

(No Model.)

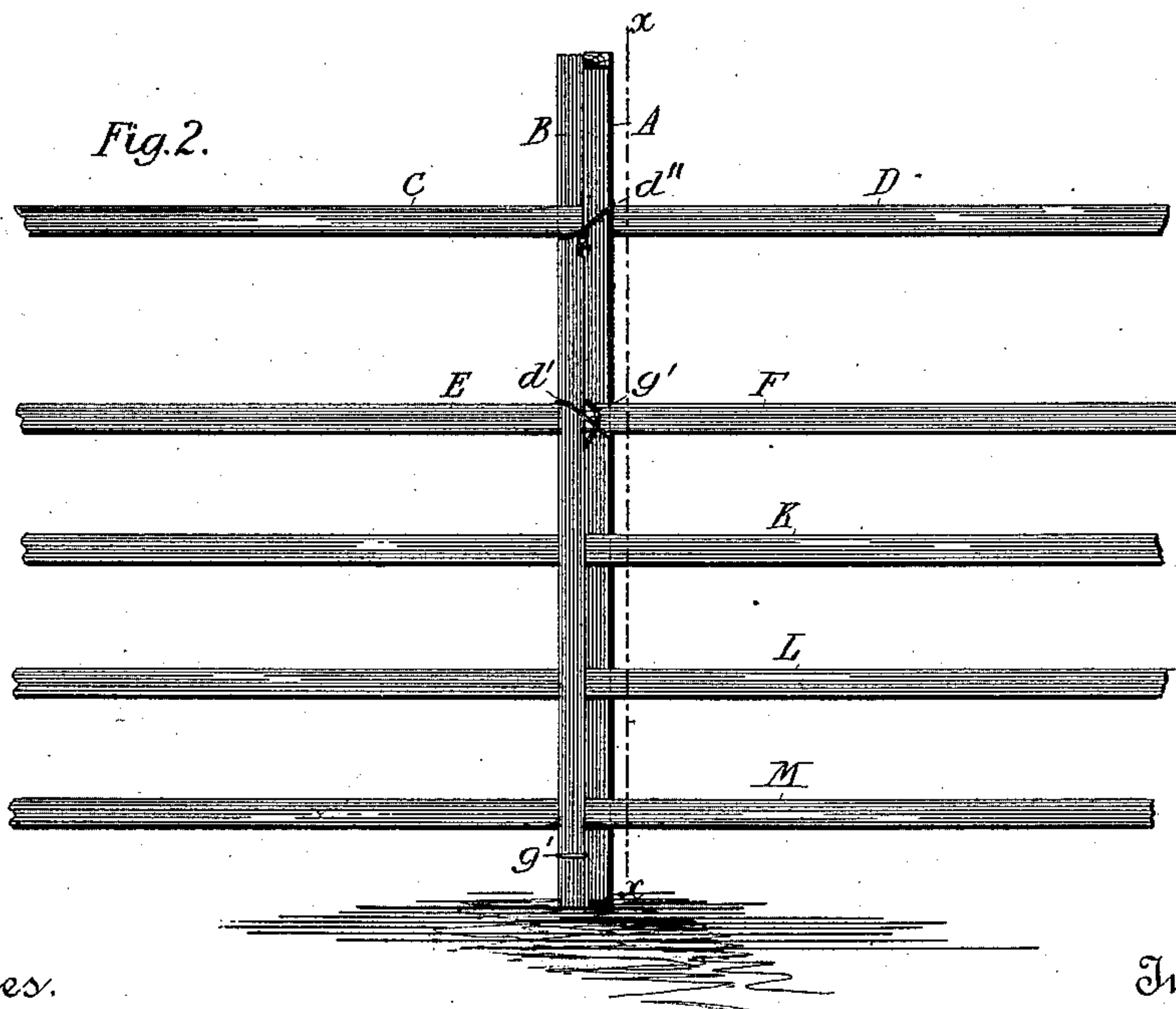
