

(No Model.)

2 Sheets—Sheet 1.

P. H. CHRISTIE.
FENCE.

No. 521,759.

Patented June 19, 1894.

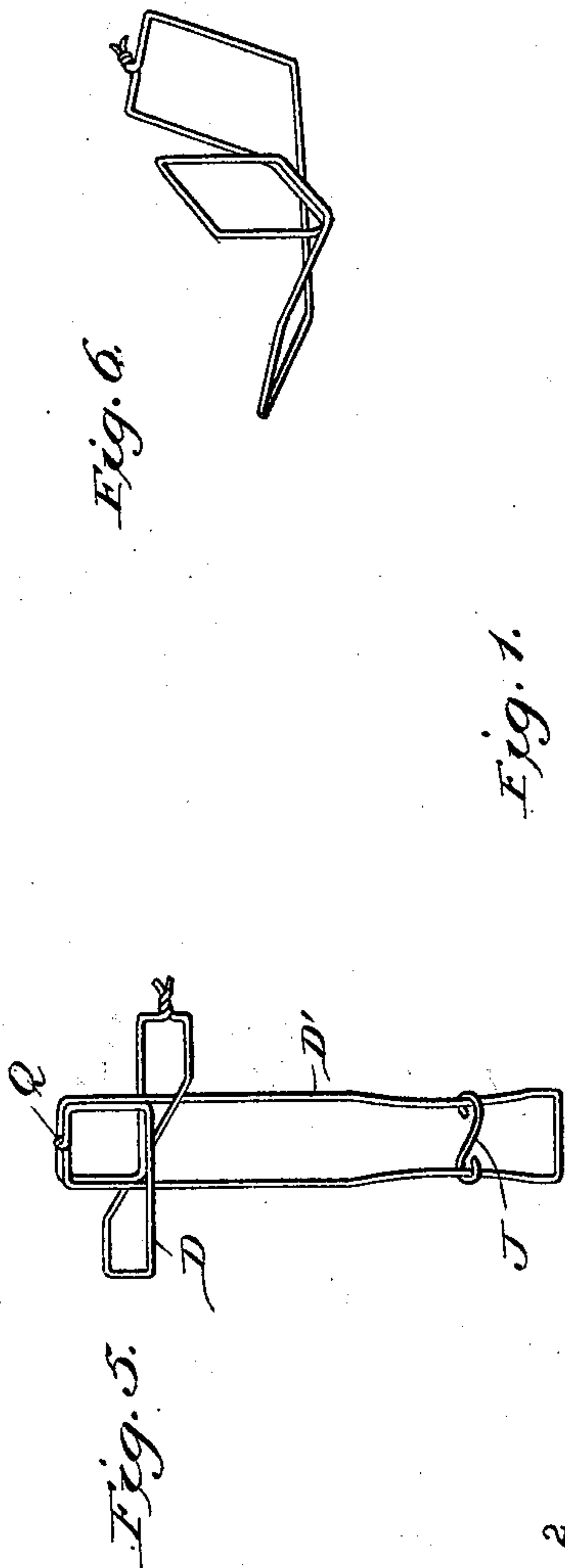
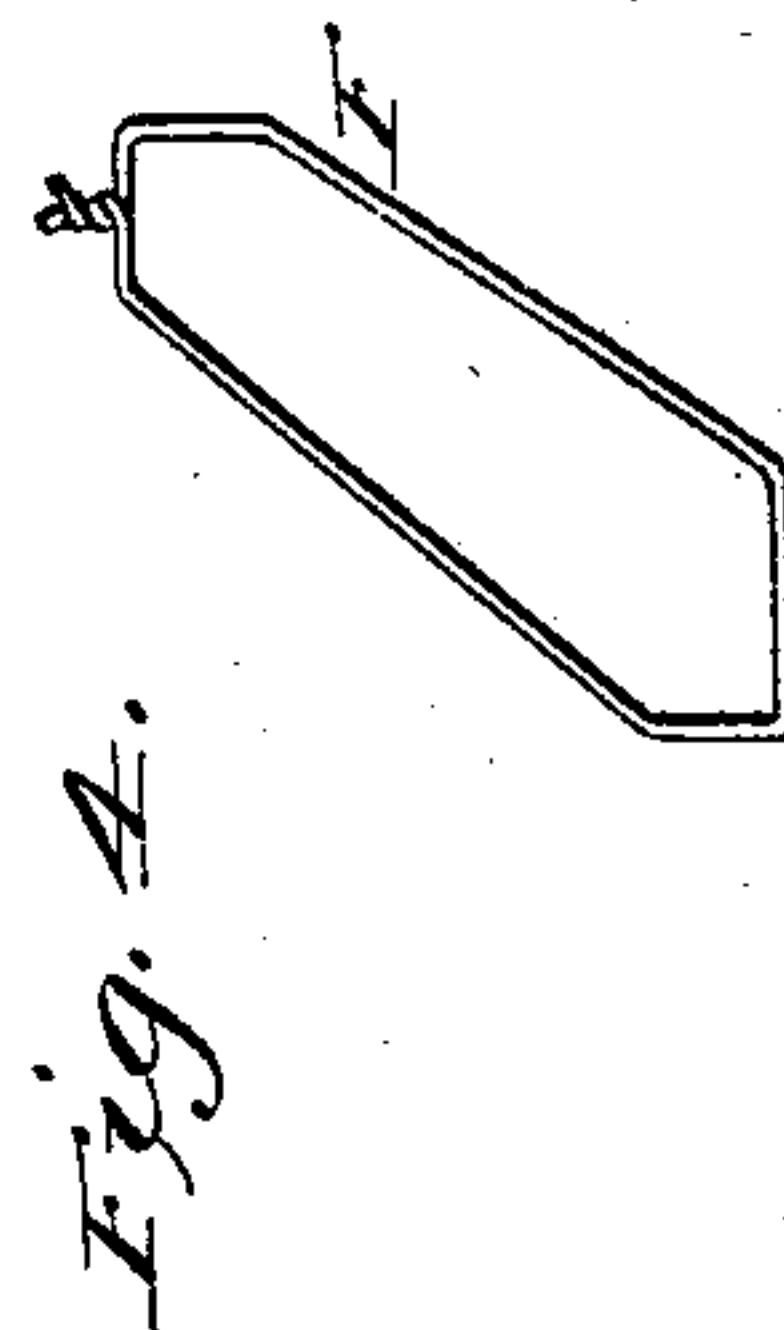
