

(No Model.)

2 Sheets—Sheet 1.

R. B. McMULLEN.

FENCE.

No. 395,500.

Patented Jan. 1, 1889.

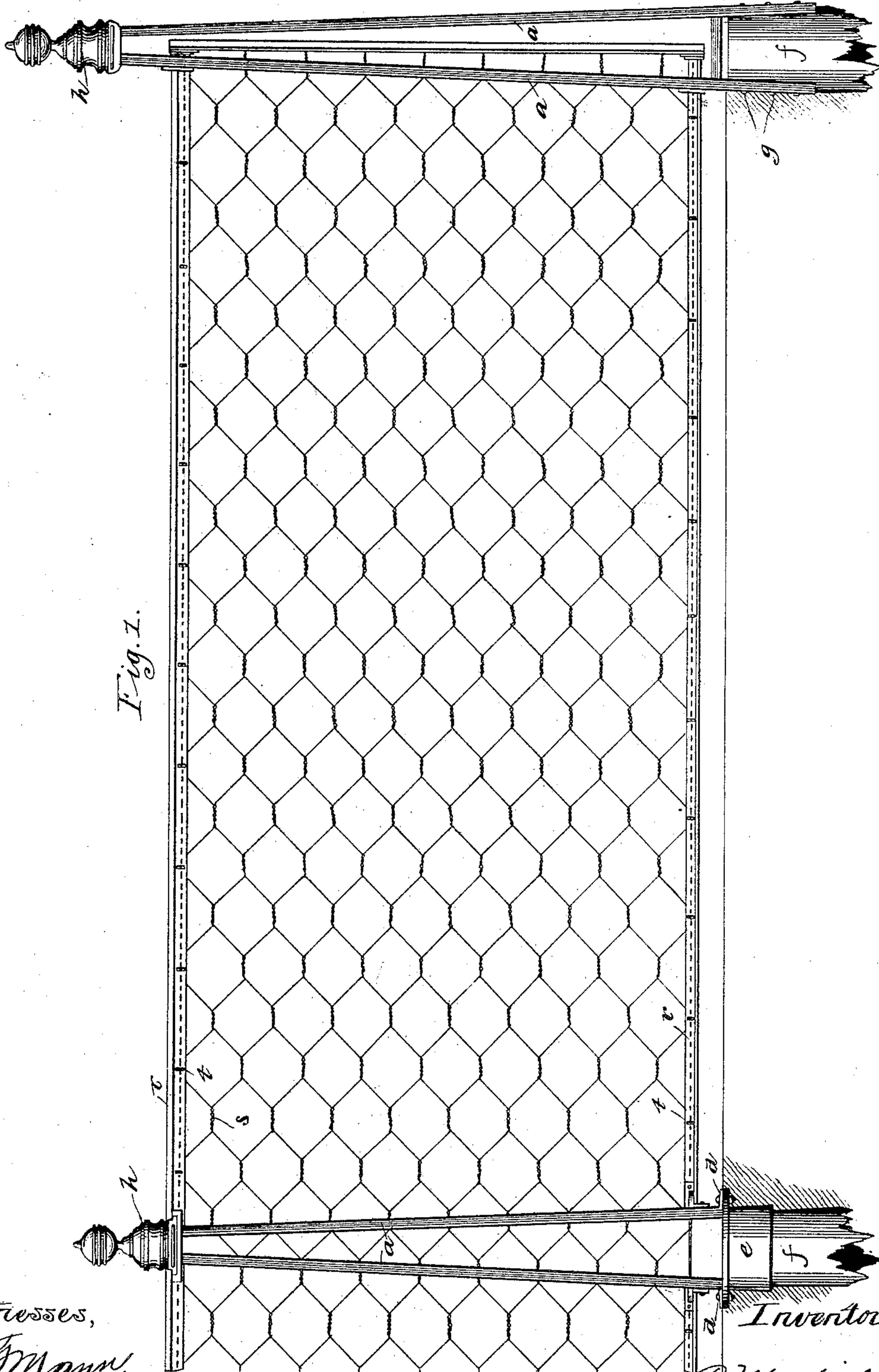


Fig. 1.

