

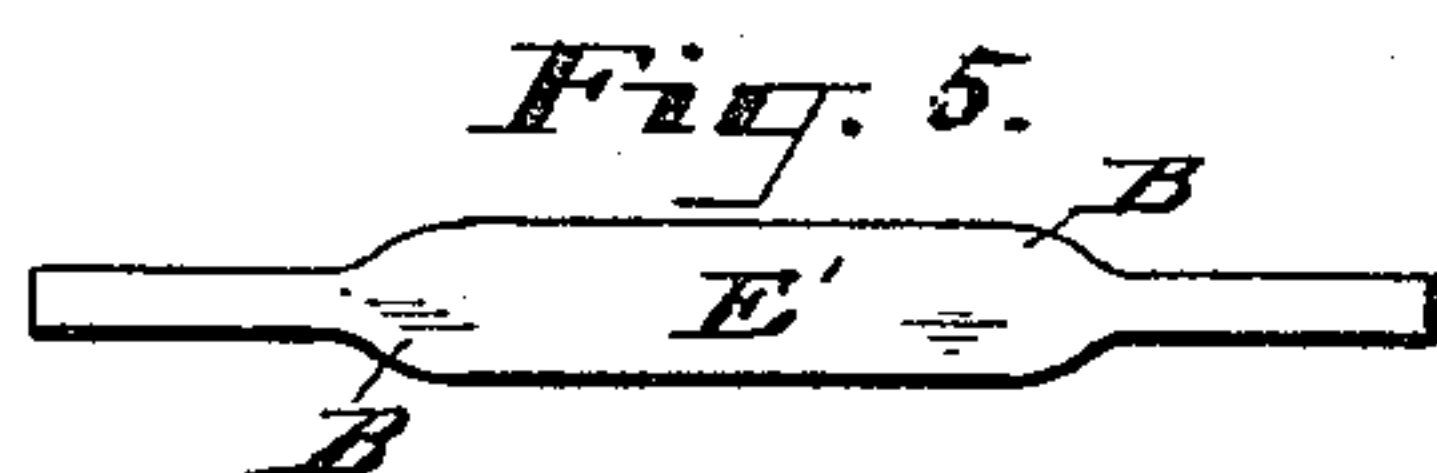
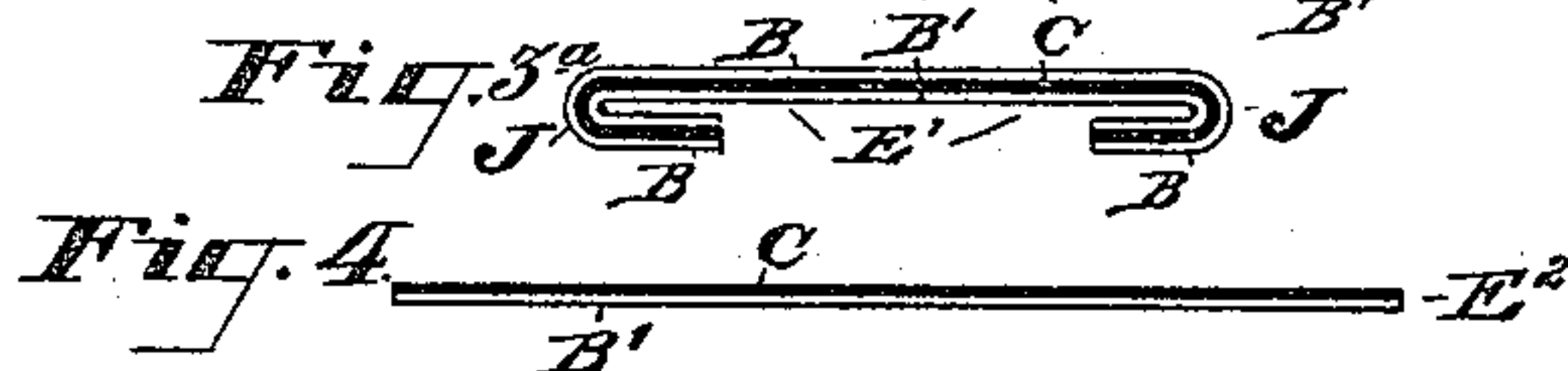