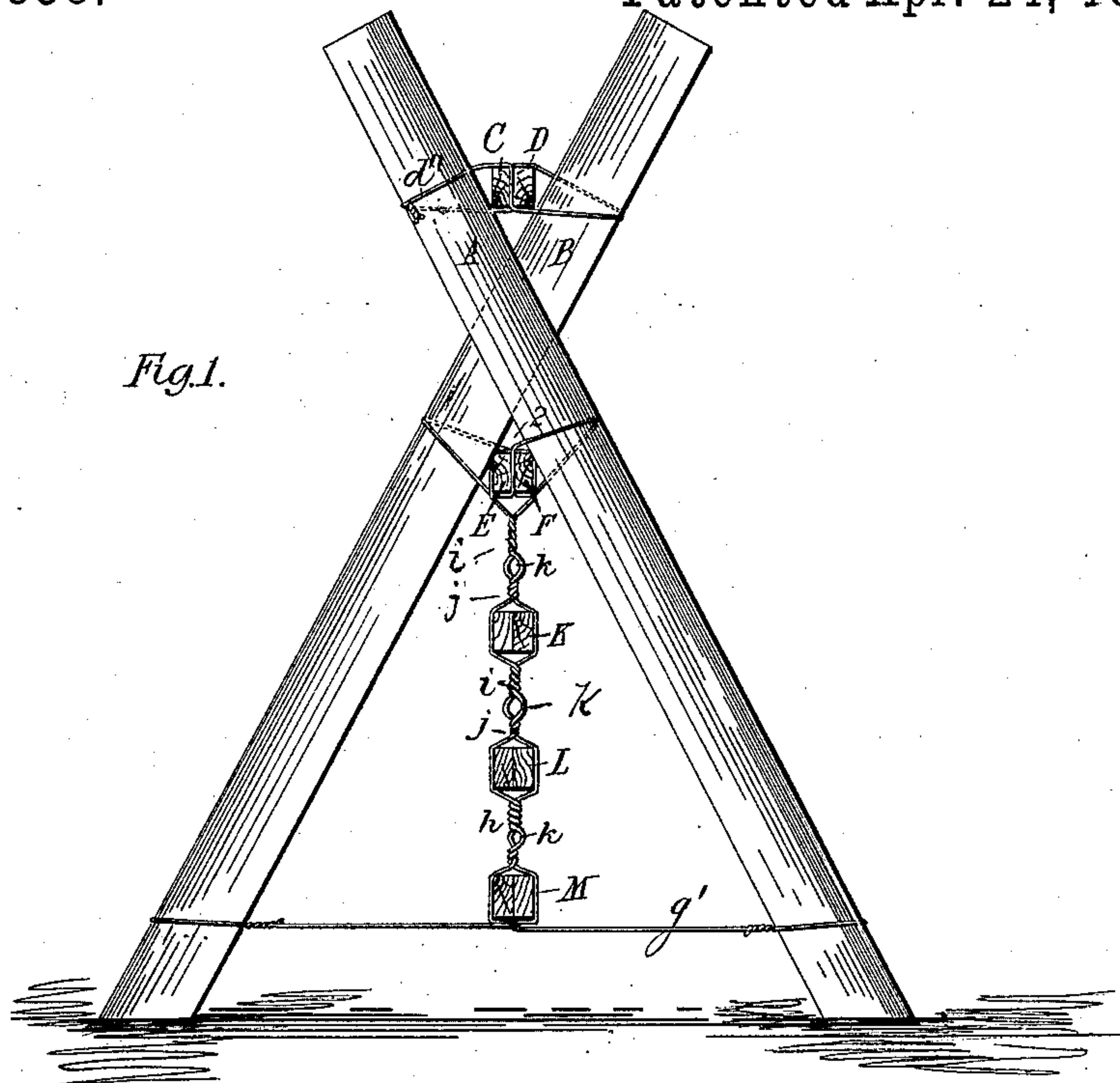
3 Sheets—Sheet 1.

