(No Model.)

G. W. WILLIAMS.

FENCE WIRE RATCHET.

No. 514,106. Patented Feb. 6, 1894.

FIG. 1.

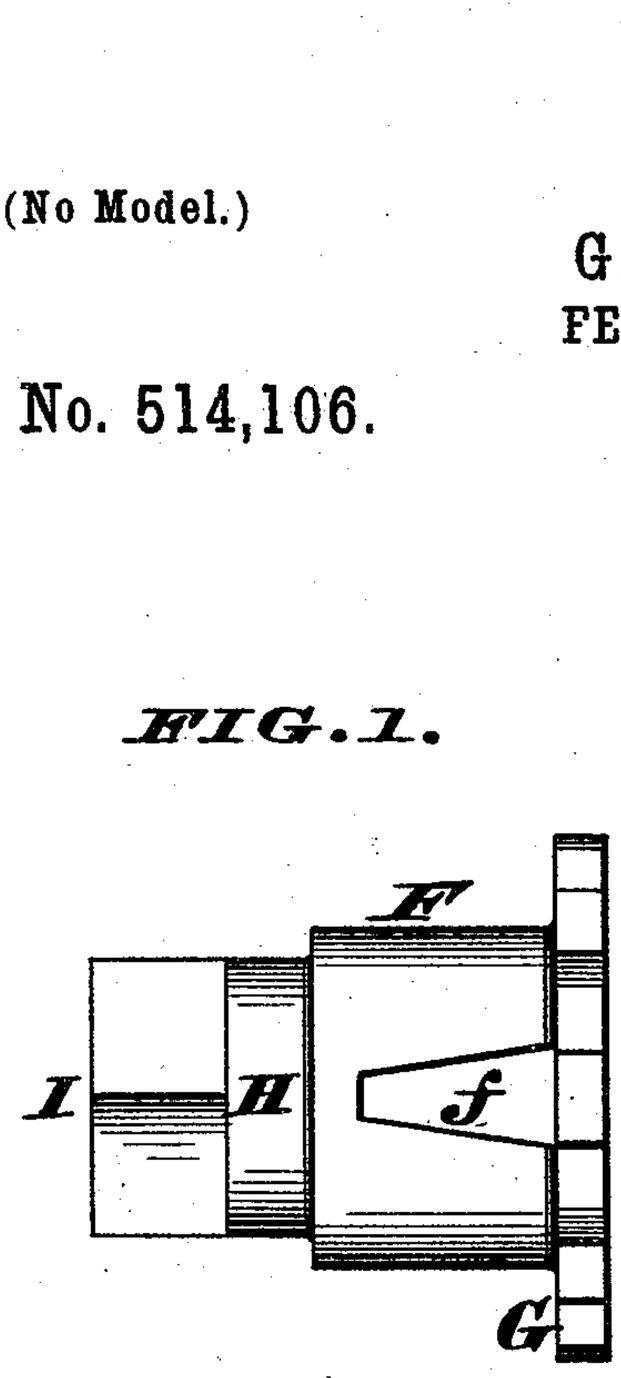
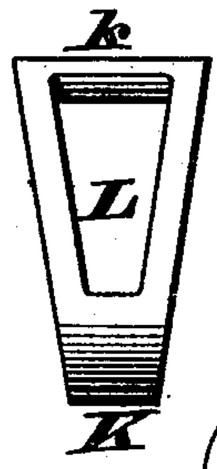


FIG. 2.



