

(No Model.)

M. HAMBURGER.  
FASTENING DEVICE.

No. 432,938.

Patented July 22, 1890.

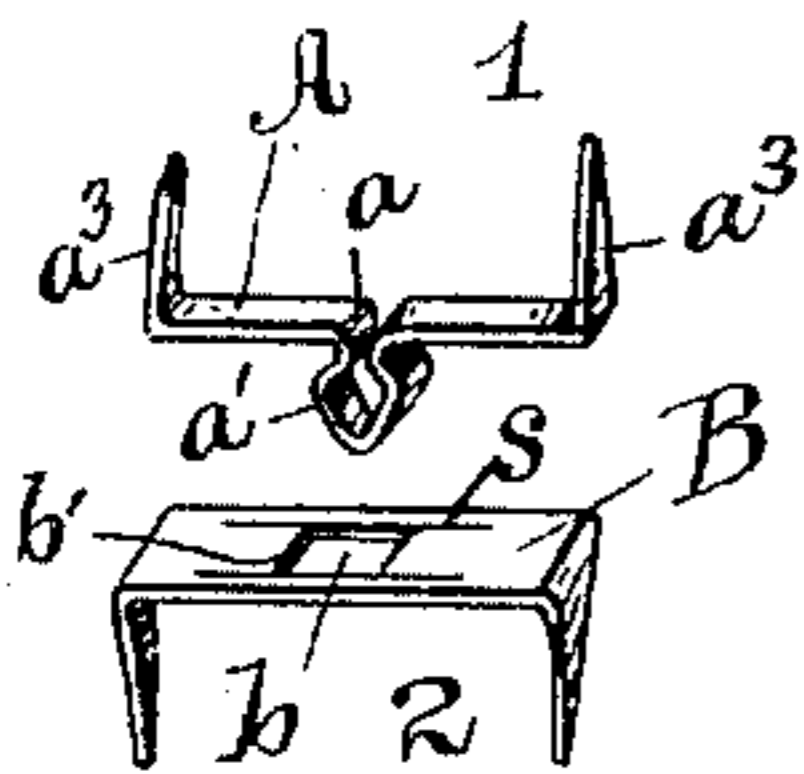


Fig. 1.

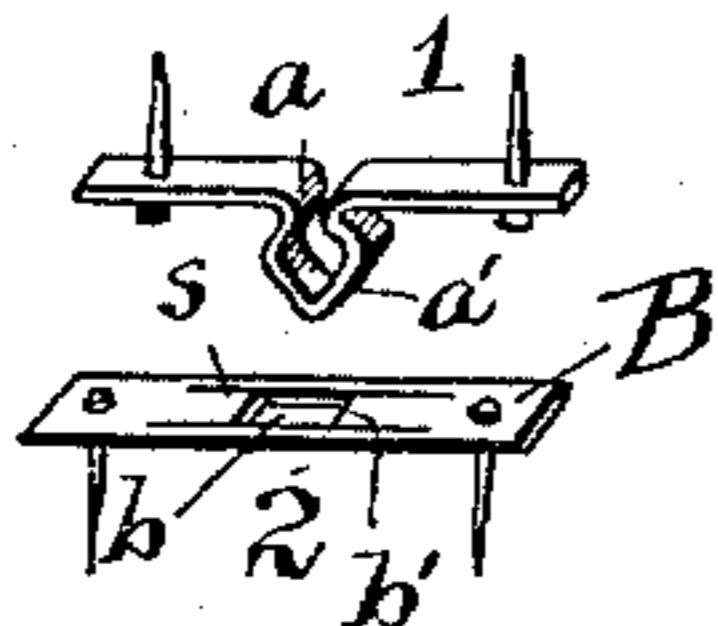


Fig. 2.

