

(No Model.)

R. A. BREUL.
CHAIN.

No. 575,102.

Patented Jan. 12, 1897.

Fig. 1.

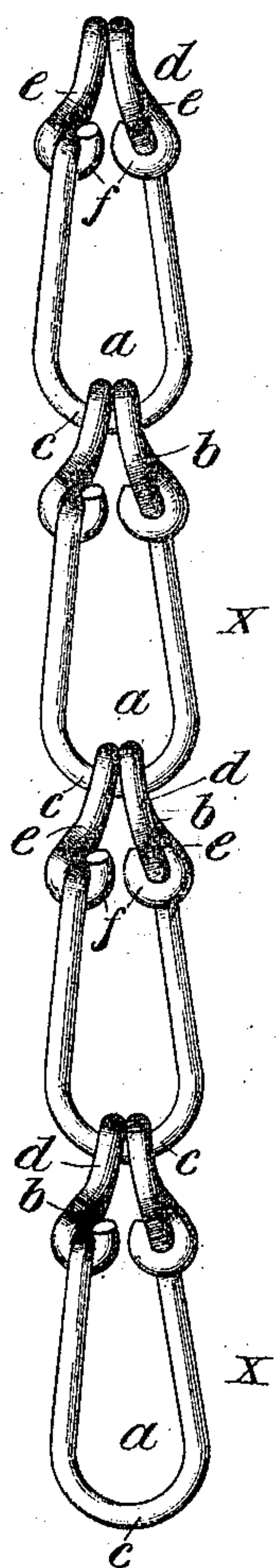


Fig. 2.

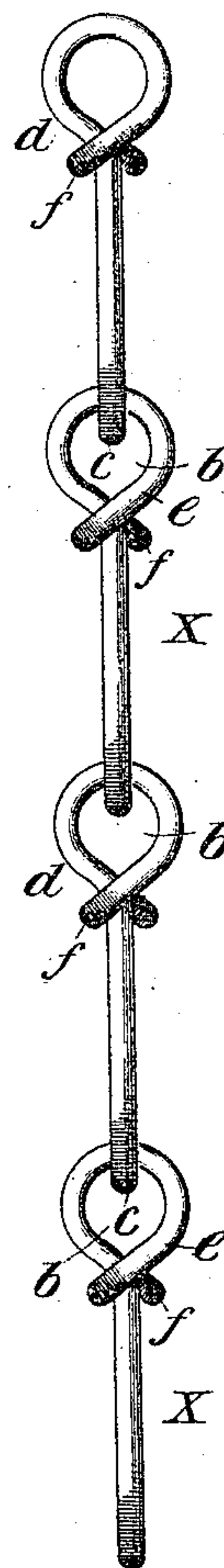
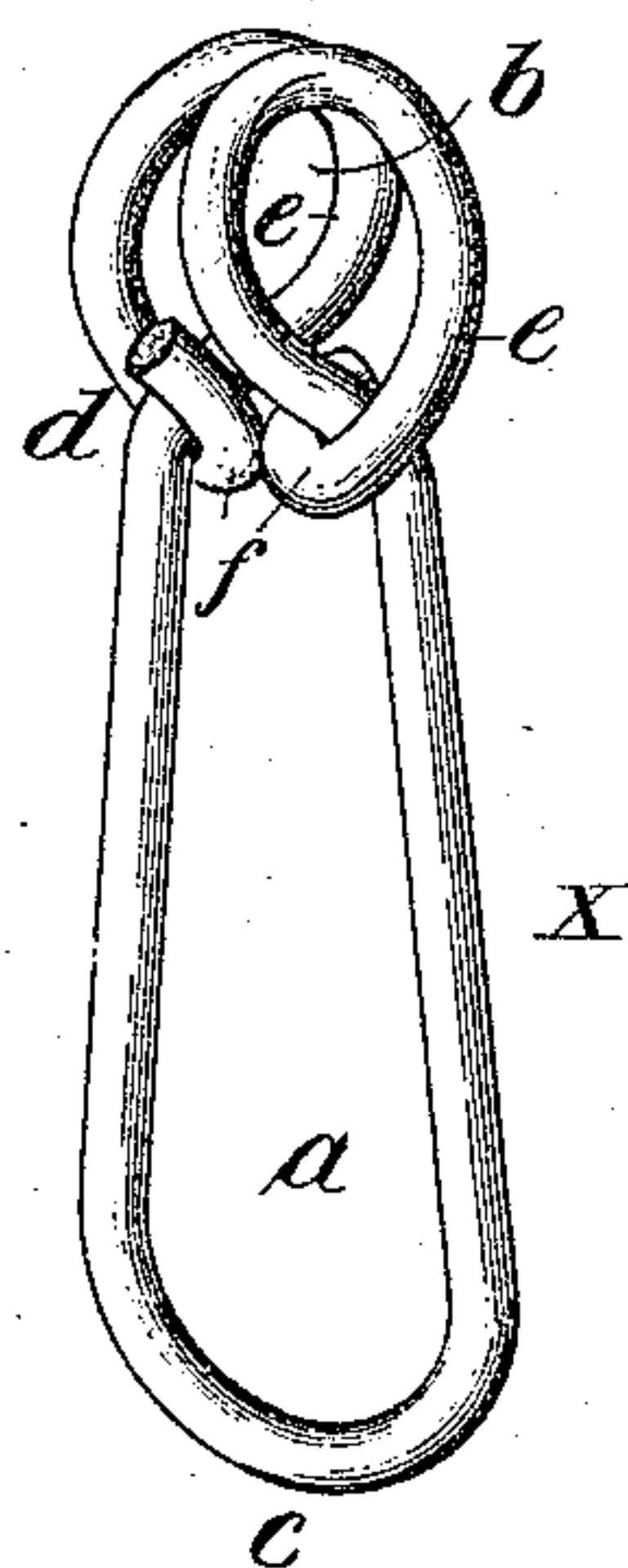


