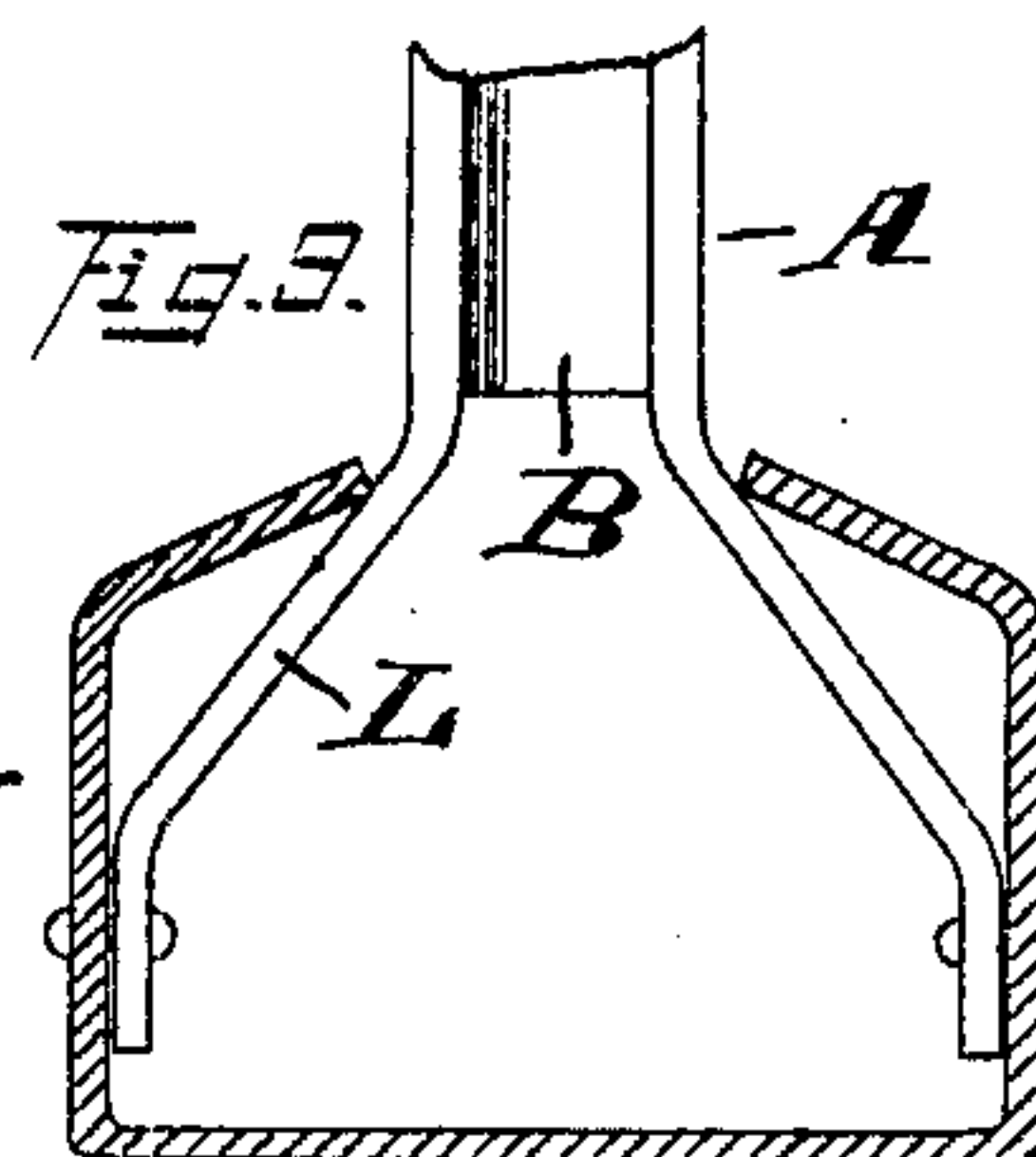
