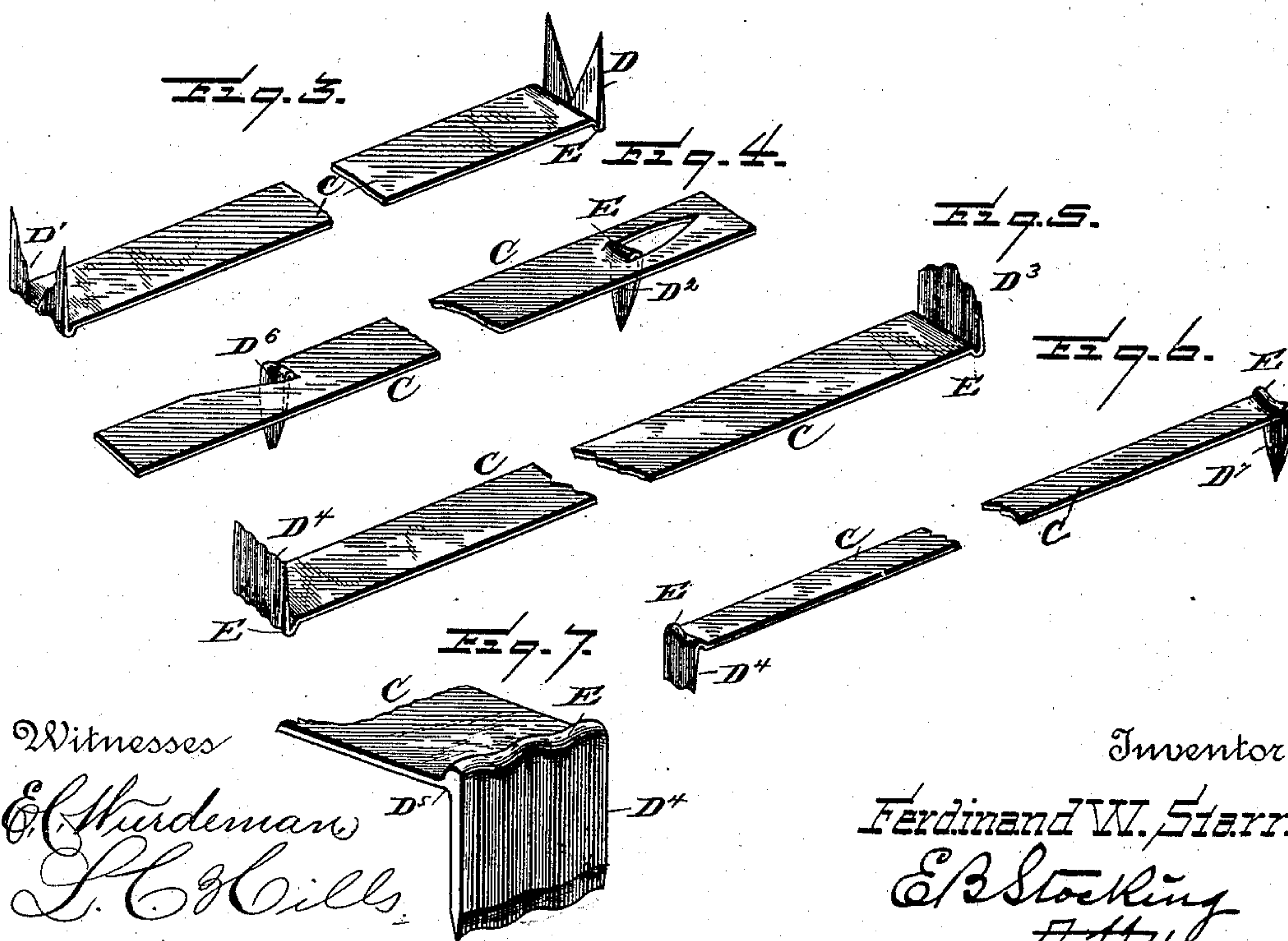
