

(No Model.)

W. S. IVINS.  
HINGE.

No. 539,057.

Patented May 14, 1895.

FIG. 2.

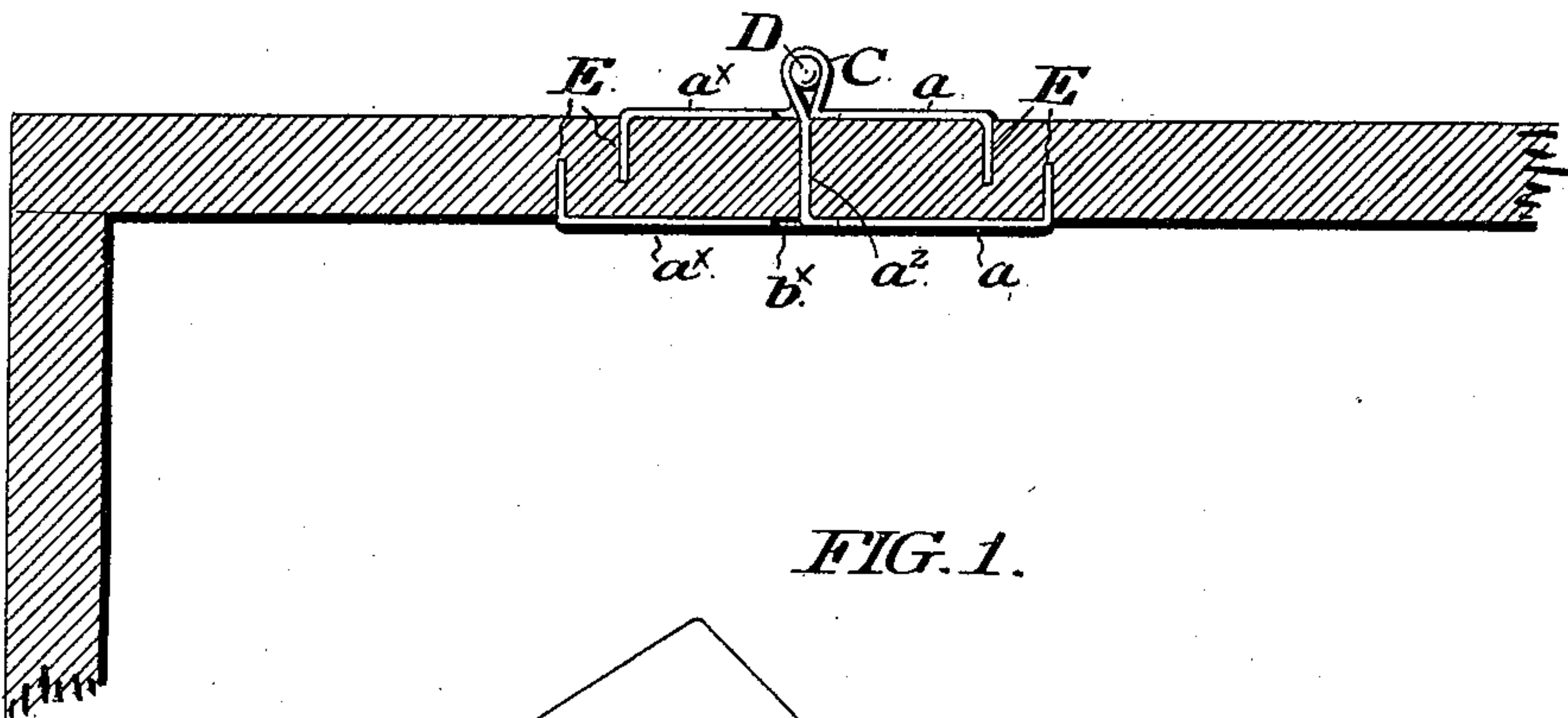


FIG. 1.