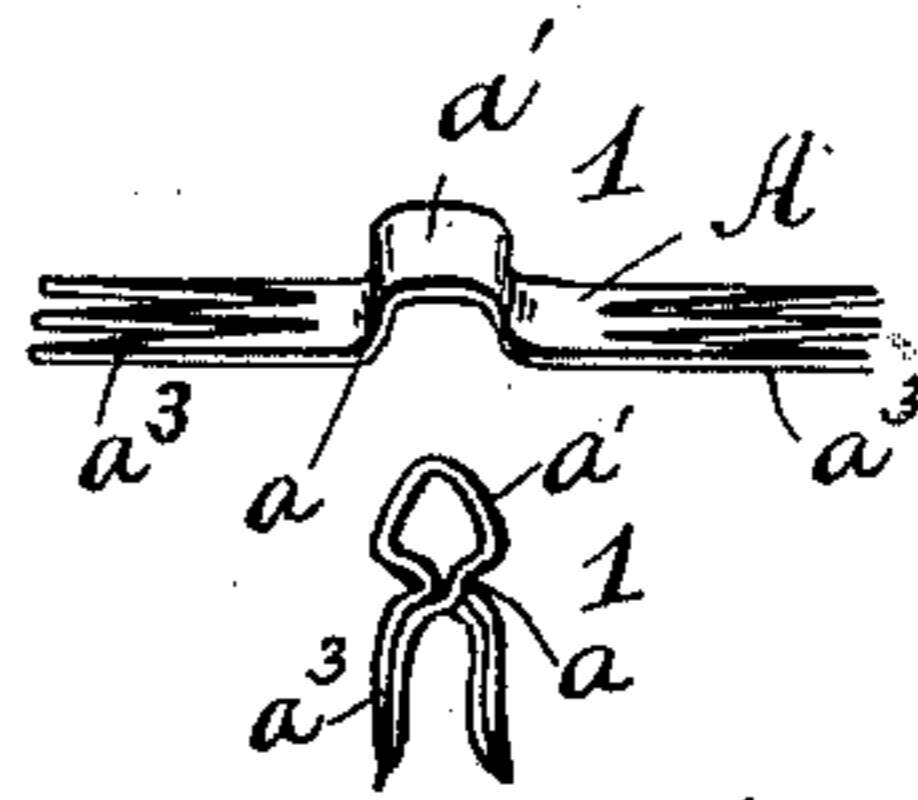


Fig. 3.

