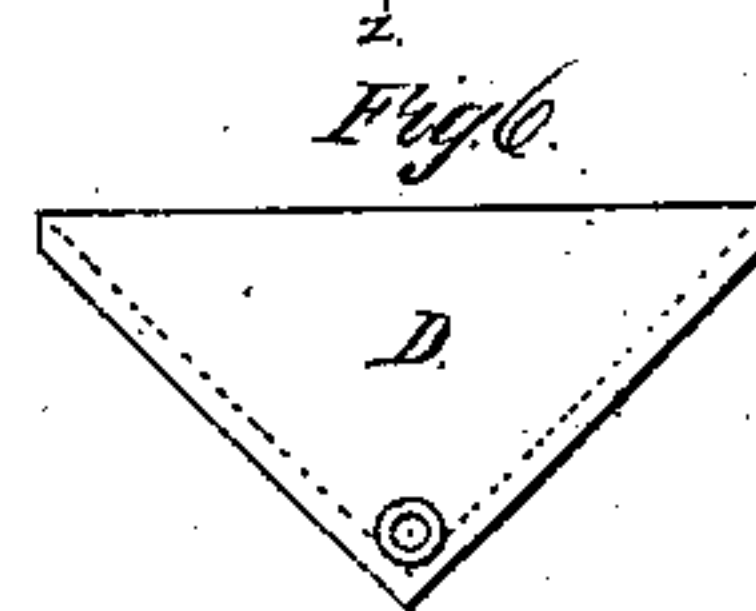
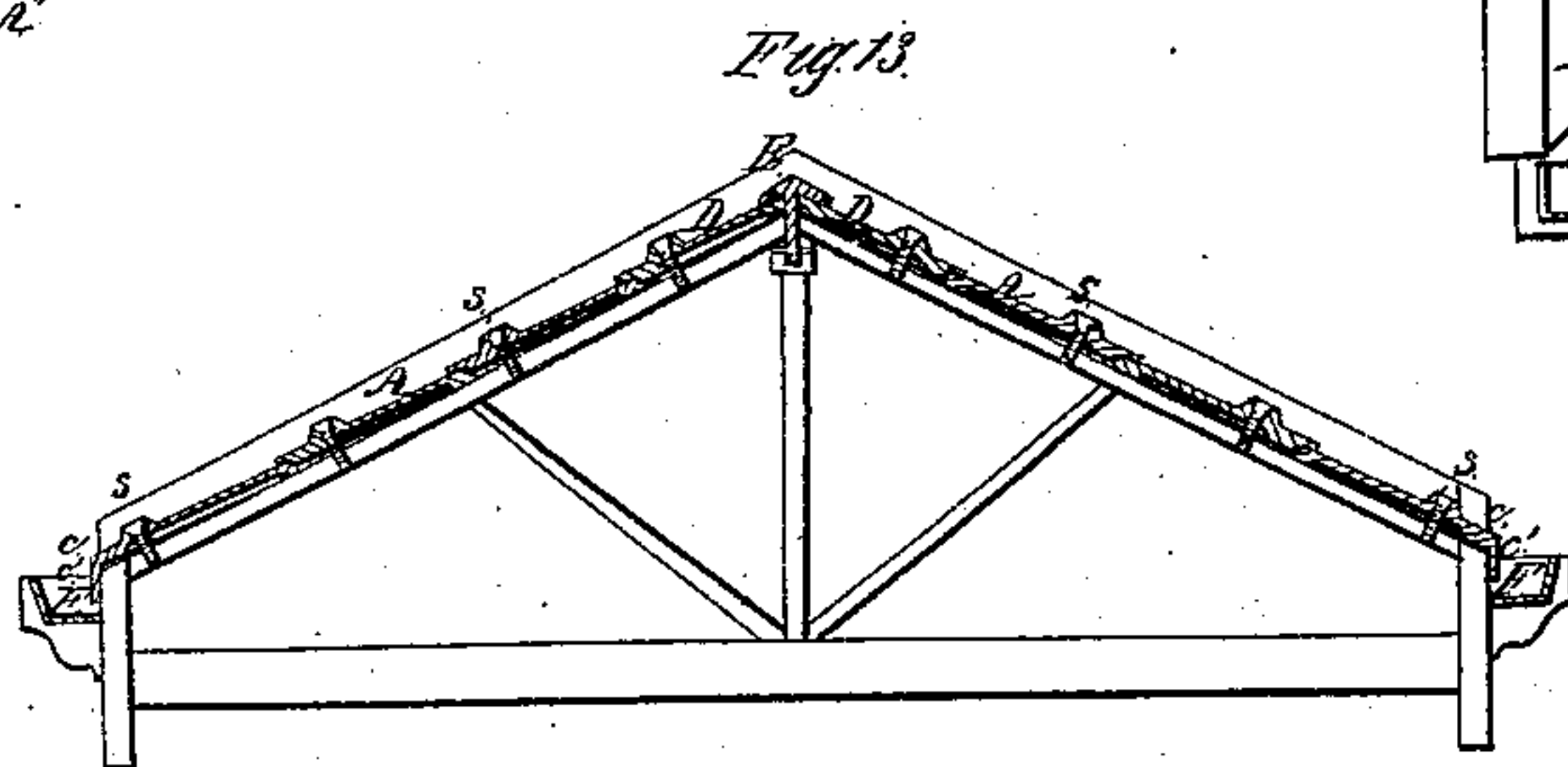
