

(No Model.)

3 Sheets—Sheet 1.

M. STEPHENS & S. O. KOONS.

WIRE AND PICKET FENCE BUILDING AND REPAIRING DEVICE.

No. 516,237.

Patented Mar. 13, 1894.

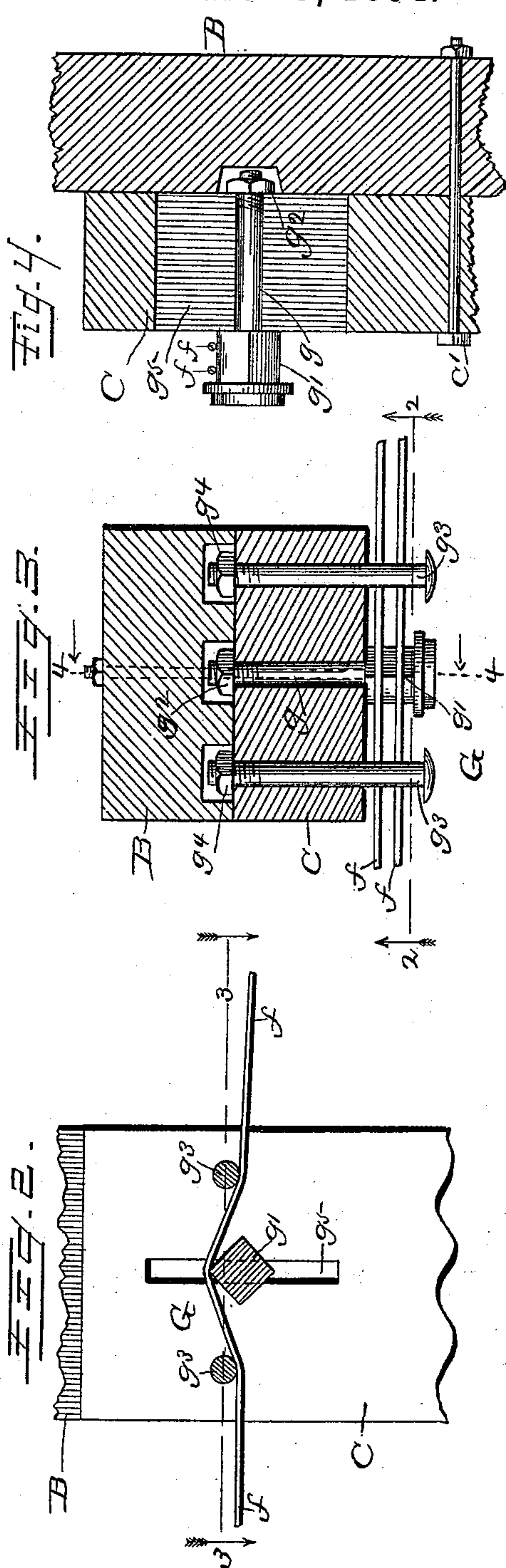
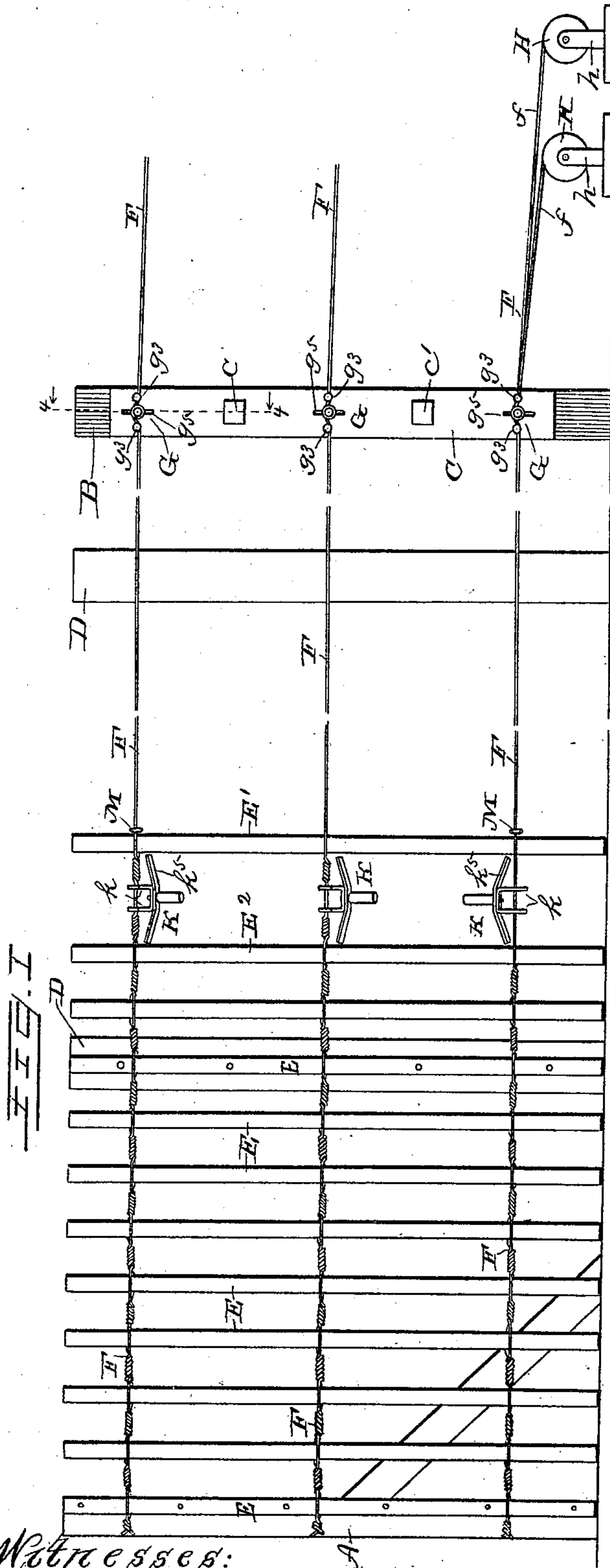


Fig. 4.