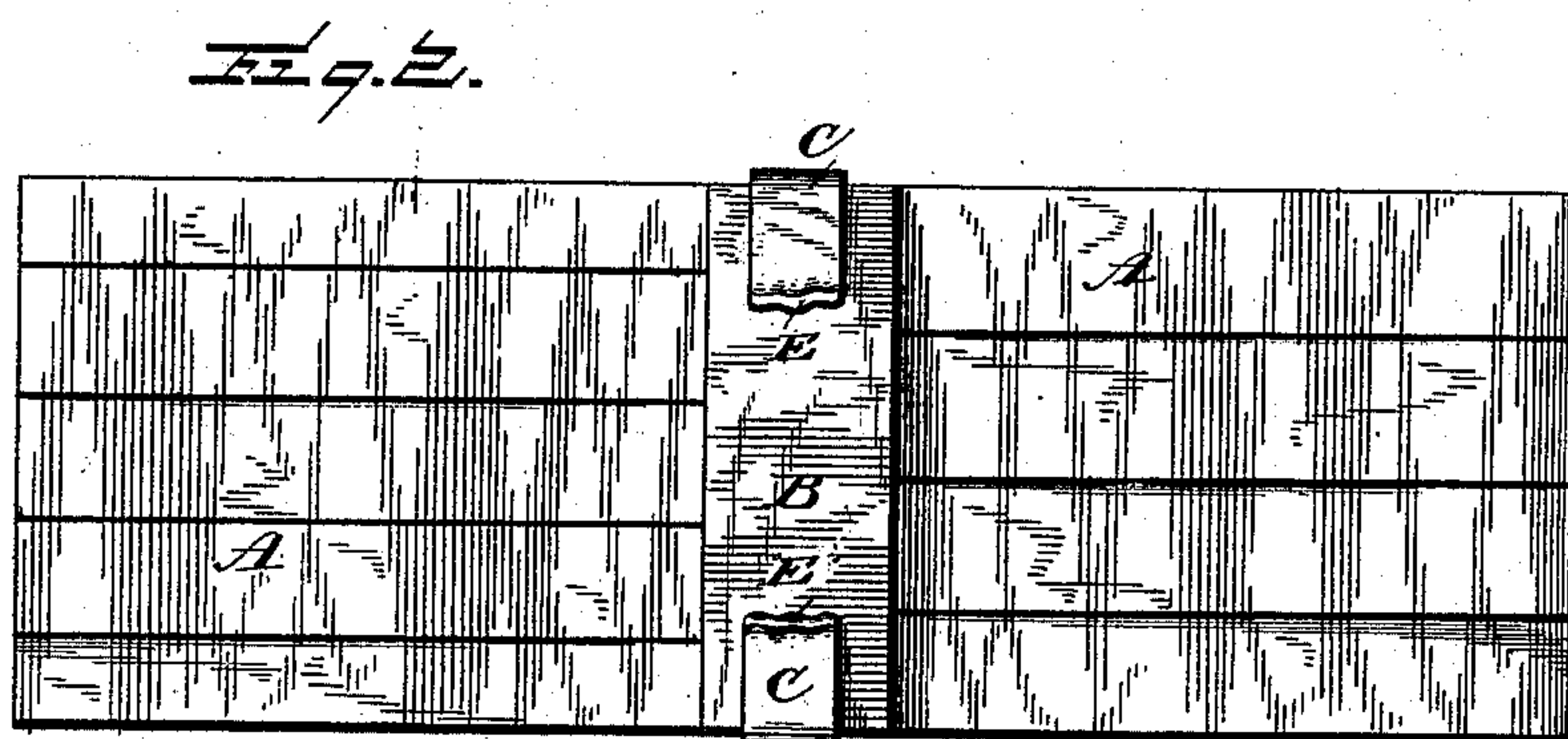
