

(Model.)

2 Sheets—Sheet 1.

I. KINNEY.
METAL FABRIC.

No. 343,958.

Patented June 15, 1886.

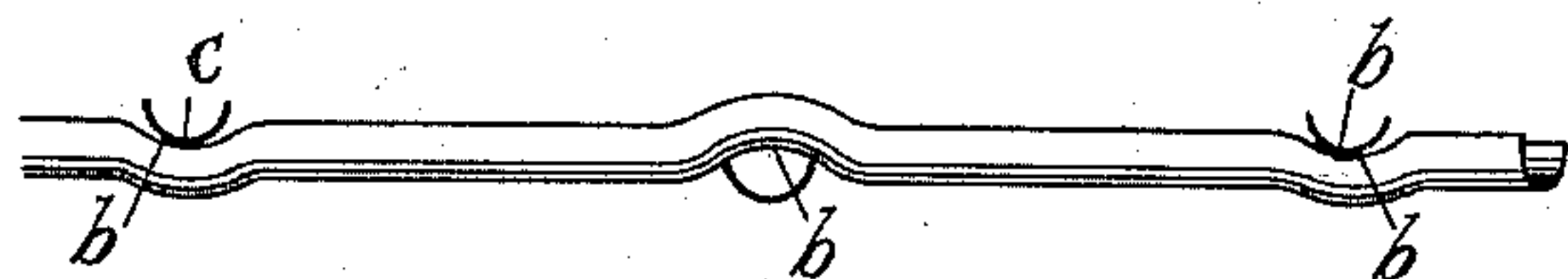


Fig. 2.