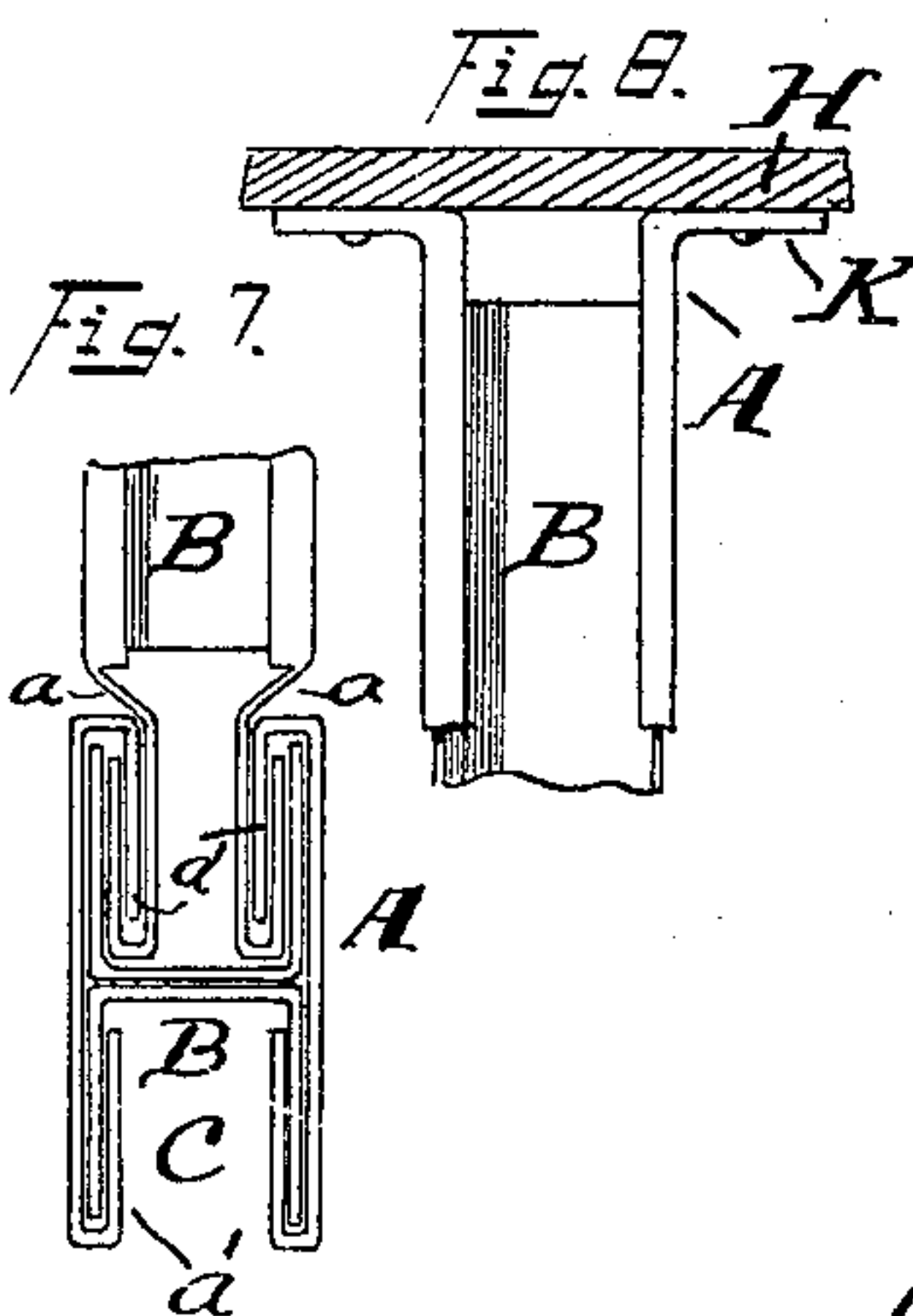
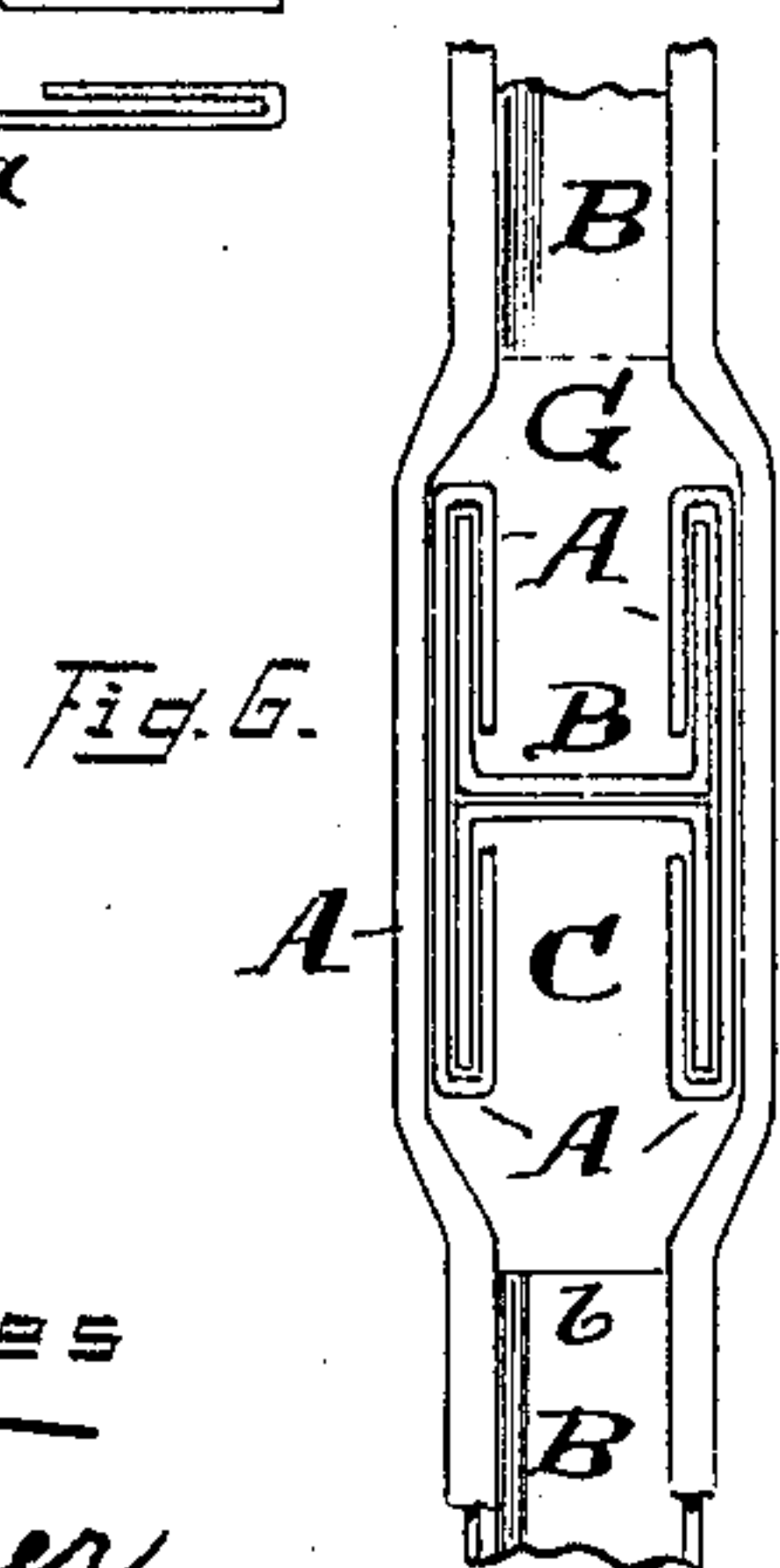