J. Z. STANLEY.

FENCE.

No. 381,858.

Patented Apr. 24, 1888.



Witnesses.

*Will. Norton.*  
*J. L. Curtis.*

Inventor.

*James Z. Stanley.*

By his Attorneys.

*John J. Halsted & Son.*

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Fig. 3.

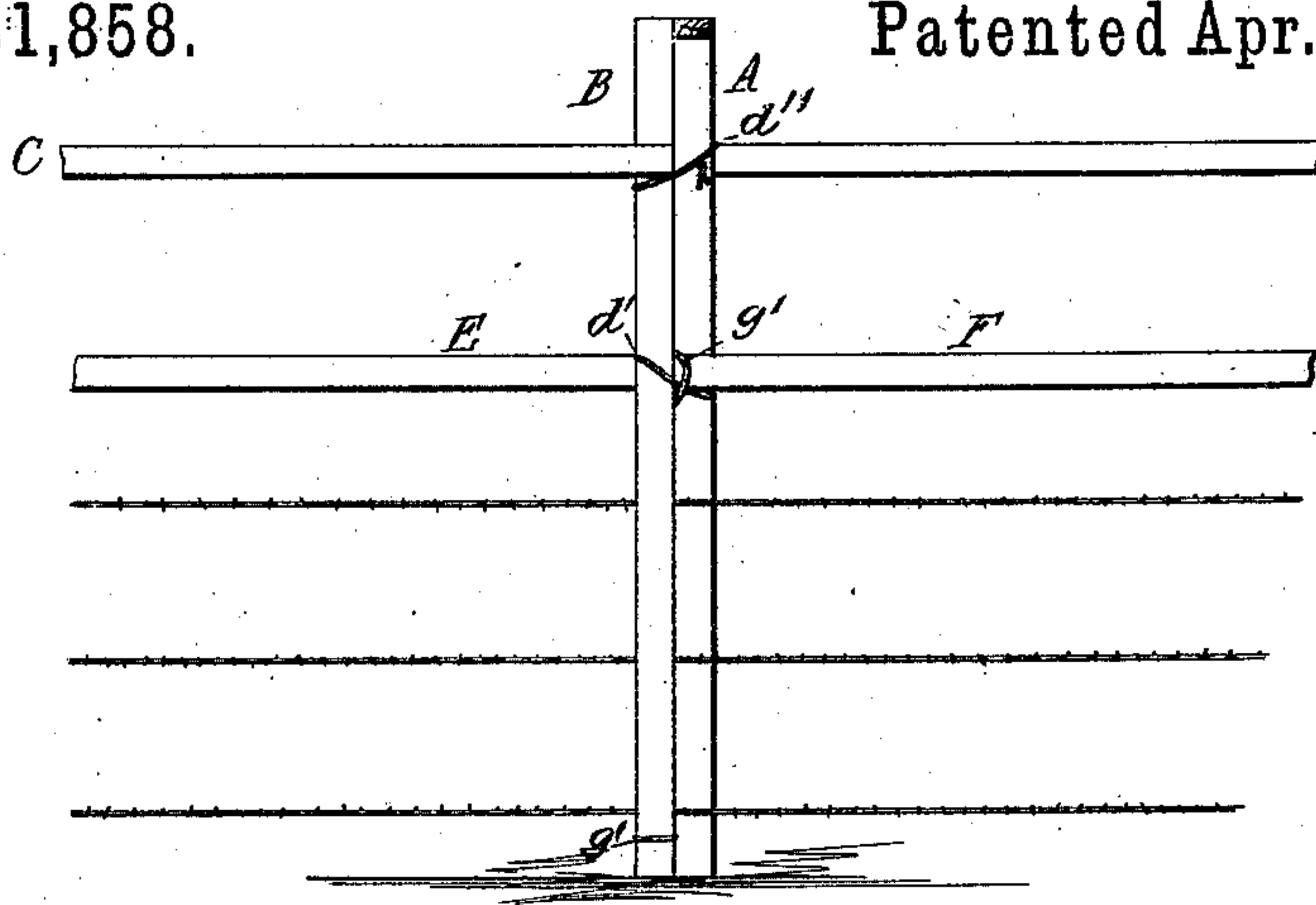


Fig. 4.