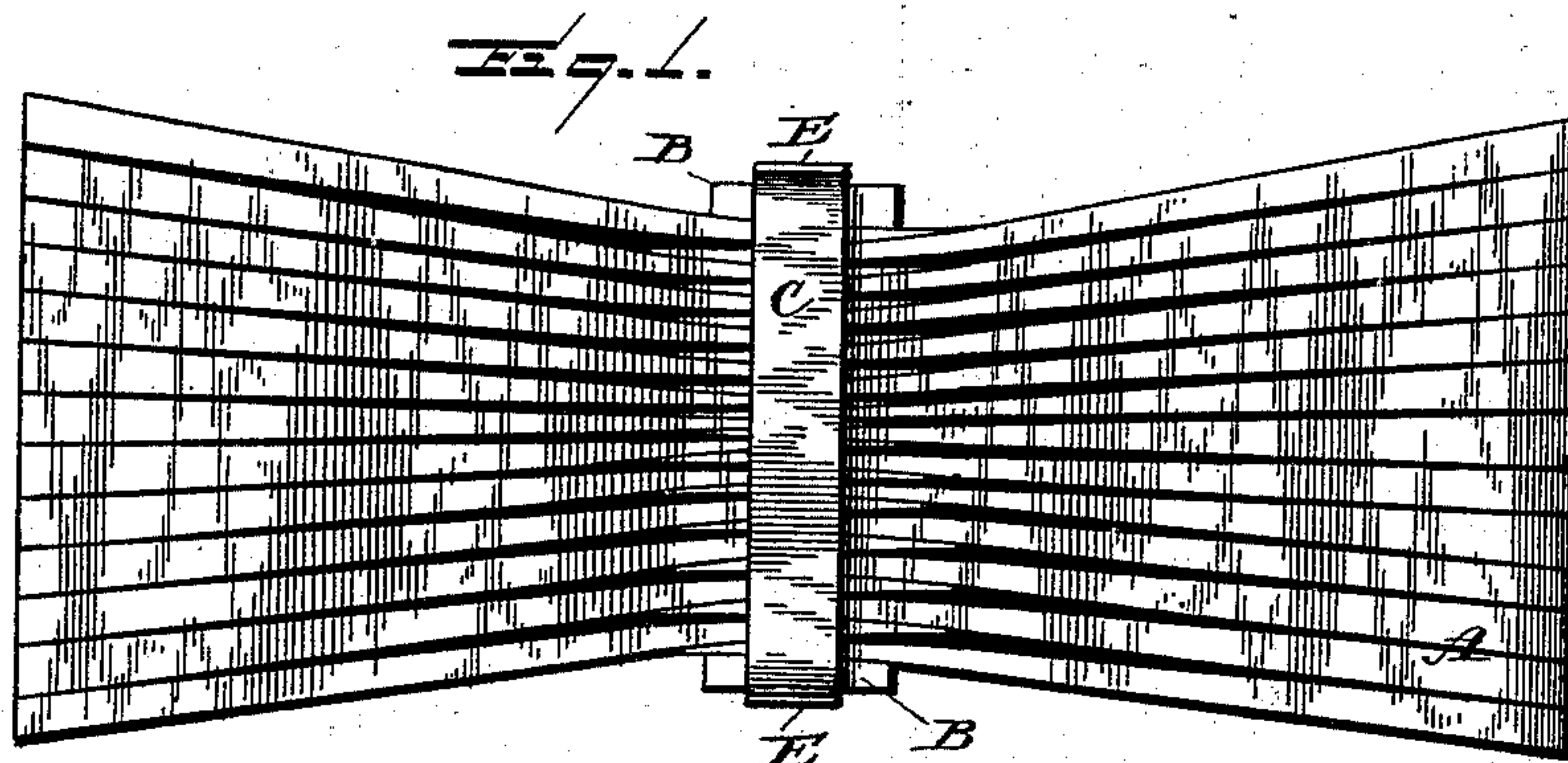


