(No Model.)

L. LANDRETH.

SPIKE DRAWING BAR.

No. 517,977. Patented Apr. 10, 1894.

FIG. 1.

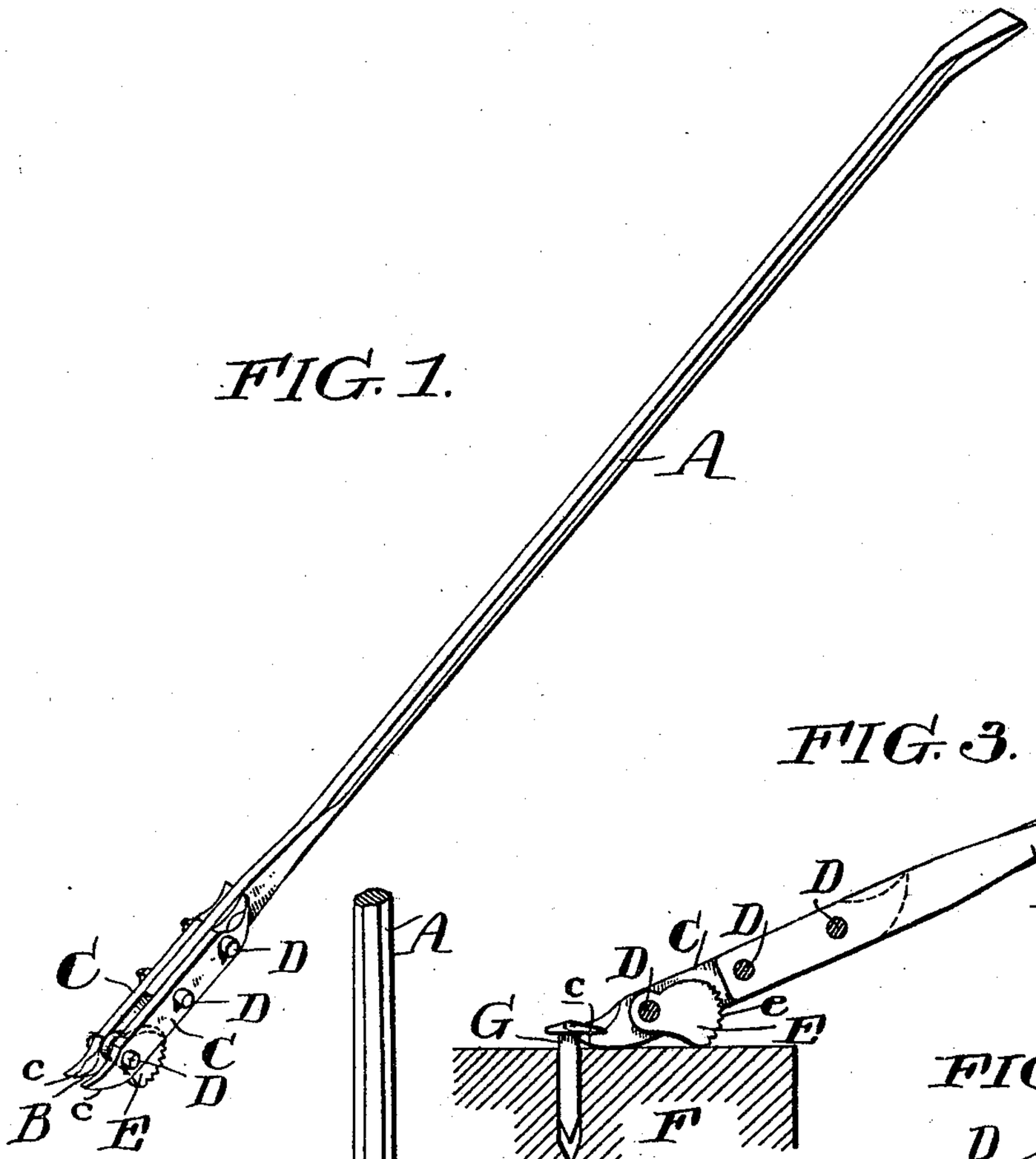


FIG. 2.