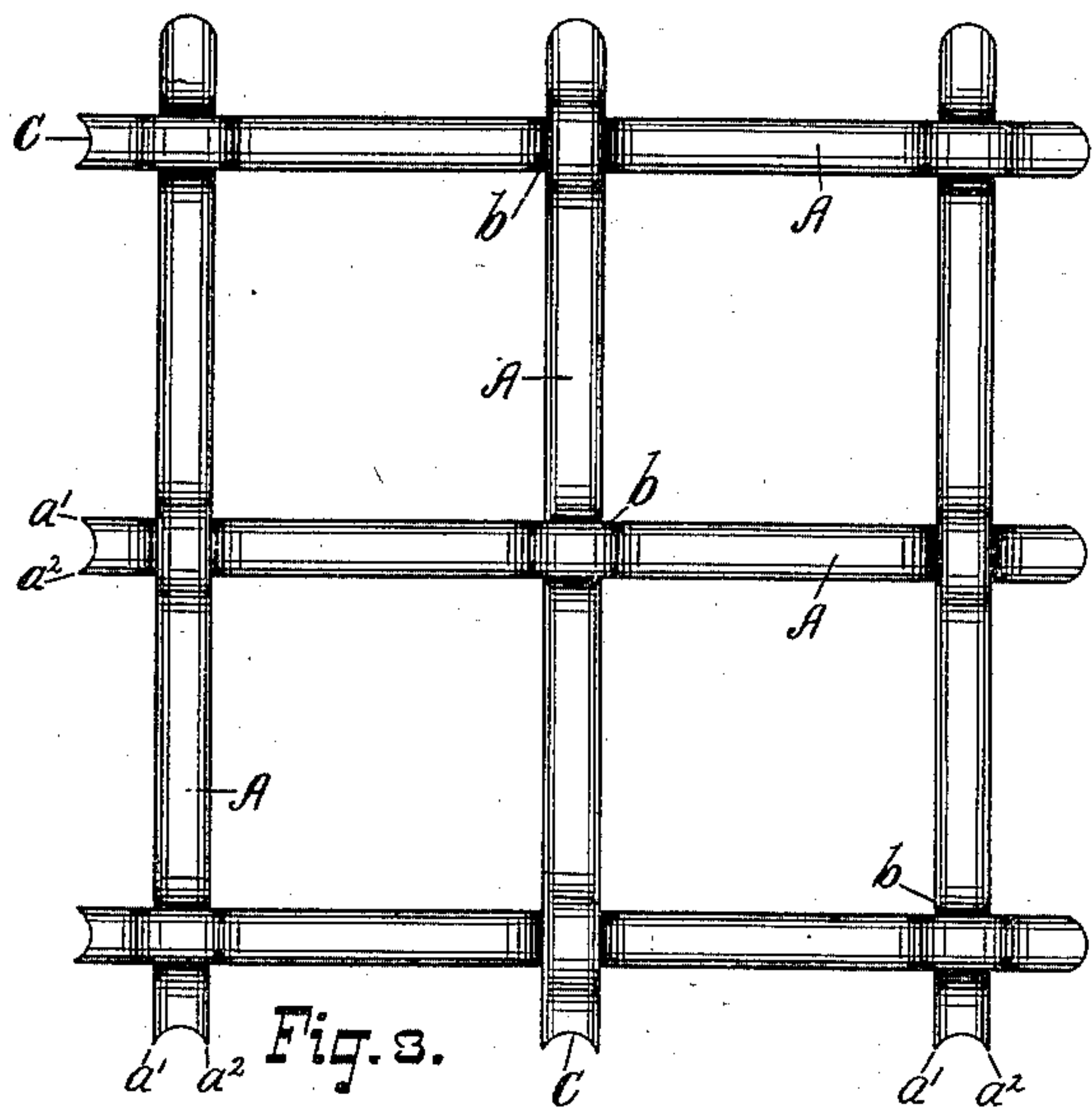


Fig. 3.

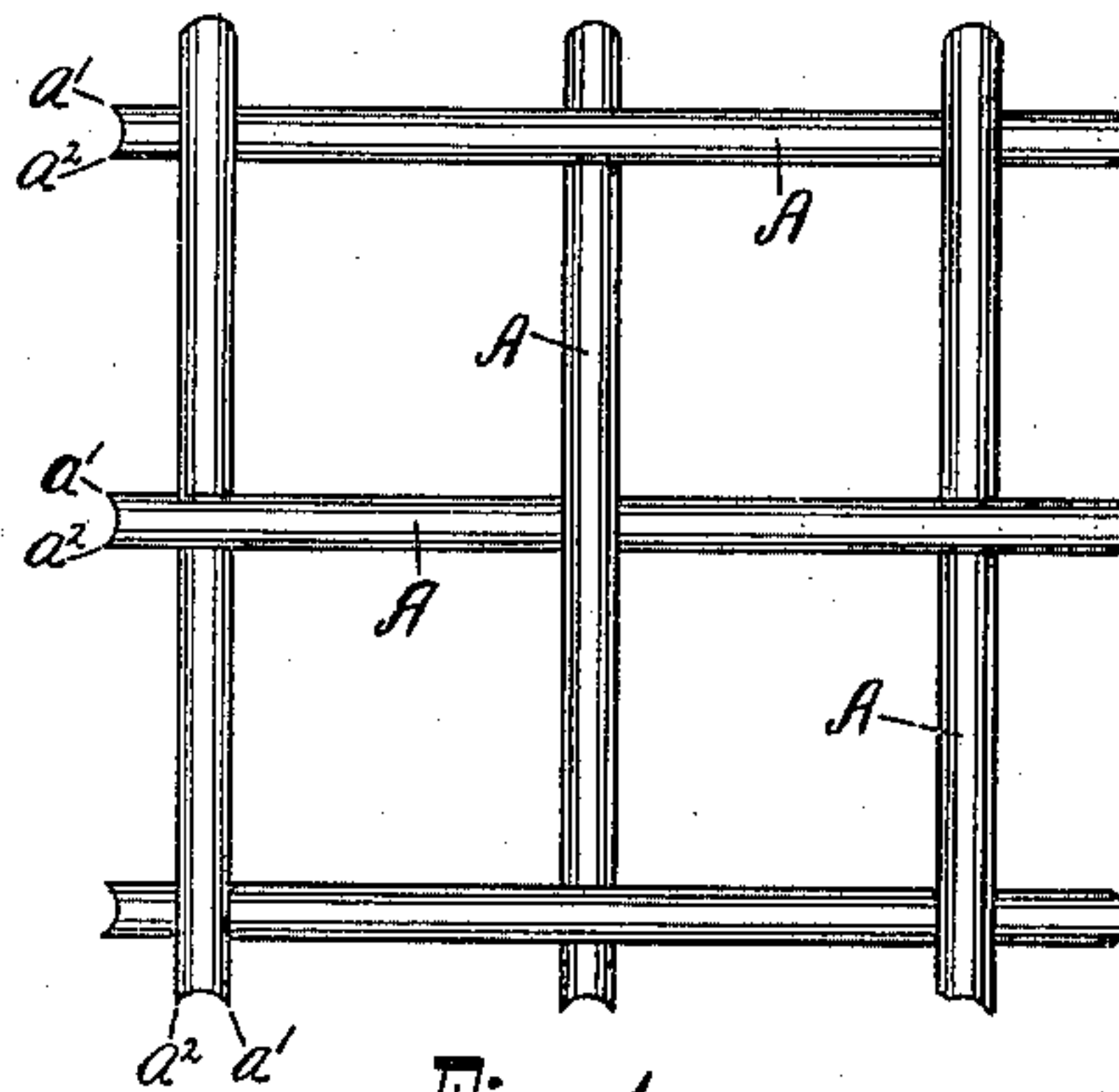


Fig. 1.