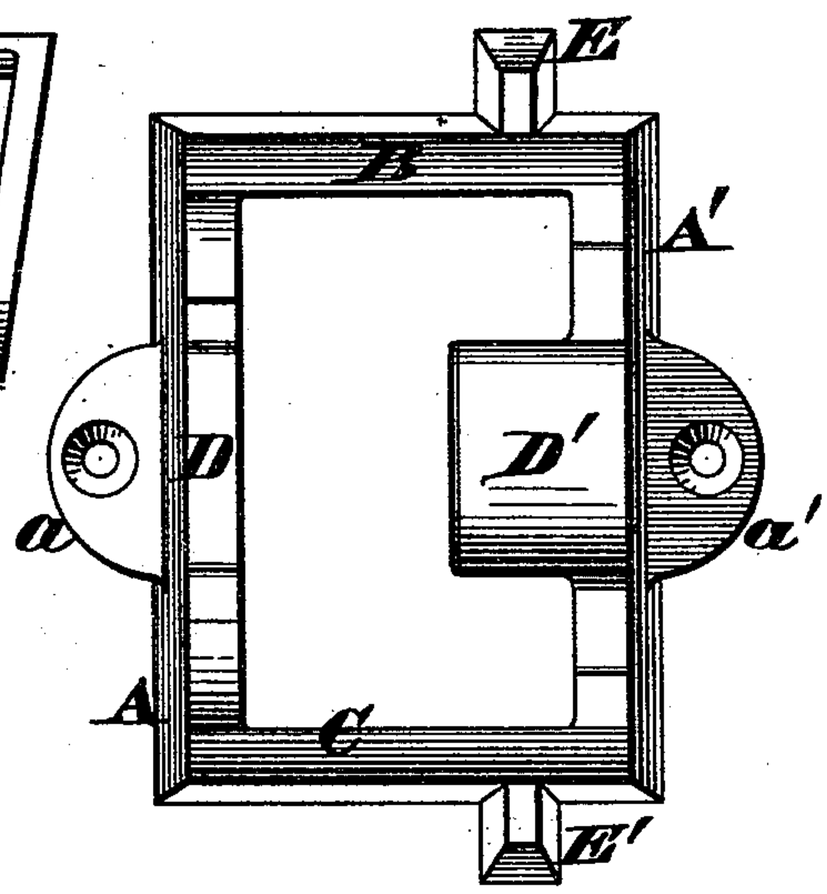


FIG. 3.

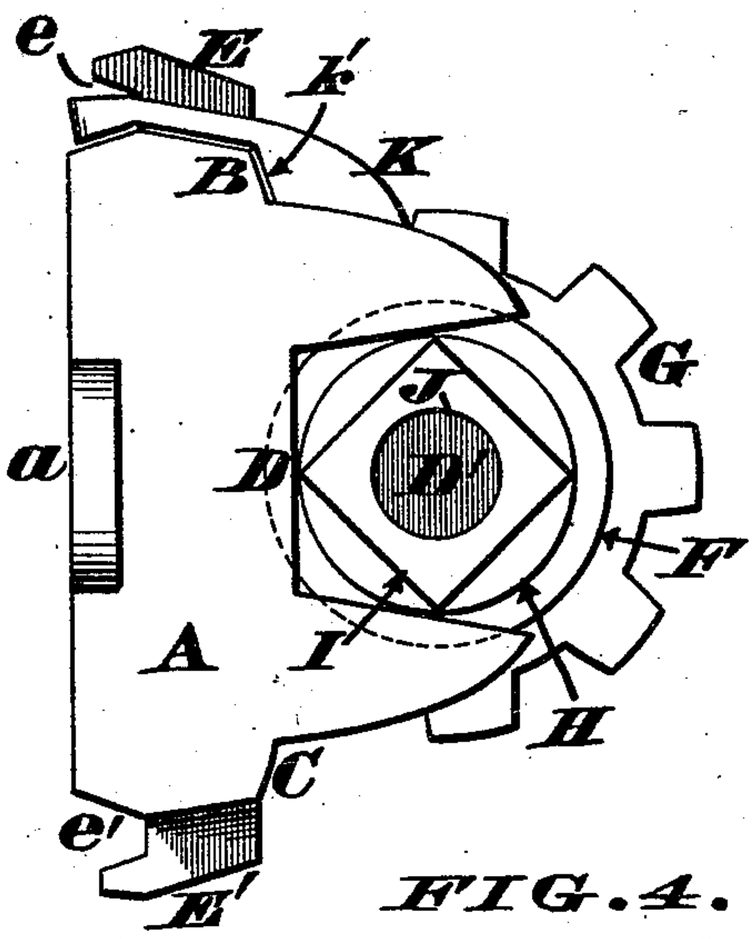
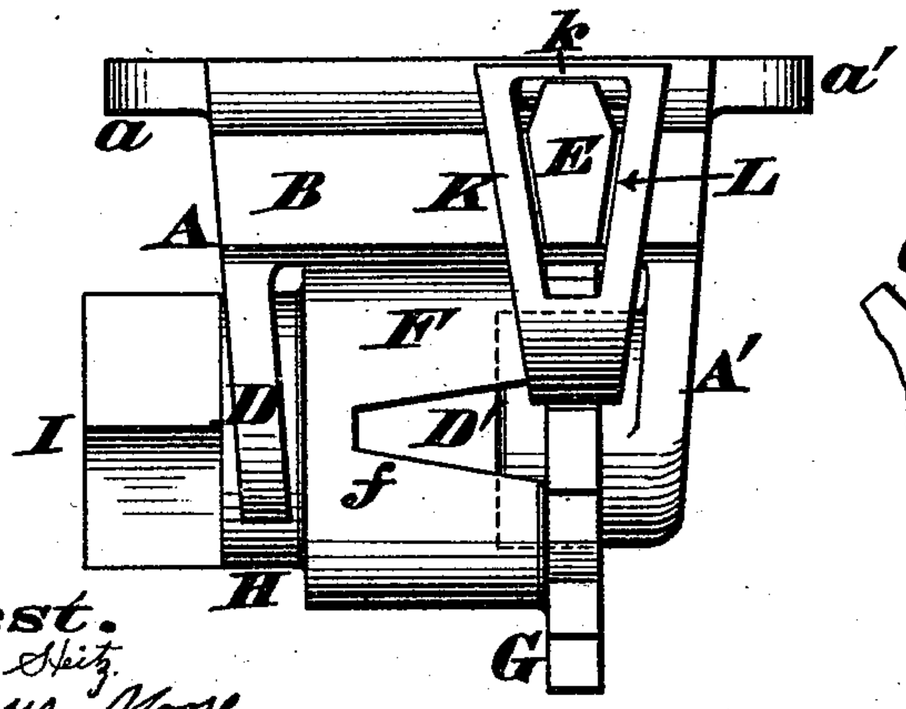
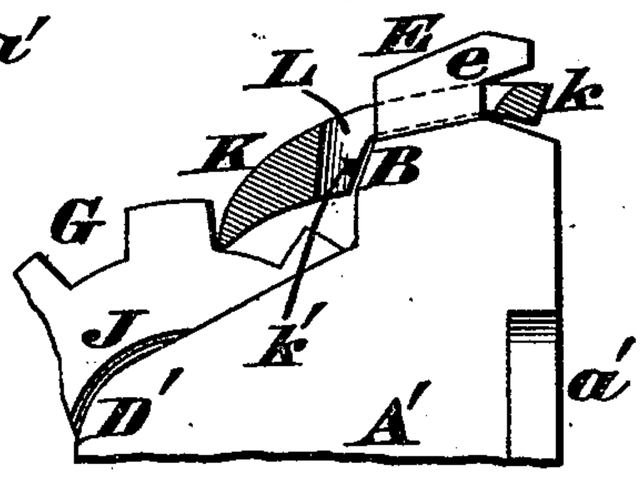