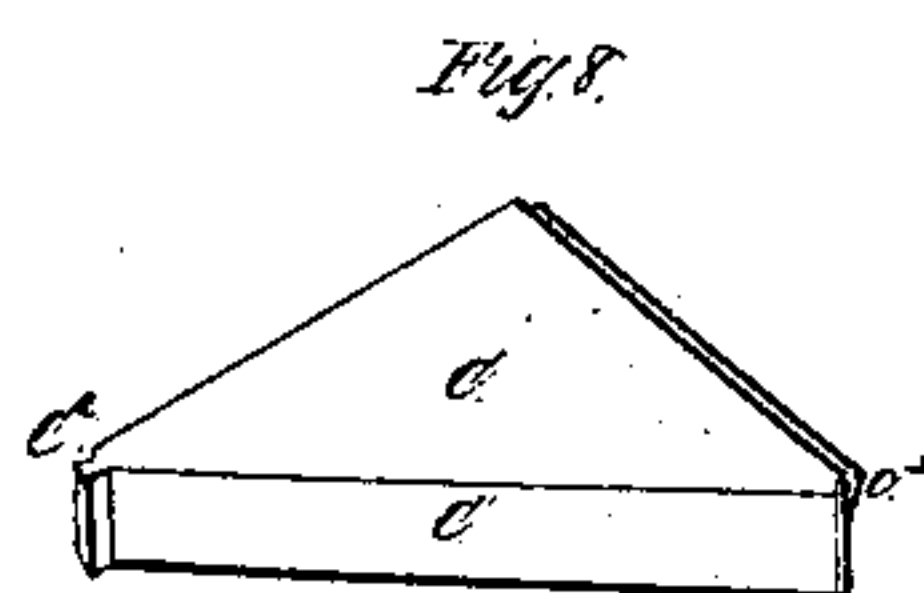
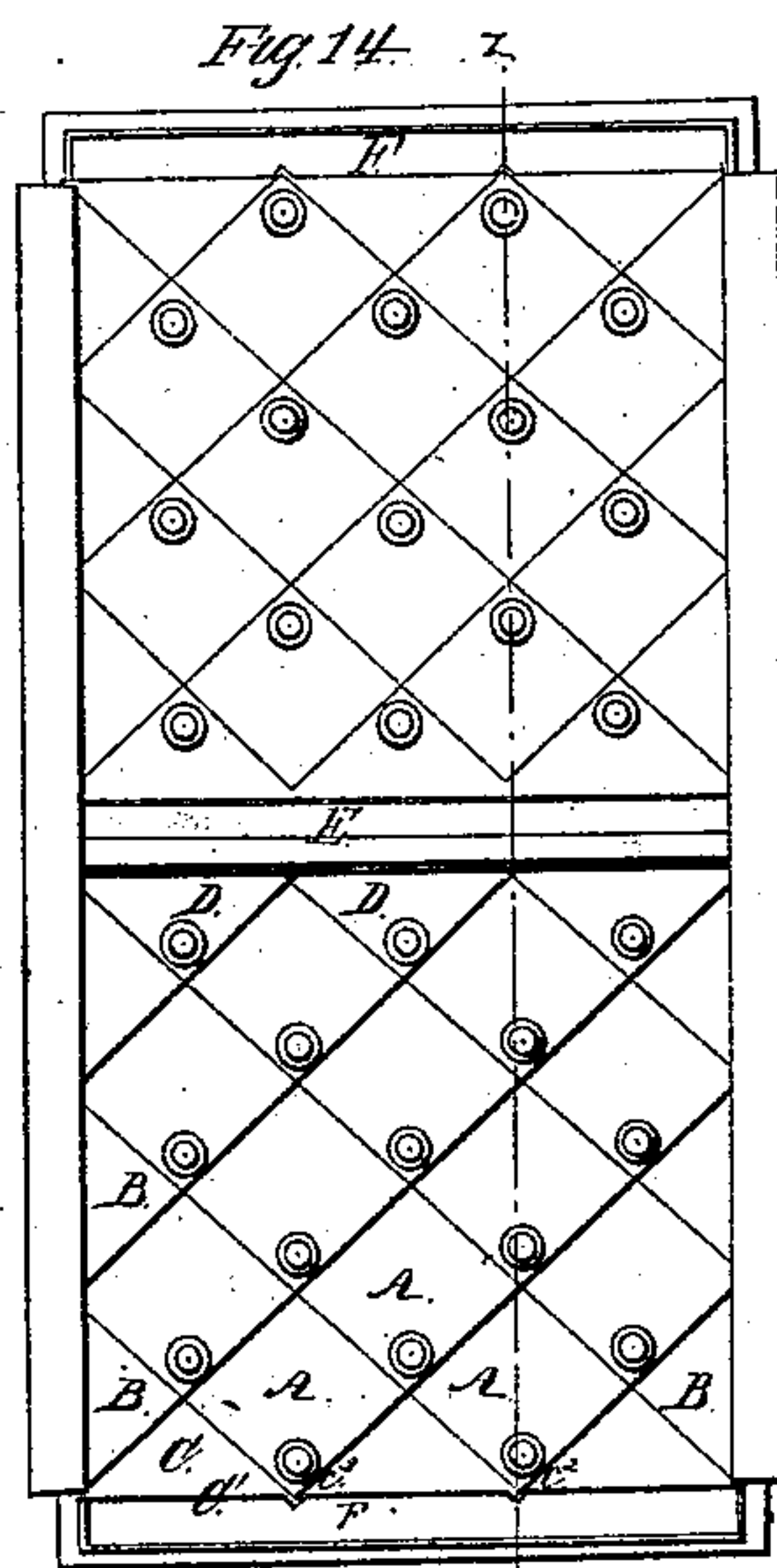