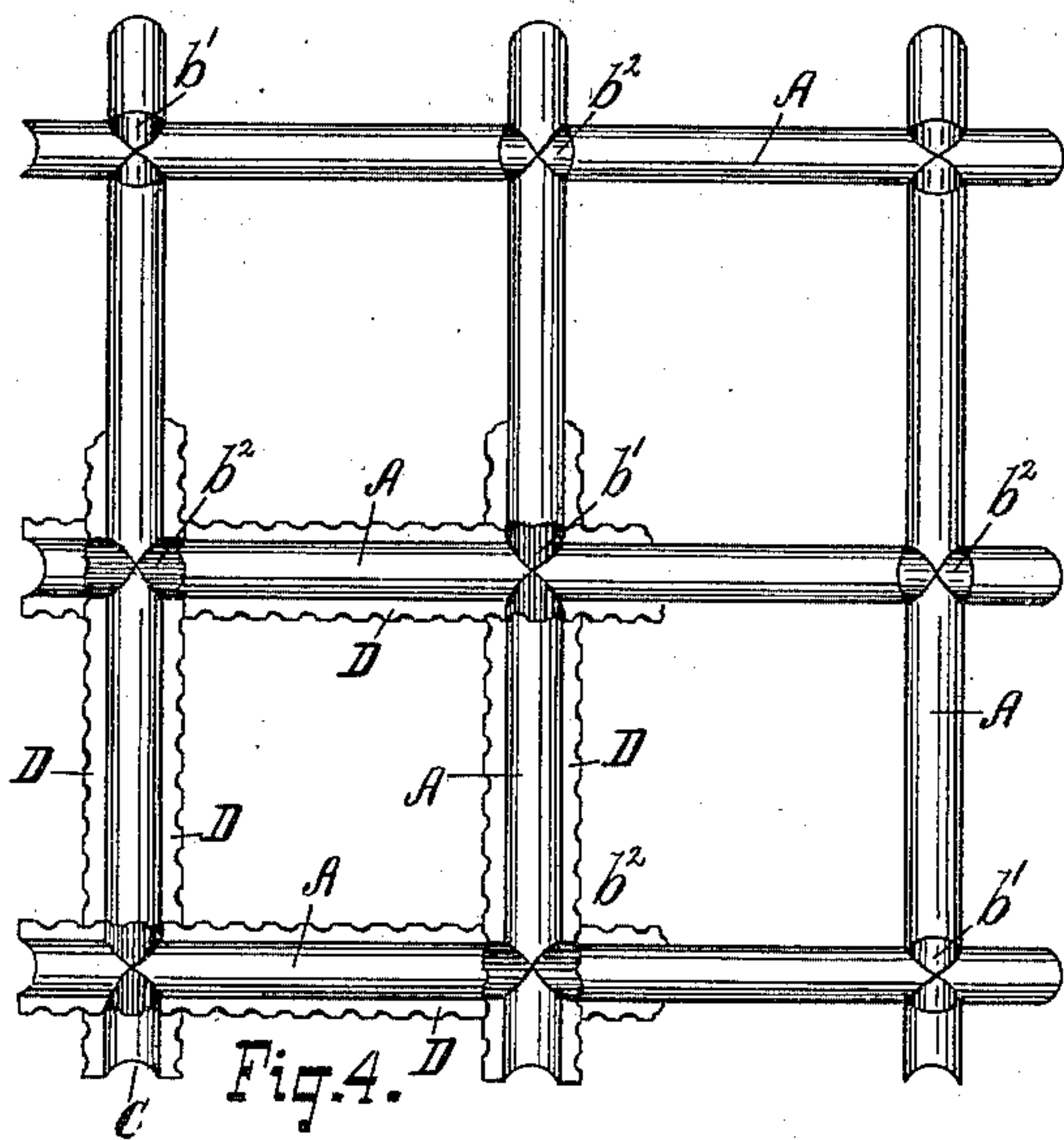


Fig. 4.