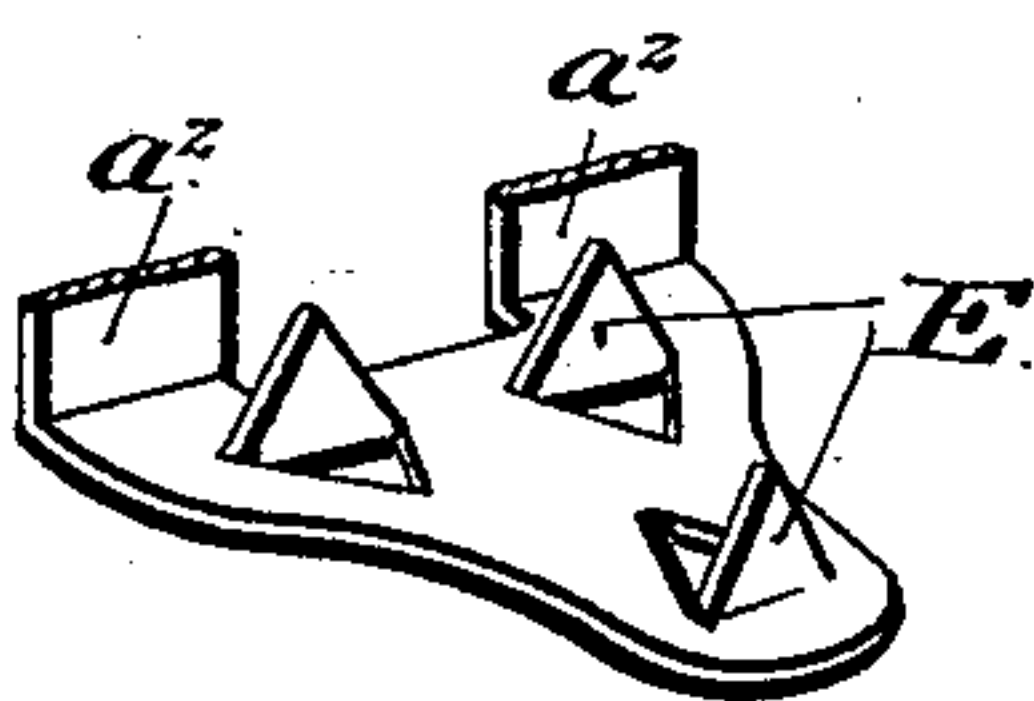
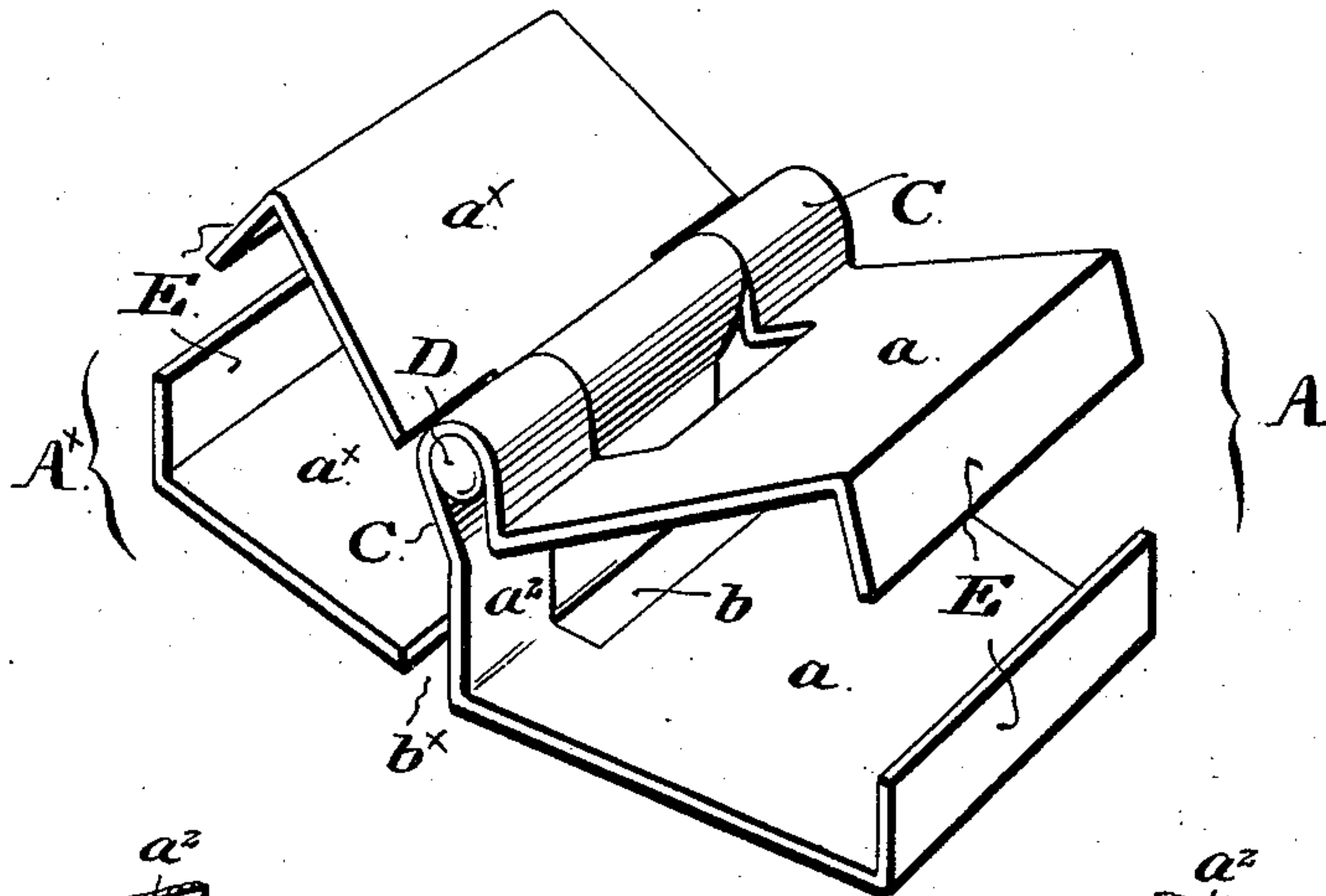