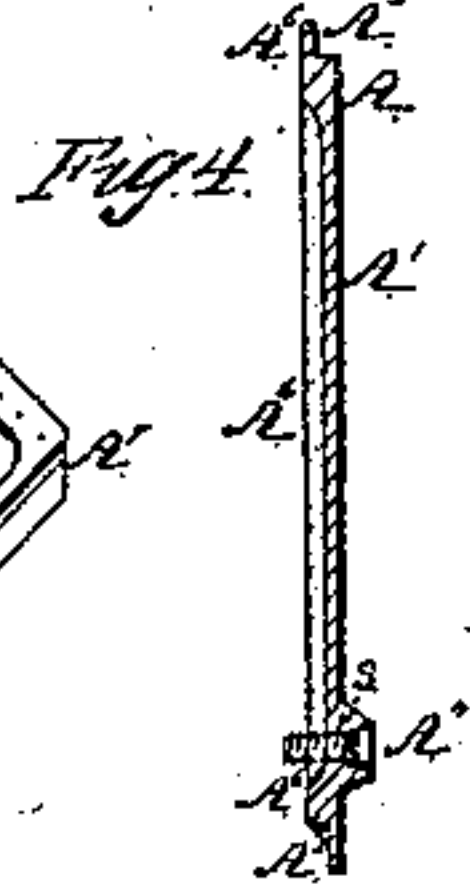
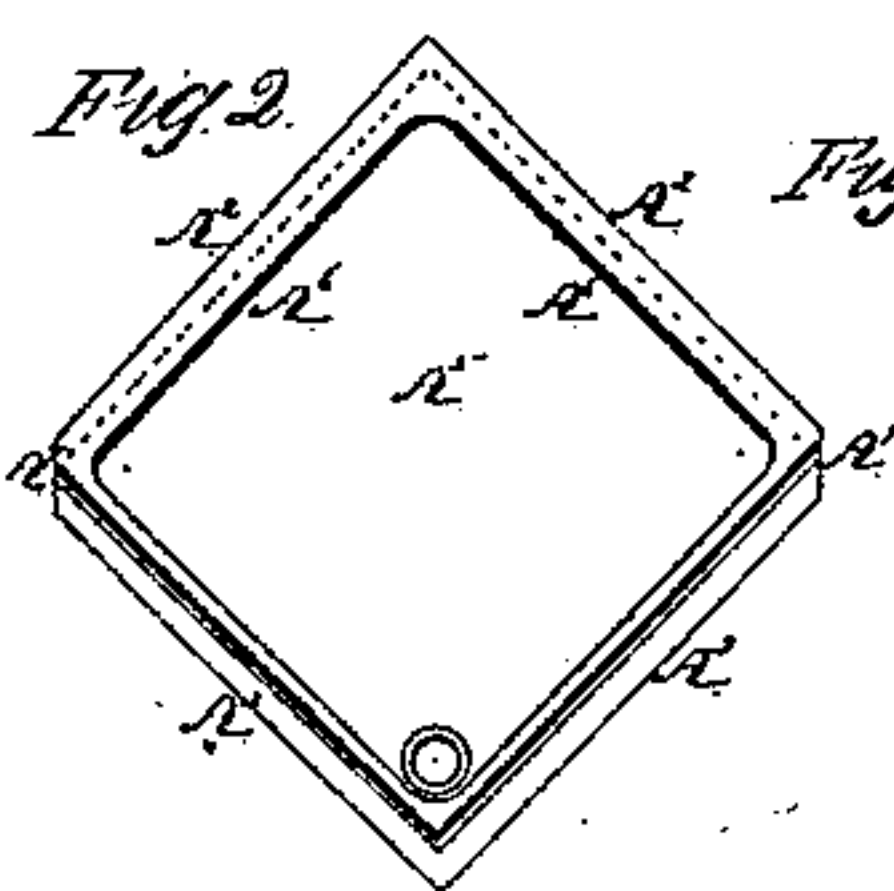