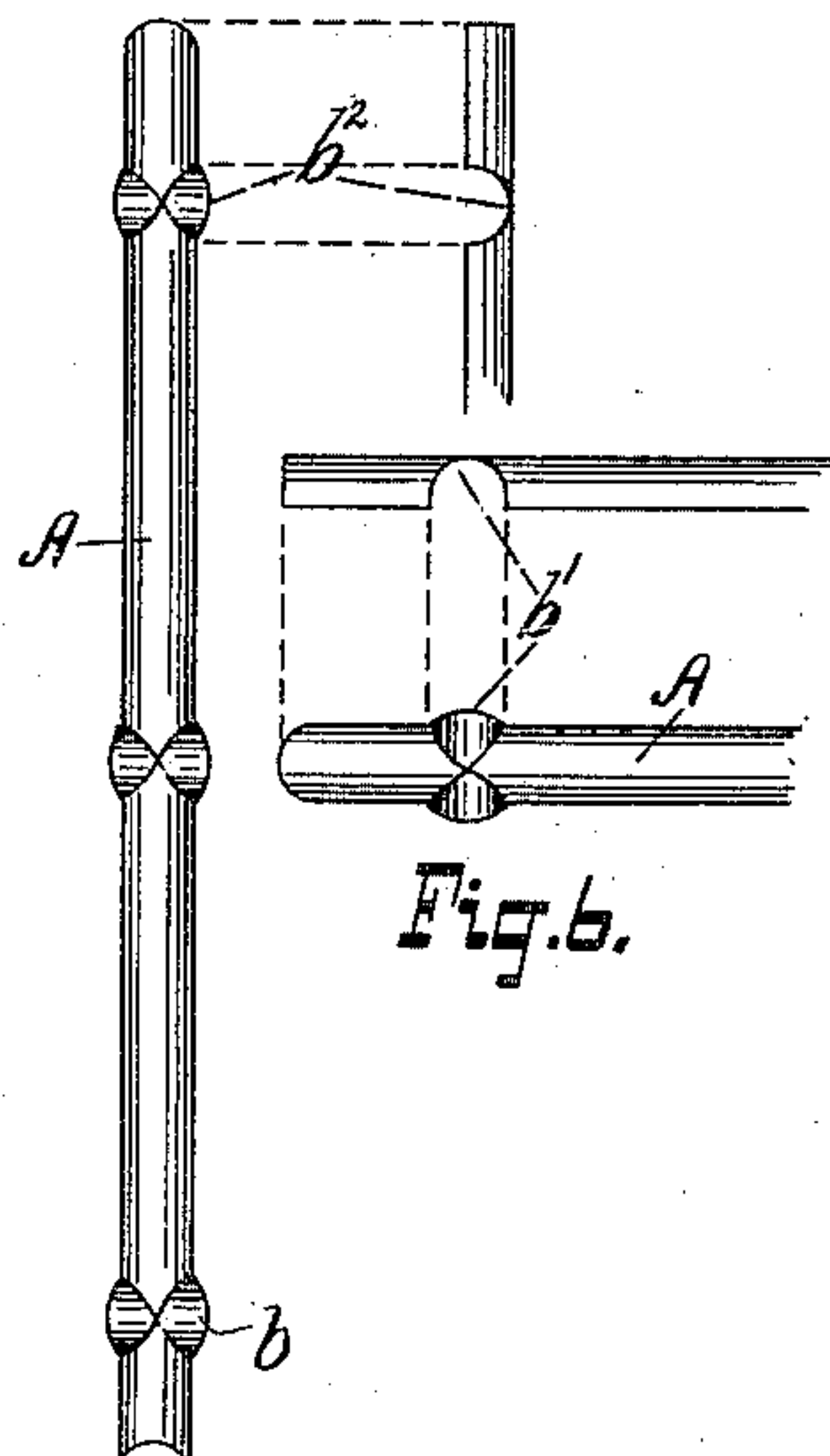


Fig. 5.

Fig. 6.