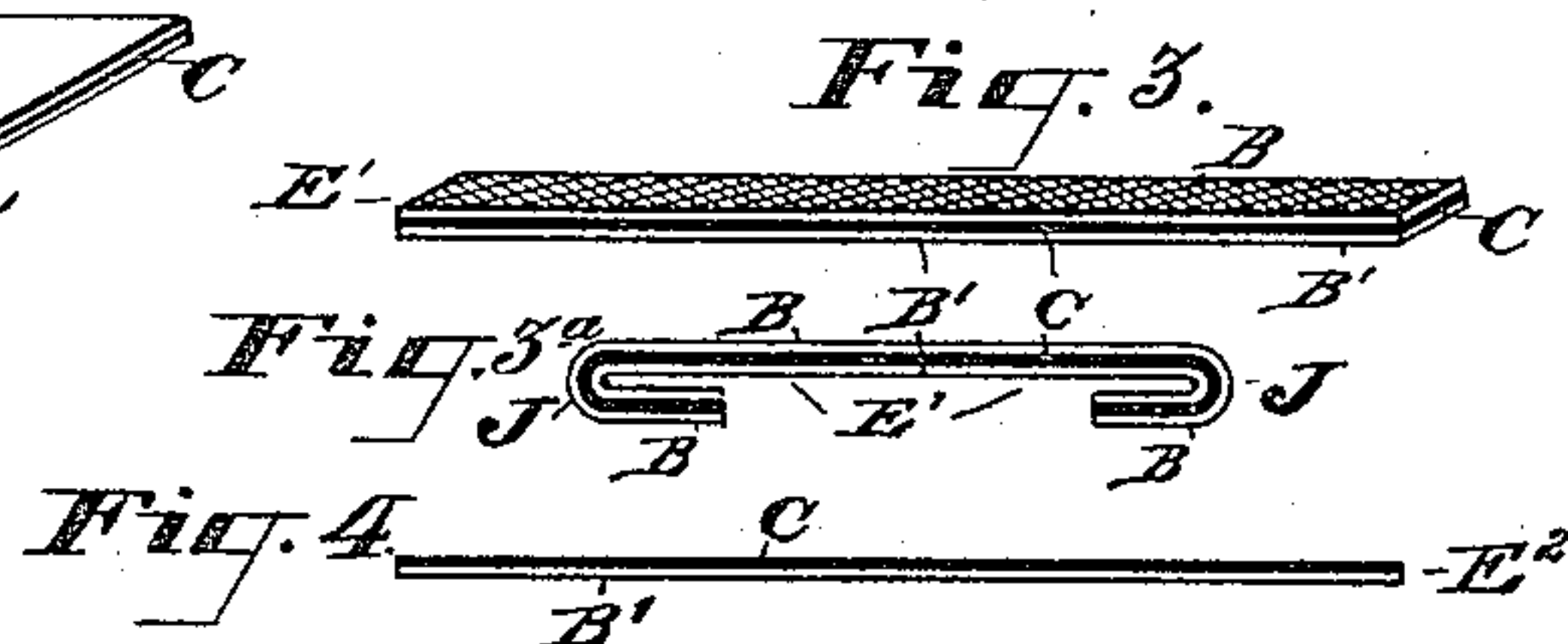
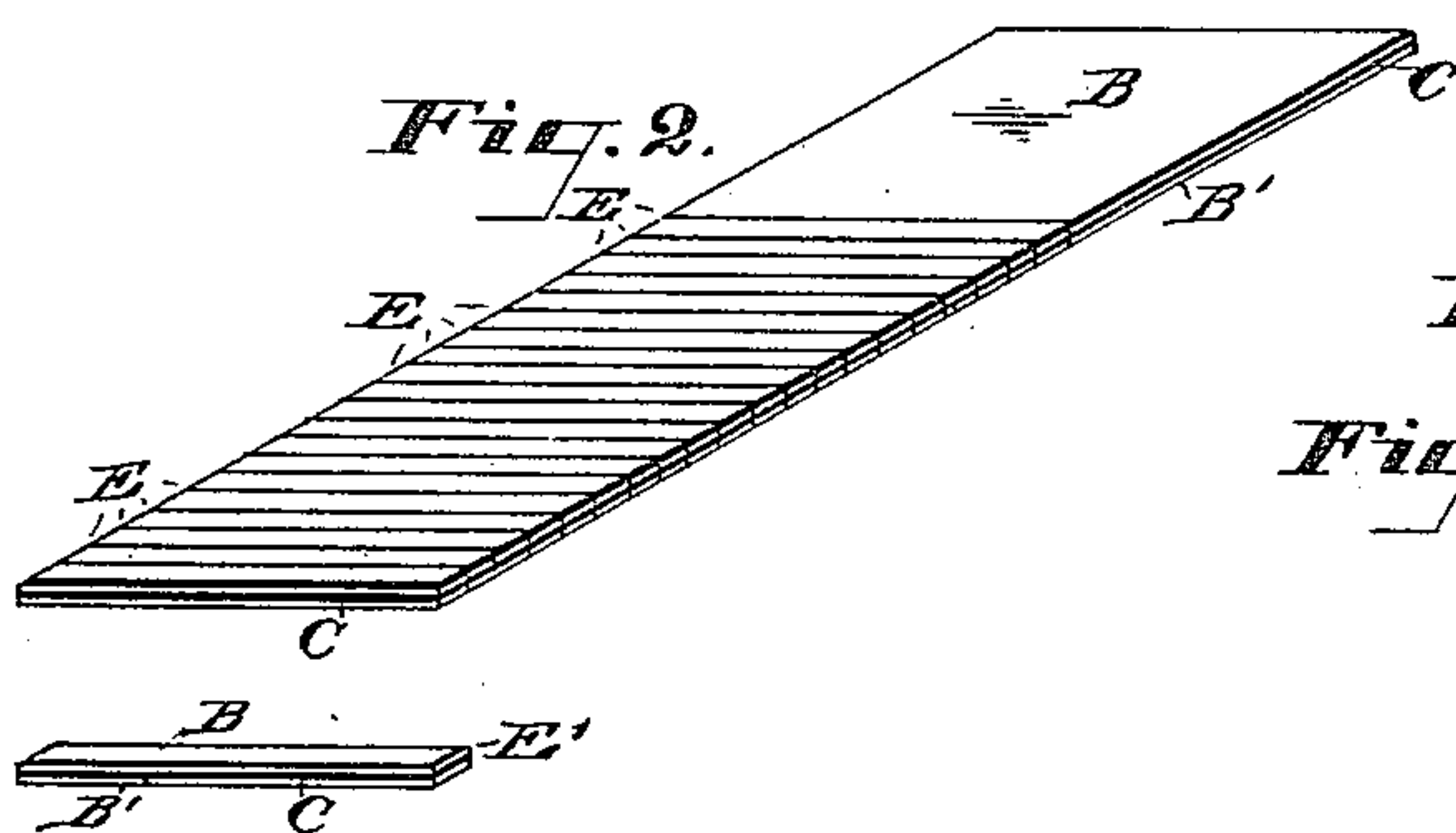