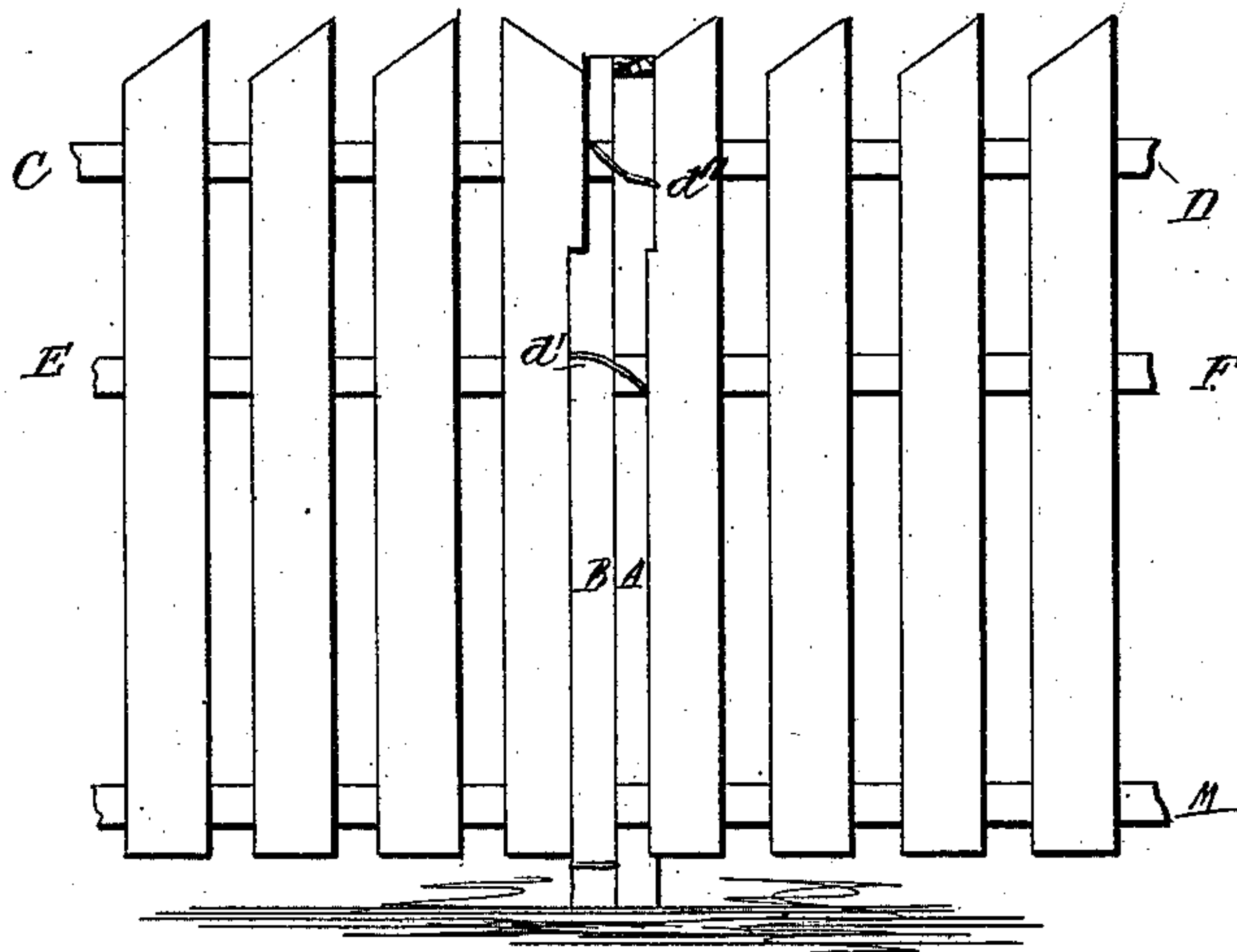
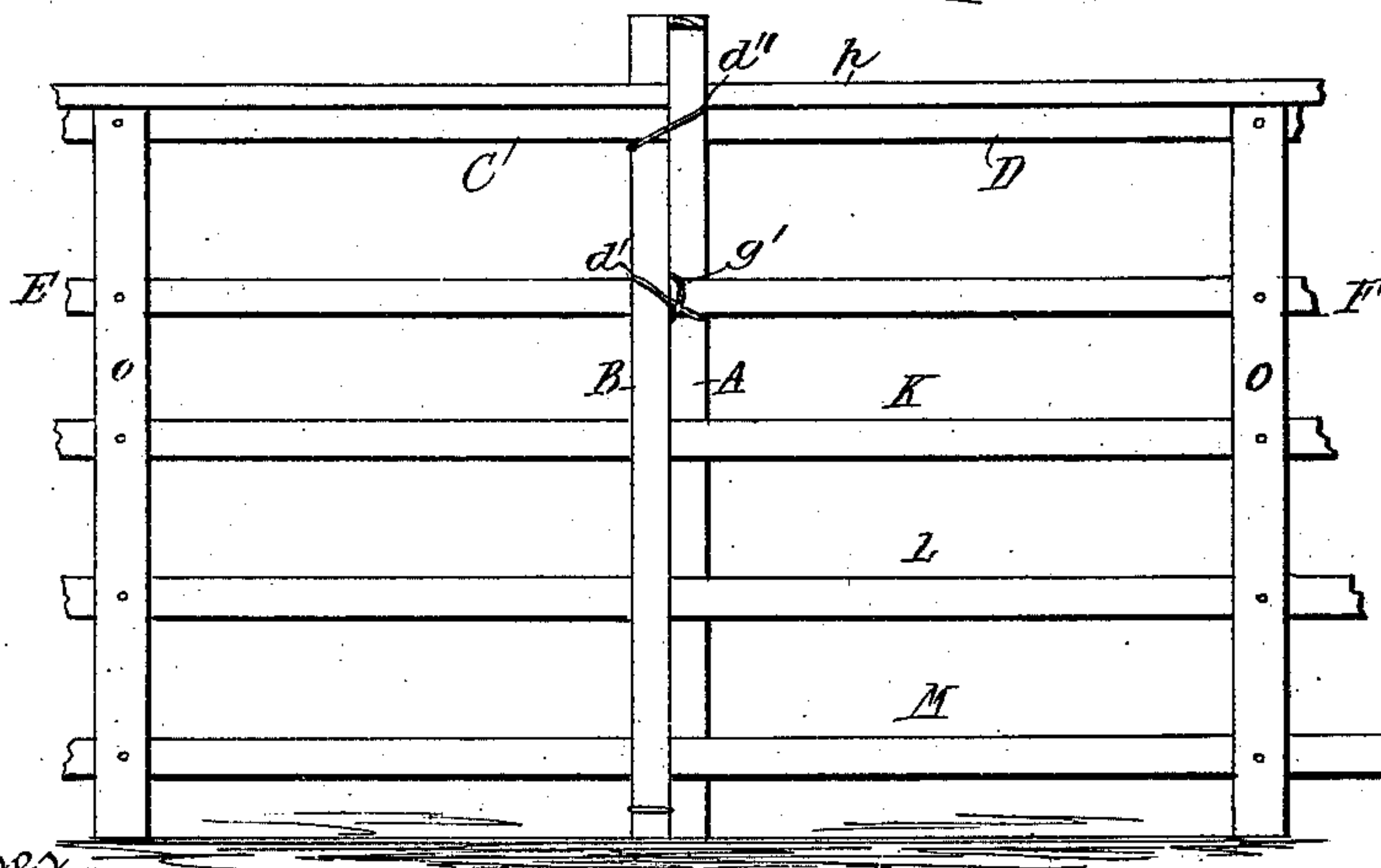