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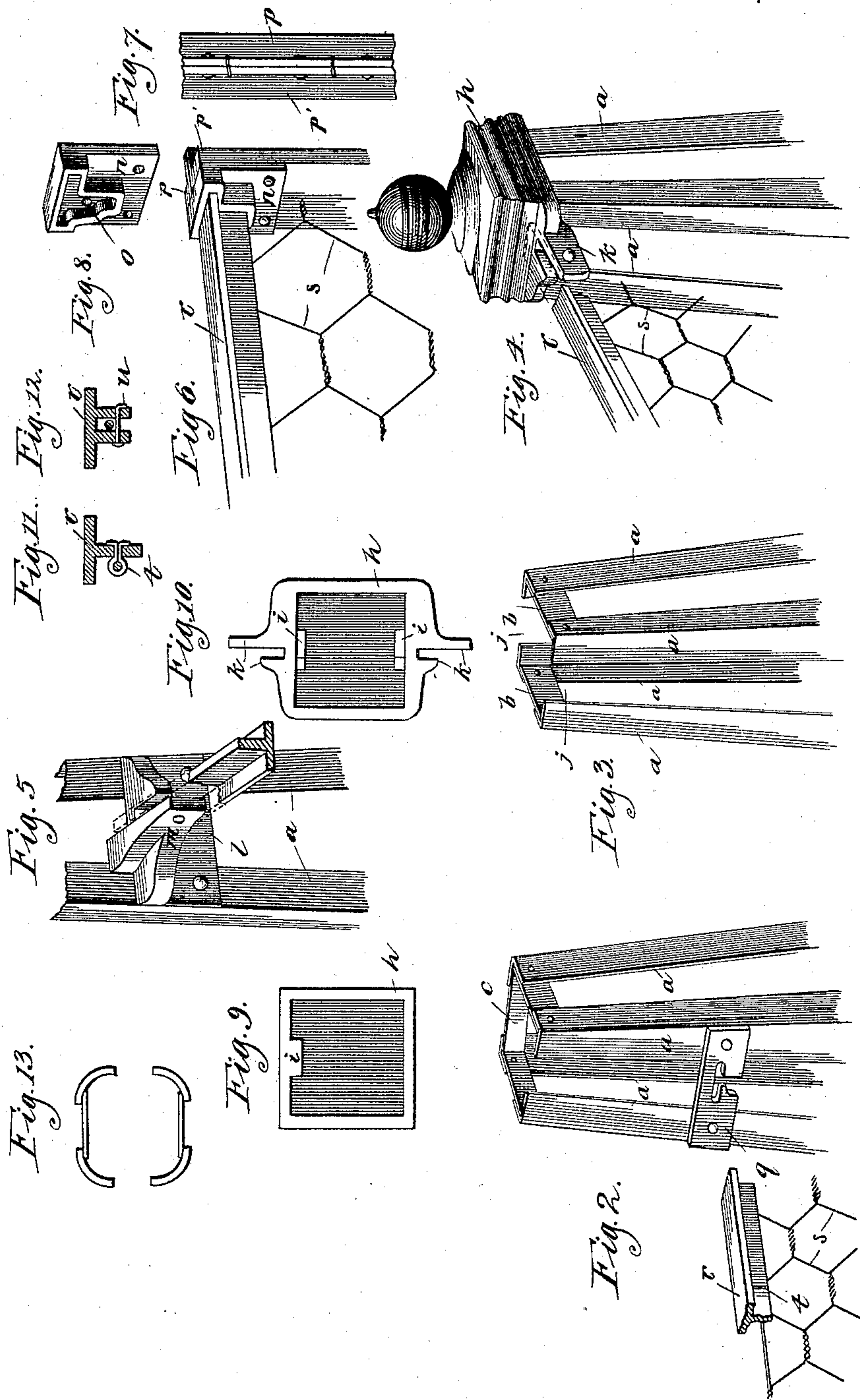
2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

ROGER B. McMULLEN, OF CHICAGO, ILLINOIS.

FENCE.

SPECIFICATION forming part of Letters Patent No. 395,500, dated January 1, 1889.

Application filed August 8, 1888. Serial No. 282,268. (No model.)

To all whom it may concern:

Be it known that I, ROGER B. McMULLEN, of Chicago, Illinois, have invented certain new and useful Improvements in Fences, of which the following is a specification.

My invention relates to fences in which are employed metal posts and a woven-wire netting or fabric stretched between said posts and secured along its margins to suitable rails secured upon the posts.