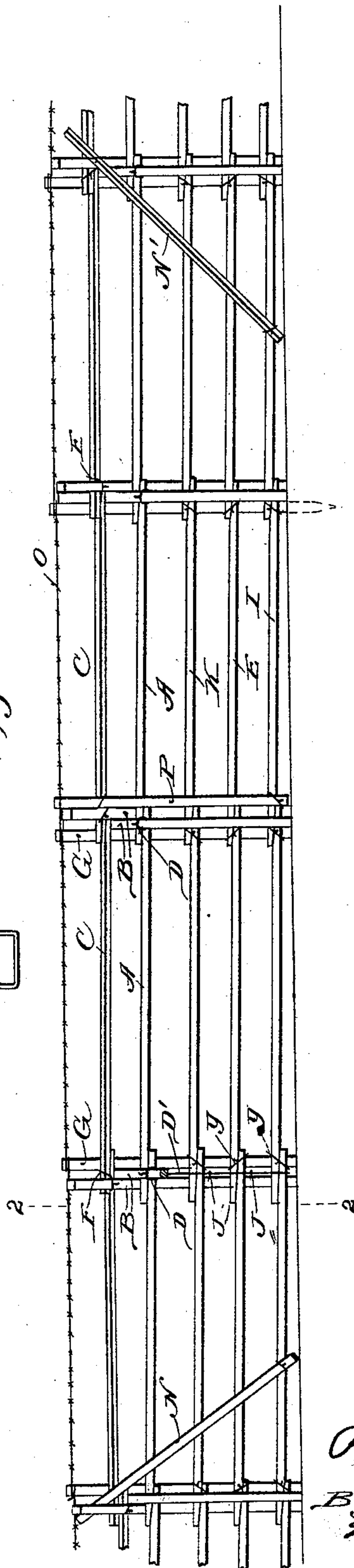


Fig. 1.



witnesses:
Harry S. Rohrer
John G. Wood

Inventor:
P. H. Christie.
By Wallace Greene
Atty.

