No. 647,385 Patented Apr. 10, 1900.

N. ESSICK.

SPIKE PULLER.

(Application filed Nov. 1, 1899.)

(No Model.)

Fig. 3.

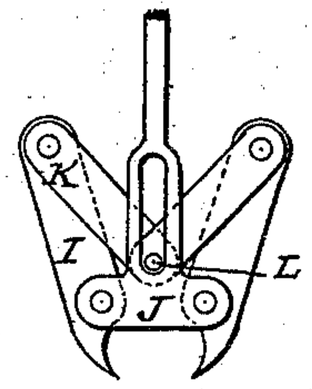


Fig. 1.

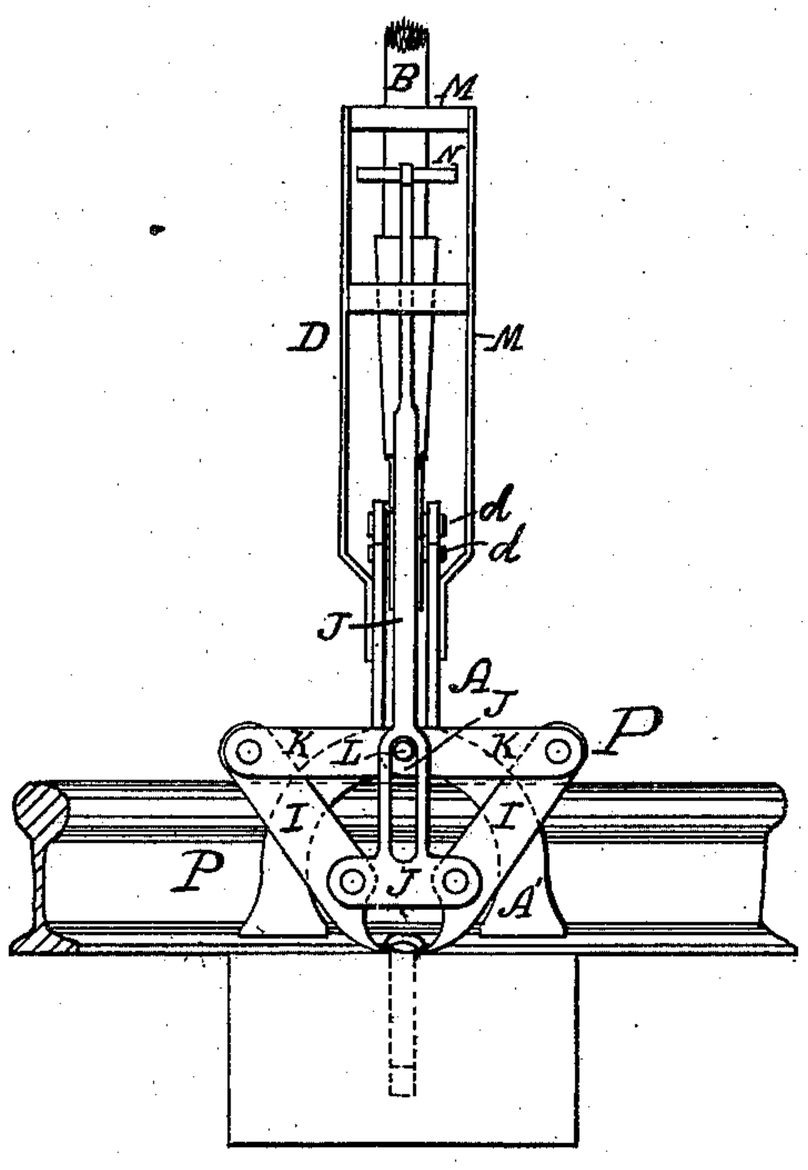
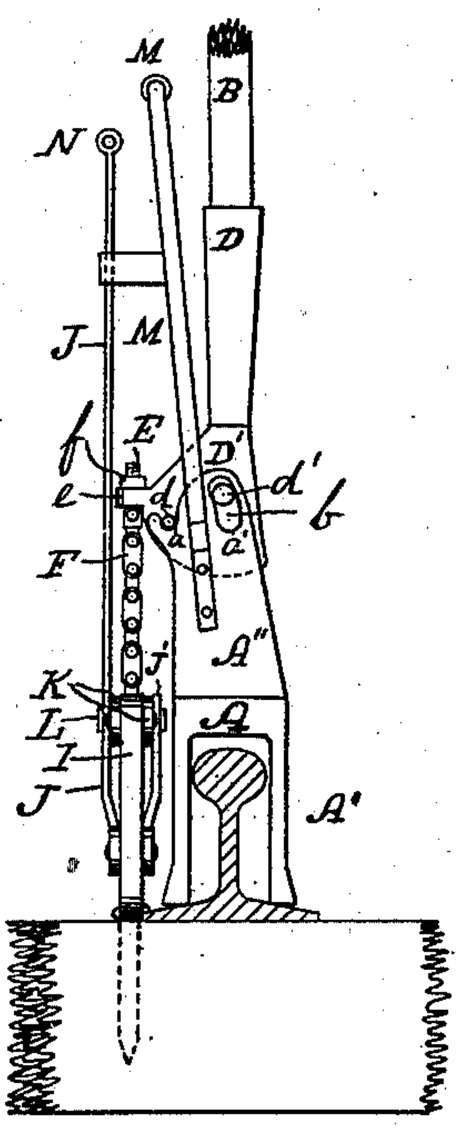


Fig. 2.



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UNITED STATES PATENT OFFICE.

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SPIKE-PULLER.

SPECIFICATION forming part of Letters Patent No. 647,385, dated April 10, 1900.

