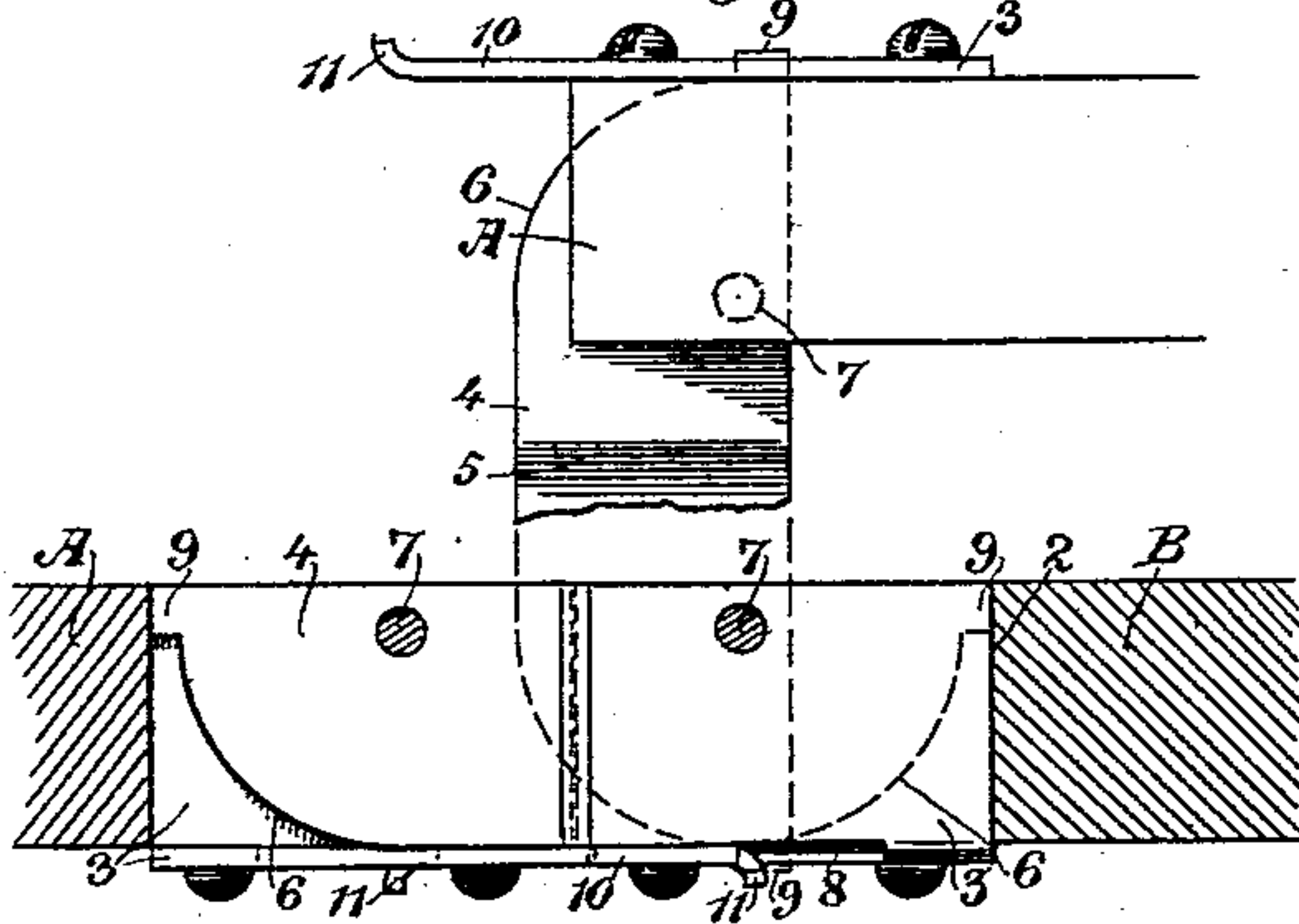


Fig. 3.



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# UNITED STATES PATENT OFFICE.

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## HINGE.

SPECIFICATION forming part of Letters Patent No. 684,297, dated October 8, 1901.

Application filed March 5, 1901. Serial No. 49,758. (No model.)

*To all whom it may concern:*

Be it known that I, OTTO NIEHAUS, a citizen of the United States, residing at West Berkeley, county of Alameda, State of California, have invented an Improvement in Hinges; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to a novel hinge which is applicable to the leaves of extension-tables and to like parts which it is desirable to have fold upon each other or be extended into a common plane with flush surfaces of close joints.

It consists of the parts and the constructions and combinations of parts hereinafter described and claimed.

Figure 1 is a top view of the table and joints. Fig. 2 is a bottom view of the same. Fig. 3 is a vertical section on line *xx* of Fig. 1. Fig. 4 is a detail view of a joint-plate and link.