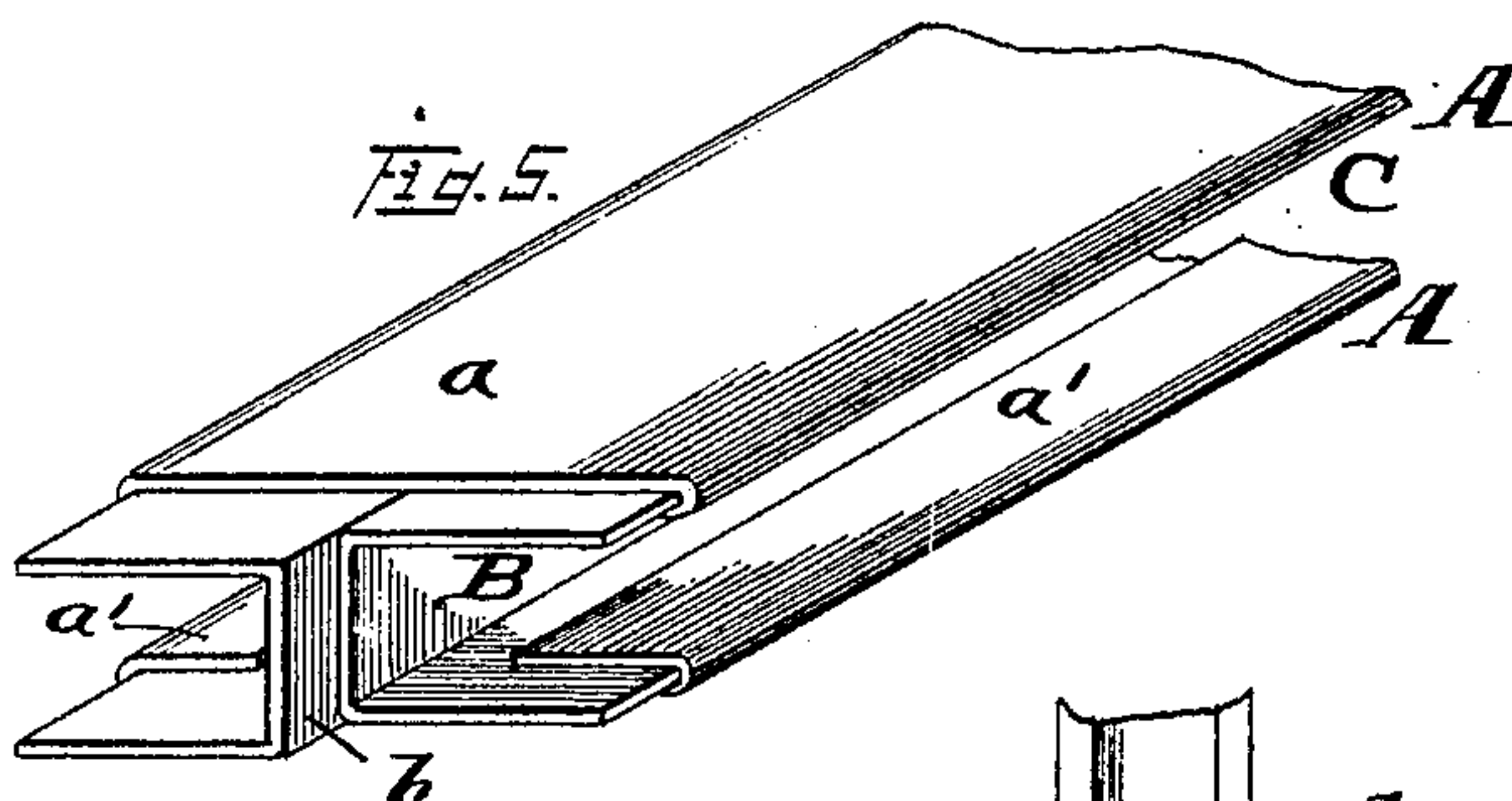