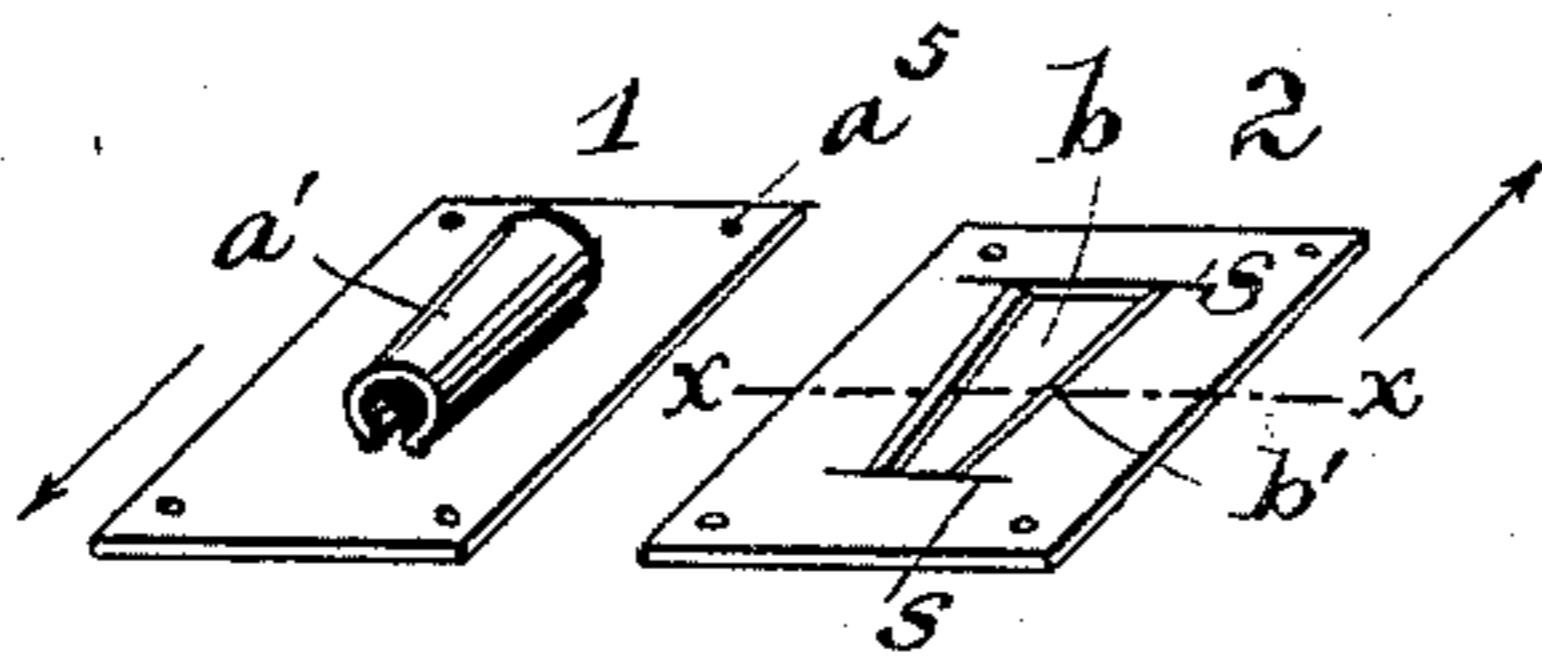


Fig. 4.

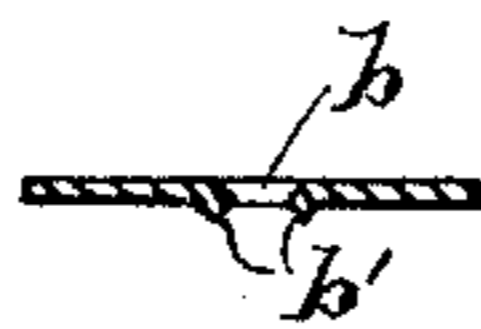


Fig. 5.

