

(No Model.)

F. E. HALL.  
GLOVE FASTENER.

No. 503,081.

Patented Aug. 8, 1893.

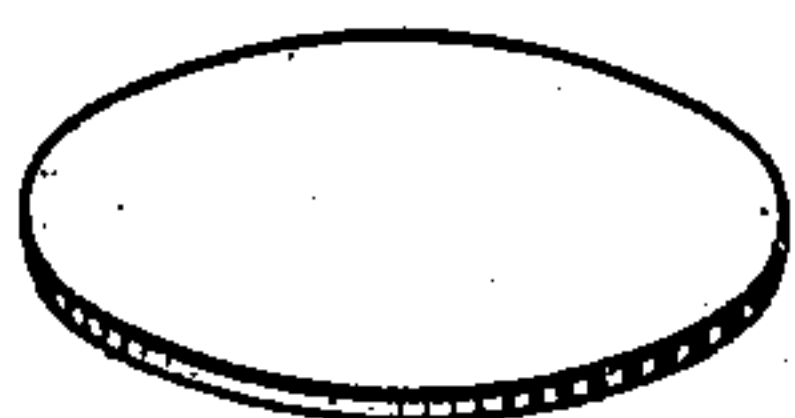


Fig. 1.

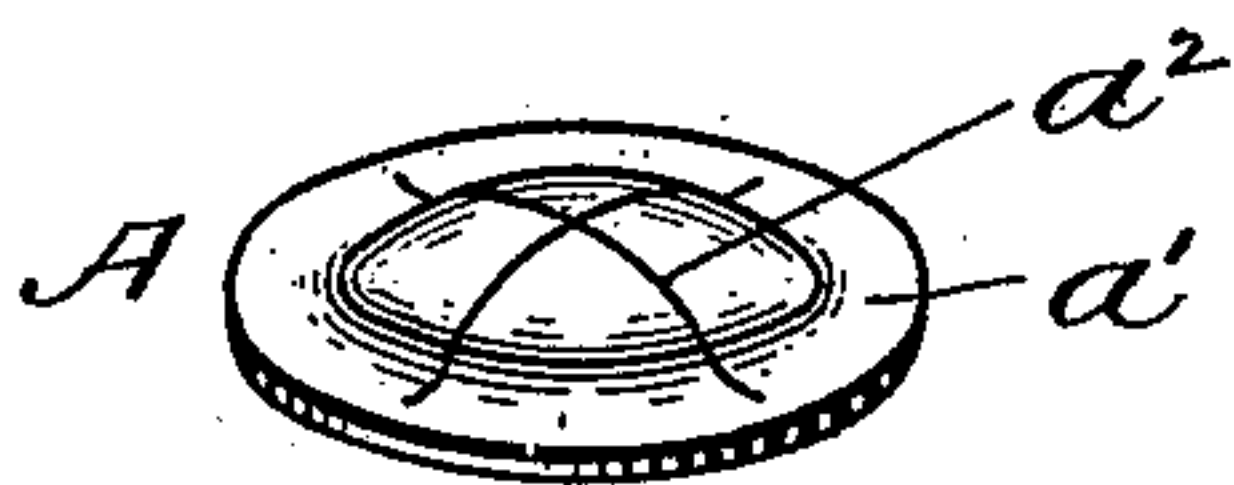


Fig. 2.