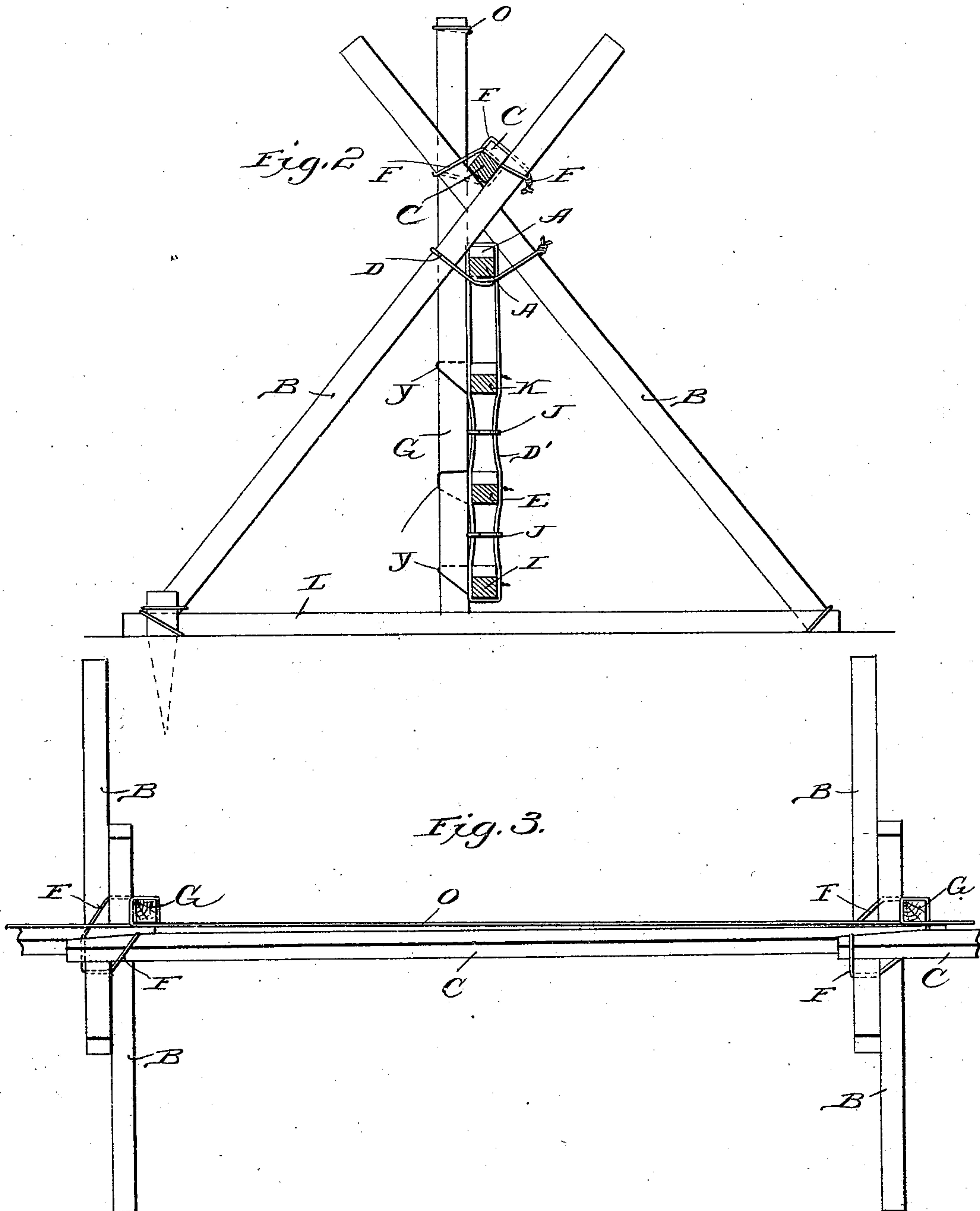
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Harry S. Rohrer
John P. Wood

Inventor:
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UNITED STATES PATENT OFFICE.

PETER H. CHRISTIE, OF CLOVE, NEW YORK.

FENCE.

SPECIFICATION forming part of Letters Patent No. 521,759, dated June 19, 1894.