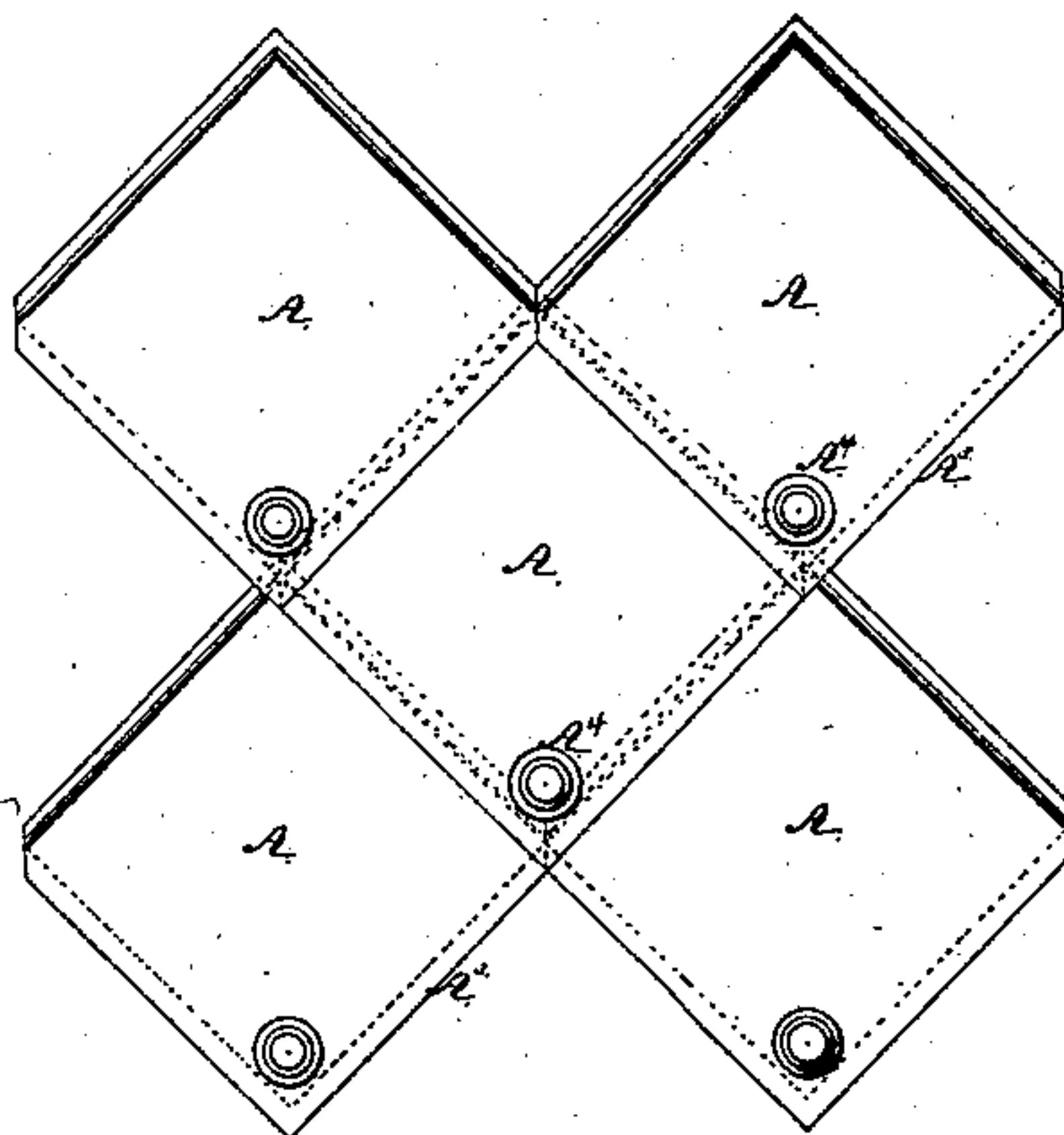
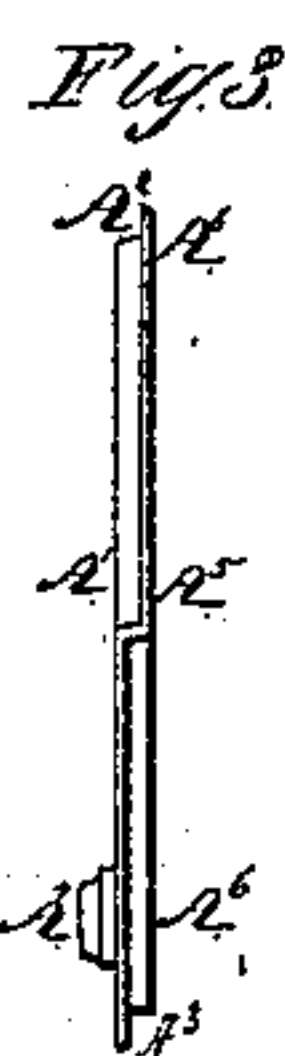