Application filed November 1, 1899. Serial No. 735,535. (No model.)

To all whom it may concern:

Be it known that I, NEWMAN ESSICK, a citizen of the United States, residing at Los Angeles, county of Los Angeles, State of California, have invented new and useful Improvements in Spike-Pullers, of which the following is a specification.

My invention relates to improvements in machines for pulling spikes, particularly from railroad-ties; and the object thereof is to provide a machine of simple construction that will have great power to start the spike, combined with sufficient power and movement to draw the spike after it is started, and that can be easily operated. I attain this object by means of the mechanism described herein and illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of my spike-puller. Fig. 2 is a side elevation of the same both in place on a rail in position to pull a spike. Fig. 3 is a front view of the clutch with the jaws open.

A is a fulcrum-block provided with legs or supports A′, adapted to straddle the rail and rest on the flanges thereof. It is also provided with two upwardly-projecting arms A″, each arm having two fulcrums *a* and *a′*, which form bearings for the lugs *d* and *d′* on the segmental head D′ of the lever D, which support the levers at different times in its movements. In each arm A″ is a segmental slot *b*, in which the lug *d′* has a limited movement. The operating-handle B (partly removed) is driven into a socket in the lever D. Head D′ is provided with a projecting lug *e* at right angles to and at the upper edge of the segmental face of head D′, which has a hole for the passage therethrough of the bolt E. This bolt is revoluble therein to adjust the clutch to spike-heads at any angle to the rail and is held in said lug by the screw-nut *f*, which also serves to adjust the length of the chain F, to which the bolt E is attached. The clutch P is composed of two jaw-levers I, pivoted near their converging jaws to the plates J and J′, each provided with a slot J″. The outer plate J projects upward and terminates at its upper end in the handle N, which provides means to move the clutch. The inside plate J′ terminates just above slot J″. The outer ends of the toggle-links K are pivoted to the upper ends of the levers I and are connected to each other and to the chain F by the pin L, which passes through slots J″ in plates J and J′ to limit the upward movement of the toggle-links.

M is a handle attached to arms A″ to handle the spike-puller.

My device is operated as follows: Fulcrum-block A is preferably placed on the rail, with the legs A′ straddling the same, and the clutch placed so that the jaws come against the spike to be pulled immediately below the head of the same, as shown in Figs. 1 and 2. When the handle is in its elevated position, as shown in the drawings, the head will rest on the fulcrum *a*, the lug *d′* being in its elevated position, as shown. As the handle is depressed the fulcrum will remain at *a*, the lug *d* resting thereon, the device developing great power and but little movement of the clutch. This will start the spike; but when the lug *d′* reaches the fulcrum *a′* the movement of the clutch will be accelerated (as the fulcrum has changed) with a corresponding loss of power. The periphery of the head D′, on which the chain rests, being directly over the spike and concentric with the lug *d′*, a straight upward pull will be imparted to the spike, which will take it out of the tie without twisting and consequent injury to the tie.

It will be seen that the gripping power of the jaw-levers increases from their open position until their movement is stopped by the pin L coming in contact with the top of slots J″.

Having described my invention, what I claim is—

1. In a spike-puller, a fulcrum-block provided with downwardly-projecting legs adapted to straddle the rail and two upwardly-projecting arms, having two fulcrum-points in each of said arms; an operating-lever having a segmental head adapted to work between said arms; two fulcrum-lugs attached to each side of said segmental head, adapted to rest on the fulcrum-points in said arms at different periods in the stroke of the lever; a lug projecting from said segmental head at right angles to and at the upper edge of the segmental face thereof and having a hole therethrough, a revoluble adjustable bolt in the

hole in said last lug; a chain attached to said bolt in combination with a clutch adapted to be fastened to said chain.

2. The combination in a spike-puller of the fulcrum A, having downwardly-projecting legs A′, and two upwardly-projecting arms A″, each of said arms being provided with fulcrums *a* and *a′* with the lever D having segmental head D′ provided on each side with projecting lugs *d* and *d′* adapted to fit into said block and rest on said fulcrums at different periods in the stroke of the lever; said head being also provided with projecting lug *e* at right angles to and at the upper edge of the segmental face of said head, and having a hole therethrough; bolt E in the hole in lug *e* adapted to be vertically adjusted, and revoluble therein; chain F attached to bolt E and a clutch attached to chain F.

3. In a spike-puller, the herein-described clutch comprising toggle-links K pivoted together at their inner ends and to the gripping-levers I at their outer ends, the gripping-levers provided with converging jaws at their lower ends, pivoted at their lower ends (and close to the gripping-jaws) to the plate J, their upper ends being pivoted to the outer ends of the links K, the plates J and J′ each having slot J″ to the lower end of which are pivotally attached the gripping-jaws I, the upper end of plate J terminating in a handle and the pivoting-pin L connecting the toggle-links together at their inner ends, the said pin being provided with a projecting end adapted to enter and work in the slot J″.

4. A clutch comprising two jaw-levers having the jaws converging and projecting toward each other and pivoted near the jaws to plates, toggle-links pivotally connected to the top of the jaw-levers and to each other, plates pivotally connected to the jaw-levers and having slots therein, a pin forming the pivot between the toggle-arms and passing through the slots in the plates connecting the jaw-levers and adapted to limit the upward movement of the toggle-links, and means to operate said clutch.

In witness that I claim the foregoing I have hereunto subscribed my name, this 26th day of October, 1899, at Los Angeles, California.

NEWMAN ESSICK.

Witnesses:
G. E. HARPHAN,
H. T. HAZARD.