FIG. 3.

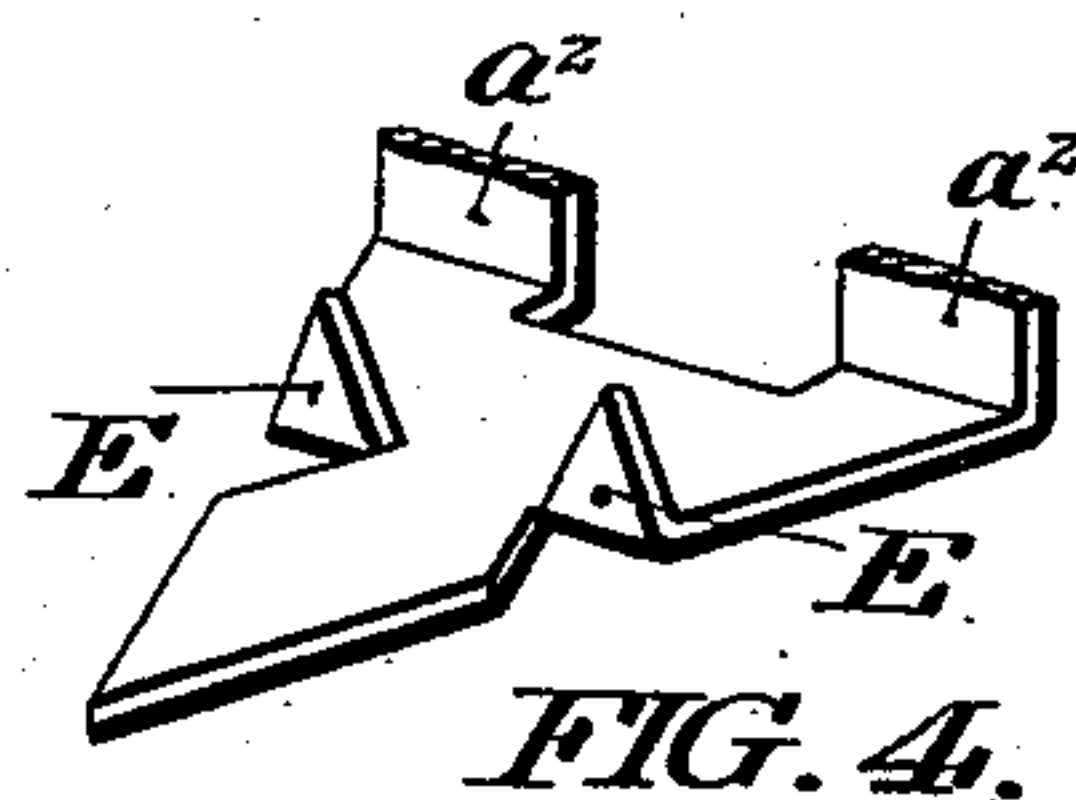