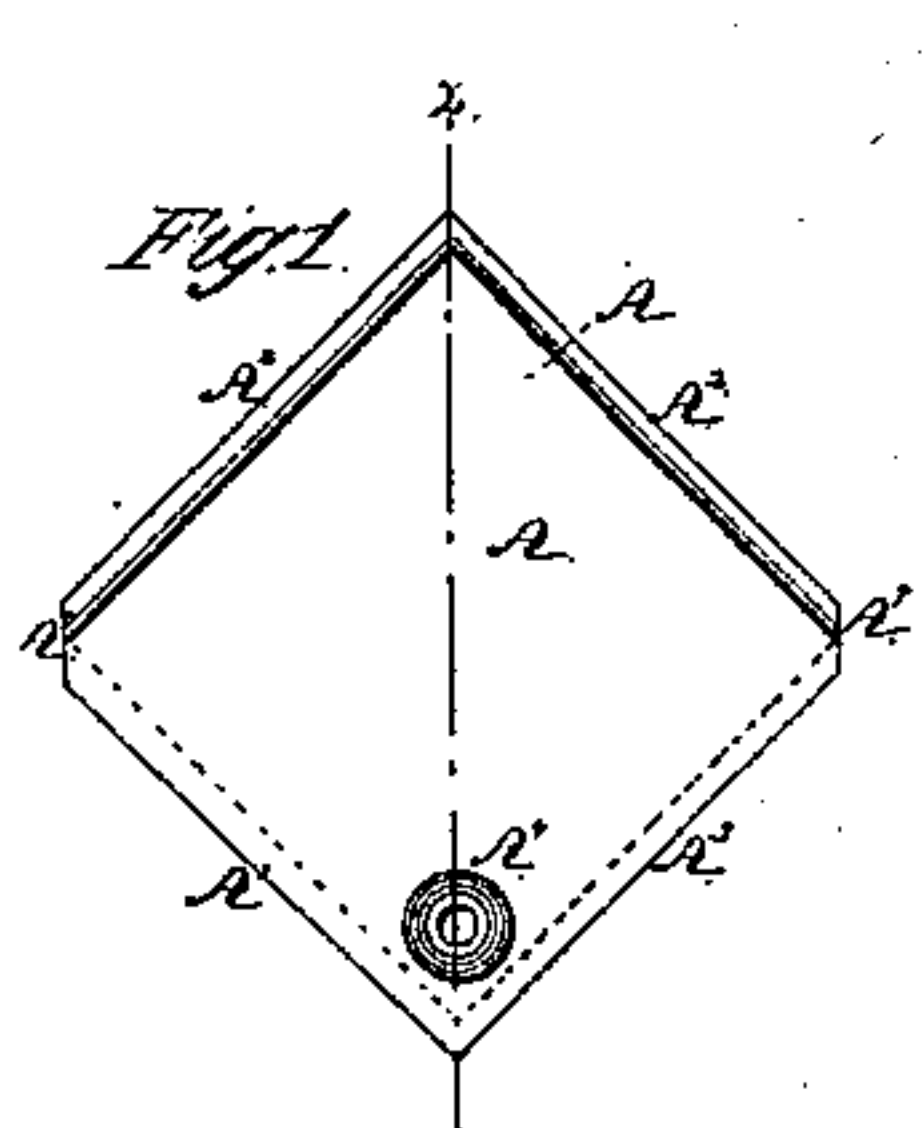
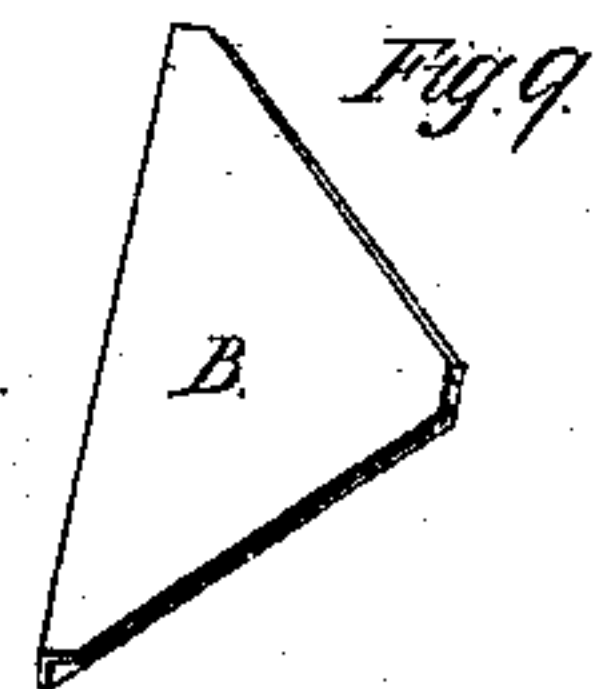