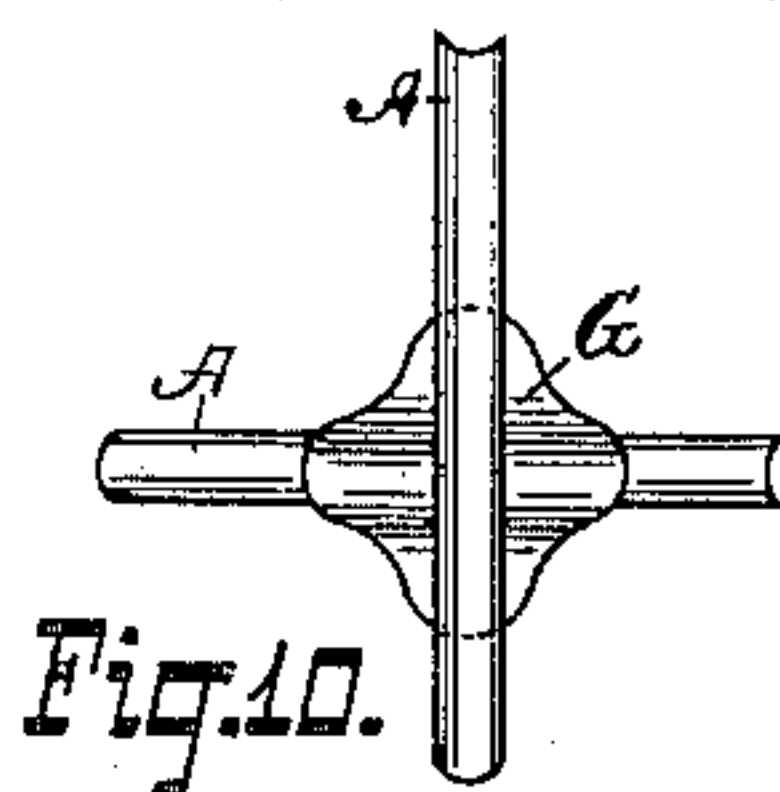
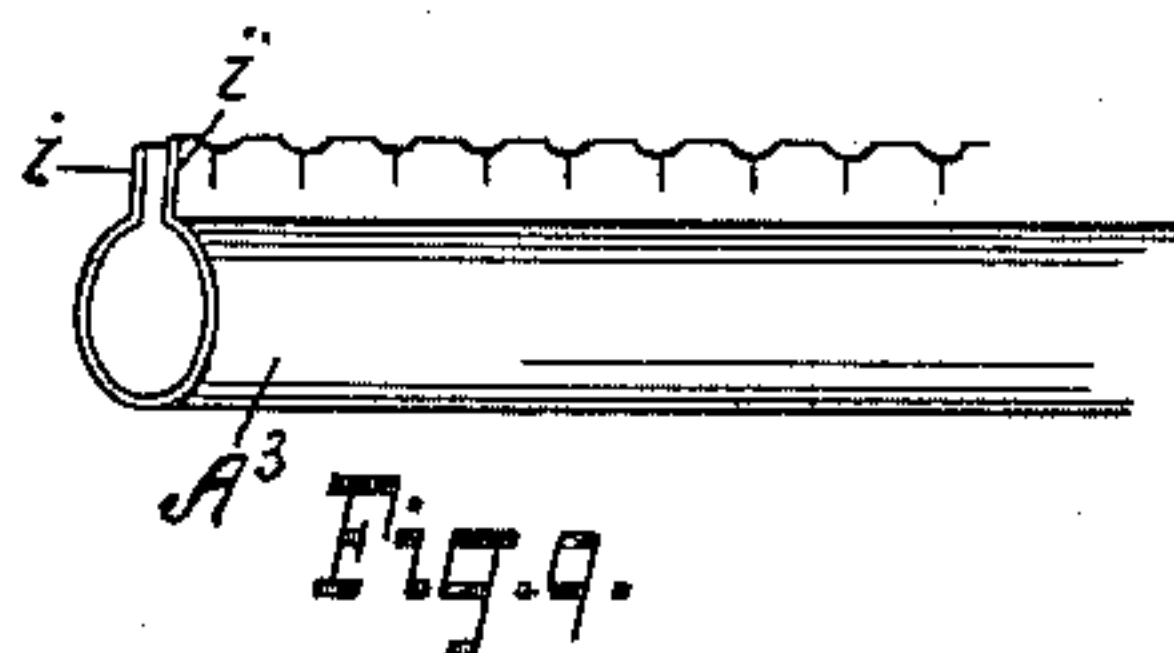
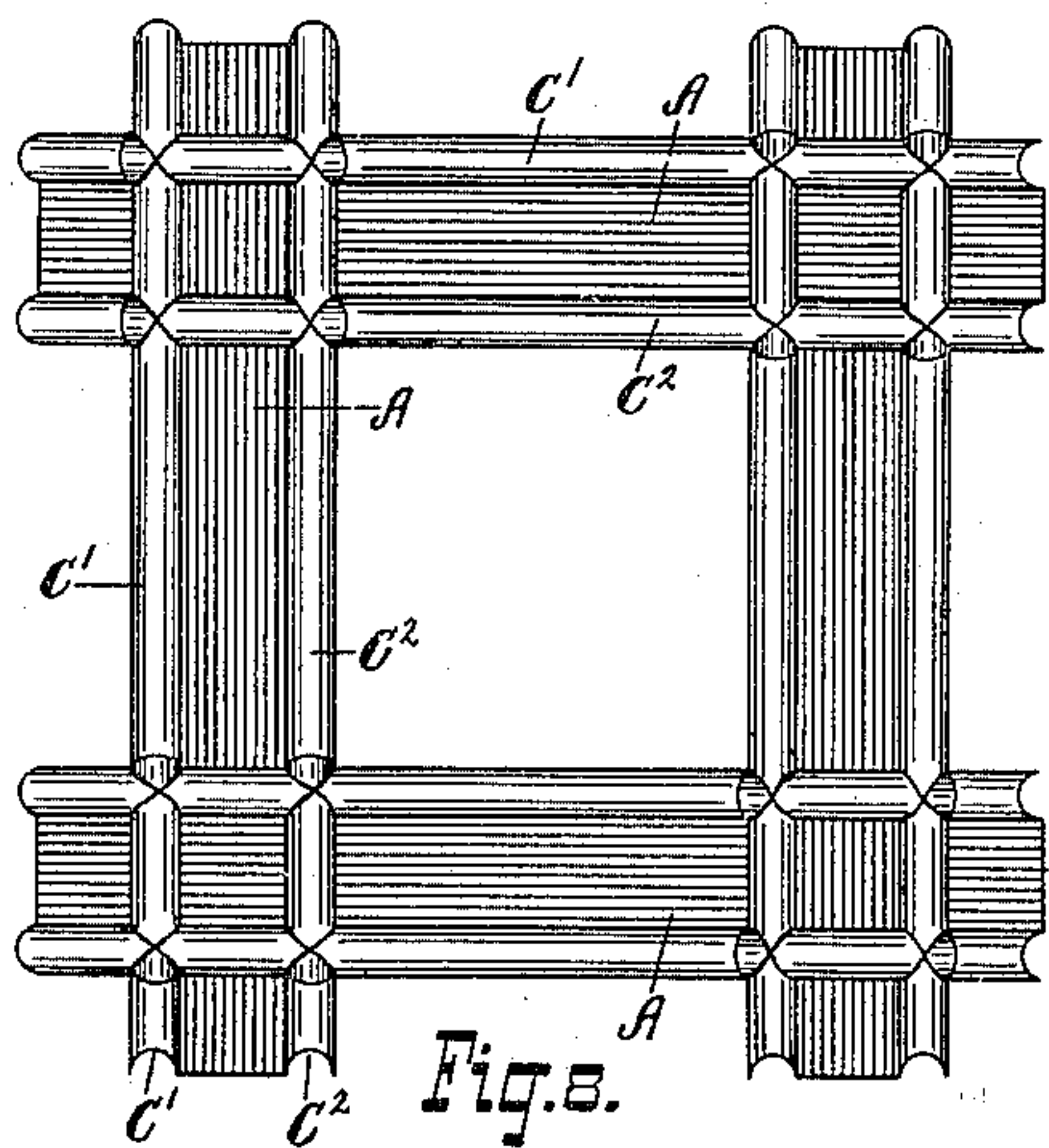