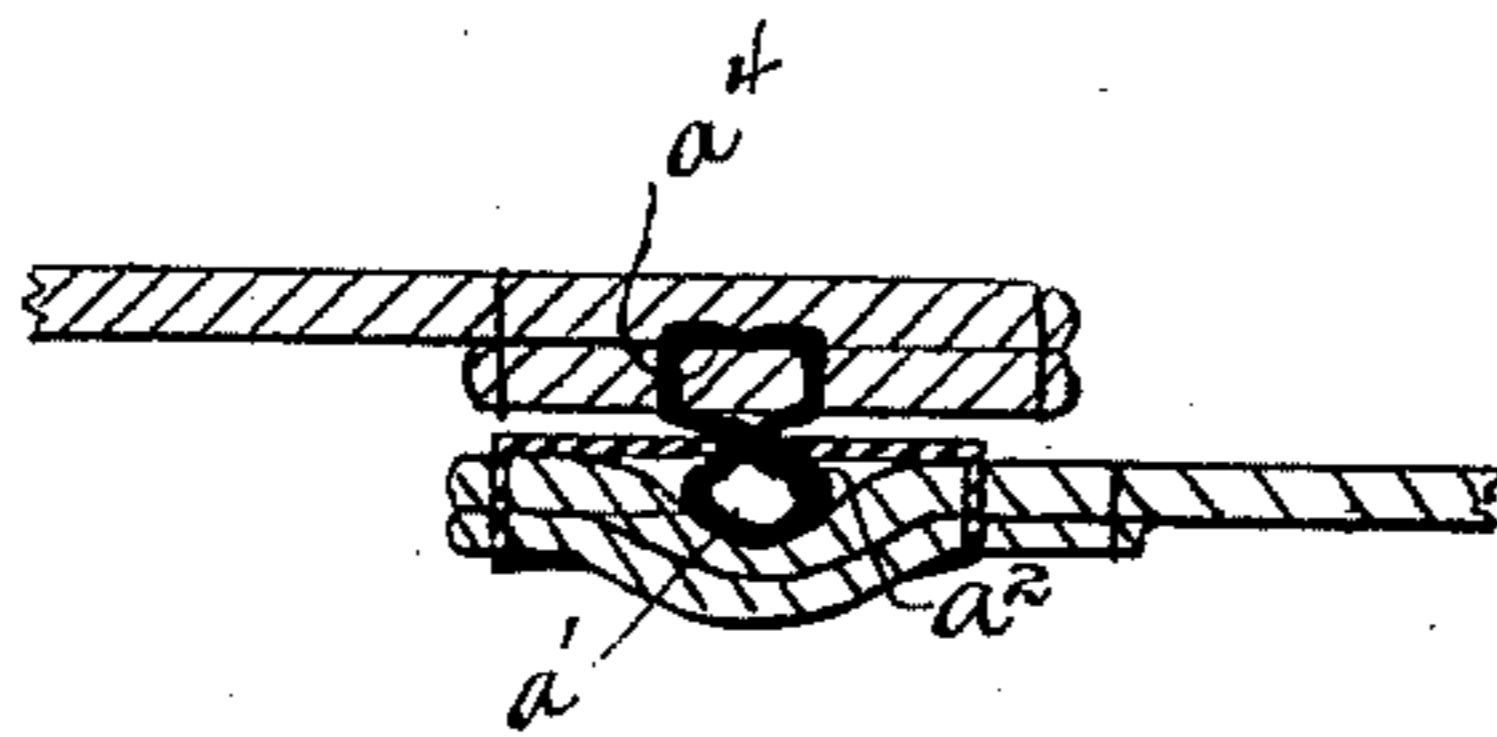


Fig. 6.

Witnesses:

E. E. Clement.  
J. H. Jacobson

Inventor:

Manes H. Hamburger  
by Lewis Abraham

Attorney.

# UNITED STATES PATENT OFFICE.

MANES HAMBURGER, OF WASHINGTON, DISTRICT OF COLUMBIA.

## FASTENING DEVICE.

SPECIFICATION forming part of Letters Patent No. 432,938, dated July 22, 1890.

Application filed May 17, 1890. Serial No. 352,204. (No model.)

*To all whom it may concern:*

Be it known that I, MANES HAMBURGER, a citizen of the United States, residing at Washington, in the District of Columbia, have invented a new and useful Improvement in Fastening Devices, of which the following is a specification.

My invention relates to fastening devices; and it consists in the provision of means whereby the interlocking members thereof may be securely intermeshed and readily separated.

My invention is hereinafter fully described, illustrated in the drawings, and specifically pointed out in the claims.

Referring to the accompanying drawings, wherein like letters of reference point out similar parts on each figure, Figure 1 is a perspective view of my improved fastener, the two parts being separated. Fig. 2 is a similar view showing another form of connection to the material on which it is used. Fig. 3 is another view showing one member of the fastener spread out, also a view of the same bent over ready for insertion in textile fabric. Fig. 4 represents my improved fastener provided with plates, the surfaces of which are adapted to lie flat on each other when the fastener is interlocked. Fig. 5 is a sectional-detail view on the line  $x x$  of Fig. 4. Fig. 6 is a sectional view of the fastener attached to pieces of fabric, the two members being interlocked.