Fig. 3.

Fig. 2.

Witnesses:  
Arthur F. Howard,  
H. M. Richards.

Inventors:  
Morgan Stephens,  
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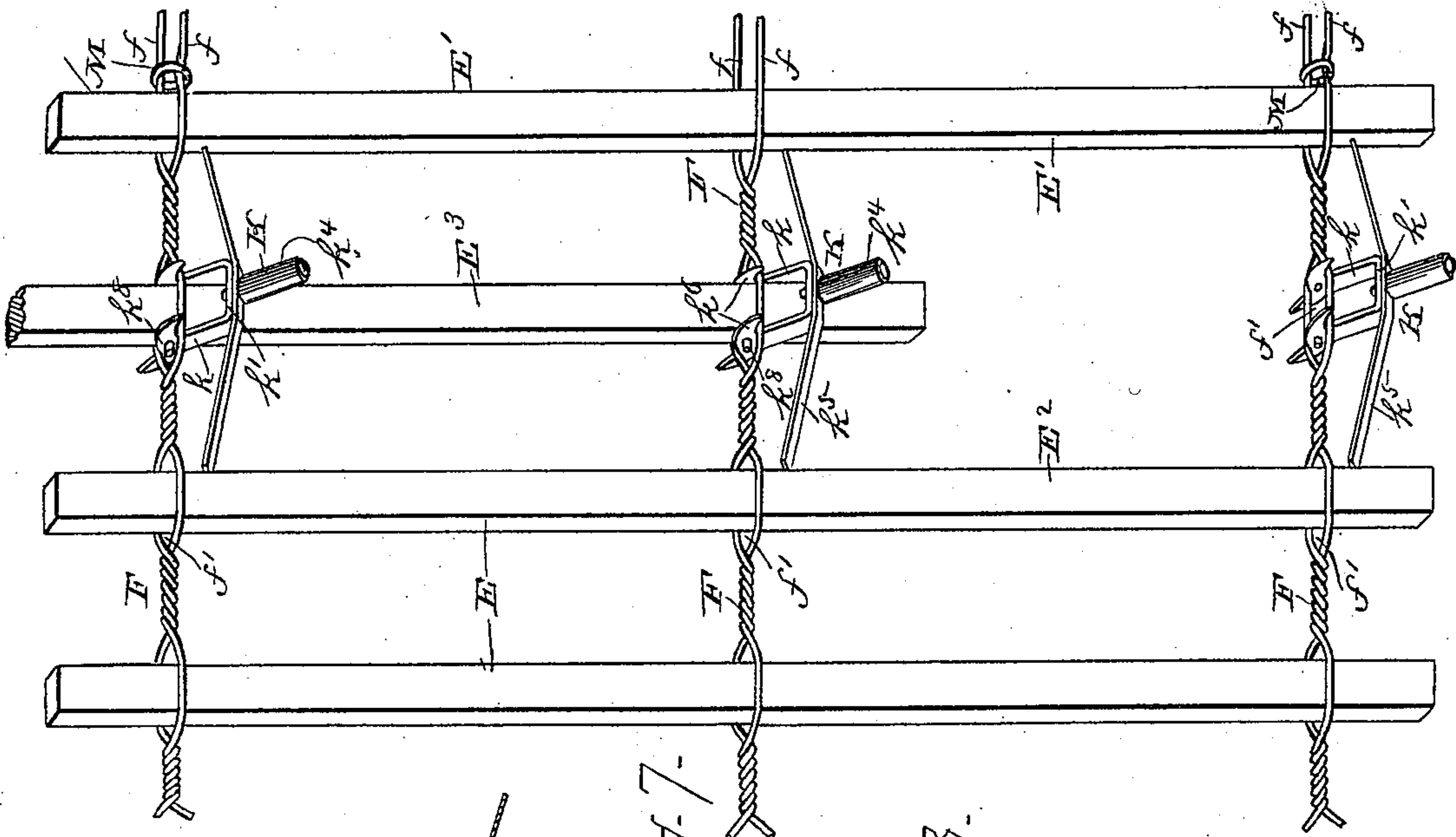


Fig. 1.

