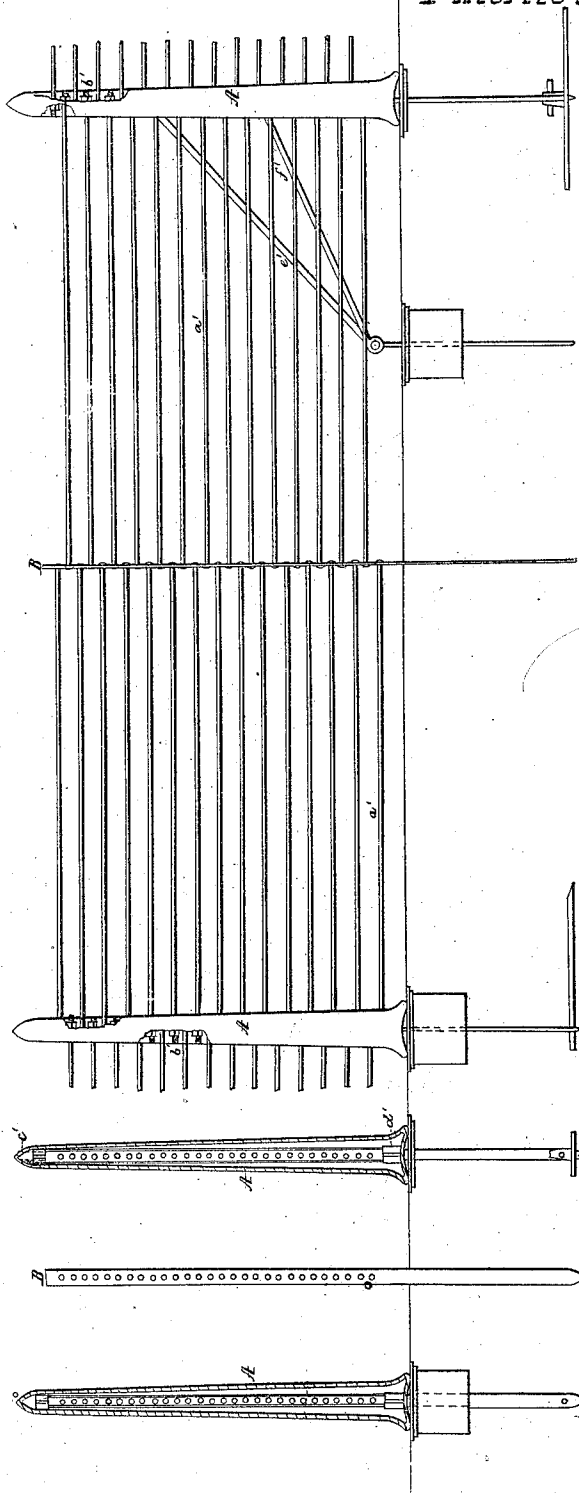


M. P. Coons,

Wire Fence,

No. 10,781-

Patented Apr. 18, 1854



UNITED STATES PATENT OFFICE.

MATTHIAS P. COONS, OF BROOKLYN, NEW YORK.

IRON FENCE.

Specification of Letters Patent No. 10,781, dated April 18, 1854.

To all whom it may concern:

Be it known that I, MATTHIAS P. COONS, of the city of Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in the Construction of Wire Fences or Barriers of Like Nature, the direct object of which is to provide a means for overcoming the injurious effects of heat and cold upon such fences by the expansion and contraction of the metal thereof, as well as other causes of evils which I shall hereinafter explain, and to enable others to use this improvement I shall in the annexed specification describe its nature in detail.

It is well known that when fences are constructed of metallic rods or wire the latter if drawn as "taut" as would be desirable for the stiffness of the fence or trimness and general beauty of the structure, and from their unyielding nature are liable to break from various causes, among which may be mentioned the continuous succession of expansion and contraction of the rods by constant changes of temperature varying according to locality and season from below zero to upward of 100° Fahrenheit, violent vibrations caused by heavy winds; from incrustations of ice during storms of sleet, &c., premised to all of which must be borne in mind the fact that to produce the "taut" and horizontal position of the wires as mentioned, which their weight impedes greatly, they must according to the ordinary method be subjected to a heavy dead strain rendering them less able to withstand the further and superenduring causes, in all cases unavoidable of the tendency to ruptures mentioned.

Now while through my hereinafter specified improvements I am enabled with safety to construct wire fences, &c., with any amount of "tautness" which firmness and elegance may demand, I avoid subjecting the tensile strength of the metal to any serious task, either in process of construction of my fence or by natural contingency thereafter—by rendering it not a whole but every individual panel is elastic while at the same time I am enabled to introduce to the best advantage many valuable collateral improvements in the details, thus producing a structure of extraordinary general merit, in

all the conditions of economy beauty and durability.

To point out to others more clearly the nature of my improvements and the method of applying it in the construction of wire fences, &c., I will describe it substantially, referring to the accompanying drawing, making a part of this specification wherein—

Figure 1 is a longitudinal elevation of a wire fence showing the combination, showing my spring bar (being the main feature of my improvement) therewith; Figs. 2, 3, and 4, respectively, end elevations of the post, (as I construct and use it) of the spring bar in its approximate state for use, and of a post with the spring bar combined therewith, and further I have for the sake of clearness colored my spring bar on the drawing a bright blue, while the letters of reference in red in all the figures indicate like parts for similar letters.