The object of my invention is to provide a fence in which provisions are made for the expansion and contraction of the metals employed in its construction, whereby the fence is kept in proper position.

A further object is the construction of a post in such manner as to permit the use of a continuous netting or fabric through a series of panels, and which post is also so constructed and secured as to render it firm and unyielding.

Another feature of my improvement is the construction of the rails and the connection of the fabric thereto in such manner that the latter is prevented from sagging; and I also improve other features of the construction of such fences, whereby are secured simplicity and economy in construction and efficiency and attractiveness in the completed fence.

In the accompanying drawings, Figure 1 shows a section of my improved fence in side elevation, the right of the picture being one of the terminals of the fence and the left of the picture representing an interior post and section of a panel. Fig. 2 is a perspective view of the upper portion of one of the ends with its cap removed. Fig. 3 is a similar view of an interior post composed of four angle-irons joined together in pairs, with the cap removed. Fig. 4 is a perspective view of an interior post with a section of the upper rail and a section of webbing applied thereto and with the cap in place. Fig. 5 is a perspective of the lower part of one of the interior posts with the bottom rail applied thereto. Fig. 6 is a perspective of a clamping device for the end of the netting and a socket connected thereto to receive the end of the rail, and showing also a section of the netting applied to the rail and held by the clamping device. Fig. 7 is a rear elevation of said clamping device. Fig. 8 is a perspec-

tive view of the socket for receiving the rail shown in Fig. 6. Fig. 9 is a bottom plan view of a cap for the end post shown in Fig. 2. Fig. 10 is a similar view of a cap for one of the interior posts and having flanges for securing rails thereto. Fig. 11 is a cross-section of the rail in the figures before described, and illustrating the method of attaching the selvage of the netting thereto. Fig. 12 is a modification of the construction shown in Fig. 11, and Fig. 13 is a modification of the form of post shown in the other figures.

In carrying out my invention I employ metallic posts constructed, preferably, of four angle-irons, *a*, arranged in quadrangular form and joined together in pairs, as shown in Fig. 3, by bars or plates *b* to form an interior post, or by a single bar, *c*, as shown in Fig. 2, to form an end post. However joined the angle-irons will be spread at their lower ends, so as to give a pyramidal form to the completed post. I may secure their lower ends by turning them outwardly to form rivet or bolt flanges *d*, whereby to secure them to a cap, *e*, which cap is fitted to the end of a post, *f*, set in the ground; but I prefer the construction shown at the right of the picture, Fig. 1, wherein the ends of the angle-bars *a* are secured directly to the post by means of screws or nails *g*. The posts are provided with a cap, *h*. (Shown in Figs. 1, 4, and 10.) This cap is preferably of cast metal, and may be of any fanciful or ornamental design. Its interior is adapted to receive the upper end of the bars of the post to prevent their separation, and it is provided with shoulders *i* on two of its interior faces when applied to an interior post, which shoulders enter the openings *j* between the pairs of angle-bars of the post when the cap is in place, thus preventing the collapsing of the pairs of angle-bars. Said cap when applied to an interior post is provided with flanges *k*, adapted to receive between them the web of the upper rail, the head of said rail resting upon said flanges. To secure the bottom rail in position, I employ the bracket shown in Fig. 5, which may have the flange *l*, whereby to secure it to the angle-bars, and the flange *m*, extending parallel to and adapted to furnish a bearing for the head and web of the rail.

The cap for the end post is constructed on

its interior as shown in Fig. 9, one of the shoulders *i* being employed and the rail-flanges *k* being dispensed with. This cap is adapted to the post shown in Fig. 2, and the rail will not be secured to the cap, but its end is entered in a flanged socket, *n*. (Shown in Fig. 8.) Said socket has a central opening formed to fit the top and one side of the rail, but cut out on the side of the rail to which the webbing is attached, as at *o*, to receive the selvage. This socket-piece is secured preferably to the clamping device shown in Fig. 6, which device consists of the angle-bars *p p'*, which may be secured together by rivets, as shown, and the ends of the fabric being placed therein, the separate wires composing said fabric are bent over the edges of the angle-bars to prevent their withdrawal. This clamping device is contained within the hollow of the end post, as shown in Fig. 1, but is not secured rigidly therein.