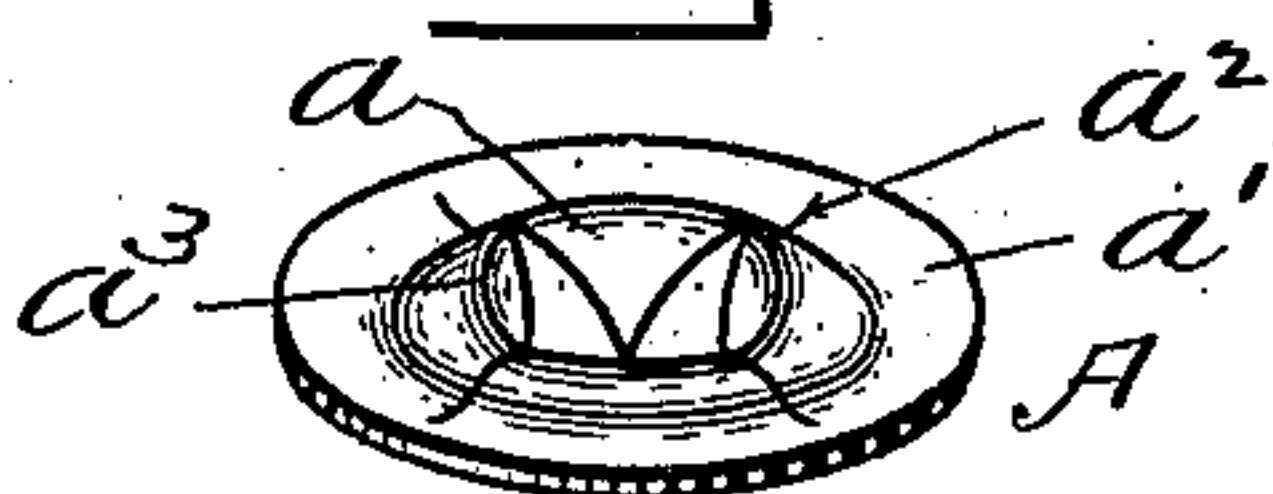


Fig. 3.

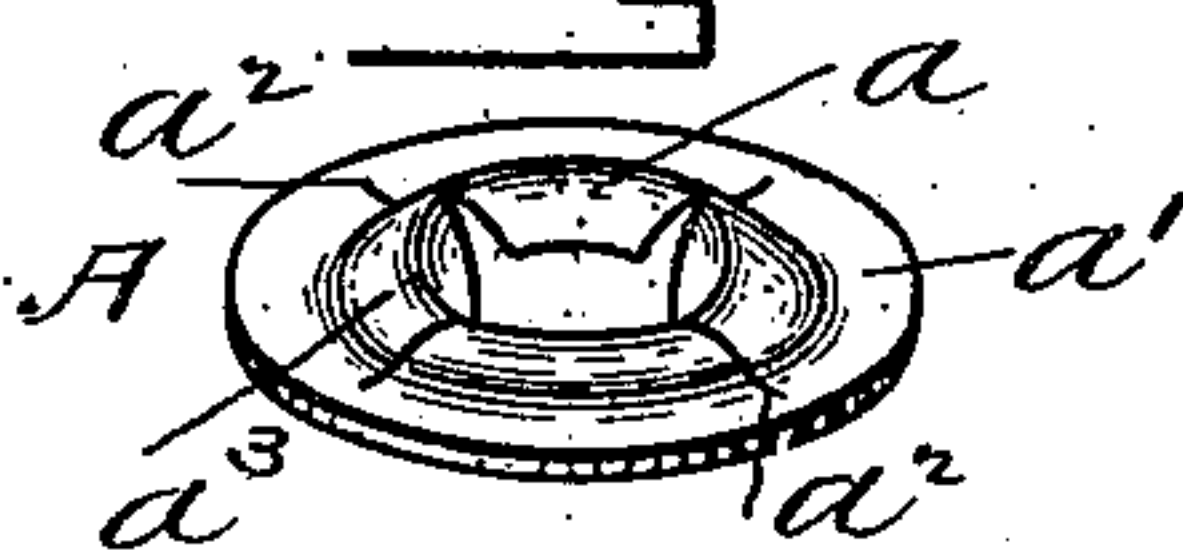


Fig. 4.