Application filed March 28, 1893. Serial No. 468,000. (No model.)

To all whom it may concern:

Be it known that I, PETER H. CHRISTIE, a citizen of the United States, residing at Clove, in the county of Dutchess and State of New York, have invented certain new and useful Improvements in Fences; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates particularly to rail fences of the class in which the parts are bound together by wire. In such fences, simplicity, low cost and durability are indispensable, and the fence should be suitable for all situations including wet ground and slopes, and should be both laterally and longitudinally rigid, without occupying great space upon the ground. To secure all these advantages it is necessary that certain of the binding wires should be strained with considerable force, to bind the parts firmly; that the construction should allow replacing any member without disturbing many of the others; that each rail should be so bound that it cannot "crawl;" and that it should be readily modified to suit the requirements of different kinds of stock. It is desirable also that the fence should present a trim and substantially uniform appearance, and that it should have certain other characteristics hereinafter set forth. These features are combined in the fence illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of the fence. Fig. 2 is a section on the line 2-2, Fig. 1. Fig. 3 is a top view at the junction of two panels. Fig. 4 shows the wire loop or tie used above the crossing of each pair of stakes. Fig. 5 is a detached view of the wire binding the stakes below their crossing. Fig. 6 shows a modified tie hereinafter described.

In the figures, A, A are overlapped rails over which the stakes B, B are crossed, and C, C are rider rails resting in the forks of the stakes above the crossing.

To begin the construction of the fence, two or more of the rails A are placed at the proper height upon temporary supports, not shown. Over the ends of the panels thus begun are crossed pairs of stakes and the stakes are bound together below the rails, the rails bound

together and the rails bound to the stakes by a wire tie D, from which depends a loop D' intended to receive lower rails, K, E, I. The first rail C is then placed in position and vertical posts G are placed beside each pair of stakes. Wire loops are then formed around the stakes and posts in such manner that one side or branch of the loop may be above the rail and the other below it. A second rail C is then inclined, in a vertical plane, thrust through the loop, and swung into a horizontal position and into the fork of the next pair of stakes, care being taken in inserting the rail, that it shall pass under that side of the loop over which the other rail passes and over that side under which the other passes, so that the second rail C may serve as a long lever to draw the two branches of the loop, respectively down from the top and up from the bottom of the other rail C. Such action straining the loop F strains also the tie D and binds all the parts firmly at this point, the degree of firmness depending upon the original length given the loop F, for owing to the great length of the lever C in comparison with the width of the loop, which is the length of its short arm, an enormous force may easily be exerted. When the parts have been thus bound, the temporary support is no longer needed at this point and it is advanced to the end of the succeeding panel and the operation is repeated, and so on indefinitely, each rider rail itself serving as a lever to strain the wire lashings at the nearest end of the last preceding panel.

It is to be observed that the structure thus far described is not for all purposes a complete fence, but it is a self-supporting structure capable of being moved about, even, without displacement of its parts, and fully adapted to combine with, or support other parts desirable in a fence. To complete it, rails I are placed in the loops D' and above these S-like hooks J are placed upon the loop to draw its branches toward each other, the length of the hooks being greater as the distance desired between the rails is less. The other rails E are then placed in the loops above the hooks, and other hooks and a second set of rails are added in like manner, and the rails of each set are then tied to the posts G by independent lashings Y. The rails are