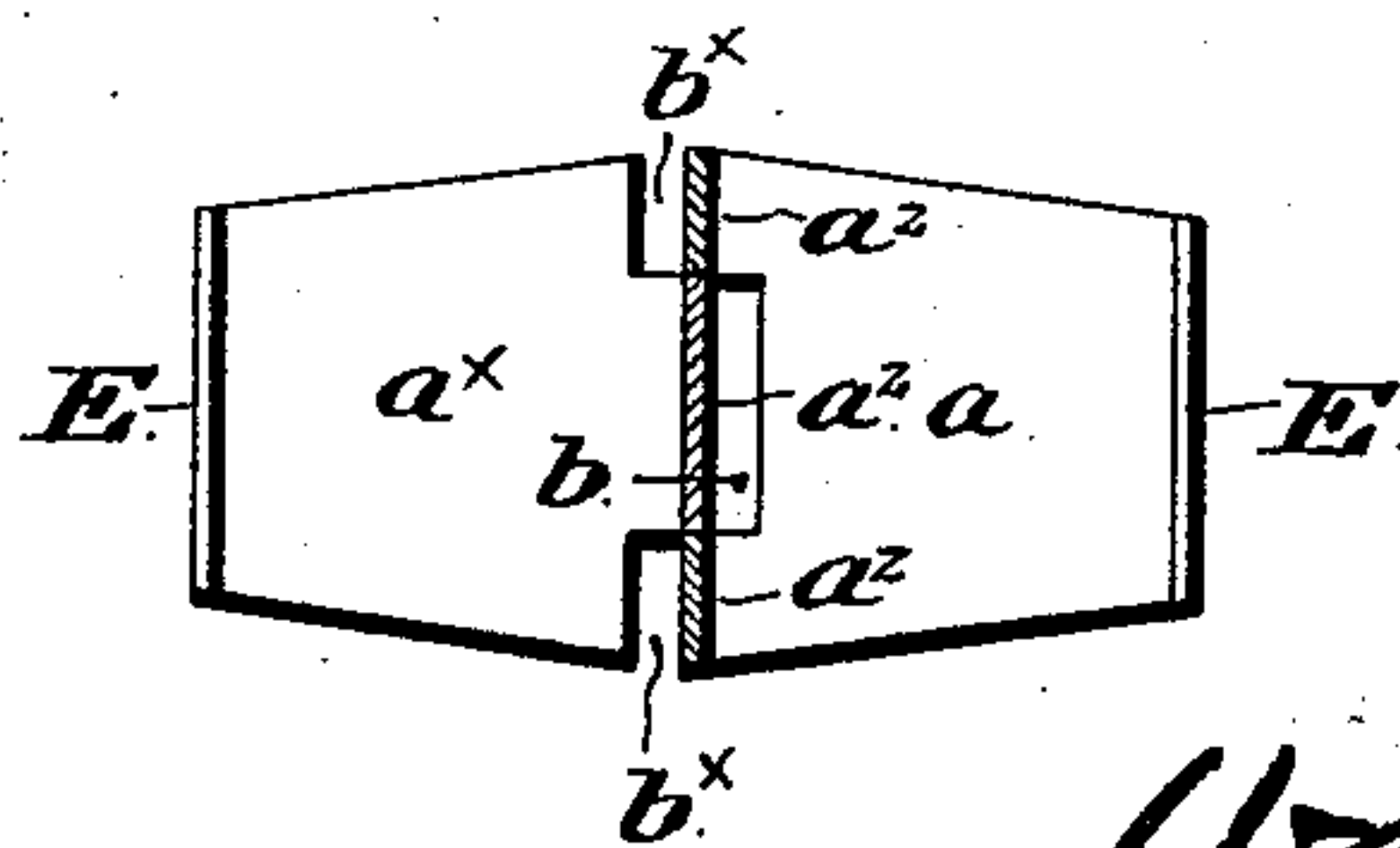