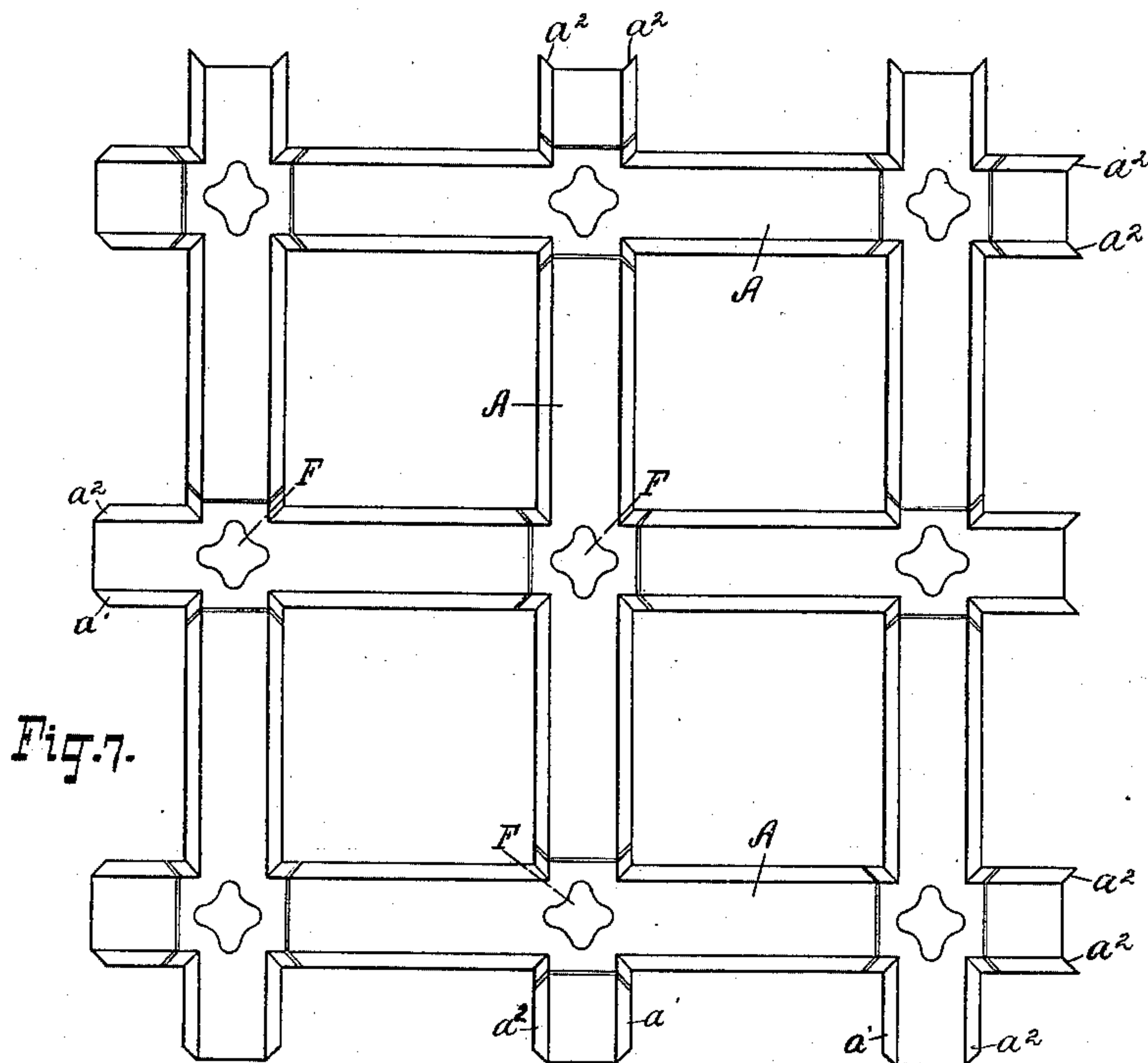
Witnesses
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Carl Hayden