Fig. 5.



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Fig. 6.

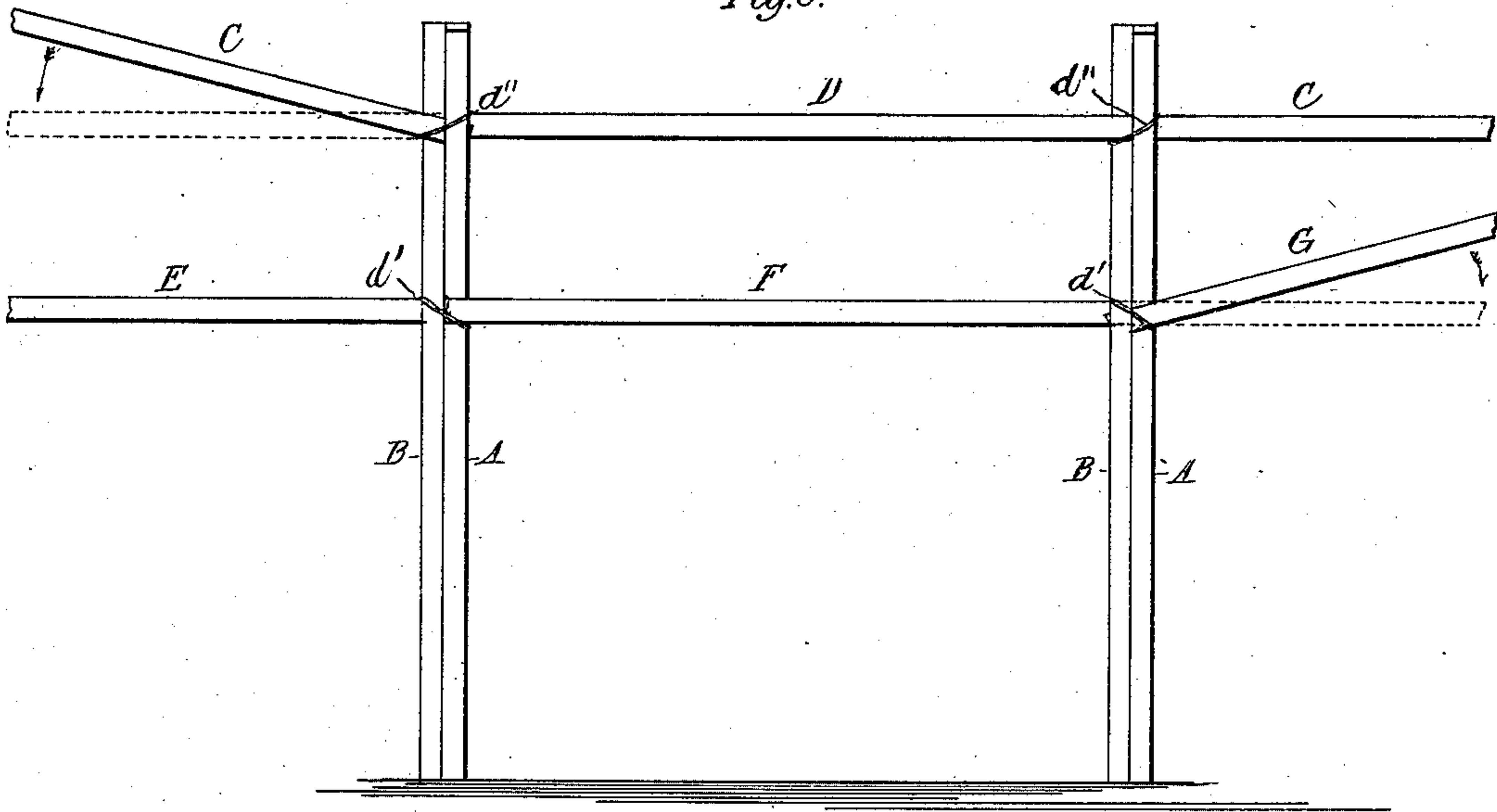
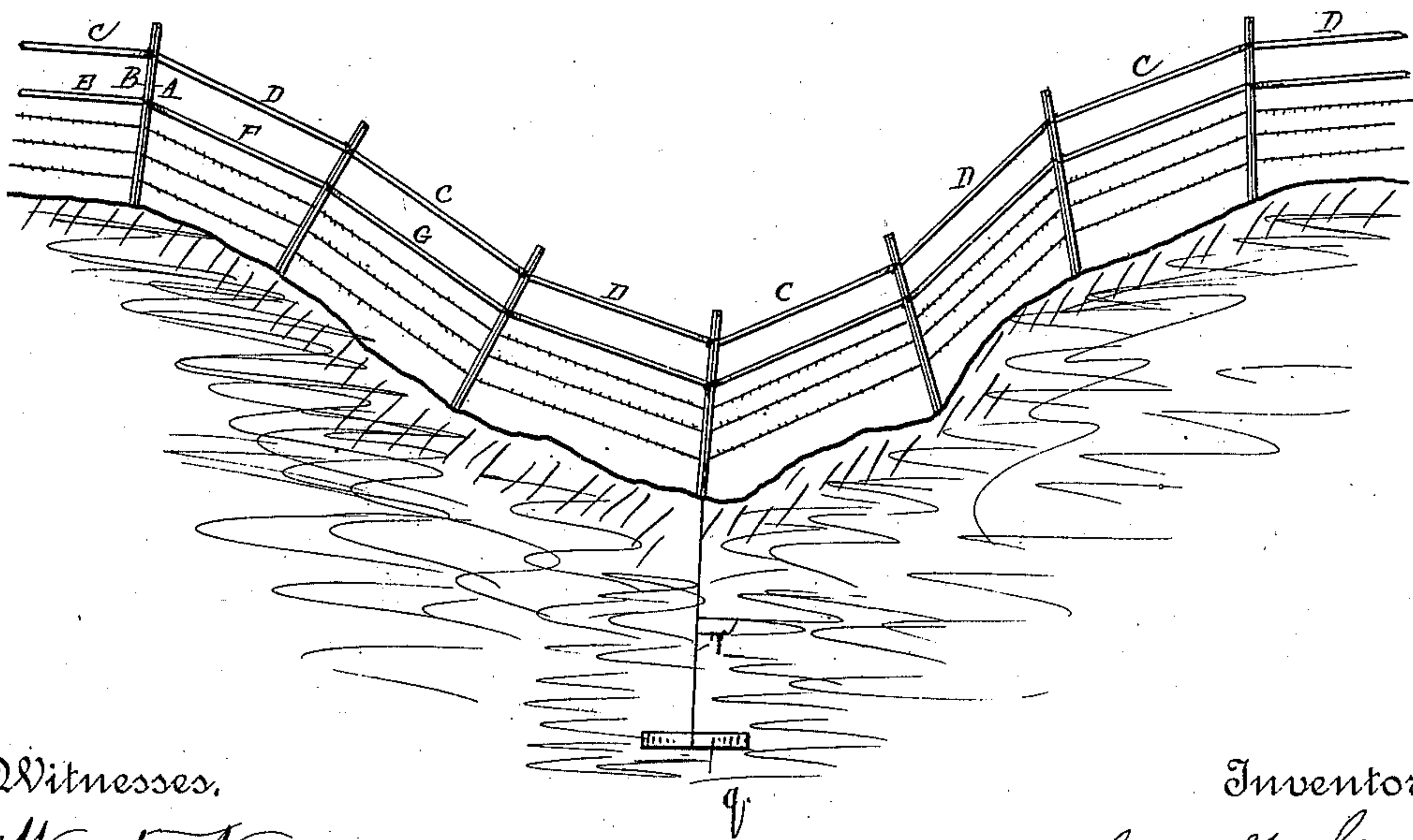


Fig. 7.



Witnesses.

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# UNITED STATES PATENT OFFICE.

JAMES Z. STANLEY, OF SPRINGDALE, MICHIGAN.