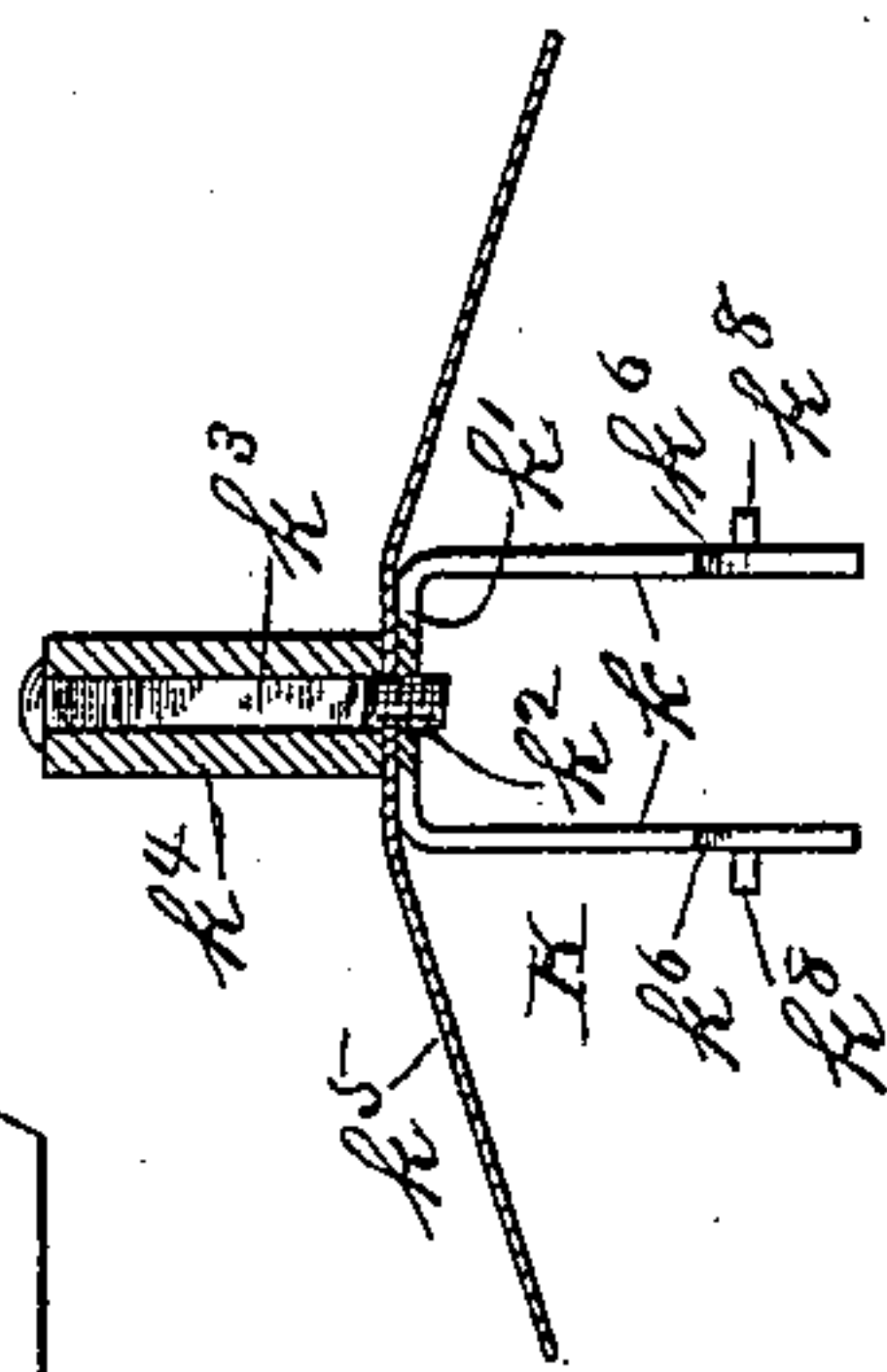


Fig. 2.