(No Model.)

F. W. STARR.  
FASTENING OR BINDING STRAP.

No. 406,544.

Patented July 9, 1889.



Witnesses

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# UNITED STATES PATENT OFFICE.

FERDINAND W. STARR, OF SPRINGFIELD, OHIO.

## FASTENER OR BINDING-STRAP.

SPECIFICATION forming part of Letters Patent No. 406,544, dated July 9, 1889.

Application filed March 20, 1889. Serial No. 304,010. (No model.)

*To all whom it may concern:*

Be it known that I, FERDINAND W. STARR, a citizen of the United States, residing at Springfield, in the county of Clark, State of Ohio, have invented certain new and useful Improvements in Fasteners or Binding-Straps, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to that class of fastenings for bales, boxes, and bundles in which a metal band is bent over at the ends or stamped down between the ends to form a point for the purpose of securing said band to the bale or box.

To this end I construct my bands as described in the following specification, and with such novel features as are particularly set forth in the claims at the end of the same.

In the drawings, Figure 1 is a side view of a bundle of shingles secured by my band. Fig. 2 is a top view of the same. These two figures together show the mode of attachment of the bands for the purpose of securing any bundle, a bundle of shingles being used as an example. Figs. 3, 4, 5, and 6 show details of various modifications of my improved band. Fig. 7 is a detail of the end of one form of my improved band, showing the upsetting of the body of the metal.

A represents a bundle of shingles brought together in the ordinary way, with the narrow ends of the shingles together at the middle. Upon the top and bottom of this bundle there is generally a pair of cleats B for the purpose of holding these middle portions tightly together. Along the sides of the bundle there are laid the bands C, made of metal of any convenient kind, turned over at the ends and sharpened for the purpose of entering the wood of the bundle or box to which they are applied. These ends are in the case shown applied to and driven into the cleats upon the top and bottom of the bundle. As hitherto made, this class of fastening had the ends turned down approximately perpendicular to the direction of the body of the band, as shown at D in Fig. 3.

It has been found that with this form of band there is great danger of the breakage of the strips from the striking of the body of the band, especially just back of the point of

flexure, by the sharp edge of the hammer. As generally used, a hammer does not come down squarely upon the top of a nail or other article to be driven, but at the moment of percussion the plane of the striking-surface of the hammer is sloped slightly out of the horizontal, and when the surface upon which the hammering is flat and at all extended, as is the case with these bands, the farther edge of the hammer strikes with a good deal of force upon that portion of the band back of the downturned point. The effect of this contact is the frequent breakage of the bands near the points and the consequent destruction of the band for all practical purposes of fastening.

My improvement consists in the upsetting or double flexure of the band at the point of downturning to form an outward ridge or hump E. The function of this hump is to form a mark for the carpenter or cooper, whereby the hammer-stroke may be the more easily guided, and, further, to so raise the point of percussion that the incline of the hammer-surface shall not have the effect of making the edge of the same come in contact with the band behind the point. Again, the well-known strengthening effect of corrugations comes into play, and even if the hammer comes occasionally into contact with the band itself there will be less danger of breakage than with the old form of band. Especially is this the case where the metal is positively upset, as shown in Fig. 7, at D<sup>5</sup>, for the increase of metal at this critical point of the structure is effective in preventing breakage. The points may be and are, under various circumstances, of any form, as shown in the drawings, and the exact form of these points will not, of course, affect the validity of my invention, the vital point of which is the upsetting or reverse turning and humping of the points, as shown.

At D is shown a pair of points struck out in a plain V. D' shows the same, but corrugated.

At D<sup>2</sup>, Fig. 4, there is shown one of these points struck out of the body of the band between the ends of the same, leaving an aperture. These are principally used where it is desired to get a large number of attaching-points upon the box or bale, and a modifica-



tion is shown at D<sup>6</sup>, where this point is struck out of the side of the band. This point may of course be single or double, plain or corrugated.

5 Fig. 5 shows the whole width of the band struck down and corrugated. The entering edge of this corrugated portion may be straight or curved, as shown at D<sup>3</sup> and D<sup>4</sup>, at either end of the band in this figure.

10 At D<sup>7</sup>, in Fig. 6, the end is shown turned down in the entire width, and the same pointed, as shown in Fig. 4, at D<sup>2</sup>.

Fig. 7 shows the form in which the body of the metal is upset, properly speaking, and the metal at the bend greatly increased thereby.

15 Of course these modifications are by no means all that could be made, and I do not wish to be understood as limiting myself to the exact details of these modifications.

20 What I claim is—

1. A fastener or binding-strap provided with prongs formed integrally and upset out of the plane of the strip to constitute a driving-head, substantially as described.

25 2. A fastener or binding-strap consisting of a strip of metal having corrugated prongs,

the base of which is struck up out of the plane of the strip to form driving-heads, substantially as described.

3. A fastener or binding-strap consisting 30 of sheet metal, having integral prongs corrugated and struck up at their bases to form driving-heads and having an angular outline at their driving edges, substantially as specified.

4. A fastener or binding-strap provided 35 with prongs formed integrally and upset out of the plane of the strip, the metal being thickened at the base of said prongs, substantially as specified.

5. A fastener or binding-strap provided 40 with prongs formed integrally, corrugated and struck up out of the plane of the bases of the same to form driving-heads, and having multiple points at their driving edges, 45 substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FERDINAND W. STARR.

Witnesses:

E. B. STOCKING,  
H. SUTHERLAND.