## FENCE.

SPECIFICATION forming part of Letters Patent No. 381,858, dated April 24, 1888.

Application filed January 23, 1888. Serial No. 261,681. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES Z. STANLEY, of Springdale, in the county of Wexford and State of Michigan, have invented certain new and  
5 useful Improvements in Fences; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings,  
10 and to letters of reference marked thereon, which form a part of this specification.

The object of my improvement is to make a rail fence having wire "binds" in which the  
15 crossing stakes shall be firmly held, with no tendency to spread at their bottom ends, and therefore having no need of cross-wires or other stays connecting them at the bottom to prevent such spreading, and also to facilitate  
20 the inserting and fastening of horizontal rails in pendent wires by a peculiar double twist of the wire, and which also prevents the rails being lifted or pushed up by small animals, and to economize the construction and accom-  
25 modate it to the making of picket fences.

The nature of the invention will readily appear from the following description.

Figure 1 is an enlarged transverse section on the line *xx* of Fig. 2. Fig. 2 is an elevation of a portion of my improved rail fence.  
30 Fig. 3 is a view similar to Fig. 2, in which wires instead of lower rails are used. Fig. 4 is a view similar to Fig. 2, in which pickets instead of lower rails are used. Fig. 5 is a  
35 view of a portion of my rail fence, showing a top and side brace; Fig. 6, a view showing the manner of completing and tightening the binds for the upper and lower top rails, which are placed in the crotches of the crossing stakes.  
40 Fig. 7 shows my mode of anchoring on irregular ground.

I employ the well-known crossing stakes A B, which cross each other near their upper ends, but which by my mode of wire binding  
45 do not require to be permanently nailed or bolted together, nor do they need to be embedded in the ground. A short endless uncrossed loop, *d'*, of strong wire, is first placed around the under top rail, E, and around the  
50 stakes A B, and upon inserting rail F aslant in said loop, and then pulling down the rail (see

Fig. 6) from its inclined to a horizontal position, a great purchase power is obtained, similar to that in binding a load of logs or lumber with a pole and chain. It will be evident that a  
55 bind formed by merely twisting a wire around these stakes and rails could not bind strong enough to hold a fence from going down, because it would lack the requisite stability; but by the purchase power obtained by my using  
60 a loop of large wire and then using the rail as a long lever I can embed this wire into the stakes and rails as the rail tightens down. Thus I form what I call "bind No. 1" as far  
65 as I wish to go with the fence—say for twenty rods—putting in the rails in the lower crotches or angles, 2, clear across the lot, and as fast as a rail is brought down another pair of crossing stakes is placed over said rail, and so on,  
70 and after reaching the terminus of the fence I cease to bind the line of rails E F G, &c., and next I go back with the top rails, C D, &c., binding them off with what I call "bind No.  
75 2" in like manner as with bind No. 1, excepting, of course, that in making this No. 2 bind I am obliged to go back over the same ground traversed before, and in forcing down the upper top rails to place after their insertions in the top loops, *d''*, the leverage of these rails on these loops is in a direction the reverse or  
80 opposite of that employed in tightening the other lower set of similar loops, *d'*. The stakes, upper rails, and tightened loops are thus so powerfully held together that even if the structure were not further strengthened the fence  
85 would be self-sustaining. The fence is self-binding—that is, the insertion and forcing to place of the rails accomplish the binding. It should be borne in mind that the end posts are only used at the starting-place and terminus of the fence, all the rest of the fence being  
90 composed of stakes, rails, and wire.

It will be seen that the construction thus far described may be used either for a rail fence, a picket fence, or for one in which the  
95 lower portion below the angle 2 may be closed by horizontal wires, either barbed or plain, to keep animals from passing. My preferred way of effecting this is to use a wire support, peculiarly made for sustaining a few horizontal rails,  
100 it being understood that in my fence fewer rails than usual are needed. I pass a third inde-