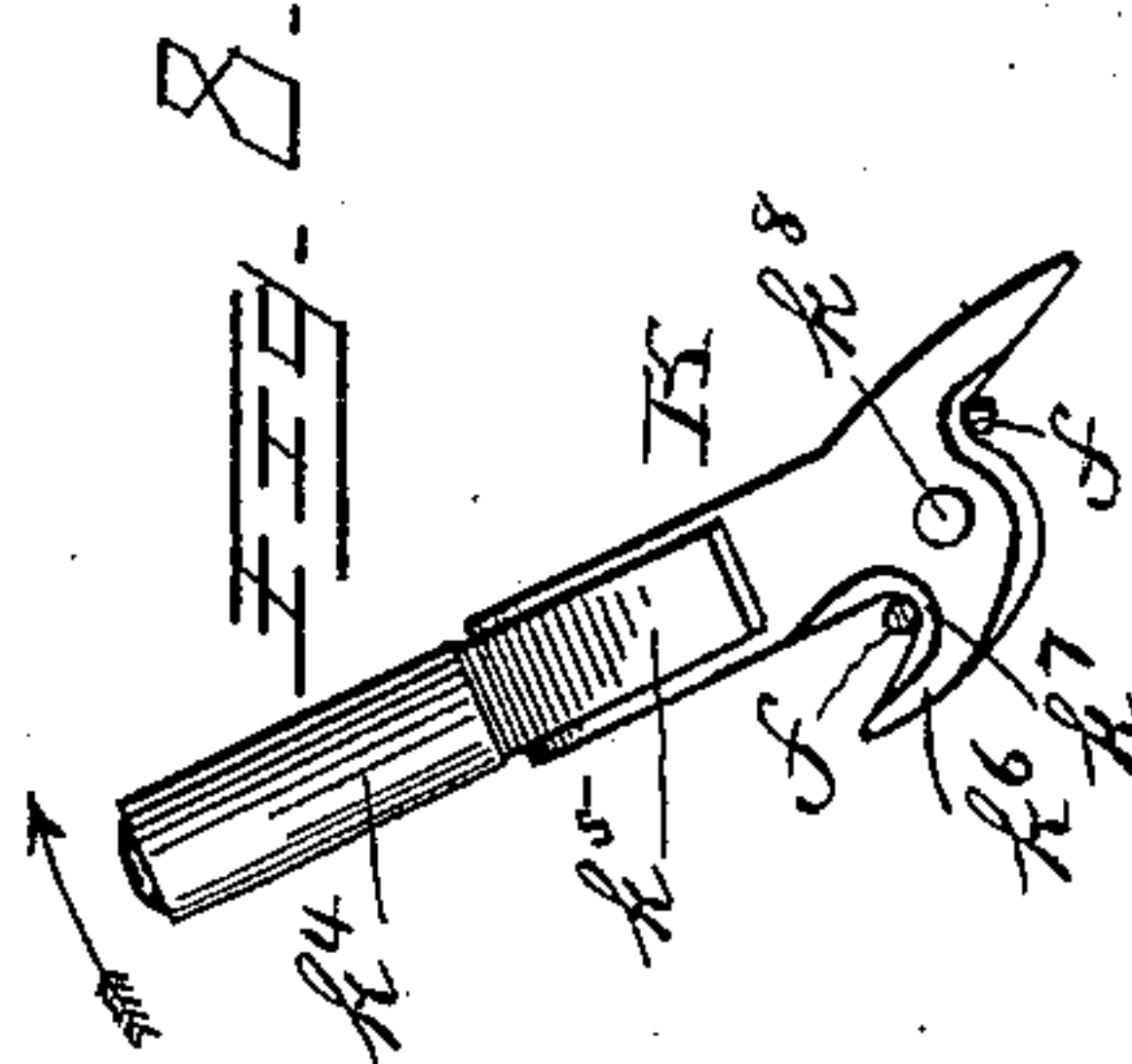


Fig. 3.

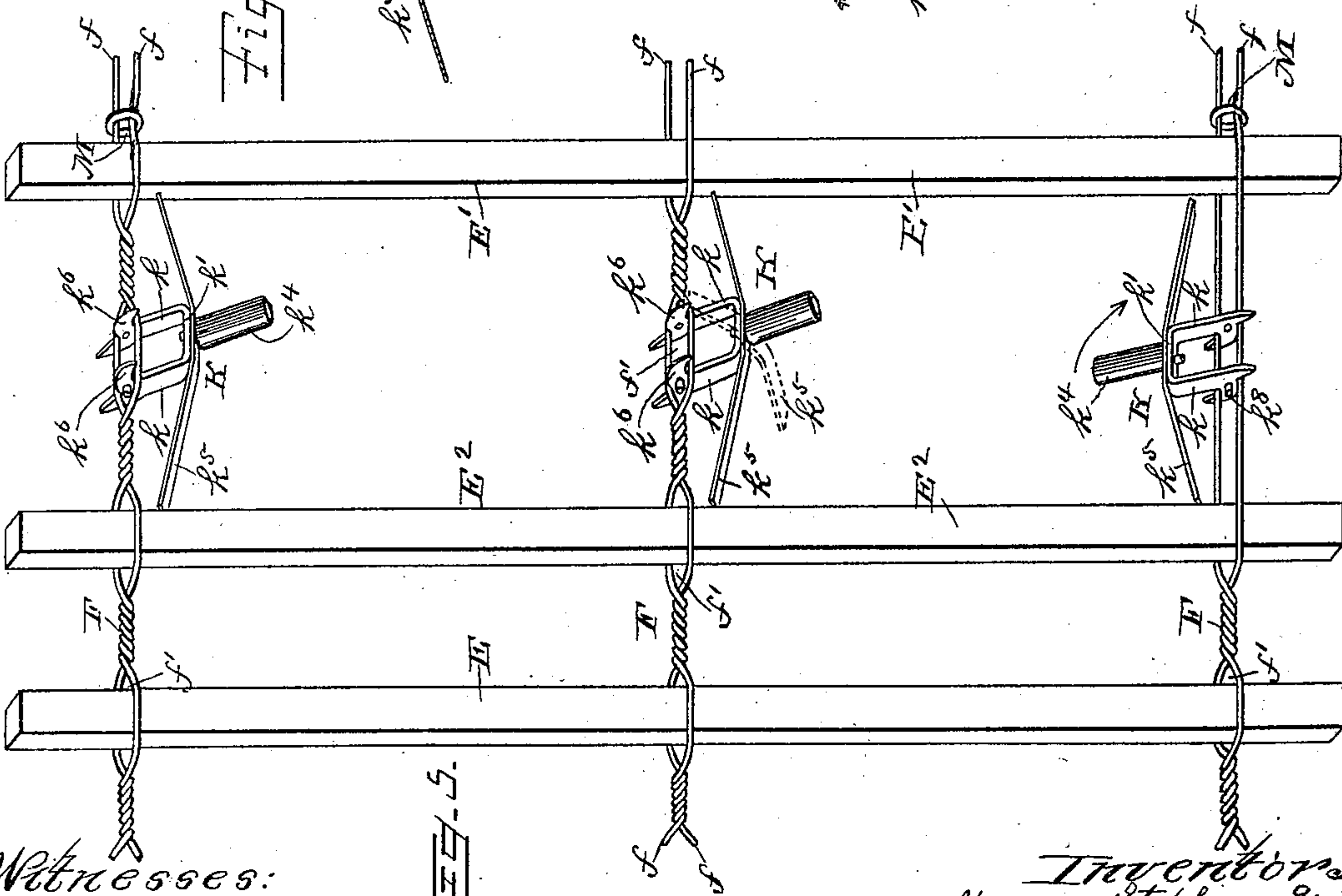


Fig. 4.