The posts A, A, of cast iron, forming the extremities of each panel or stretch which may be of any approved length having the holes cast therewith and being spaced or quartered, and gaged to meet the general requirements of construction and use, I erect in the center of the panel or all alternate panels, the spring bar, B, provided with holes corresponding in gage, spacing, &c., to those in the post mentioned, and place the tang or foot of the bar in the ground until the holes in the spring bar (intermediate post) correspond in elevation. Through the bar (or post) thus erected I pass the rods, *a*, having rivet heads (or equivalents) at one end, and screws and nuts at the other, alternately in opposite directions (see Fig. 1) so that the rivet heads of the respective rods are adjoining on the reverse faces of the spring bar, while their opposite ends are passed through their respective posts to be there confined by the operation of the nuts and screws, *b*, or by any other approved fastening. It will be observed that the effect of employing my spring bar is to do away with all the evils to which wire fence is exposed in the ordinary method of construction from the various causes shown elsewhere, and that it operates as a compensating spring to "tauten" the fence when loosened by expansion or extension from any cause, or to yield to the tension of the fence

arising from its construction, &c., the spring bar adapting itself to the changes, respectively, by corrugation from or reversion to a plane surface.

5 Perhaps a still more advantageous and economical arrangement of my improvement might be made as shown by Fig. 4, where I have shown the spring bar combined with the post of which it may if desired form a part, being directly connected with the "tang" and the latter being a fixture in the post where, nevertheless, the bar would have the amount of "play" necessary for its operation for the purposes specified, by an appropriately large slot, as at *c*, in the top of the post, or otherwise, the bar might be used within the post yet not directly attached thereto on to the tang thereof, but simply passing into respective slots in the top and bottom of the post, as at *c* and *a*, (see Fig. 4,) which also sufficiently exemplifies the modification suggested. In both of their arrangements, however much the post might possibly be moved by the action of the post or other similar causes, (but which I have elsewhere provided against) the bar will be still unimpaired in its operation, &c., by its motion within its slots as pointed out.

There are many important advantages on the first of the two modifications, among which I will enumerate the economy of material in the post, the saving of time and labor of manufacture and construction, by avoiding the clipping of the wire in the center of each panel, and the consequent forming of the rivet head, before specified and the ability to use in each alternate posts the rods with simple rivet heads in the place of the more costly right and left hand socket nut and screw and lastly the superior simplicity and elegance of an unbroken line of panels of fence.

I may here remark that my improvement is equally applicable to wire fences of ordinary construction, for by clipping the wires in the center (or at a point where a compensating spring bar should be deemed necessary for the purpose heretofore described and by loosening or removing the nut or its equivalent at the opposite ends of the rods, I obtain a sufficiency of wire to pass through the holes in the spring bar, where by using a powerful pair of nippers I flatten and flare those clipped ends so as to increase their width over the gage of the rod and of the hole it is to pass through, the spring bar substantially forming a rivet head for the purpose elsewhere set forth, the fence being "tautened" by the nuts and screws. A glance at Fig. 1 will also exemplify this method of application.

The operation of erecting and tautening my wire or iron farm fence is more fully and practically exemplified by the model ac-

companied these specifications and drawings; and finally to more fully illustrate and explain the practical operation of my invention I will in part describe the mode of its construction.

The corner posts (or as they are more generally called the straining pillars) one of which is first firmly and substantially placed in its proper locality, either with or without the spring bar attached as heretofore described, the tang of which is inclosed in the ground and then properly braced with two or more braces sufficient to prevent any inclination by the power of tension to be applied. The wire or rods are intended to be cut accurately of one length from twelve to twenty feet, as desired, having heads or their equivalent at one end and male screws at the other (the female screws being left off until required for use). The corner post or straining pillar being "fixed," a rod is passed through the post to its head. The end at the male screw determines the exact place for the first spring bar or intermediate post, which is forced into the ground until the holes in the bar correspond with the holes in the post. The first rod being in the lower hole of the post it is now inserted in the lower or corresponding hole in the bar. The second bar is then inserted in the next hole above in the bar and passed through to its head, thus determining the place for the second bar on intermediate post, and so on alternately to the end of the line, at which point the second straining pillar is secured the same as the first. Having thus placed all the posts in the line, the rods are now inserted in their proper places, one alternately above the other, and as the rods are inserted the female screw is applied. When the whole line is thus arranged, the nuts are then used to strain or "tauten" the rods, by which operation the spring bar or intermediate posts are corrugated or forced into a zigzag form by the tension applied being transverse and at alternate different points, and thus by corrugation the bar becomes elastic and insures ample elasticity for the compensation of the contraction and expansion of the metal rods produced by the different variations of temperature, operating thus in cold and freezing temperatures the metal rods contract and consequently causes the intermediate post (a flat bar of iron) to corrugate, yielding to the tension of the rods, and in warm and temperate atmospheres the rods expand when the posts again assume their former shape.

I am aware that various attempts have been made at elasticity in the construction of wire fences and other devices intended as a compensation for the contraction and expansion of metal bars or rods, among

which are "kinks" in the center of the panel, spiral springs, compound or right and left screws, and various other complex machinery which I need not here describe, each and
5 all of which are more or less inoperative and impracticable and all of which I consider is, by the use of the simple device of the said described spring bar effectually superceded.

10 Having thus described the nature and the practical operation of my invention, I do not claim any particular device or construction of a post or straining pillar nor any

particular mode of attaching wire or rods to them.

15

I claim—

Combining a spring bar with the rails, wires, or their equivalents of metallic fence in the manner substantially set forth for the purpose of yielding to pressure or strain
20 arising from change of temperature.

MATTHIAS P. COONS.

Witnesses:

WM. G. HAMMOND, Jr.,
CHAS. HENRY.