now all in position and each rail is so bound that no crawling is possible even if the fence runs up or down a steep hill. The posts G rest upon, or are driven in the ground, or
 5 in swampy places upon bars L wired to the lower ends of each pair of stakes and serving the additional purpose of holding these ends at a fixed distance apart. To guard against lateral sliding of the fence. *e. g.*, by force of
 10 the wind, the ends of the stakes may be wired to anchor pegs driven in the ground. To prevent longitudinal motion of the top of the fence, braces N, N' inclined, preferably, some to the right, some to the left, are placed in
 15 the loops F and secured below to one of the lower rails. The posts G are shown as rising above the line of the rider and as having barbed wire O secured to their tops. This is desirable if the fence is to be of unusual
 20 height. Now it is evident that any one of the lower rails may be removed by simply removing the ties which bind its ends, and that any of the rails A, C may be removed by first taking off or loosening the ties F. But
 25 if, for example, one of the riders be thus removed and replaced by another inserted and brought to place as set forth, there will be no means of straining the last loop F that is needed to restore the fence to its original
 30 condition since the rail C which should strain it is firmly bound at the other end by the next loop F, strained by the next rail C. If this other end be set free, so as to use the rail as a lever, we may strain the loop it is true,
 35 but we have then to again secure this lever C,—that is we have merely transferred the difficulty to another point. In such case, to avoid the necessity of removing all the succeeding riders, to the end of the fence, and
 40 replacing them so as to re-strain all the loops, I make use of a short lever at this one point, using it instead of the rider to obtain the strain, by inserting it in the tie and bringing it down alongside the fence and securing it
 45 in a vertical position as shown at P. Here it is so like the posts G that it is not particularly noticeable, and the observer hardly detects the fact that the fence has been repaired.

50 It has been suggested that in straining the loops F the rider may be so inserted that its free end will require either upward or downward motion to bring it into position. Practically, the strains upon the fence are more
 55 perfectly balanced if each method of insertion be alternated with the other.

The formation of the main ties is peculiar. The tie F is a simple loop preferably not
 60 in having its branches passed, respectively over one rail and under the other, so that each is for the most part encircled by the wire. The tie D is less simple, since the same wire forms the stake tie, a tie about the two rail
 65 ends, and the dependent loop to support the lower rails. Beginning at the closed bend of the dependent loop, the two branches pass

upward, parallel to each other and are twisted together or interlocked at Q upon the top of the rails A; thence they pass down along
 70 opposite sides of the said rails and in opposite directions across their lower faces and around the stakes, respectively, and then the longer end is carried diagonally across, between the sides of the dependent loop, to the
 75 opposite stake where it meets the end of the other branch and is twisted with it to secure both. Owing to the twisting together of the two branches of the dependent loop at the top of the rails, that portion of the tie that holds
 80 the rails and stakes together is wholly independent for its security upon the loop and rails beneath and there can be no loosening of the parts by drawing wire from the loop
 85 below. That loop may be made as short as in any case desirable,—whether three rails are to be placed in it, or two, or one, or even if it be desired to rely entirely upon the post G to support these rails. In the latter case the
 90 loop may be so drawn up that its lower bend lies in contact with the rails A. The tie may however, in this latter case be modified with advantage in the manner suggested in Fig. 6, where the middle of the wire is placed upon
 95 the top of the overlapped rails, the branches are passed to the lower side thereof, carried in opposite directions past each other and around the stakes, respectively, and are then inter-twisted.

The fence is shown and described as formed
 100 of rails and other regular parts, but the same construction is equally adapted for use where only the roughest poles are available, and indeed one of the valuable features of this fence is the construction that allows the lower rails
 105 to be readily replaced with boards, to make the fence proof against the smaller domestic animals, such, for example, as pigs.

What I claim is—

1. The combination with the overlapped
 110 rails and a pair of stakes crossed over the overlapped ends, of the crossed wire loop passing around the stakes just below said rails and having one of its branches forming a loop or coil around said ends, a rider rail resting
 115 in the stakes, a second loop passing around the stakes with one of its branches above and the other below the rail last named, and a lever having its end passed over the upper and
 120 under the lower of said branches and its other end secured to another member of the fence; whereby the rails in said coil are bound together and the whole is made rigid.

2. The combination with the overlapped
 125 rails, stakes crossed over them, and a wire tie connecting the stakes below said rails, passing around the latter and having a dependent loop to receive lower rails, of rider rails resting in the stakes, a wire loop passing
 130 around the rails above their crossing, and a vertical post secured in the loop and lashed to rails in said dependent loop.

3. The combination with the rails A, stakes crossed over them, and the ties binding the

stakes together below the rails and provided
with a bight encircling the latter and with
the dependent loop, of the rails in said loop,
the post beside said loops wired to the rails
5 last named, the barbed wire secured to the
tops of the posts, the loops passing around
the post and stakes above the crossing, the
straining-lever riders and the braces inserted

in the upper loops and wired to the rails be-
low.

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

PETER H. CHRISTIE.

Witnesses:

WALLACE GREENE,
I. A. APLIN, Jr.