FIG. 4.

FIG. 5.



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# UNITED STATES PATENT OFFICE.

WALTER S. IVINS, OF PHILADELPHIA, PENNSYLVANIA.

## HINGE.

SPECIFICATION forming part of Letters Patent No. 539,057, dated May 14, 1895.

Application filed February 14, 1895. Serial No. 538,328. (No model.)

*To all whom it may concern:*

Be it known that I, WALTER S. IVINS, a citizen of the United States, residing in the city and county of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Hinges, of which the following is a specification.

In the manufacture of such articles as cracker and other boxes, which involve the use of hinges, and which are ordinarily used but once, it is a desideratum that the hinges should be of such character as to be not only inexpensive but strong and capable of rapid and easy application.

It is the object of my invention to provide a hinge equipped with fastening barbs produced from its substance and adapted, to the exclusion of nails or screws, to be driven directly into the substance of the box and its lid, which will thus possess the advantages of cheapness and ease of attachment, and which will effectuate the union of the leaves of the hinge with the box and its lid in so firm a manner as to overcome all liability of detachment under ordinary usage.

Generally stated my invention comprehends the provision of a hinge, especially designed for use upon the cheaper grade of boxes, formed, as to one or both members, with two leaves arranged in substantially parallel planes and adapted to embrace between them that part of the thing to be hinged to which a particular member is applied, and provided as to each leaf with a barb struck or produced from its substance and deflected into a position at an approximate right angle with respect to said leaf, with the result that when said member has been applied each leaf reinforces the hold of the other, augments the strength of the attachment, and renders said member capable of resisting strain exerted upon it in any direction.

In the manufacture of my improved hinge, a variety of types of embodiment, differing as to the form and position and number of the barbs employed and as to the character and form of the leaves themselves, but possessing in common the principle of construction set forth in the claim, may be resorted to.

In the accompanying drawings I illustrate, and herein I describe, several good forms of preferred embodiments of my invention, the

particular subject-matter claimed as novel being hereinafter definitely specified.

In the accompanying drawings, Figure 1 is a view in perspective of a hinge embodying my invention. Fig. 2 is a longitudinal central vertical sectional elevation of the same, showing the hinge applied to a box and its lid. Figs. 3 and 4 are views in perspective of types of variation of barbed hinge-leaves. Fig. 5 is a central horizontal sectional top plan of the hinge of Figs. 1 and 2.

Similar letters of reference indicate corresponding parts.

In the drawings, A A<sup>x</sup> are the respective members of the hinge therein depicted. The hinge members are made each from a suitably shaped blank of bendable sheet metal, bent to the required form. Each of the members embodies a pair of leaves, designated *a a*, and *a<sup>x</sup> a<sup>x</sup>*, arranged by pairs in approximate parallelism, and adapted to clamp against the respective faces of the articles to which said members are applied. Each is provided with an inner end plate *a<sup>2</sup>* continuous and connective of the leaves and adapted to be applied against and extend across the end or edge of said article,—an eye the axis of which, in the form shown, is in parallelism with the back plate,—and barbs produced or struck up from the substance of the leaves at an approximate right angle with respect thereto, and adapted to be forced into the substance of the article to which the hinge member is applied. The member A, in the form shown in Figs. 1, 2, and 5, embodies a central quadrangular slot, *b*, preferably of a breadth about equal to one half its own, and of such length as to follow the back plate and eye, and extend a short distance into the bodies of the respective leaves *a a*, as shown, with the result that the inner ends of said leaves, the back plate, and the eye, are not of the full width of the hinge, but are formed, so to speak, of two strips of metal connecting the main bodies of said leaves *a a*. The member A<sup>x</sup>, on the other hand, embodies two counterpart marginal recesses, *b<sup>x</sup>*, the combined breadth of which is preferably about equal to one half its own, and which are of such length as to follow the back plate and eye of said member, and extend a short distance into the bodies of the leaves *a<sup>x</sup> a<sup>x</sup>*, so that the inner ends of said