A and B are two abutting parts, which in the present case represent two leaves of an extension-table which it is desired to connect together in such a manner that they may lie flush and in the same surface-plane or may be folded upon each other. These parts A and B have each a transverse vertical slot made through them on their meeting edges, so as to stand in line with each other. These slots are designed to contain the hinges, which consist of plates 3, bent at right angles at about the central portion, so that one part of the plate can be secured upon the flat under surface of the board or part and the other will extend into the slot 2. Each of the bent plates forms a lip portion at 3', which lip extends only a portion of the length of the plate, and said plates are longitudinally slotted at or near the angle between the two portions thereof. The lip portions are, as shown, oppositely disposed on the respective plates, so that when in position the offsets formed on the abutting edges of the plates will permit the seating of the lip portions thereof in line with each other and also bring the slots in alinement. The parts which thus extend into the slots are connected together by a plate or link 4, which is bent so as to form an offset, as at 5, this offset lying between the abutting ends of the two plates 3 when the parts

are in place. The link 4 is pivoted to each of the plates 3, which enter the slots at a sufficient distance from the ends, as at 7, and the ends of the link are curved to form an arc 6 upon the radius of the pivot-pins 7. These arcs extend to near the end of the link, and the extreme end forms a lug or extension 9, which serves as a stop moving in the slot 8 of the plates 3 to limit the distance to which the parts A and B can be turned in one direction. These lugs are so disposed that they enter the slots 8 made in the plate 3 on the surface side of the angle and abut against one side of the slots when the hinge-link stands at approximately right angles with plates 3. This allows the parts connected by these devices to be turned or folded back upon each other, so as to stand in parallel planes without contact, and these stops limit the distance to which they can be moved in that direction. When turned in the opposite direction, the offset or shoulder 5, being bent between the ends of the plates 3, will contact with these ends when the surfaces A and B stand in a common plane with each other. By reason of the distance of the pivots which connect the link 4 with the plates 3 the parts connected may be turned about the pivots, so that the vertical ends of the connected parts A and B will abut with each other and form a smooth joint, with their surfaces lying in a common plane and the parts firmly locked together. The connecting-plates being sunk into the slots 2 from the under side the edges only of the plates 3 and the link 4 will show on the upper surface, and these edges are in the plane of the surfaces of A and B, so as not to present any protuberances or projections.

By the peculiar connection of the joints the parts A and B may be turned about these joints, notwithstanding the fact that the ends are at right angles with the surfaces and of considerable thickness and would otherwise bind if such movement were attempted. These connections may be employed for uniting such parts as here shown, where it is desired to have a perfectly flush surface when connected or to fold the parts upon each other without contact of these surfaces.

When desired, the portions of the plates 3 on the under side of the parts A and B may



be provided with extensions 10, which respectively serve to support these parts. The ends of these extensions are slightly curved outwardly, as at 11.

5 Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A hinge connection including a pair of bent plates having slots formed therein near  
10 the angles, and a link pivotally connected to a member of each of the bent plates and having an offset between the abutting ends of the two plates said link having a lug or extension working in the slots and adapted to  
15 serve as a stop to limit the distance the parts to be connected can be turned in one direction, substantially as described.

2. The combination with the parts to be connected said parts having slots in their  
20 meeting edges and extending in opposite directions, of a pair of plates bent at right angles and having slots formed in them near their angles, the bent portions adapted to be seated in the slots of the parts to be connected,  
25 and a link pivoted to one member of each of the bent plates and having extending lugs operating in the slots to limit the movement of the first named in one direction, substantially as described.

3. A hinge including two plates bent at  
30 about right angles and having slots formed therein near the angles, said plates each having a member adapted to fit a slot in one of the parts to be joined, and having the other  
35 member adapted to be secured upon the flat surface of said part, and a link pivoted to said members within the slots of the parts to be joined and having stops to engage the slots in the angles of the bent plates, substantially  
40 as described.

4. A hinge including in its structure two

plates bent at about right angles and having slots formed therein near the angles, each of said plates having a member adapted to fit a slot in one of the parts to be joined, and hav-  
45 ing the other member adapted to be secured upon the surface of said part, a link having a central vertical offset, the ends of said link being pivoted to said member within the slots of the parts to be joined, and said link hav-  
50 ing extensions or lugs at opposite ends adapted to engage the slots formed in the angles of the plates to limit the distance to which the parts may be turned about each other, substantially as described.

5. A hinge including in its construction a pair of plates bent at right angles and having slots formed therein near the angles, each of said plates having a member adapted to fit a slot in one of the parts to be joined, and hav-  
60 ing the other member adapted to be secured upon the surface of said part, a link pivoted to each of the plates within the respective slots and at a distance from the abutting ends of the parts to be united, said link having  
65 its ends curved with the pivot-pins as the radius of curvature, and having projecting lugs at the ends of the link adapted to enter the slots formed in the angles of the first-named plates when the parts are folded upon them-  
70 selves to form limiting-stops, an offset made in the link between the adjacent ends of the plates, said offset forming a shoulder to limit the movement of the plates in the opposite direction, and retain the surfaces of the parts  
75 united in a common plane.

In witness whereof I have hereunto set my hand.

OTTO NIEHAUS.

Witnesses:

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P. W. METCALF.