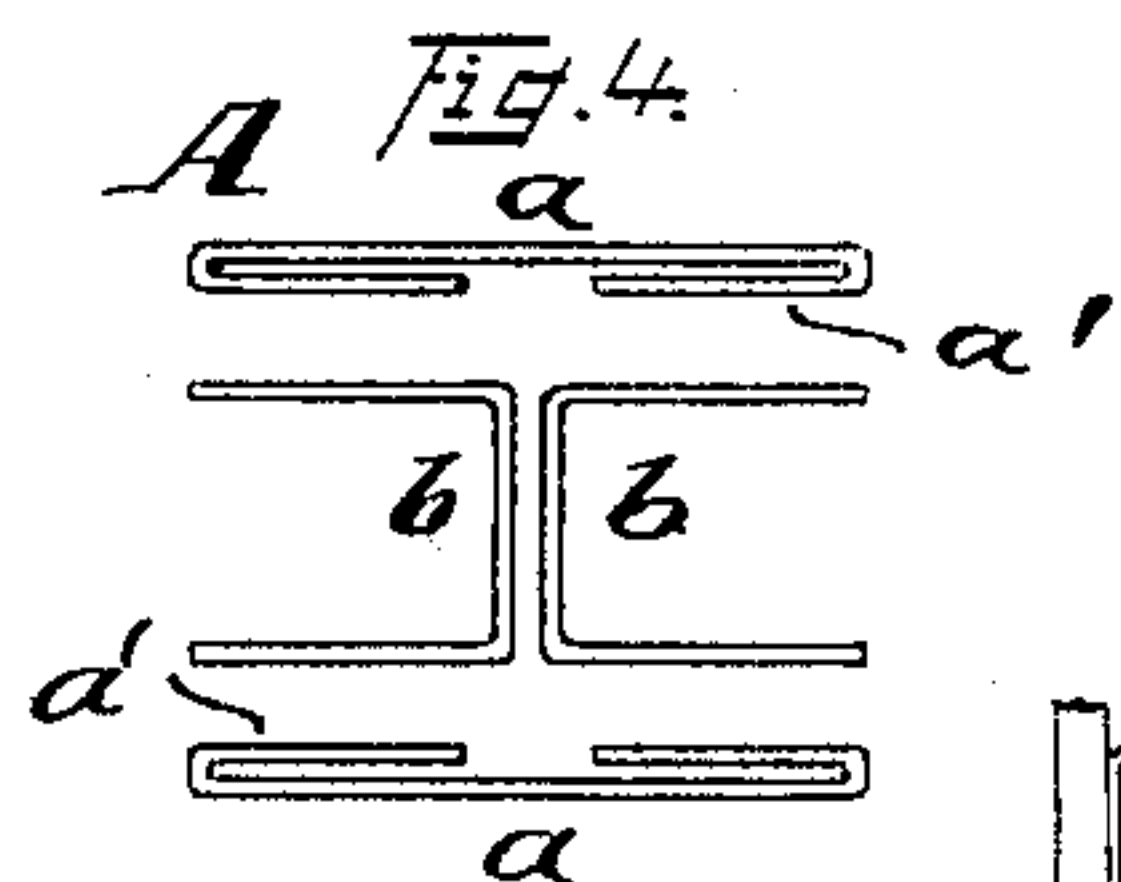