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(No Model.)

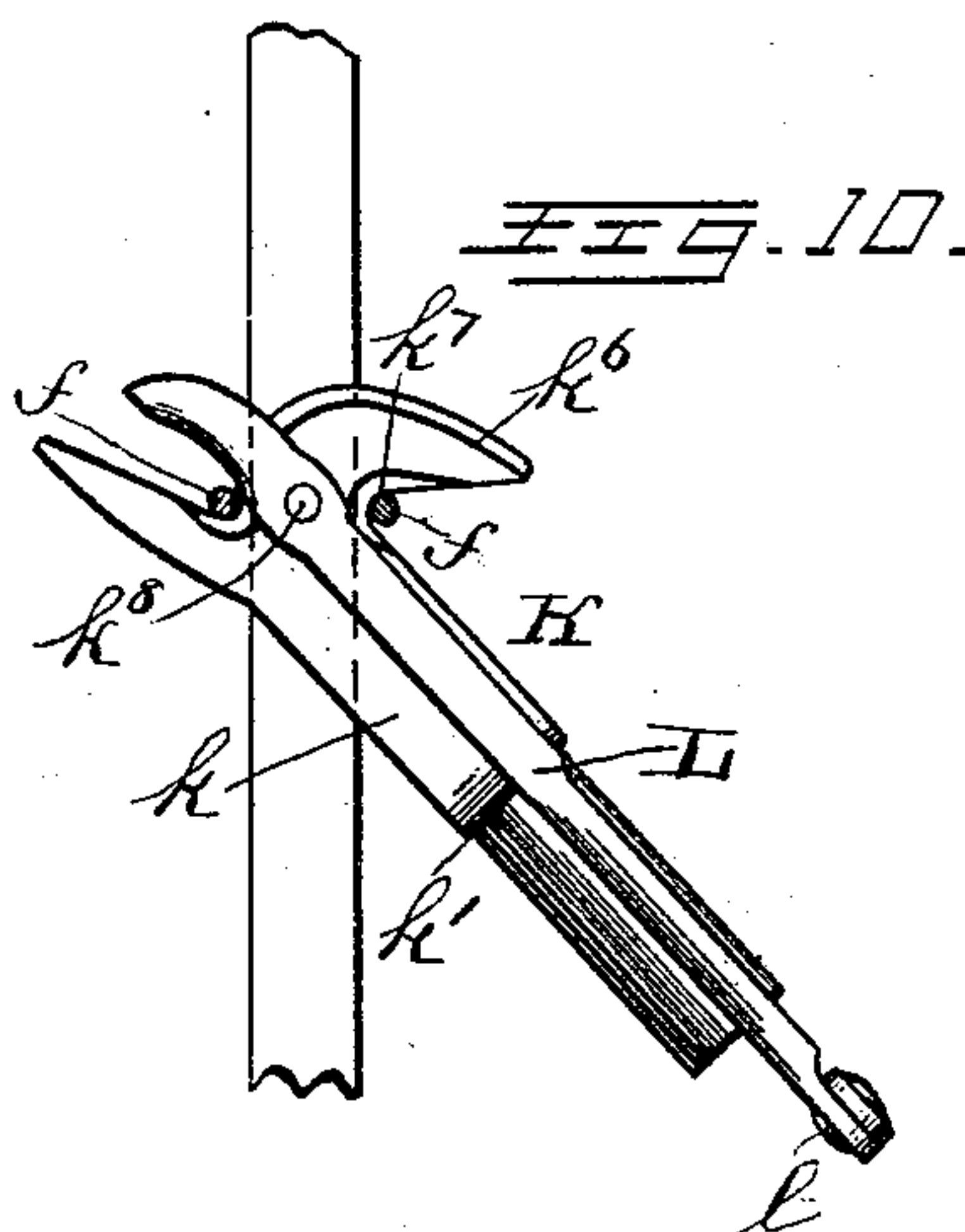
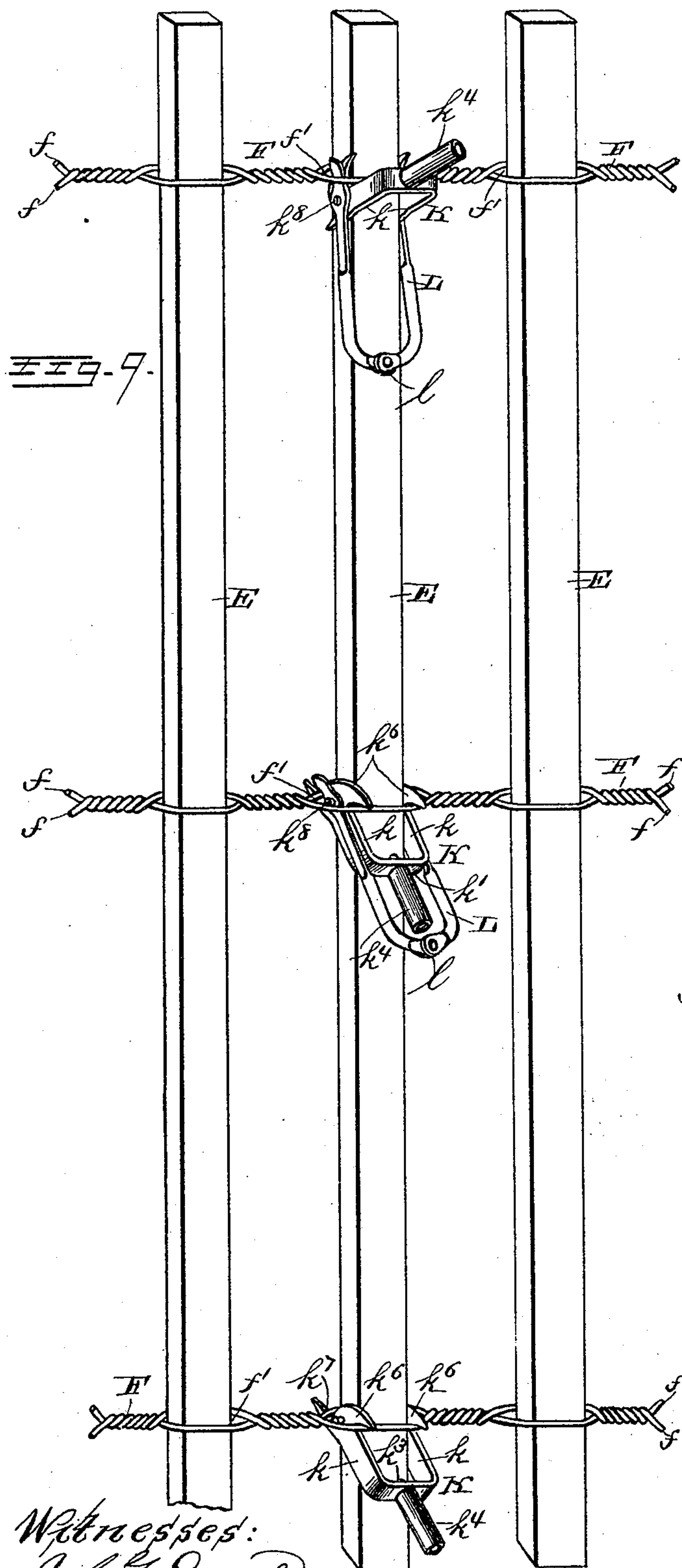
3 Sheets—Sheet 3.