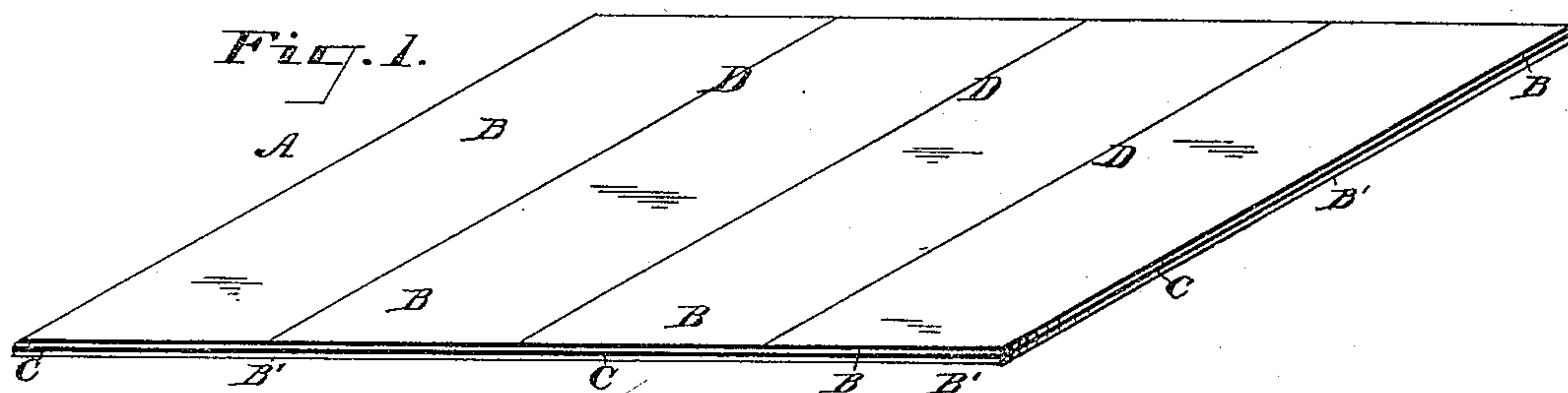
(No Model.)