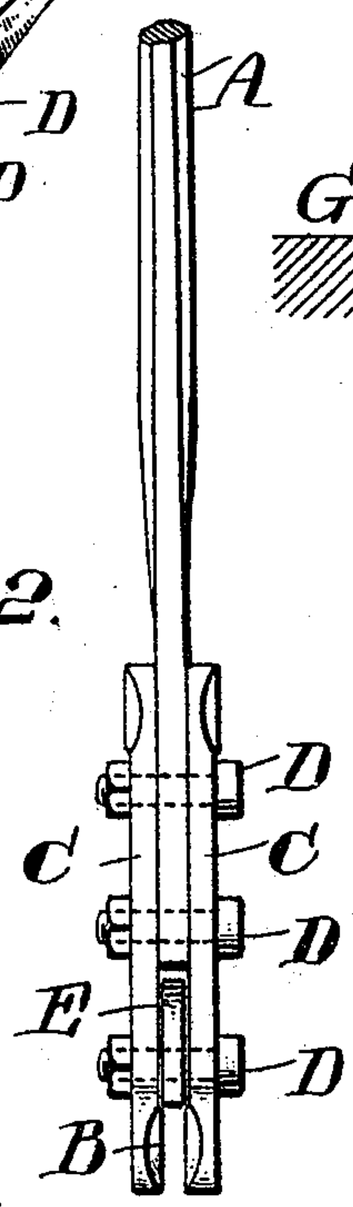


FIG. 3.

FIG. 4.

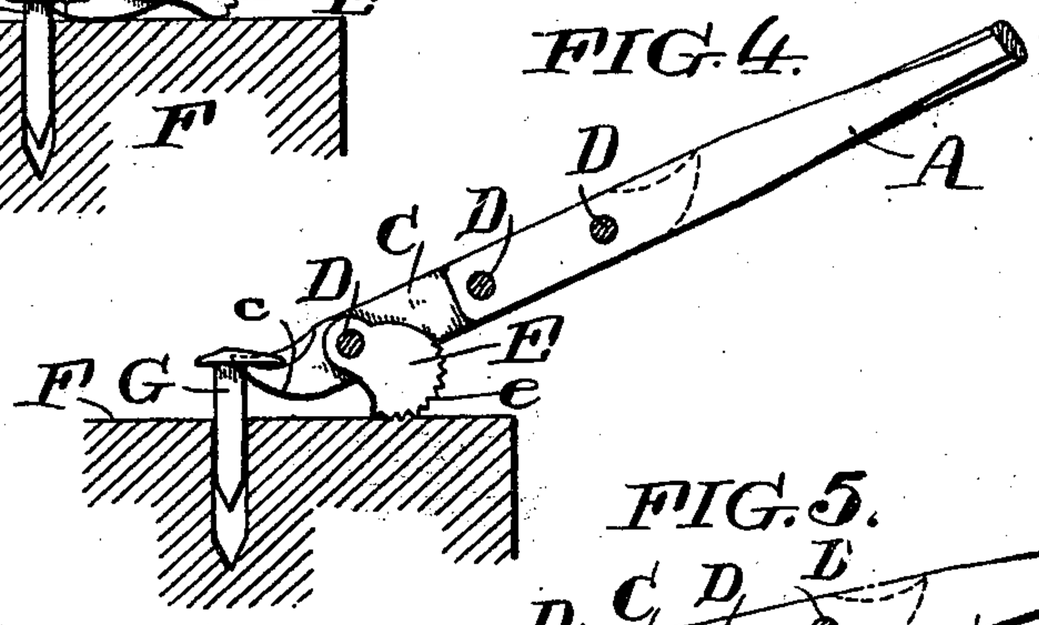
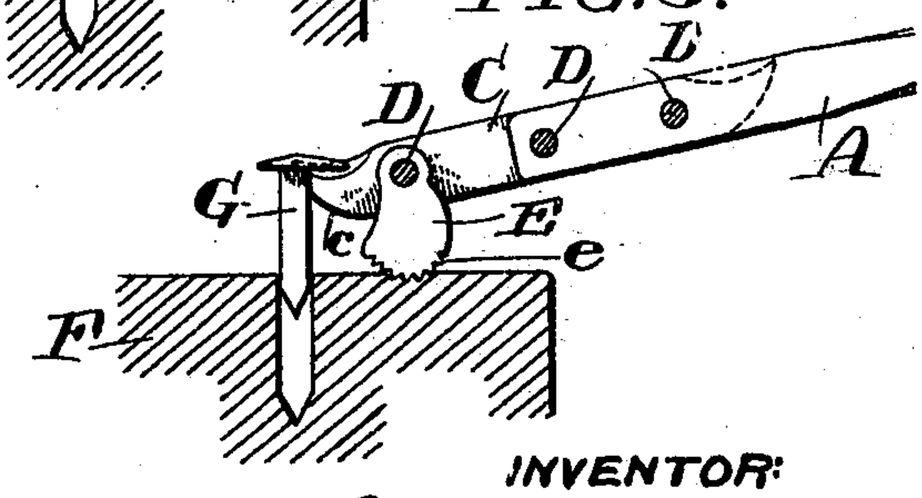


FIG. 5.