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By P. J. Edmunds
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UNITED STATES PATENT OFFICE.

ISRAEL KINNEY, OF WINDSOR, ONTARIO, CANADA.

METAL FABRIC.

SPECIFICATION forming part of Letters Patent No. 343,958, dated June 15, 1886.

Application filed August 22, 1885. Serial No. 175,118. (Model.)

To all whom it may concern:

Be it known that I, ISRAEL KINNEY, a subject of the Queen of Great Britain, and a resident of the town of Windsor, in the county of Essex, in the Province of Ontario, in the Dominion of Canada, machinist, have invented a new and Improved Metal Fabric, of which the following is a specification.

The object of my invention is to produce a strong, stiff, and ornamental open frame-work with little weight of metal.

It consists, essentially, in metal strips or bars so formed that a maximum degree of strength may be had from a minimum quantity of metal, said strips being suitably secured together, as hereinafter fully described.

To this end I take flat strips of metal, and by any suitable process corrugate, curve, or emboss said strips, or form longitudinal grooves, angles, or channels therein, to give them strength and ornamentation; or, which is probably preferable, I construct the desired shaped strips or bars at the original or first process of manufacture by means of suitably-shaped rolls at any ordinary rolling-mill, the object being to produce metal strips or bars corrugated, flanged, or shaped in a manner best adapted to give them stiffness and strength with little weight of metal, and also to produce in said bars the necessary indentations or recesses to enable them to be woven or riveted together. These recesses are so constructed that when placed in proper position the bars or strips, even if thick, will nest snugly together and form an approximately-smooth fabric, and at the same time the amount of metal at these recesses will be about the same as at other portions of the bar or strip; or, if preferred, they may be given the proper form by drawing through dies, in the manner well known in the manufacture of wire. For convenience of shipping, these strips or bars may be put up into bundles or coils, and can be readily woven or riveted together when desired. The lighter kinds of fabric may be made by first weaving or riveting together thin flat strips of metal, and then by a stamping or rolling process curve, corrugate, or emboss said strips to give them strength and ornamentation.

The construction will be more particularly described and claimed with reference to the

accompanying drawings, wherein Figure 1 is a view of a small portion of a metal fabric constructed of curved strips or strands of metal. Fig. 2 is an end view of a small portion of a metal fabric constructed of curved strips or strands of metal in which indentations are formed in one or both strips where they cross each other. Fig. 3 is another view of same. Fig. 4 is a plan view of a small portion of a metal fabric constructed of curved strips or strands of metal formed with ornamental flanges. Figs. 5 and 6 are plan and side views of metal strips or strands in which deep indentations are formed. Fig. 7 is a view of a small portion of a metal fabric constructed of embossed strips of metal in which the edges of the strips of metal are bent at an angle to their faces. Fig. 8 is a view of a small portion of a metal fabric constructed of strips of metal formed with two curves or channels or corrugations lengthwise of the strip of metal at the edges, leaving a flat smooth surface between these two channels for ornamentation by embossing or otherwise. Fig. 9 is a view of a tubular metal rod or strand, several of which may be woven together to form a fabric. Fig. 10 is a view of an ornamental brace or strip of metal which is placed between these metallic strips or strands of wire where they cross each other.

