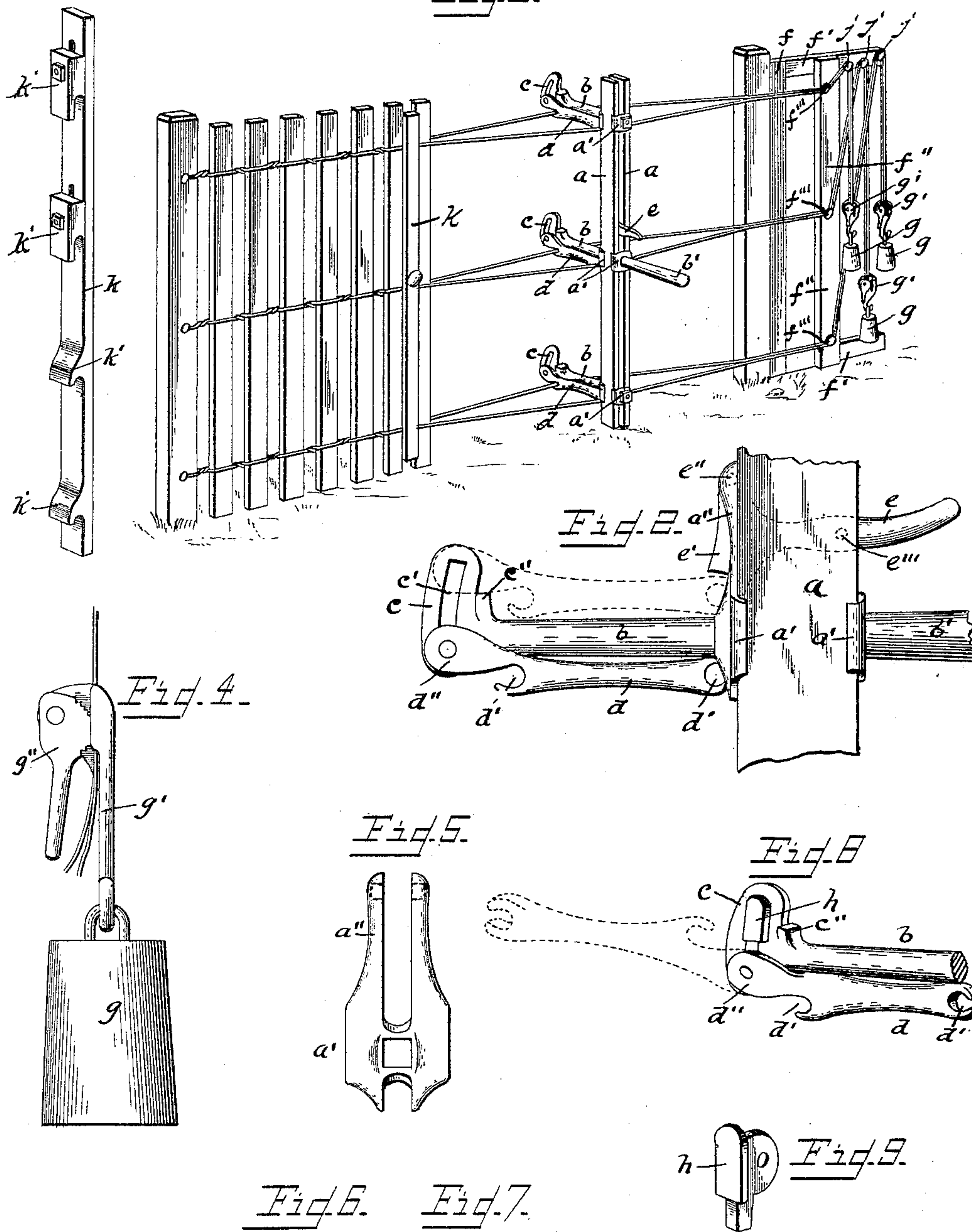


P. C. MILLER.
FENCE BUILDING MACHINE.

Patented July 29, 1890.

Fig 1.



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PHILIP C. MILLER, OF CLAYTON, OHIO.

FENCE-BUILDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 433,299, dated July 29, 1890.

Application filed April 24, 1890. Serial No. 349,308. (No model.)

To all whom it may concern:

Be it known that I, PHILIP C. MILLER, a citizen of the United States, residing at Clayton township, (Somerset P. O.,) in the county of Perry and State of Ohio, have invented certain new and useful Improvements in Fence-Building Machines, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 represents a perspective view of my improved machine as it appears in use; Fig. 2, a detail view of a portion of the twisting mechanism; Fig. 3, a perspective view of the wire-spacing gage; Fig. 4, a detail view of the device for keeping the wires tight; and Figs. 5, 6, 7, 8, and 9 detail views which will be fully hereinafter explained.

The object of the invention, generally, is to provide an extremely simple apparatus for simultaneously twisting and braiding the fence-wires around the pickets and keeping the wires tight while being twisted, braided, or interwoven, as will be fully hereinafter set forth.

In the annexed drawings I have illustrated a portion of a wire-and-picket fence in the course of construction, with my invention applied thereto as it appears in use.