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LEOPOLD LANDRETH, OF BRISTOL, PENNSYLVANIA.

SPIKE-DRAWING BAR.

SPECIFICATION forming part of Letters Patent No. 517,977, dated April 10, 1894.

Application filed March 2, 1893. Serial No. 464,322. (No model.)

To all whom it may concern:

Be it known that I, LEOPOLD LANDRETH, of Bristol, Bucks county, and State of Pennsylvania, have invented an Improvement in Spike-Drawing Bars, of which the following is a specification.

My invention relates to spike drawings bars and consists of certain improvements which are fully set forth in the following specification and shown in the accompanying drawings.

It is the object of my invention to provide an implement for drawing spikes from railway ties, &c., which shall be efficient in operation and convenient to handle. Considerable power is required to draw a spike from a railway tie and the force should act at all times with a substantially direct upward pull upon the head of the spike. When a spike is partially drawn by a lever, the head becomes so far raised above the surface of the tie upon which the lever acts as a fulcrum, that the end of the lever either ceases to act upon the spike, or pulls it at an angle. Railway spikes cannot therefore be drawn entirely out of the tie by a lever resting upon the surface of the tie and having a single fulcrum. It becomes necessary therefore, after a spike has been partially drawn to elevate or raise the fulcrum upon which the lever acts so that the end of the lever may engage the head of the spike and exert the necessary direct pull. With an ordinary lever or crow bar this elevation of the fulcrum is accomplished by inserting a block under the lever and acting on that as a fulcrum. This is of course, objectionable and unhandy.

It is the object of my invention to provide the bar or lever itself with devices for elevating the fulcrum upon which it acts to such extent as may be required; and to enable those devices to act quickly and easily through automatic adjustment.

It is another object of my invention to enable the bar to be easily repaired in case of injury, so that the entire bar may not become useless, if a single claw be broken or bent. This is an important feature because it sometimes happens that a crow bar or spike drawer becomes injured while it is being used on the line of a railway where a new bar cannot be readily obtained, so that the work must be suspended while a new bar is brought from a distance. To avoid this I so construct my spike drawing bar that it may be easily repaired on the spot, if at any time a claw becomes injured. The usefulness of the instrument is therefore prolonged.

I shall now refer to the accompanying drawings for the purpose of particularly describing the construction and operation of my new drawing bar.

Figure 1 is a perspective view of my new spike drawing bar. Fig. 2 is a front view of a portion of the same; and Figs. 3, 4 and 5 are sectional side elevations of the bar illustrating the operation of the same in drawing a spike.

A is the handle of the bar, which should be made of sufficient length to give the requisite leverage.

B is the claw on the end of the bar which is inserted under the head of the spike. This claw is constructed of two claw pieces C, C fastened together and to the end of the handle A by bolts D, and extending beyond the end of the handle so as to leave an intermediate open space between the claw piece C, C beyond the end of the bar. The ends of the pieces C, C which form the claw are suitably tapered and are rounded on their under faces as at *c*.

E is a pivoted cam or variable fulcrum piece pivotally supported between the pieces C, C in the rear of the claw B. The cam face of the fulcrum piece E may be provided with teeth *e*, or a roughened surface, to prevent it from slipping on the tie F when it is acting as a fulcrum, during the operation of drawing a spike.

The fulcrum piece E may be pivoted on the forward bolt D, which secures the parts C, C together, beyond the end of the handle A, and should be free to swing in the opening or space between the parts C, C beyond the end of the handle.

G is a spike.