leaves, the back plate, and the eye, are not of the full width of the hinge but are formed of a central strip of metal between said two marginal recesses. As a result of this arrangement the respective members  $A A^x$  of the hinge fit or nest snugly together, the slot in the member  $A$  being of about the width of and serving to receive that part of the member  $A^x$  left between the marginal recesses of said member,—the extension of the respective openings into the bodies  $aa$  and  $a^x a^x$  of the leaves of the respective members serving as countersinks to receive each the corresponding solid part or parts of the other member, with the result that the back plates of the respective hinge members may be carried into a common plane as shown in Fig. 5 in order that the opposing edges of the articles united may also be brought into close contact.

The eye  $c$  of the respective hinge members may be formed at any selected part of the back plates. In Figs. 1 and 2 of the drawings I show them as formed of loops of metal extending beyond the planes of the adjacent leaves of the hinge, and continuous of the metal of the respective back plates.

$D$  is a pintle extending through, and secured in any desired manner within, the eyes, which are aligned.

The barbs  $E$  in Figs. 1, 2, and 5, are shown as formed by turning up at approximate right angles to the bodies of the leaves the tips or outer portions of said leaves themselves. My invention is not, however, restricted to this arrangement of barbs, and in Figs. 3 and 4 I have illustrated leaves provided with barbs  $E$  formed by stamping out and turning up V-shaped pieces of the metal of the leaves intermediate of the length of the latter.

I prefer, to avoid possibility of splitting the wood of the boxes, that the barbs of the respective leaves of a member should not be in line with each other, and therefore, when as in Figs. 1 and 2, the barbs are formed by turning up the ends of the leaves themselves, I make the opposing leaves of dissimilar length to carry said barbs out of the same plane.

In practice, the hinge members are made of bendable metal, and, when manufactured, the

respective leaves of a member are given the set shown in Fig. 1 of the drawings, in which said leaves are not in parallelism but are opened or inclined from their inner ends outward or away from each other, to the end that the opposing extremities of the barbs may with slight, if any, further opening of the leaves, receive between them the article to which the member is applied. As the barbs are driven into the article, the leaves are of course at the same time compressed or clamped against the opposite faces of the article, and thus brought into parallelism. The structure as made of bendable sheet metal has thus many advantages over hinges made of cast or rigid metal, in which the leaves are given their final set in the course of their manufacture, and, in fact, it is obvious that it is only by resort to bendable metal for the purpose of its manufacture that a hinge member of my invention, provided with two leaves adapted to embrace between them the article to which it is applied, and provided with inturned opposing barbs adapted to be driven into said article, becomes possible.

Having thus described my invention, I claim and desire to secure by Letters Patent—

A hinge composed of two suitably connected members, one of which is formed from a plate or sheet of readily bendable metal bent to form two leaves adapted to embrace opposing sides of the thing to be hinged to which said member is applied, and which are formed with integral inturned opposing barbs adapted to be forced into the substance of the thing to be hinged, said leaves, as formed, diverging slightly from their inner to their outer extremities to afford between the barbs the clearance necessary in the application of the hinge member,—substantially as set forth.

In testimony that I claim the foregoing as my invention I have hereunto signed my name this 9th day of February, A. D. 1895.

WALTER S. IVINS.

In presence of—

J. BONSALE TAYLOR,  
F. NORMAN DIXON.