I. W. HEYSINGER.

HAIR CRIMPER AND THE METHOD OF MANUFACTURE.

No. 440,154.

Patented Nov. 11, 1890.



WITNESSES

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# UNITED STATES PATENT OFFICE.

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## HAIR-CRIMPER AND THE METHOD OF MANUFACTURE.

SPECIFICATION forming part of Letters Patent No. 440,154, dated November 11, 1890.

Application filed April 20, 1886. Serial No. 199,462. (No model.)

*To all whom it may concern:*

Be it known that I, ISAAC W. HEYSINGER, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Improvement in Hair-Crimpers and in the Method of Manufacture Thereof, of which the following is a full, clear, and exact description, reference being had to the drawings accompanying and forming a part of this specification, in which—

Figure 1 is a perspective view of a sheet of crimper-stuff out of which I cut or punch my crimpers, showing the subdivisions into which I divide the sheet preparatory to cutting it up into crimpers. Fig. 2 is a strip or subdivision of the sheet shown in Fig. 1, showing it divided in part by cross-lines to show the manner in which the crimpers are cut off separately, and also shows at E' a single crimper thus detached. Fig. 3 shows in an enlarged form a crimper ready for use. Fig. 3<sup>a</sup> shows the method of use by bending the ends of the crimper around a strand of hair which is to be crimped, curled, or frizzed. Fig. 4 shows a similar crimper in which textile fabric or the like is applied to one side of the metal sheet only, the other being left plain or finished with varnish or other like surface; and Fig. 5, a similar crimper having an enlarged middle portion.

The lettering in all the figures is uniform.

The object of my invention is to produce a flexible non-elastic metal hair-crimper having its sides protected by a coating of composition, paint, varnish, fabric, or the like to render the article more agreeable to handle, larger in bulk, and less liable to break the hair than if no such coating were used, and to produce such a hair-crimper at a lower cost and in larger quantity than can readily be done by the slower processes now in use, and also to improve the method of manufacture of this hair-crimper so that no skilled labor shall be required, and in which the crimpers shall be of uniform size, stiffness, and quality.