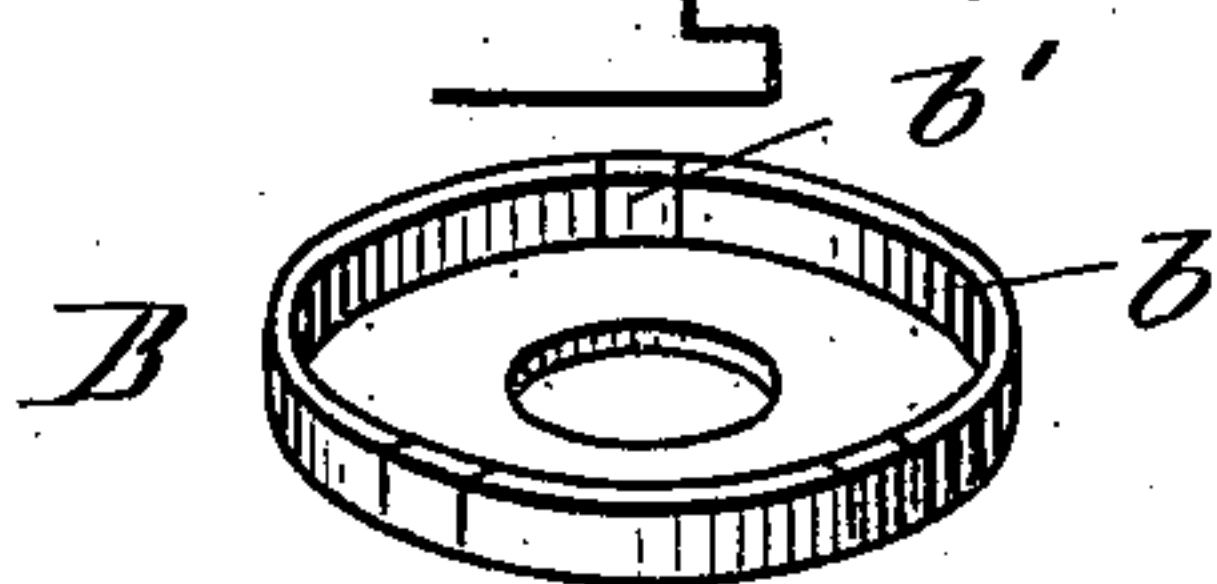


Fig. 5.