FIG. 4.

FIG. 5.





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GRIFFITH W. WILLIAMS, OF GREENSBURG, INDIANA.

FENCE-WIRE RATCHET.

SPECIFICATION forming part of Letters Patent No. 514,106, dated February 6, 1894.

Application filed October 7, 1893. Serial No. 487,471. (No model.)

To all whom it may concern:

Be it known that I, GRIFFITH W. WILLIAMS, a citizen of the United States, residing at Greensburg, in the county of Decatur and State of Indiana, have invented certain new and useful Improvements in Fence-Wire Ratchets; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the annexed drawings, which form part of this specification.

This invention relates to those ratchets which are secured to the sides of posts for the purpose of taking up any slack that may occur in fence stringer wires, and my improvement consists in constructing these devices in such a manner as to facilitate their casting, to diminish the cost of manufacture, to render them more durable, and also to enable them to be readily inverted according to any special location of the posts, as hereinafter more fully described.

In the annexed drawings, Figure 1 is a front elevation showing the three component members of my ratchet device separated from each other. Fig. 2 is a side elevation of the complete device. Figs. 3 and 4, are, respectively, a horizontal section and plan of said device. Fig. 5 is a vertical section of the engaged pawl and its accessories.

The frame or housing of the ratchet is a casting consisting of a pair of side-plates A, A′, united together at top and bottom by cross-bars B, C, and having perforated ears *a*, *a′*, wherewith said frame is secured to the side of a fence post, in the usual manner. These plates A, A′, are not parallel, but are farther apart in the rear than in front, as more clearly seen in Fig. 3, to afford sufficient room for the spool and the wire coiled around it. Furthermore, the plate A has a notch D, while the other plate A′, has a short stump D′. This stump is cylindrical, projects horizontally toward the plate A, and its axis is in line with the center of notch D. The cross-bars B, C, have vertical lugs E, E′, narrower in front than at rear, and their back edges are undercut at *e*, *e′*, one of these undercuts being more clearly seen in Fig. 2.