M. STEPHENS & S. O. KOONS.

WIRE AND PICKET FENCE BUILDING AND REPAIRING DEVICE.

No. 516,237.

Patented Mar. 13, 1894.



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# UNITED STATES PATENT OFFICE.

MORGAN STEPHENS AND SIDNEY O. KOONS, OF GILSON, ILLINOIS.

## WIRE-AND-PICKET-FENCE BUILDING AND REPAIRING DEVICE.

SPECIFICATION forming part of Letters Patent No. 516,237, dated March 13, 1894.

Application filed October 24, 1893. Serial No. 488,995. (No model.)

*To all whom it may concern:*

Be it known that we, MORGAN STEPHENS and SIDNEY O. KOONS, citizens of the United States, residing at Gilson, in the county of Knox and State of Illinois, have invented certain new and useful Improvements in Wire-and-Picket-Fence Building and Repairing Devices, of which the following is a specification.

10 This invention relates to wire and picket fence building devices, and has for its object means by which such fences may be more rapidly, easily, effectively, and economically constructed.

15 For these purposes it consists in combinations and constructions hereinafter described and made the subject matter of claims hereto appended.

20 Mechanism embodying the constructive forms of our fence building device, showing the mutual relationship and combination of its several parts, and also so much of a wire and picket fence in process of construction as will fully illustrate one of its methods of operation, are shown in the accompanying drawings, in which—

Figure 1 is a side elevation of a wire and picket fence in process of construction, and of our building device as applied thereto.

30 Fig. 2 is a detail, showing an enlarged sectional elevation of the tension device, in the line 2—2, in Fig. 3. Fig. 3 is a detail showing an enlarged sectional plan in the line 3—3, in Fig. 2; Fig. 4, a detail, an enlarged sectional elevation in the line 4, 4, in Figs. 3 and 1; Fig. 5, an enlarged perspective of parts shown at Fig. 1, showing the two upper wire strands twisted, ready for the insertion of a slat, and the twister in position ready to commence twisting the lower strand; Fig. 6, a plan of the wire twisting tool, with its handle and slat spacing gage in sectional plan; Fig. 7, a perspective of same parts shown at Fig. 5, but showing the lower wire strand also twisted, and also showing a slat being inserted; Fig. 8, a side elevation of the wire twisting tool, its slat gage plate, and section of two strand wires engaged thereby; Fig. 9, an enlarged perspective of part of a fence, and of the wire twister with its auxiliary bail as applied thereto in raising or in removing a slat for any purpose, and for the insertion

of a substitute slat; Fig. 10, a side elevation of the twister and its auxiliary bail, and of part of one fence slat, and a sectional elevation of the two wires of a strand.

The same reference letters indicate the same or corresponding parts in the several figures of the drawings.