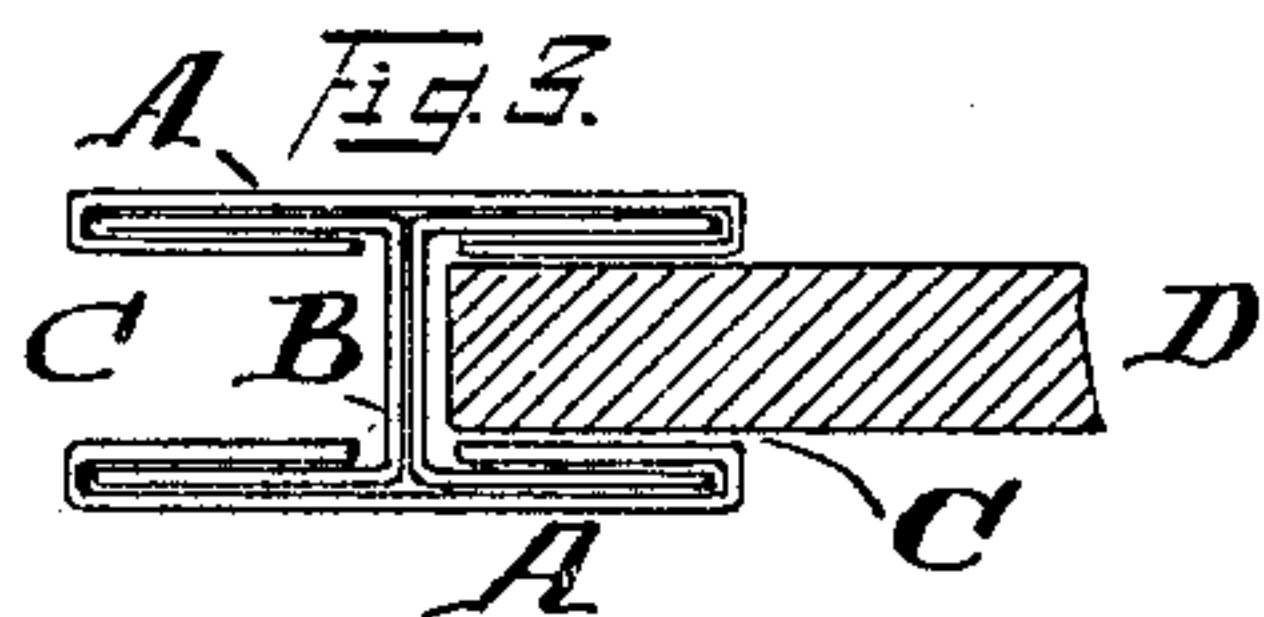
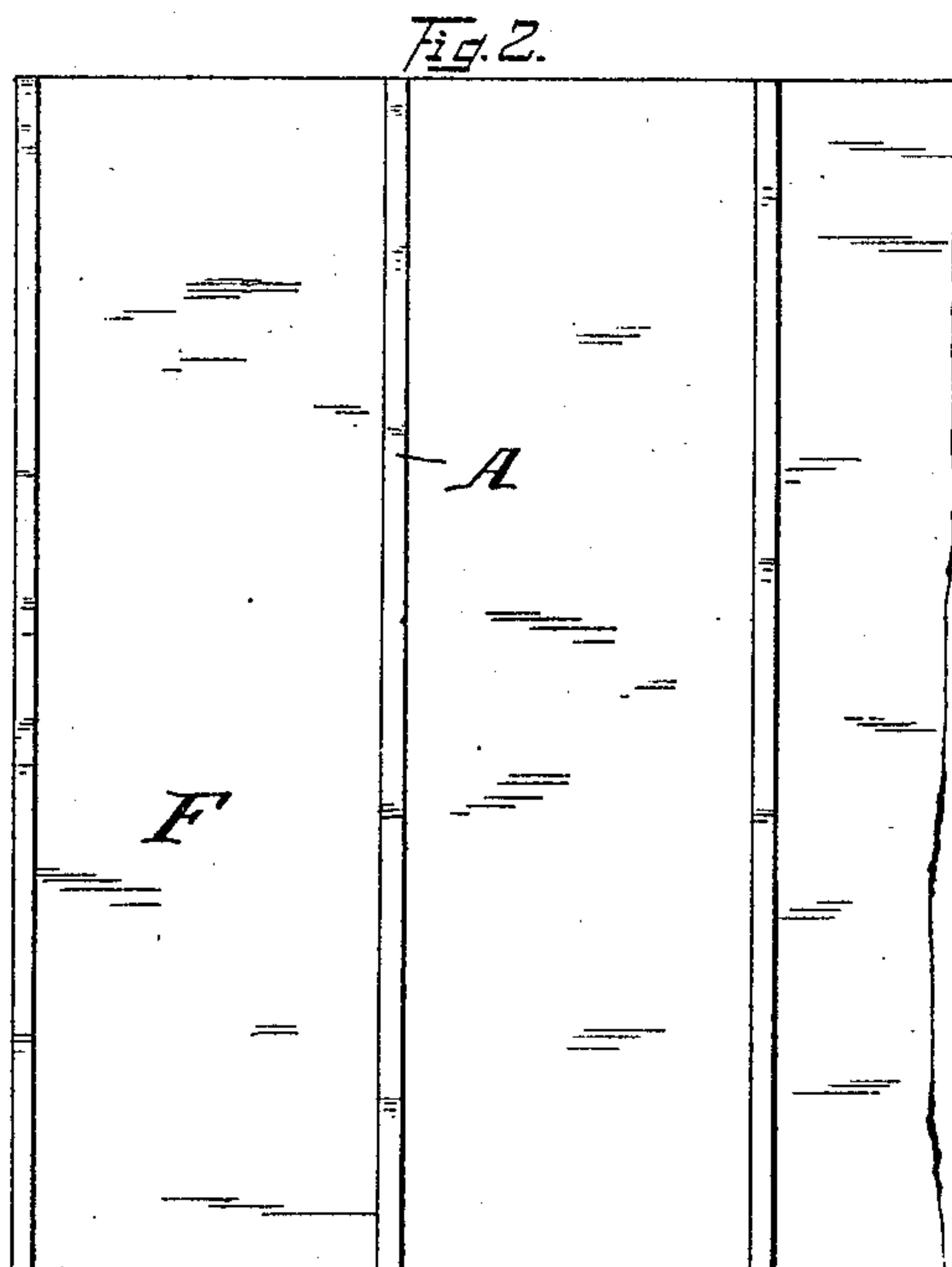