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

RICHARD A. BREUL, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE
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CHAIN.

SPECIFICATION forming part of Letters Patent No. 575,102, dated January 12, 1897.

Application filed January 14, 1896. Serial No. 575,510. (No model.)

To all whom it may concern:

Be it known that I, RICHARD A. BREUL, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Chains, of which the following is a specification.

Chain made in accordance with my present invention has each of its links made of a single piece of wire bent to form a loop with a transversely-arranged eye at its end, to which the loop of the next link is joined. The eye of each link is formed by bending the free ends of the wire in opposite directions in planes perpendicular to the plane of the loop in such manner as to form two coincident and for the most part parallel coils. The wire at the ends of the coils is bent or hooked in opposite directions around the same sides of the loop on which they are respectively situated. The hooks are made to encircle, or substantially encircle, the sides of the loop, thereby securing a permanent connection and covering the extreme ends of the wire when, as in the preferred construction, the ends of the wire pass from the outside to the inside of the bow or loop. Such a chain is not only attractive in appearance and easy to manufacture, but it utilizes the entire tensile strength of the stock and preserves the shape of the links under abnormal strain.

In the accompanying drawings, Figure 1 is a front view of a chain embodying my improvements. Fig. 2 is a side elevation, and Fig. 3 is a perspective view of one of the links.

Each link *X* is made of a single piece of wire bent to form a loop *a* and an eye *b*. At one end *c* the loop is curved and at its opposite end *d* it is contracted, and the two wires are curved in opposite directions in planes substantially parallel with each other, but perpendicular to the plane of the loop, to form two coils *e*, which register and form the eye *b*. The free ends of the wire are bent in opposite directions around the sides of the loop at the adjacent contracted end or neck thereof, the hooks *f* engaging the wires from opposite sides and lying in intersecting planes. The ends of the hooks within the neck of the loop, it will be observed, come close together

and nearly touch, so that should the chain tend to contract under strain the hooks will come in contact with each other and prevent the collapse of the links.

By the arrangement described the wires are securely locked. The strain on the wire on one side of the loop is opposed to that on the opposite side thereof. Therefore the shape of the link will be preserved under strain and such a distortion as would result in the separation of the hooked ends from the neck of the loop is prevented, as obviously if one hook pulls in an opposite direction to that of the other the sides of the loop must remain parallel and the hooked ends of the coils must be forced against each other and securely clamped.

It will be observed that the two hooks that encircle the sides of the bow are in planes that intersect each other, and in the drawings they are shown at approximately right angles to each other. Under a strain which would tend to collapse or flatten the bow the crossed wires of the two hooks would come together and each would have a relatively long bearing upon the other, and consequently there would not be the same liability for them to slip past each other that there would be if these parts of the two hooks were parallel.

When the wires are passed in reverse directions from the outside of the bow inwardly, (as I prefer,) as shown in the drawings, the extreme ends of the wires will be concealed and protected, so that not only will the chain have a neat appearance, but it will be characterized by an absence of sharp edges or points.

I do not herein claim anything shown in Patent No. 530,921, granted December 18, 1894, to me as inventor and as assignee of Charles Breul, one of the joint inventors. In that patent the ends of the wire are crossed at the ends of the loop before forming the eye, while according to my present invention the ends of the wire are not crossed and the free ends of the wire forming the coils are bent around or hooked to the same sides of the loop on which they are respectively situated.

I claim as my invention—

A chain, each link of which is made from

a single piece of wire bent to form a loop having an eye at one end formed by curving the free ends of the wire in opposite directions in planes perpendicular to the plane of the
5 loop to form two coincident coils, the ends of such coils being bent or hooked around the sides of the loop on which they are respectively situated, the two hooks being in intersecting planes so that the parts thereof occu-

pying, and in effect forming the end of the bow or link, cross each other, substantially as set forth.

In testimony whereof I have hereunto subscribed my name.

RICHARD A. BREUL.

Witnesses:

FRANK SCHOENER,
WM. GRIESINGER.