The spool or drum, around which one end of a fence stringer wire is coiled, is a hollow-cylinder F, having at one end a notched wheel G, and near its other end a journal H, terminating with a square I, to which latter a wrench or spanner can be readily applied. The notches in the wheel are so arranged as to cause the projections between them to take the form of regular cogs or teeth, whose opposite edges, against which the pawl bears, are so shaped as to be equally effective when the housing is used in the ordinary position, or when said housing is inverted. Therefore, said teeth must not be shaped like ratchets, but must be about radial. These parts, F, G, H, I, are a single, integral casting having a longitudinal chamber or bore J, which increases in diameter from the square I, to the wheel G. (See Fig. 3.) Cylinder F is slotted on opposite sides, as at *f*, *f′*, which slots pass through to the bore J, and provide for the convenient attachment of the end of a fence wire.

K is a pawl or click, having a longitudinal slot L, of such a size and shape as to fit around either of the lugs E, or E′, and yet permit a slight backward and forward and up and down motion of said pawl, the rear bar of which, *k*, is capable of engaging with either of the undercuts *e* or *e′* of said lugs. (See Fig. 5.) This pawl is not of uniform thickness, but is considerably heavier at its front or effective end, thereby forming a shoulder *k′*, that bears against the edge of either of the cross bars B or C.

To use my ratchet device, the frame A A′, is first secured to the side of a fence post, in the usual manner, and then the spool or drum is applied diagonally to said frame, so as to cause its stump D′ to enter the larger end of chamber J. The spool is now brought to a position where it stands squarely across the frame, thereby causing the journal H to enter the notch D. Consequently, the spool is now journaled in part on said stump, and in part within said notch, and when a wire is applied to the device, the backward pull of said wire is sufficient to prevent said spool becoming accidentally detached from the frame. This backward pull of the wire also causes the teeth of the indented wheel G to bear against the free end of pawl K, thereby retracting it and bringing the shoulder *k′* in contact with the cross bar B. Therefore, the severe pull of the wire is taken up by these heavy por-

tions of the device, and is not sustained by frail pawl-pivots, as in the usual form of ratchets. Again, when the device is in use, the rear bar *k*, of the pawl, engages with the undercut *e*, of lug E, and this prevents accidental detachment of said pawl, but at the same time, the latter is free to play up and down when the spool F is so turned as to take up any slack that may be in the fence wire, the proper turning of said spool being effected by applying a wrench to its square I.

By providing the device with a loosely-coupled pawl, a spool having ordinary cogs or radial teeth and arranging lugs at the opposite ends of the frame, with either one of which lugs said pawl can be instantly engaged, said frame can be secured to a post in such a manner as to cause either of said lugs to project up, thus enabling the winding square I to be located either to the right or left of the ratchet. This simple expedient permits the device being used in certain situations where an unreversible ratchet could not be employed.

By tapering the bore J, and slotting the sides thereof, near its larger end, the pattern of the spool can be made without "dry-sand cores," thereby enabling it to be drawn vertically out of the mold, the result being a cheap casting that requires no subsequent finishing or fitting together. Finally, in an inferior modification of my invention, the pawl K can have a projection on its under side to enter sockets in the ends of the frame, or said pawl can be loosely coupled to said frame in any other manner.

I claim as my invention—

1. The combination, in a fence-wire stretcher, of an invertible frame having devices at its upper and lower ends to permit the application of a pawl, a spool journaled in said frame and having a cogged periphery, and a readily-detachable pawl capable of being coupled to either end of said frame, for the purpose described.

2. The combination, in a fence-wire ratchet, of an invertible frame, a toothed spool journaled therein, projections at the top and bottom of said frame, and a readily-detachable slotted-pawl capable of being coupled to either one of these projections, for the purpose described.

3. A fence-wire ratchet provided with an invertible frame having a pair of undercut lugs E *e*, E′ *e′*, in combination with a readily-detachable pawl K, having a longitudinal slot L capable of being coupled to either one of said lugs, for the purpose described.

4. A fence-wire ratchet-frame having a side plate A, notched at D, and another side-plate A′ provided with an integral stump D′, in combination with the spool F, having a bearing H that enters said notch D, an axial bore J and teeth G, said teeth being arranged on the end of the spool near the plate A′, in order that said spool may be bodily detached without removing any part of the ratchet, all as herein described.

5. The combination, in a fence-wire ratchet, of the invertible frame A A′ B C, having a notch D, stump D′, and a pair of undercut lugs E *e*. E′ *e′*; the spool F having slots *f*. *f′*. indented flange G, journal H, square I and longitudinal bore J; and a readily-detachable pawl K having a slot L, all as herein described.

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

GRIFFITH W. WILLIAMS.

Witnesses:

GEO. W. BYERS,

P. T. LAMBERT.