My hair-crimper, which forms the subject of my present invention, consists substantially of a strip of soft non-elastic metal, which may be large or small or of any form required, to the sides of which is attached by

a flexible but firm attachment a coating of paint, varnish, paper, felt, cloth, composition, or like substance, which overlies the entire surface, but does not necessarily extend over the edges of the strip which forms the crimper, though it may do so if desired. I usually apply the coating to both sides of the metallic strip, but do not always do so, as a coating of cloth on one side may be the only protection requisite; or I may use cloth or paper on one side and paper or composition on the other, or I may use material of different colors on the opposite sides or leave one side entirely plain. Where the edges are thus uncovered the metal strip will be seen extending along the edge of the crimper; but as the strands of hair draw around the corners which are protected no injury will result. It is a matter of great importance that these coatings shall be very securely attached to the metal strip, as if connection be broken, the coverings will have a tendency to warp over to the sides as the hair is wrapped around them, and the form and crimping qualities will be more or less impaired.

The means which I prefer and the method of manufacture is as follows: I take a sheet of soft non-elastic metal of a proper thickness, which may be lead, copper, tin, annealed iron, soft brass, or the like, and of considerable size. I cover this sheet above and below with a coating of composition, paint, varnish, felt, muslin, or paper, which I cement to the sheet by a strong flexible cement or varnish. The most secure attachment is made by vulcanizing the covering to the metal by a cement of india-rubber in a vulcanizing-bath. This makes a joint which will never separate if properly done. There are other elastic cements and varnishes well known in the arts which may be used, or rows of stitches or indented folds may be used; but I do not recommend them. I sometimes use a minutely-perforated sheet of metal, so that the cement of the coverings may strike through the holes and unite the coatings directly to each other as well as to the metal sheet; or in lieu of such perforations I emboss or figure the surfaces, so as to add to the finish, bulk, and adhesion of the covering.



Instead of applying a coating of fabric, I sometimes use a soft nicely-finished paper, made up in imitation of leather, for instance, and I also surface the metal plate with oil  
5 and pulverized cork, &c., or other composition, making a coating like oil-cloth or linoleum, or I use a simple covering of elastic paint or varnish flocked over like some wall-papers or left plain. In such cases I emboss or figure  
10 the surfaces, as desired, before cutting up into crimpers.

Having thus prepared my sheet, when I prefer to cut my crimpers from a sheet I use the following method of turning it into  
15 crimpers: For ordinary straight crimpers—such as are shown in Fig. 2—I cut my sheet into longitudinal strips as wide as the crimpers are intended to be long. If covered with cloth, I prefer to cut these strips so as to run  
20 bias to the woof; but this is not essential, though it adds elasticity and durability to the crimper. These long strips are then run into a shearing-machine almost precisely like those used in nail machinery, in which a rotating or reciprocating knife at each revolution cuts off one crimper from the end, the feed being so gaged against a head-block as to insure an equal width for each cut. It will be seen that after the crimpers are  
25 chipped off, which may be done at the rate of two hundred to four hundred per minute, nothing is necessary but to bundle up and box the crimpers, when they are ready for the market. I prefer to make these coverings in  
30 such colors as will match the hair—for instance, brown, black, or blonde. For cutting the crimpers shown in Fig. 5 or any crimper having a swollen body, I punch them out of the sheet in an ordinary punching-press, like  
40 metal blanks.