In the operation of drawing a spike from a tie by means of this bar, the claw B is inserted under the head of the spike and the portions *c c* of the claw pieces C, C rest upon the tie. The cam or fulcrum piece E is not in action, but the fulcrum is the point of contact of the portions *c c* of the claw and the tie. The toothed or roughened surface *e* of the cam piece is not in contact with the tie. The bar

is shown at this point of its operation in Fig. 3. As the bar is depressed on this fulcrum the spike G is partially withdrawn, and during this movement the fulcrum piece E is carried into the opening between the pieces C, C and performs no function in drawing the spike. When the spike is thus partially withdrawn the bar is elevated and the fulcrum piece E is permitted to drop back by gravity until its surface *e* comes in contact with the surface of the tie as is shown in Fig. 4. This piece E thus acts to elevate the fulcrum or point on which the bar rocks and elevates the position of the claw B so that it will act upon the head of the spike G. The fulcrum is now between the piece E and the bolt D and when the bar is depressed or rocked on this fulcrum the spike will be either wholly or more fully withdrawn. Ordinarily these two operations will be sufficient to draw an ordinary spike. If, however, the spike be long and has not been wholly drawn out, the bar may be raised again to permit the cam piece E to swing down further until a higher part of its surface *e* rests upon the tie and affords a more elevated fulcrum with a corresponding elevation of the claw B. By rocking the bar upon this new fulcrum the spike may be drawn out. Thus it will be seen that the pivoted piece E may afford a variable or gradually elevated fulcrum and correspondingly elevate the claw B so that at each operation it will act properly upon the head of the spike. The first fulcrum must be low enough to permit the claw B to grasp the head of the spike, and is not usually in the piece E but at the point at which the pieces C, C rest upon the tie. The piece E should be so constructed, therefore, that the roughened or toothed surface *e* will not engage the surface of the tie when the claw rests upon it as in Fig. 3, otherwise it would act immediately to transfer the fulcrum of the piece E and thus unduly elevate it.

Of course, if the spike to be drawn is not driven far into the tie, that is if its head is materially above the surface of the tie, the fulcrum piece E would be brought into operation in the first instance, as in Fig. 4, for the spike would then occupy the same partially drawn position to which it would have been brought by the operation shown in Fig. 3.

The implement is easily operated, as the fulcrum piece E is caused to assume its proper positions by the simple elevation of the bar.

For the purpose of permitting the implement to be readily repaired, if one of the claws should become broken, I employ the construction shown, in which the pieces C, C are separate from the handle A and are bolted to it, so that they may be disconnected when desired. I also prefer to make the pieces C, C reversible, that is provided with a claw at each end, so that when any claw is broken the instrument may be repaired by simply detaching and reversing the piece having the broken claw.

While I prefer the several minor details of construction which have been shown for the purpose of more clearly illustrating and explaining my invention, I do not mean to limit myself to them as it is apparent that they may be varied without departing from the invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. A spike drawing implement consisting of a long handle A provided with a claw upon its end extending beyond the end of the handle so as to leave an open space between the jaws of the claw, a bolt D between the jaws extending through the open space, and a fulcrum piece carried by the bolt D and free to swing into the opening between the jaws when not used as a fulcrum.

2. A spike drawing implement consisting of a long handle A provided with a claw upon its end composed of two claw pieces C, C fastened to the end of the handle A and extending beyond the end of the handle so as to leave an open space between the claw pieces beyond the end of the bar, a bolt D between the claw pieces beyond the end of the bar and a fulcrum piece carried by the bolt D and free to swing into the opening between the claw pieces when not used as a fulcrum.

3. A spike drawing implement consisting of a long handle A provided with a claw upon its end composed of two reversible claw pieces C, C detachably fastened to the end of the handle A and extending beyond the end of the handle so as to leave an open space between the claw pieces beyond the end of the bar, a bolt D between the claw pieces beyond the end of the bar, and a fulcrum piece carried by the bolt D and free to swing into the opening between the claw pieces when not used as a fulcrum.

4. A spike drawing bar, consisting of a handle A, two detachable and reversible claw pieces C, C each provided with bolt holes adjacent to each claw end, a bolt D passing through the claw pieces and the bar at the rear end to secure the claw pieces to the bar, a second bolt D passing through the bolt holes in the front end of the claw pieces beyond the end of the bar leaving an opening or space between the end of the bar and the front bolt, and the fulcrum piece E carried by the front bolt D, the rear bolt holes being adapted to receive the front bolt D when the claw pieces are reversed.

In testimony of which invention I have hereunto set my hand.

LEOPOLD LANDRETH.

Witnesses:
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