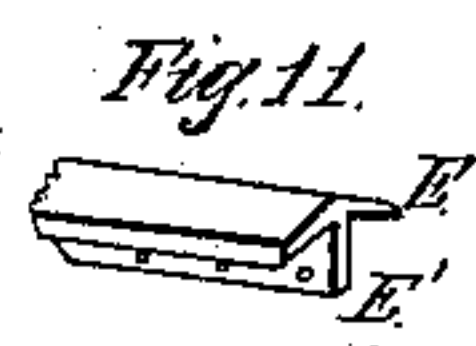
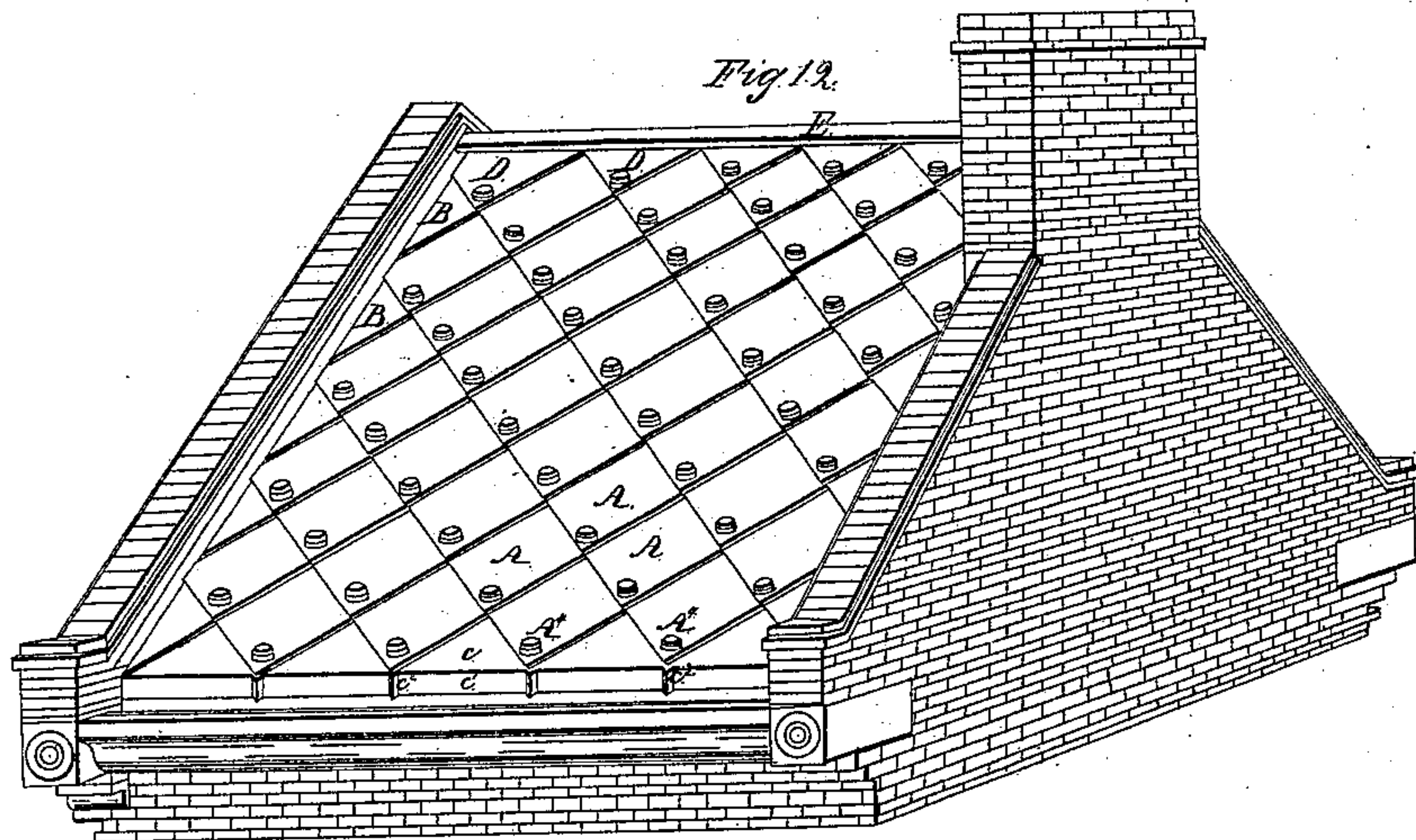