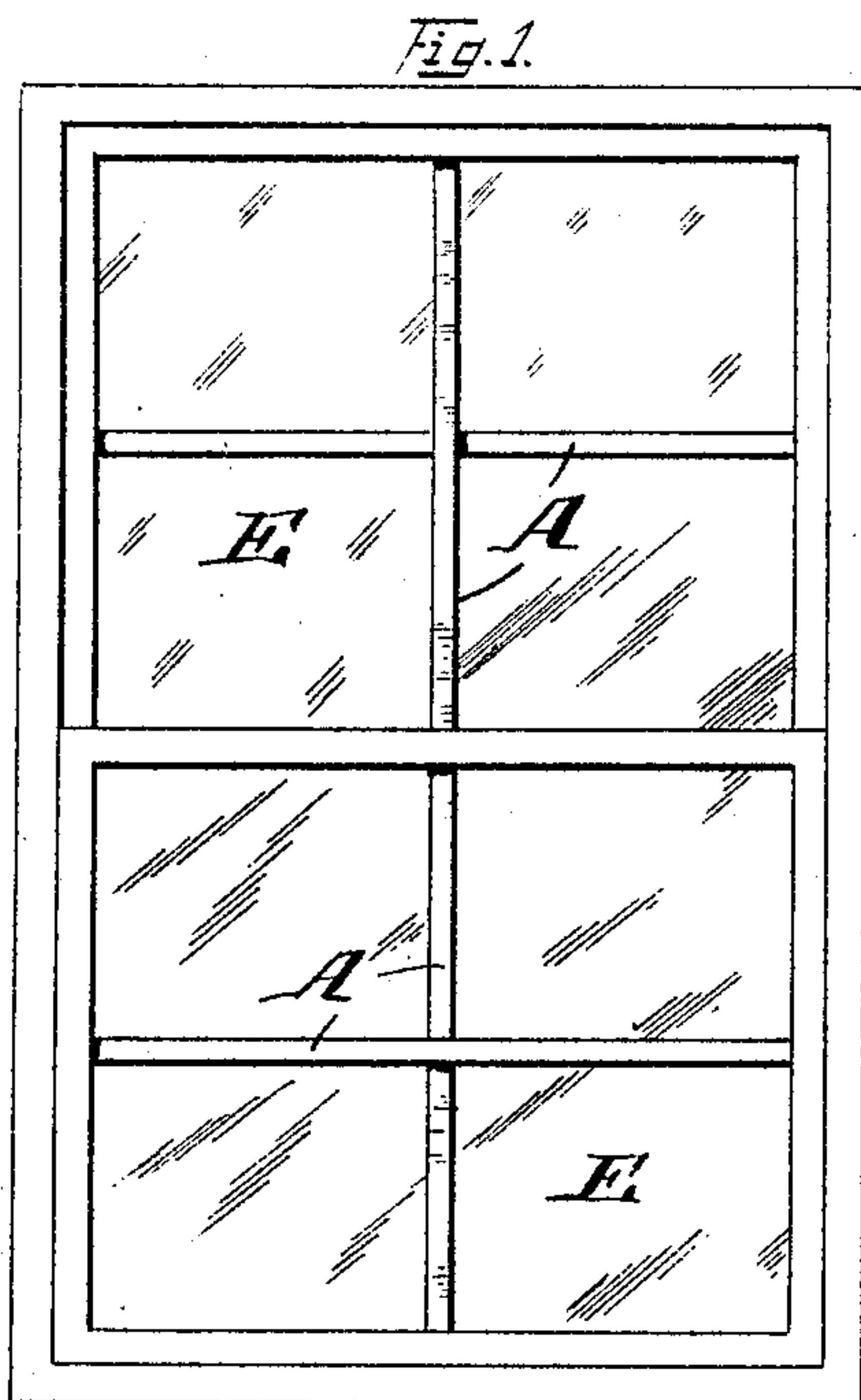