Referring to the drawings, Figure 1 shows a sheet of crimper-stuff A, which consists, as shown along the margins, of the metal plate C, soft, non-elastic, and thin, and above and  
45 below it the coverings B and B', which are painted, varnished, vulcanized, or otherwise securely cemented or attached to the upper and under side of the metallic sheet C. The sheet A may be of any convenient size, from  
50 a few inches to a width of two or three feet and a length of a hundred or more. It is divided upon the lines D D D into a series of parallel strips B B B, which have a width equal to the length of E'. (Shown in Fig. 3.) These  
55 cuts are made by running the sheet through suitably graduated cutting-rolls. In Fig. 2 one of these strips B is shown after it has been separated from the sheet A. This is further subdivided by cutting it upon the  
60 lines E E E into small strips or crimpers, which are shown at E', Fig. 2, and in an enlarged form at E', Fig. 3.

The method of using the crimper is shown in Fig. 3<sup>a</sup>. The ends are bent under at J J  
65 and serve to hold a strand of hair from unrolling until it has received a permanent set.

The hair is usually rolled up moist and is dry when opened.

I sometimes, as shown in Fig. 4, only cover the metal on one side, finishing the other in  
70 lacquer or other style. When polished brass is used, as I sometimes do, it makes a very pretty effect in either style, and especially in that shown in Fig. 5, which I also sometimes cover in whole or part with rubber, celluloid,  
75 or other material of an ornamental character. For a large, wide, flat crimper sometimes the size is too great to allow sufficient flexibility of the metal. In such case I taper off the ends, as shown in Fig. 5, and these I punch  
80 out of the sheet A without waste, just as envelopes are matched in the cutting.

It will be seen that these crimpers may be produced very rapidly and of an exceedingly ornate appearance and at a low cost. I vary  
85 the style, design, color, texture, and material according to the special requirements of the manufacture without departing from the essential principles of my invention as herein shown, described, and claimed. I also some-  
90 times use the material and method of manufacture for other analogous or suitable purposes to which it may be applicable by the use of such present knowledge as may be common to skilled mechanics and artisans. 95

I do not in this application specifically claim a hair-crimper composed of a central inelastic core-strip and a covering of strips of paper longitudinally applied thereto, the whole cemented together; nor do I claim in  
100 this application such core-strips having perforations or such strips of paper having marginal edges extending beyond the sides of said soft-metal core-strip, the whole cemented together; nor do I claim such paper strips  
105 cemented together and covering such soft-metal core-strip upon opposite sides thereto, said strips different from each other in color or having embossed or figured outer surfaces, as I have embraced claims for such parts of  
110 my invention in a divisional application separated from this original application and bearing dated April 24, 1890, Serial No. 349,259, and in my present application I confine myself to the subject-matter of the claims here-  
115 in below set forth.

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

1. A hair-crimper consisting of a soft flexible non-elastic flat metal strip C, in combination with the coverings B and B', of paint, varnish, composition, or the like, applied to the upper and under surfaces of the said strip C, and having said surfaces embossed or figured, substantially as described. 120 125

2. In combination with the soft-metal strip C, the non-metallic covering B' or its equivalent, cemented to the said strip C by an elastic cement or vulcanization, said cement or  
130 vulcanization forming an impermeable coating, and having the surfaces of said strip and



said covering embossed or figured, substantially as described.

3. The method of manufacturing hair-crimpers, consisting of applying to a thin sheet  
5 of soft non-elastic metal a covering of paint, varnish, or other suitable material or composition firmly adherent thereto, then dividing the said sheet into strips of a suitable width to make one or more crimpers, and  
10 finally shearing up these subdivisions transversely into finished crimpers, substantially as described.

4. A hair-crimper consisting of a flat strip of soft metal and a non-metallic covering of  
15 paint, varnish, composition, or the like applied to one or both sides thereof and secured

thereto by an impermeable self-adherent cementing substance integral with said coating or separate therefrom when applied substantially as described.

5. A hair-crimper consisting of the soft inelastic metal core-strip C and the flat strips BB', of paper or the like, applied against opposite sides of the said core C and facing each other, the whole continuously secured together by  
25 a flexible cementing substance and adapted to be operated when in use as a single construction, substantially as described.

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Witnesses:

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M. B. FENNINGER.