*M. Stewart,*  
*Metallic Roofing,*  
*Patented May 1, 1847.*

*N<sup>o</sup> 5,091.*





# UNITED STATES PATENT OFFICE.

MATHEW STEWART, OF PHILADELPHIA, PENNSYLVANIA.

## ROOFING.

Specification of Letters Patent No. 5,091, dated May 1, 1847.

*To all whom it may concern:*

Be it known that I, MATHEW STEWART, of the city and county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in the Manner of Constructing and Combining Cast-Iron Plates for Covering Buildings, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 represents a plan or top view of a cast plate of a roof which will admit of being removed without destroying the adjoining plates, for repairing it or replacing it with a new one or for any other purpose. Fig. 2 represents a view of the under side of ditto. Fig. 3 is an edge view of ditto. Fig. 4 is a vertical section of ditto on the line  $xx$  of Fig. 1. Fig. 5 is a section of a roof showing several of the aforesaid plates put together and screwed to the laths or sheathing. Fig. 6 is a plan of one of the triangular plates fitted against the comb or ridge of the roof. Fig. 8 is a perspective view of one of the triangular plates arranged along the eaves of the roof. Fig. 9 is a perspective view of the plates arranged along the fire wall. Fig. 11 is a perspective view of a portion of the saddle piece or ridge cap that covers the ridge, and secured to the ridge pole. Fig. 12 is a perspective view of a roof when completed with the aforesaid plates. Fig. 13 is a vertical section of ditto on the dotted line  $zz$  of Fig. 14. Fig. 14 is a plan of the roof when finished.

Similar letters designate similar parts in the several figures.

*First*—Description of one of the plates designed to form part of a roof which may be detached without destroying the adjacent parts or plates having its upper and lower edges rabbeted. A is the plate cast of a quadrilateral form, plane on the upper side as at A, except its two upper edges which are cast with rabbets  $A^2$ , on the upper surface, and its two lower edges which are cast with rabbets  $A^3$  on the under side; and at  $A^4$  where the screw passes through which is raised on the upper side in the form of a circular protuberance or curb  $A^4$  having a countersink to admit the head of the screw, and the necessary cement for protecting the screw from the weather. The center of the plate on the under side is cast concave at  $A^5$  between the thick portions thereof  $A^6$  which form the bearings which rest upon the