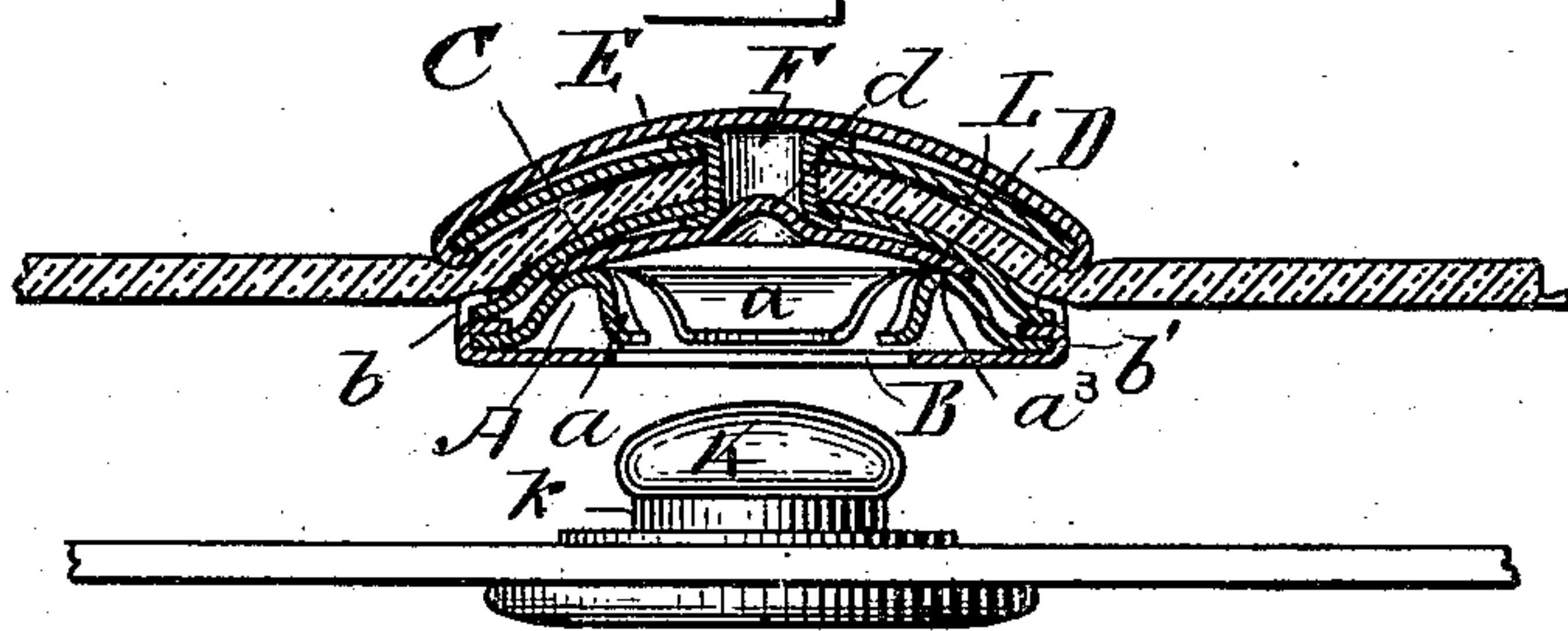


Fig. 6.

WITNESSES

*Mina Robinson*  
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INVENTOR.

*Frank E. Hall*  
*By Albert E. Leach*  
*Att'y*

# UNITED STATES PATENT OFFICE.

FRANK E. HALL, OF NEWTON, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE CONSOLIDATED FASTENER COMPANY, OF PORTLAND, MAINE.

## GLOVE-FASTENER.

SPECIFICATION forming part of Letters Patent No. 503,081, dated August 8, 1893.

Application filed February 1, 1893. Serial No. 460,545. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK E. HALL, of Newton, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Fasteners for Gloves and other Articles, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to the button hole member of a two-part spring fastener for gloves and other articles, and has special reference to the construction and form of the spring which constitutes the stud-clasping and retaining portion of said member, and to the peculiar arrangement and mode of attachment of said spring within the member.

The principle object of my invention is to provide a spring that shall occupy very little more vertical space than a flat slitted washer, and at the same time possess far greater resiliency than such a washer. It has heretofore been a common custom in springs of the slitted type, wherein the resiliency is attained by wings, to make said spring in the form of a flanged eyelet with a high slitted shank or body, the height of the latter being considered necessary in order to obtain sufficient play for the spring ears or wings. This construction makes the fastener very high and ungainly, necessitating the use of a long stud, which is objectionable, especially in view of the fact that the constant tendency and aim in the button art has of late been to produce as flat and low a button as possible, so that it may not project appreciably above the glove or other material. I attain this end by making my spring in the form of a struck up plate, having inwardly projecting spring ears or wings, the form of the plate being ruffled, or having an annular corrugation between the inner opening and the outer edge, the slits which form the spring wings being carried back through this ruffle or corrugation nearly to the outer edge. In this manner, by having the spring wings bent back upon themselves, or, as it were, folded, I am enabled to gain a far greater swing and resiliency to each wing from the central opening to the outer circumference than if the spring were perfectly flat. Furthermore, by securing the spring firmly

by its outer edges within the stud receiving chamber I gain additional advantages, as hereinafter set forth in detail.

Referring to the accompanying drawings Figures 1, 2, 3 and 4 show in perspective various stages in the construction of the spring from the flat blank to the finished article. Fig. 5 is a perspective view of the bottom plate with its upwardly projecting flange, and Fig. 6 shows the two parts of a complete fastener, the button hole member of which embodies my invention, the said button hole member being shown in central section.

The spring A, forming the principal feature of my invention, is struck up from the plain circular blank shown in Fig. 1, into the shape shown in Fig. 2, being by the first operation crowned upward centrally, and afterward cut with a number of slits radiating from the center nearly to the outer edge thereof, said outer edge being preferably flat. The spring ears  $a$  thus formed by the slitting, are next curved downward and inward as shown in Fig. 3, forming thereby the annular ruffle, groove or corrugation,  $a^3$ . Finally the spring is cut out centrally, as shown in Fig. 4, with an opening of the required size to snap over the stud head. The spring is firmly held by its outer edges within the stud receiving chamber which rests on the under surface of the glove material. As herein shown, this stud receiving chamber is formed of the under or bottom plate B and curved top plate C.