The horizontal fence-wires are held tight by means of weights *g*, adjustably attached to the wires by means of links or bars *g'*, provided with cam-levers *g''*, as shown clearly in Fig. 4. The free ends of the wires are passed under pins *f'''* on an upright *f''*, secured to the arms *f' f'* of a frame *f*, and from thence are carried up over pins or hooks *j* on the upper bar or arm *f'* of said frame. The said weights *g* are attached to the free portions of the wires below the pins *j*, and thereby serve to keep the wires under tension during the twisting, braiding, or weaving operations. The cam-levers *g''* are pivoted upon ears formed on the bars *g'*, as shown in Fig. 4, so that they clamp the wires between their curved serrated edges and the said bars *g'*. By raising the cam-levers the wires will be released and the weights may be removed entirely or adjusted along the wires, as is evident. The frame *f* is preferably placed against one of the fence-posts, as shown in Fig. 1, the post serving as an abutment for the frame. The

wires are properly spaced and kept a uniform distance apart by means of the gage-bar *k*, which is provided with hooks *k'* on its rear side, which set over the wires and support the gage during the twisting operations. The upper hooks *k'* on the gage-bar may be made adjustable longitudinally, if desired, as shown in Fig. 3, in order that the gage may be used on fences where the spaces between the wires vary. The gage or spacer is hung on the wires between the last-secured picket and the one about to be twisted in place, and as fast as the pickets are secured the gage is moved from place to place.

The twisting mechanism consists of a pair of separated upright bars *a a*, provided with horizontal arms *b b b*. These arms have their inner ends passed between the bars *a*, and are provided with flanged caps or plates *a'*, (see Figs 5, 6, and 7,) which clamp and embrace the opposite edges of the uprights and are securely held in place by suitable nuts. By means of these plates and nuts it is evident that the arms are readily adjustable up and down upon the uprights to accommodate or suit different fences. One arm is provided for each wire rail, and each rail is composed of at least two strands of wire, as shown, and any number of arms may be employed according to the number of wire rails in the fence. The middle arm is provided with an extension *b'*, which serves as a handle by which the apparatus may be operated. The forward ends of the arms are each provided with a vertical plate *c*, provided with a curved slot *c'*. Pivoted in the slots *c'* are horizontal arms *d*, which are turned back under the arms *b*, and are provided at their ends with notches *d'* for the reception of the strands of the fence-wires, the forward ends of these arms being provided with ears *d''*, which embrace the slotted plate *c*.

The operation of the twisting mechanism is as follows: The strands of the rails being inserted in the slots or notches *d'* of the oscillating arms, and a picket being placed between the separated wires up against the gage-bar, the operator, by means of the handle *b'*, raises the apparatus until the swinging bars *d* assume the position shown in dotted lines in Fig. 8, when he lowers it, whereupon

these bars will swing over on top of the arms *b*, as shown in dotted lines in Fig. 2, the slots *c'* permitting these movements. As these bars swing around from beneath the arms *b* to a position immediately above them, it is evident that they each make one complete revolution, thereby twisting the strands about and securely binding the picket in place. Then when a new picket is inserted between the wires and the gage or spacing bar properly adjusted, the operator first lowers the machine and then elevates it a sufficient distance to bring the swinging bars *d* around to their original position under the arms *b*, thereby performing another twisting operation, but in the reverse direction to the first one, as is evident, and so on until the entire fence is picketed. Of course the parts of the apparatus are moved along the line of the fence as fast as it is completed. When the swinging arms *d* are on top of the arms *b*, they preferably rest upon shoulders *c''*, formed on the outer ends of the latter, as shown in Figs. 2 and 8.

In case it is desired to support or hold up the twisting devices temporarily while the operator is adjusting some of the other parts of the apparatus, this may be done by means of a depending latch *e'*, pivoted between the slotted extensions *a''* of the central clamping plate *a'* (see Fig. 5) and working between the uprights *a a*, this latch being provided with an operating-handle *e* within easy reach of the operator, as shown in Fig. 2. To hold the latch *e'* back in the space between the bars *a a*, so that it will not engage the bar *b*, I provide the handle *e* with a hole *e'''*, (shown in dotted lines in Fig. 2,) through which a pin or nail may be passed and allowed

to rest against the edges of the bars *a a* and thereby hold up the handle.

In case it is desired merely to braid or cross the strands of the fence-wires, this may be done by inserting the flanged block *h* (shown in Fig. 9) in the upper part of the slot *c'* of the middle arm, as shown in Fig. 8.

Having thus fully described my invention, what I claim is—

1. A gage and spacing bar *k*, provided on its rear side with hooks *k'*, adapted to set over the fence-wires, one or more of the upper hooks being made adjustable.

2. The combination of a pair of separated uprights, horizontal arms carried by the said uprights and provided with slots in their outer ends, swinging notched bars pivoted in the slots in the forward ends of the said arms, and a latch *e'*, pivoted between the said uprights above one of the said arms, substantially as and for the purpose described.

3. The combination of an upright carrying horizontal arms, these arms being slotted at their outer ends, swinging notched bars pivoted in said slots, and a removable block *h*, adapted to be inserted in the upper part of one of said slots, substantially as and for the purpose described.

4. The combination, with an upright, of two or more arms adjustably secured to said upright and provided with vertical slots in their ends, and notched swinging bars *d*, pivoted in said slots, substantially as described.

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

PHILIP C. MILLER.

Witnesses:

W. H. H. MINTREY,
PHILIP ALLEN.