The first operations in the construction of our fence are illustrated at Fig. 1 of the drawings—the commencement being from the ordinary braced post A. The post B is set some distance from the post A, and has a block C removably fixed thereto by bolts *c'* or other fastenings. Other posts, D, are located between the posts A and B, as may be thought necessary to stay and stiffen the completed fence by nailing or otherwise fixing an adjacent fence slat E thereto, as is common.

Each longitudinal strand F of fence wire is preferably formed of two single wires *f, f*, but it will be evident that a greater number of single wires may be used in each strand. The number of strands of wire used may be varied as desired. In the drawings three strands are shown, each of which is fixed at one end to the post A. Each strand F of wire passes through the tension mechanism G, hereinafter described, and which is mounted on the block C, and thence extends to the two spools H, each of which spools carries one of the single wires *f*. The spools H are mounted or journaled each in a stand or frame *h*, which will permit of the spool revolving to unwind the wires therefrom—the two spools of one strand wire only are shown, as they clearly and sufficiently illustrate the manner of mounting spools of wire for supplying single wires for any desired number of strands F of wire.

The tension mechanism G consists of a bolt *g*, with an outer end portion *g'* preferably square in its cross section, or of such other cross sectional form as to have angles between its multi-sides. The bolt *g* is held in the block C by a nut *g<sup>2</sup>*. The bolt *g* is located between and a short distance from a straight line between two bolts *g<sup>3</sup>* which are fixed to the block C by passing through it and being secured by nuts *g<sup>4</sup>*. The bolts *g<sup>3</sup>* pass through holes in the block C, but the bolt *g* passes through a vertical slot *g<sup>5</sup>* therein, in which said bolt can be adjusted in higher and lower positions and fixed after such adjustments to secure it



nearer in line with or farther from in line with the bolts  $g^3$ , whereby the two wires  $f$  passing under the bolts  $g^3$  and over the bolt  $g$ , as shown plainest at Figs. 2 and 3, can be clamped more or less taut as may be found necessary in giving the proper tension to the wires, so that they will be held with a yielding force which will be sufficient to hold them against sliding too freely while the wire strands are being twisted, but which at the same time will permit the wires to slide endlong there-through as they are unwound from the spools, to furnish the increased lengths of wires used in twisting the strands to form loops or openings  $f'$  between the wires  $f$  of a strand, for the reception of the slats E.

The wire twister K has two arms or prongs  $k$ , see Figs. 5 and 6, at a slightly greater distance apart than the width of the fence slats, so that they will readily stride such slats. The branches or prongs  $k$  are united at one end of each by a bar  $k'$ , midlength of which is a screw threaded hole  $k^2$  into which one end of the handle shank  $k^3$  is screwed to fix the handle in place. The shank  $k^3$  has a sleeve or handle  $k^4$  thereover, between one end of which and the bar  $k'$  is a slat spacing or gage arm  $k^5$ , for spacing the distances apart of the fence slats E. The shank  $k^3$  is preferably square in its cross section, and is seated in a square aperture in the sleeve or handle  $k^4$  so that it will rotate with said sleeve or handle, but it may be held from rotation thereon by a through pin. The shank  $k^3$  passes loosely through the spacing bar  $k^5$ , and is preferably screwed into the hole  $k^2$  tightly to hold the spacing bar in a fixed position between the shoulder or lower end of the handle  $k^4$  and the bar  $k'$ . It will be evident however that the shank  $k^3$  and sleeve  $k^4$  may be integral, and the shank  $k^3$  either be screw threaded into the hole  $k^2$  to secure it thereto as described, or pass through the bar  $k'$  and be secured by a nut on its screw threaded end. Spacing bars may be otherwise mounted on the twister, if preferred, such for instance as arms projecting laterally from the prongs  $k$ . From each prong  $k$ , a tapering hook shaped spur  $k^6$  projects laterally, and each in such manner as to form a wire receiving shoulder or cavity  $k^7$  between itself and the prong  $k$  which carries it. A short pivot stud  $k^8$  projects laterally and outwardly from each prong  $k$ , on which pivot studs a bail L is pivoted or hinged, as shown at Figs. 9 and 10. This bail has hook shaped ends, and may be formed in two parts, hinged to each other at  $l$ , or it may be of a single piece of metal, either of which constructions will provide means for separating its ends, for mounting it on the stud pins  $k^8$  or removing it therefrom in an evident manner. The bail L is an auxiliary, used only for removing, substituting, or raising and lowering slats in position, in a completed fence.

In describing our improved building device, and its operation in building a wire and picket fence, we will assume that a fence has