The bottom plate B has the upwardly projecting flange  $b$ , which is provided by slits with a number of ears  $b'$ . The spring being placed upon the bottom plate and within the flange  $b$ , the ears  $b'$  are clinched down upon the flat outer edge  $a'$  of the spring, thus holding it firmly to said bottom plate, which is in turn held to the curved plate C by turning down the flange  $b$  around said plate. If desired, the riveting anvil D may first be interposed between the plates B and C before clinching together, the anvil resting upon the spring. The stud receiving chamber is secured to the under surface of the glove or other material in any desired manner, preferably by means of a central rivet, suitably held within a button-like dome or cover E.



In the present case the rivet F is held by its flange between the double cover, composed of the two plates E and L, and the two main parts of the button hole member thus formed are finally fastened together by passing the eyelet F through the material, and turning it outward over the anvil nipple *d*, the parts being held between the suitably shaped dies.

The spring A, while rigidly held by its outer edges within the stud receiving chamber, may be so held in a variety of ways, as by ears projecting downward from the plate C. The spring thus constructed may be made as low vertically as desired, the height thereof being made such as to give sufficient head room for the stud within the chamber. At the same time, while occupying but little space vertically, the spring ears *a* have great resiliency, by reason of the annular groove or corrugation *a*<sup>3</sup>, which increases the length of the spring ears, but, as it were, folds them in a compact space, with the consequence that the spring acts much in the manner of a perfectly flat slitted washer, but with much greater movement in the resilient portion. The size of the central opening of the spring is considerably less than the diameter of the contracted neck *k* of the stud K, while the size of the central opening of the bottom plate B is such as to easily receive within it the said stud. When the stud is inserted in the chamber of the button hole member, the spring ears snap together around the contracted neck of the same, and each ear always has a continuous gripping surface around its portion of the neck of the stud, with the result that the stud is evenly supported on all sides. It is however when the glove is tightly stretched across the wrist of the wearer, that the greatest strain comes upon the fastener, and in most fasteners the lateral strain has been borne by the spring alone, or in such a manner that the spring becomes loose, and consequently unresilient after a time.

In the present fastener, the construction is such, that when the stud rests against one side of the central opening in the bottom plate B, being drawn to one side by the lateral strain of the glove on the wrist so that the rigid bottom plate stands all this lateral strain, the spring A still bears against the neck of the

stud on all sides, even though said stud is out of center, because the resiliency of the folded spring ears is so great, that the opening of the spring is virtually drawn to one side. The spring being held by its outer edges, the result is that when pulled to one side there is still a firm grip on the stud to prevent a vertical separation of the two members, while the spring itself does not bear the brunt of the lateral strain.

I claim—

1. In the button hole member of a spring fastener for gloves and other articles, a stud receiving chamber, in combination with a spring plate provided with an annular corrugation and having slits passing from the central opening of said spring nearly to the outer edge thereof, whereby downwardly and inwardly projecting folded spring ears are formed, said spring plate being firmly held in said chamber by its outward edge, a riveting plate D, and dome with riveting devices, whereby the spring chamber is secured to the material, substantially as described.

2. In the button hole member of a spring fastener for gloves and other articles, a stud receiving chamber provided with a bottom plate, in combination with a slitted annularly corrugated spring plate having downwardly and inwardly projecting folded spring ears, said spring plate being held by its outer edges to the said bottom plate, and a dome or cover provided with a rivet engaging with said stud-receiving chamber, substantially as described.

3. In the button hole member of a spring fastener for gloves, a stud receiving chamber consisting of the plate C and plate B having the ears *b'*, in combination with a slitted, annularly corrugated spring plate having downwardly and inwardly projecting spring ears, and riveting devices, whereby the stud receiving chamber is secured to the material substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 26th day of January, A. D. 1893.

FRANK E. HALL.

Witnesses:

ALBERT E. LEACH,  
M. T. LEACH.