pendent wire,  $g'$ , over the rails E F, just beneath the angle 2, and then, bringing the two parts of the wire together, they are twisted together for, say, one or more twists. Then a rail, (or rails,) K, is put loosely into the untwisted part—that is, between the two parts of the wire—and a slight or single twist below the rail will prevent it from dropping; but this does not yet complete it nor properly tighten the rail, (or rails, in case two lapping ends of rails chance to be at this point,) because the rail is yet lying in a loop which is considerably larger than the cross-section of the rail. I can now insert a rod, bar, or any suitable instrument in the space between the parts  $ij$  of the wire, and just above the rail, and give the whole wire an “extra twist” in the same direction of the twist previously given, and both above and below the tightening implement, (or this may be done with pliers or pinchers,) thus tightening both above and below such implement, which is then withdrawn, and this leaves the wire in such condition that at any time a rail may be easily withdrawn for repairs or otherwise by simply using pliers, or by inserting any implement or rod in the opening or loop-space  $k$  and turning it in the opposite direction, which will undo the twists  $i$  and  $j$  and leave the rail loose. It will be seen that any desired degree of tightening of the wire and rails can be given by means of the pliers, rod, or bar when inserting these rails, and also any desired degree of looseness when removing them. One advantage of tightening the rails by the extra twist is to prevent the rails being raised or lifted by hogs or other animals passing under them. Nor can the rails slip up and down, as if hung in the ordinary wire loops. Any desired length of rails may be used. The wire  $g'$  is used, twisted in the same way, for holding other rails L M (as may be desired) below the rail K. Usually three such rails will be sufficient, making, with the upper and lower top rails, only five rails in all, while ordinarily in this class of fences from six to eight are required. Nor do I need any inclined brace-rails, as the solidity given by my manner of binding renders them unnecessary.

The bind No. 1 is preferably made before that above it, or No. 2, and the binding-twist in one of them is made in a direction opposite to that in the other one. The wire  $g'$ , as before stated, performs no duty of holding firmly together the cross legs or stakes A B, nor of preventing their spreading at their feet. I, however, extend its ends from beneath the lowermost rail to the lower ends of these stakes, merely to prevent the under rails from being swung by animals that might thereby pass under them. The effect of the whole of these several binds is that they insure a firm solid structure, which will not sway, turn, or fall down endwise, as too often happens with other fences in use.

To make a picket fence, horizontal rails may

be placed at a point near the ground and the pickets nailed or fastened to it and to the rails C D, as shown in Fig. 4; but the intermediate rails may be dispensed with. Two to four inch pickets will be sufficient.

To make a board fence, I use the same stakes and same manner of binding the two top boards to them. The boards may be notched at their ends to facilitate the wire-binding and prevent the boards turning over. Strips  $o$ , of wood, may also be placed vertically on the center of the panels and opposite to each other. These help to stiffen the fence, as does also a cap-board,  $p$ , secured above the top rail, and which also gives a finish.

Instead of pickets or boards below the two top rails, horizontal wires, barbed or plain, may be used, substantially as shown in Fig. 3. In thus using wire (preferably barbed) I first set posts in the ground as far apart as the ground will permit, and on level ground they may be forty rods apart. Then stretch the wire, (as many strands as desired,) and then proceed to set up the crossing stakes and top rails and binds, as previously stated, first completing the bind No. 1 from one end to the other and next completing the bind No. 2 from one end to the other. With this construction I do not need any wooden rail at the bottom of the fence. The horizontal wires may be any desired distance apart.

In building my fences over an uneven piece of ground—say, for instance, from the top of one small hill or elevation to another or over any similar abrupt hollow—I use the following means for preventing a tight pull on the longitudinal wire or barbed wire, and which pull would tend to pull this portion of the structure up into the air. I therefore anchor or stay the fence by burying at a suitable depth in the ground a stone or brick,  $q$ , or other material of sufficient weight, durability, and size, and attach to it a wire,  $r$ , which at its upper end I fasten to the barbed or other fence wire. This allows of pulling down the fence wire or wires to the desired position relatively to the surface of the ground and securing it in such position. This stay or anchoring wire may be in the same piece with and a continuation of one which has the double twist heretofore described. Such anchoring would of course only be needed occasionally in building a fence, and in fences where no setting-posts are used.

I claim—

1. In a rail fence, the combination, with the crossing stakes A B and with the lower top rails, E F, of short endless uncrossed wire loops placed around said stakes and tightened up to bind the parts firmly together by the lever action of such lower rail in forcing it after the insertion of its end into the loop from an inclined to a horizontal position, all as shown and described.

2. In a rail fence, the described combination, with the crossing stakes and the upper top rails, C D, of the short endless uncrossed wire loops placed around the tops of the stakes



above their point of crossing and having within them the ends of the said rails, the loops being forced to bind all these parts firmly together by the downward lever action of said rails to bring them to their horizontal position, and the direction of this binding of these upper rails being opposite that of the lower top rails, all as shown and described.

3. In combination, the crossing stakes, the lower top rails and their wire loops applied and tightened by the rail, as set forth, and the upper top rails and their endless wire loops

applied and tightened in the opposite direction by the rail, all as set forth.

4. In combination, the crossing stakes combined with the under top rails, E F, the wire *g'*, hung thereon and double twisted, as described, hanging vertically beneath the crotch of the stakes, and a series of rails or their described equivalent pendent from such wire.

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Witnesses:

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