No. 799,391.

PATENTED SEPT. 12, 1905.

T. LEE.  
SHEET METAL BUILDING STRUCTURE.

APPLICATION FILED MAR. 17, 1905.



Witnesses  
C. Klinger  
C. Meyer.

Inventor  
Thomas Lee  
by C. Spengel atty



# UNITED STATES PATENT OFFICE.

THOMAS LEE, OF HOME CITY, OHIO.

## SHEET-METAL BUILDING STRUCTURE.

No. 799,391.

Specification of Letters Patent.

Patented Sept. 12, 1905.

Application filed March 17, 1905. Serial No. 250,511.

*To all whom it may concern:*

Be it known that I, THOMAS LEE, a citizen of the United States, residing at Home City, Hamilton county, State of Ohio, have invented  
5 a certain new and useful Sheet-Metal Building Structure; and I do declare the following to be a clear, full, and exact description thereof, attention being called to the accompanying drawings, with the reference characters  
10 marked thereon, which form a part of this specification.

This invention relates to a certain new and useful building structure made of sheet metal, the construction being in a shape in which it  
15 may be used as a rail, post, girder, stile, or muntin to receive panels of any material—as, for instance, in doors, windows, or partitions.

The object is to obtain the greatest rigidity within the limits of a certain size and weight  
20 of material, which latter, as stated, is sheet metal, and to provide on opposite sides grooves of sufficient depth to receive the edges of the panels above mentioned.