laths or sheathing. The two corners at  $A^7$  are cast straight and parallel, forming obtuse angles with the four sides of the plates. The two upper rabbeted edges or sides  $A^2$  Fig. 1, are designed to pass under the two lower rabbeted edges  $A^3$  Figs. 2 and 4 when the plates are put together as represented in Fig. 5. The screw  $s$  Figs. 4 and 13 passes through each plate independently of the contiguous plates so that when the plate is required to be removed it is only necessary to withdraw the screw and loosen the screw of the right and left plates and the upper plate and lift the lower edges of the upper plates slightly and draw the lower plate downward when the two upper edges will become disengaged from the lower rabbeted edges of the upper contiguous plates. The same plate or another plate may be inserted without destroying the surrounding plates; and the plates being cast of the same size and pattern there will be no difficulty in fitting a new plate into the place of the one removed and also securing them down and combining them together as before described. The convex or semi-spherical protuberance through which the confining screw  $s$  passes is made of sufficient size to admit the formation of the aperture for the shank of the screw and a countersink to receive the head and a sufficient quantity of cement, or other article, to protect the head from the weather. See Figs. 1—3—4 and 13.

B Fig. 9, represents one of the triangular plates fitted against the division wall or fire guard. The base and perpendicular of this plate are made like the two corresponding sides of the plate above described. The hypotenuse or long side, which is fitted against the fire wall, is made straight and plain having a bearing to rest on the laths and being secured by letting the long side into a corresponding groove in the fire wall and held securely by the lap of the plates, and by cement. C, Fig. 8 is a triangular plate arranged along the eaves. The plate is cast in the same form as plate B Fig. 9, except that its long side or hypotenuse which is placed parallel to the eaves is cast with a flange  $C^1$  nearly at right angles to the face of the plate fitting over the eaves and conducting the water to the gutter, having the end of each flange cast with a notch  $C^2$  to correspond with the corner of the next adjoining plate fitted into said notch.

D, Fig. 6 is a triangular plate to be fitted



against the comb of the roof. This plate is made in a similar manner to plate B Fig. 9, the long side or hypotenuse being placed parallel to and against the ridge and the two other sides which are rabbeted being fitted to the corresponding rabbeted sides of the adjoining plates—a screw being inserted in the manner above described.

E, Fig. 11 is a sectional view of the casting that covers the two upper edges of the plates that come nearly together at the ridge, or comb, cast in the shape of a saddle having a vertical flange E' extending downward from the apex and arranged between the upper edges of said plates, being perforated for bolts or screws by which it is fastened to the ridge pole or other convenient place, and when properly secured effectually secures the joint at the ridge against the entrance of water or snow.

The plates A are placed on the laths in a position to bring the edges thereof at an angle of 45 degs. with the parallel lines of the eaves and ridge—or any required angle. The manner of uniting and securing the plates is more clearly seen at Fig. 13 which is a vertical section on the line  $z z$  of Fig. 14.

F is the gutter secured in the cornice below the eaves the flanges of the triangular plate of the eaves extending over the inner edges of the gutter.

Having thus fully described the nature of my invention and improvement in cast iron roofing I proceed to state that what I claim as my invention and desire to secure by Letters Patent is—

1. Forming the rectangular plates A with rabbeted edges  $A^2$   $A^3$  on opposite sides, flat on the upper side, or surface and concave on the under surface, having two of the cor-

ners  $A^7$  of each plate cut off parallel causing the plates to combine and unite and form close joints, having broad bearings  $A^6$  to rest on the sheathing or laths, and a perforated protuberance, or knob  $A^4$ , and a countersink in the same to admit the shank and head of a screw  $s$  back of the point of junction of the cut off corners  $A^7$  of the plates, so that when a plate is required to be removed it becomes only necessary to withdraw the screw  $s$  and slide the plate back from beneath the contiguous plates and it becomes separated therefrom as before described and represented at A Figs. 5 and 13.

2. I likewise claim the manner of constructing the triangular shaped plates C having the long sides turned down nearly at right angles to the face of the plate and notched and ribbed for the facility of interlocking their ends and securing them together against the gutter—the short sides being rabbeted in a similar manner to the above named rectangular plates in order to be fitted under the same and be combined therewith as described and represented at C Figs. 8—12—13 and 14.

3. I also claim constructing the ridge cap E like an angular roof with a vertical plate E' projecting down from the apex and perforated to admit bolts, or screws, by which it is secured to the ridge pole—the sloped sides being made sufficiently wide to extend over the adjoining plates on either side of the ridge as above described and represented at E Figs. 11—12—13—14.

MATHEW STEWART.

Witnesses:

G. L. MARTINDELL,  
ROBERT STEWART.