In the drawings, 1 represents one section of the fastener, which consists, essentially, of a strip or plate A, of metal, the central portion of which is bent upwardly and outwardly to form a projecting bow  $a'$ , springing from the opposite inward curves  $a$ . Said bow at its extremity or apex forms nearly a point. From thence it spreads outwardly at opposite inclines. The base of each incline then turns inwardly toward the other, and is then bent in opposite directions to compose curves  $a a$ . The outline or edge view of this bow will be practically in the form of a "keystone," by which name I shall herein indicate said projecting bow. The ends of the plate or strip may be finished in any suitable manner for connection to fabric. They may have pointed spurs  $a^3$ , adapted to be turned over at right angles to the plane of the strip or plate A. Said

spurs after being inserted in place are then easily overturned toward or away from each other for permanent attachment, or the ends of the strip or plate may have orifices  $a^5$  to receive pins, rivets, or stitching; but I do not desire to limit myself to any special manner of connecting the fastener to material.

The second member of the fastener is a plate or strip 2 in the drawings. This is composed, preferably, of a flat strip or plate of metal B, having a central orifice of suitable form for receiving the keystone-bow  $a'$ .

In Figs. 1 and 2 of the drawings the orifice  $b$  is represented as rectangular in plan, having in the lines of prolongation of the two edges parallel to the sides of the plates slits  $s$ , the purpose of which is to provide resiliency to the edges  $b'$ , which directly engage the keystone-bow. Like the member 1 this plate B may be finished with spurs  $a^3$  or other suitable means for attachment to the material. It may also, instead of the orifice  $b$ , have an indentation or depression of suitable shape and depth to receive the bow.

The action of the fastener will be readily understood from the drawings. When the two members are brought into juxtaposition and the keystone-bow brought over the orifice  $b$ , a slight pressure causes the shoulders  $a^2$  of the bow  $a'$  to yield and contract together, passing within the orifice or indentation  $b$ , and then instantly spring apart, catching the edges  $b'$  of the member B, and thereby preventing retraction. (Plainly illustrated in Fig. 6.) A firm pull outwardly will reverse this action; but the resiliency of the members is sufficient to resist transverse strain.

Fig. 4 shows a somewhat modified form of both members of the fastener, which is still further adapted to resist a considerable longitudinal strain without separation. The bow  $a'$ , either circular or keystone-shaped in section, is approximately conical in general form, and the orifice  $b$  in the twin plate B is made trapezoidal or tapering and somewhat longer than bow  $a'$ , with the edges  $b'$  slightly inturned, as shown in Fig. 5. This shaping of the members when they are intermeshed has the following result: The opposing strains are supposed to lie in the directions of the arrows shown. Thus, after the bow  $a'$  is sprung into

the orifice *b* it is forced along by the strain in the orifice and tightly held therein on the principle of the wedge, and the greater the strain the greater evidently will be the opposing resistance to separation.

Having now fully described my invention and the manner of its operation, what I claim, and desire to secure by Letters Patent of the United States of America, is—

10 1. A fastening device composed of two members, one of which is a metal plate, the central portion of which is upwardly bent to form a spring-bow shaped oval in cross-section, in combination with the other member compos-  
15 ing a flat metal plate having an aperture provided with prolonged slits at each end thereof, each of said plates having suitable means for attachment to folds or surfaces of fabric, as and for the purpose intended, substantially  
20 as described.

2. A fastening device consisting of two plates, the surfaces of which are adapted to be brought together and intermesh, provided

with means for attachment to opposite sur-  
faces of fabric, one of said plates having its 25  
middle portion bent upwardly and outwardly to form a conical tubular spring-bow having its diametrical opening tapering from end to end, the other plate provided with a trape-  
zoidal orifice, said orifice having two of its sides 30  
prolonged to form slits *s*, substantially as described.

3. A two-part fastening device of the character described, consisting of plate A, having keystone-shaped projecting spring-bow *a'* of 35  
conformation described, in combination with plate B, having opening *b*, provided with side prolonged slits *s*, each plate having overturned end spurs *a*<sup>3</sup>, or equivalent means for connection to opposite pieces of fabric, as and for 40  
the purpose intended, substantially as described.

MANES HAMBURGER.

Witnesses:

SAML. H. JACOBSON,  
ARTHUR C. CLARKE.