In the following specification and particularly pointed out in the claims at the end  
25 thereof is found a full description of my invention, together with the various possibilities of its use and the construction of each, which latter is also illustrated in the accompanying  
30 drawings, in which—

Figure 1 shows my invention as used in connection with the construction of a window. Fig. 2 shows it used for purpose of forming  
35 a partition. Fig. 3, in an enlarged end view, shows the structure used for the purpose of supporting or holding a panel, which latter may be of any material. Fig. 4 shows the disintegrated members out of which the structure is made up. Fig. 5, in a perspective view,  
40 illustrates manner of assembling these members to make up the structure complete. Fig. 6 shows manner of joining two of these structures in a common plane and between their ends. Fig. 7 shows manner of such junction  
45 when one member is connected at its end to another one between the ends thereof. Figs. 8 and 9 show edgewise attachment of one structure to some other object, not necessarily a similar member.

Each structure is made up of two parallel  
50 parts A A, joined between their edges by a third part in form of a rib or web B, the metal of each of these parts being at least doubled—that is, each is formed of two layers, while  
55 the larger part of members A A is formed

of three layers. In detail these members A consist each of strips of sheet metal *a*, parts  
60 *a'* near the edges of which are turned back over the main part, as best shown in Fig. 4, but not sufficiently close to prevent insertion of the members *b b*, which constitute rib B. There are two of these members *b*, they being substantially U-shaped and placed in position  
65 back to back, their free edges being slid in endwise between the doubled-over portions of members A A, as best shown in Fig. 5. After so assembled close compression of the contiguous metallic layers may be had by  
70 suitable rollers or other devices. It is obvious that great rigidity is obtained by means of this composite construction with comparatively little metal, for which reason also the  
75 resulting structure is only of limited weight. Channels C result in this completed structure between members A A, which are adapted to  
80 receive the edges of suitable intermediate structures or parts D, as shown in Fig. 3, which parts may be metal, wood, glass, or partition stuff. The width of strips *a a* is considerably in excess to the space between  
85 them, so that the grooves or channels C, which result on each side of the connecting-web B, are of sufficient depth to receive and to hold such edges.

In Fig. 1 the invention is shown as applied  
85 to a window, and in which case it serves to form the rails or muntins which receive in the grooves or channels at their narrow edges the edges of the glass panes E.

In Fig. 2 the structure of my invention  
90 serves as uprights in the construction of a partition, such uprights receiving between their edges panels F.

Fig. 6 shows arrangement where two of  
95 these structures pass each other in the same plane—as, for instance, when used in the window shown in Fig. 1. An opening G is produced in one of the rails by the removal of part of rib B or by a limited insertion only  
100 of members *b b*, which form such rib. The other member is then passed endwise through said opening, parts A A, which form the longer side of such opening, being spread, if  
105 necessary, to admit the other member.

Fig. 7 shows connection of the end of one  
110 structure to the edge or side of another. It is done by extending parts of the ends of members *a a* of one of the structures beyond rib B and by hooking them in under the turned-over parts *a' a'* of the other structure.



Figs. 8 and 9 show attachment of these structures at their ends to other parts not necessarily similar structures--as, for instance, to a ceiling H in Fig. 8. In such case the extended ends of members *a a* are turned over to form flanges K, which permit ready attachment. In Fig. 9 similarly-produced flanges are shown attached within a hollow member, which might be the frame of a sash or window.

It will be observed that no rivets or other means are required to complete the connection of the elements of the structure.

Having described my invention, I claim as new—

1. A sheet-metal building structure consisting of spaced parallel members and of an intermediate member arranged at right angles to the parallel members and connecting them between their longitudinal edges, all these members consisting of contacting layers of sheet metal, the connection of the members to each other being by overlapping and interlocking parts of the various layers of each member one with the other and the width of the parallel members being largely in excess to the width of the member which connects them so that channels of considerable depth

result on each side of this latter member adapted to receive and hold the edges of panels.

2. A sheet-metal building structure consisting of spaced parallel members and of an intermediate member arranged at right angles to the parallel members and connecting them between their longitudinal edges, the connecting member consisting of two U-shaped parts each containing again two parallel parts and a part connecting them, which latter parts are placed against each other so as to constitute two layers which form the connecting member first mentioned, the edges of the spaced parallel members being turned around and over the parts which extend on each side from the two layers of the connecting member so as to overlap and inclose them, the overlapping part so engaged forming again layers which constitute these spaced parallel members and whereby these members and the intermediate member which connects them are held to each other.

In testimony whereof I hereunto set my signature in the presence of two witnesses.

THOMAS LEE.

Witnesses:

C. SPENGEL,  
C. MEYER.