been begun and completed as far as shown at Fig. 1, in which the three strands are fixed at one end to the beginning post A, and passing over the tension devices on the post B, extend thence to the spools of wire as hereinbefore described, several slats have been fixed in place in the wire strands, and one slat nailed to a reinforce post D. As shown at Figs. 1 and 5, a slat E' has been inserted a distance in advance of the last fixed slat E<sup>2</sup> equal to the space between alternate slats, and measured or gaged by the spacing bar  $k^5$ . A ring M carried on both the upper and lower strands of wire will by slightly clamping the wires of each strand F, closely in advance of the slat E', hold said slat E' in position while the strands are being twisted between said slat and the slat E<sup>2</sup>. The twister at Fig. 8 and the lower twister at Figs. 1 and 5 are shown in positions as when placed on the wires  $f, f$ , to begin intertwisting them with each other, and as shown at Figs. 1 and 5 when so placed the spacing arm or bar  $k^5$  may by being shorter than the distance between the slats E', E<sup>2</sup>, be used as a spacing gage, and thus permit of the slat E' approaching the slat E<sup>2</sup> as the intertwisting progresses. The pointed tapering hook shaped spur  $k^6$  can be readily and quickly inserted between the wires of the strands, and being of tapered form can be easily forced between said wires to spread them apart when necessary, so that pickets can be inserted through the loops; and the distance between the point of each spur  $k^6$  and the outer end of the prong  $k$  which carries it, is such that when the wires of a strand happen to be more than an ordinary distance apart, from any cause, they will contact with or grasp such wires. These are great advantages in operating the device rapidly, as they render it effective without any aid by hand or otherwise in properly contacting the wires with the twisting device. The spacing arm  $k^5$  may be full length of the space required between said slats, and after being used for spacing then be swung around on its pivot, as shown by dotted lines at the middle strand, to permit of the slats approaching as the wires  $f, f$  are intertwisted. By turning the twisters around, in the direction shown by the arrows at Figs. 5 and 8, the wires  $f, f$  of each strand will be intertwisted between each prong  $k$  and the adjacent slat, as shown best at Fig. 7, but between the prongs  $k$  of each twister the wires will not be intertwined or twisted. When the wires  $f, f$  of each strand are intertwisted as last described, a slat E<sup>3</sup> can then be inserted, as shown at Fig. 7, by simply passing it endwise, downwardly through the loops or openings  $f'$  between the wires  $f, f$  of each strand. When the slat is inserted, by turning the twisters slightly backward they may be removed, and the same operation then repeated, by sliding the rings on the strand wires, and inserting another slat E'. There is one twister for each wire strand, and all of the twist-



ers are applied at one time, and the twist-  
 ers are given a single turn alternately until the  
 twisting is completed. At Figs. 1 and 5 the  
 lower twister is shown as not yet operated,  
 5 merely to illustrate how the twister is first  
 applied to the wires. Fig. 7 shows the correct  
 position of the lower twister and the wires it  
 operates upon, when the upper twist-ers and  
 the wires they respectively operate upon are  
 10 in the positions and conditions shown at Figs.  
 1, 5 and 7. When a section of fence is com-  
 pleted to the post B, another post B is then fixed  
 in place at a proper distance therefrom, the  
 spools of wire then mounted beyond it, the  
 15 block C then removed from the previous post  
 B to this subsequent or newly placed post B,  
 and the strand wires again placed in the ten-  
 sion mechanism, and the operation of placing  
 and fixing slats in position as hereinbefore  
 20 described is then proceeded with. It will be  
 evident that our twister can be used to make  
 wire and picket fences by intertwisting the  
 wires of a strand at one place, in advance of  
 the last picket inserted one at a time in an  
 25 ordinary manner, instead of two at a time as  
 hereinbefore described.

For removing a broken or damaged slat E,  
 and inserting a substitute slat, or for raising  
 a slat to permit hogs or other small animals  
 30 passing through the fence beneath said raised  
 slat, we use the twister with the bail L at-  
 tached thereto, as hereinbefore described.  
 The twister and bail being placed on the wires  
 of a strand, as shown at Fig. 9 by the upper  
 35 twister, the bail may then be turned upward  
 somewhat at its handle end, as shown at the  
 middle wire strand at same figure, and will  
 slightly separate or open the wires *f, f* of the  
 strand, and thereby loosen their hold on the  
 40 slat. A twister with bail attachment being  
 so applied to each wire strand, the adjacent  
 slat can be readily raised or withdrawn by

sliding it upwardly as shown at same figure,  
 and another slat substituted therefor if de-  
 sired, or be let remain in its elevated position,  
 45 for the passage of the smaller class of ani-  
 mals, such as chickens, hogs, and others.

By first removing a slat or picket with the  
 twister and its bail attachment, as described,  
 the twister with the bail in place can be used,  
 50 as hereinbefore described, to further inter-  
 twist the wires adjacent to the removed picket,  
 and thereby shorten the strands, and by thus  
 removing such number of slats or pickets as  
 may be necessary and further intertwisting  
 55 the wires of each strand, the strands may be  
 shortened, and an old fence made firm and  
 useful which had become useless or almost so,  
 as is common with this class of fences, from  
 stretching, yielding, or expansion of the wires,  
 60 or from other causes.

Having thus described our invention, what  
 we claim as new, and desire to secure by Letters  
 Patent, is—

1. The fence-wire strand twister, compris- 65  
 ing the connected prongs *k*, with pointed and  
 tapered hooks *k*<sup>6</sup>, and a handle, substantially  
 as described.

2. In combination with the fence-wire strand  
 twister, comprising connected prongs *k* hav- 70  
 ing hooks *k*<sup>6</sup>, and an adjustable handle, a slat  
 spacing bar, substantially as described.

3. In combination with the fence-wire strand  
 twister, comprising connected prongs *k* hav-  
 ing hooks *k*<sup>6</sup>, and studs *k*<sup>8</sup>, the bail L, pivoted 75  
 on the studs *k*<sup>8</sup>, substantially as described.

In testimony whereof we affix our signatures  
 in presence of two witnesses.

MORGAN STEPHENS.  
 SIDNEY O. KOONS.

Witnesses:

W. E. HOFFMAN,  
 H. M. RICHARDS.