The rails at the end post are carried by suitable brackets or supports, *q*, Fig. 2, which will be so shaped as to prevent vertical movement and permit longitudinal movement of the rails, whereby to compensate for the contraction and expansion of the continuous web or fabric. I prefer to employ T-bars—such as are particularly shown in detail, Fig. 2, and in broken perspective and in cross-section in Fig. 1—in the construction of these rails. These may be the ordinary T-rails of commerce, which are readily rolled and are admirably adapted to my purpose. Said rail, which is marked *r* in the various drawings, furnishes a broad head, which gives strength and rigidity and provides a neat finish for the fence, susceptible of ornamentation, while the web is peculiarly adapted for the securing of the selvage or margin of the fabric thereto. This fabric, which is marked *s*, is composed of woven wires with an open mesh preferably tightly twisted at the wire intersections, and it may be secured in the fence in any convenient lengths—say up to a hundred feet. In practice it will be found expedient to secure the clamping device to the ends of the fabric before applying it in the fence, and when the posts and rails are properly set and the fabric secured at each end to a post it may be stretched sidewise and secured upon the rails by means of a split pin, *t*, (shown in Fig. 11,) which will be first spread and then, after being clamped over the wire, its ends will be inserted through transverse holes in the web of the rail, the free ends being bent to prevent their withdrawal. These split pins are made from a very soft metal, and are therefore easy of manipulation, which renders them peculiarly adapted for my purpose. They will be inserted at such intervals along the length of the rail as to insure an even tension upon the fabric.

In erecting a fence of my construction I first set the posts at predetermined intervals and secure thereto the bottom rail, except at the end panels. The fabric will then be

stretched, passing through the spaces *j* between the pairs of angle-bars composing the posts, and the ends will be temporarily secured by inserting the clamping-bars in the hollow of the end posts, the faces of these clamping-bars being of greater width than the opening of the post, whereby to prevent their withdrawal. The caps on the intermediate posts will then be put on and the top rails put in position, except those at either end of the section being then erected. Then the top and bottom rails are inserted into the flange-sockets on the clamp-bars holding the netting and their opposite ends placed at the first intermediate post. The fabric will then be stretched sidewise and secured by the split pins, as above described.

In Fig. 12 I have shown a modified construction of the rail, in which the web is divided and the selvage of the fabric will be inserted into an opening of the divided web, when it may be secured by a split pin, as shown in Fig. 11, or by a plain pin, *u*, as shown in Fig. 12. In either construction the pin will allow the selvage of the fabric a slight longitudinal movement to compensate for expansion and contraction of the metal.

In Fig. 13 I have shown a modification of the bars *a*, said bars being curved in cross-section instead of angular, and it may be found expedient to so construct them, and it may also be found practicable to employ a less number of bars than four—as, for instance, a pair of bars, *a*, may be joined and a single bar used instead of the second pair. The post herein shown answers well for a hitching-post, and hence I do not limit my claims to said post construction when employed in a fence only.

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

1. In a fence, the combination, with a post composed of four bars secured together in pairs, of a removable cap adapted to embrace the upper end of said bars to prevent their separation, and provided with interior shoulders to fit the openings between the bars and prevent their inward movement, substantially as described.

2. The combination, in a fence, of a post composed of four bars arranged in pairs to provide openings through which to pass a continuous fence-body, and a cap adapted to embrace the upper ends of said bars to prevent their separation, said cap provided with flanged bearings to receive the ends of the fence-rails, substantially as described.

3. The combination, in a fence, of a post composed of a plurality of bars disposed to provide an opening through which to pass a continuous fence-body, and said bars spread apart at their lower ends, a cap adapted to confine the upper ends of said bars, and rails joined to said cap and bars respectively, substantially as described.

4. The combination, in a fence, of a post

composed of a plurality of bars so disposed
as to provide an opening for the passage of
the fence-body, a fence-body composed of a
woven-wire fabric secured along its side mar-
5 gins to suitable rails, and a clamp for the end
of said fabric, said clamp and the end of the
fabric being movably supported by the post,
whereby to compensate for contraction and
expansion of said fabric, substantially as de-
10 scribed.

5. The combination, in a fence, of a wire
fabric composing the fence-body, suitable

rail-carrying posts, rails having attaching-
flanges for the fabric, provided with trans-
verse perforations to receive securing-pins, 15
and split pins adapted to embrace the selvage
of the fabric, pass through the perforations
of the rail, and have their ends separated,
whereby to secure the fabric, substantially as
described.

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