A A designate strips or strands of metal, in which depressions *b b* are formed. These depressions *b b* are formed on the strips or strands of metal A A at intervals where they cross each other, as shown particularly in Figs. 2, 5, and 6 of accompanying drawings. These depressions *b b* hold the adjacent strip A in place and also greatly strengthen the frame-work by preventing the curved or corrugated portion C of the strip from spreading or flattening out, as it will be seen that the depression *b* on one strip forms a brace or tie for the two edges *a' a'* of the adjacent strip to rest upon, thus giving two bearings, instead of one, and preventing the contour of the strips A A from being altered, and thus weakened. In very light work these indentations may or may not be formed as required when the indentations *b b* are not formed in the curved strips A A, and when they are woven together in a similar manner to ordinary wire-work they have the greatest advantage, how-

ever that there may be two or more points, a' a^2 , of contact, as shown in Fig. 1 of accompanying drawings, where the strips cross each other, instead of one, as in wire-work. These indentations $b b$ also permit the strips A A where they cross each other to fit or nest snugly together, thus insuring an approximately-smooth uniform face and making the sheet of open-work at and between the joints very nearly the same thickness. In all cases the strips lengthwise and across may be indented or recessed where they come in contact or cross each other; or these depressions, indentations, or recesses may be formed in one set of strips running lengthwise and not formed in the strips running crosswise, or vice versa. The strips running in one direction in which these indentations $b b$ are not formed retain their contour throughout; or these indentations may be formed alternately in each strip or strand of the fabric. In these strips or strands of metal A A one or more longitudinal curves, angles, or channels may be formed, to give them strength and ornamentation.

In Fig. 1 of accompanying drawings, one corrugation, C, is formed, and in Fig. 8 two corrugations, C' C², are formed, one near each edge, and the strip A being flat between these curves or corrugations enables this portion to be embossed or otherwise ornamented and the fabric greatly strengthened.

D D designate ornamental flanges formed on one or both edges of strips A A.

In Fig. 7 the edges $a' a^2$ of the strip or strand of metal A A are shown bent at an angle to the face thereof, leaving the face of the strip A between the turned-over portions flat, to permit ornamental panels F to be cut out or struck up and the fabric greatly strengthened thereby, and it may be further greatly strengthened by corrugating the flat portion at the joints.

A³ in Fig. 9 designates a strip bent around to form a tube. The open edges $i i$ of this strip forming the tube when woven will be more or less compressed together, and the elasticity thus imparted will tend to keep them in place with very little if any other indentation.

G designates a supplemental strip or brace, which is to be placed between the strips or strands A A where they cross each other. This brace G is curved to fit and partially surround the strips, and it may be woven with and held in place between the strips herein described or between the strands of ordinary wire-work.

Strips with ornamental flanges may be used in any of the foregoing figures, if so desired.

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

1. A metal fabric constructed of strips or bars of metal A A, having edges $a' a^2$, said strips or bars being corrugated or embossed

or having longitudinal grooves, angles, or channels, to give them strength and ornamentation, substantially as described.

2. A metal fabric composed of strips or bars of metal A A, having edges $a' a^2$, said strips or bars being corrugated or embossed or having longitudinal curves, angles, or channels, and indentations $b b$, as and for the purpose set forth.

3. A metal fabric composed of curved, corrugated, or embossed strips of metal A A, said strips having ornamental flanges D D on one or both of their sides, substantially as described.

4. A metal fabric composed of strips of metal A A, the edges $a' a^2$ of which are corrugated or bent at an angle to the face of said strips, and leaving a flat portion between the turned-down edges $a' a^2$, as and for the purpose described.

5. A metal fabric composed of strips or bars of metal A A, having edges $a' a^2$, which are bent at an angle to the face or body of said strips or bars, and leaving a curved, corrugated, or embossed portion between the turned down edges $a' a^2$, as set forth.

6. As a new article of manufacture, metal strips or bars A A, having edges $a' a^2$, said strips or bars being corrugated or embossed or having longitudinal grooves, angles or channels, and indentations $b b$, for the purpose specified.

7. An ornamental brace, G, fitted to and held in place by the corrugated, curved, or embossed strips of metal A A or strands of wire, substantially as described.

8. A metal fabric composed of rods or strands tubular in form and interwoven, substantially as herein shown and described.

9. A fabric constructed of strips or bars of metal having longitudinal grooves, said strips or bars being crossed and secured together by riveting or other suitable means, substantially as described.

10. A fabric constructed of strips or bars of metal having longitudinal grooves, said strips or bars being woven together, substantially as described.

11. A fabric consisting of strips or bars of metal woven together, some of said strips or bars having longitudinal grooves or corrugations to strengthen or stiffen the structure.

12. A metal fabric composed of strips or bars of metal having longitudinal grooves or corrugations, or embossed longitudinally, said strips or bars having flanges projecting from their sides, substantially as and for the purposes set forth.

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

ISRAEL KINNEY.

Witnesses:

P. J. EDMUNDS,
A. EDMUNDS.