J. DOUGLASS.

SPIKE-PULLER.

No. 186,546. Patented Jan. 23, 1877.

Fig. 1.

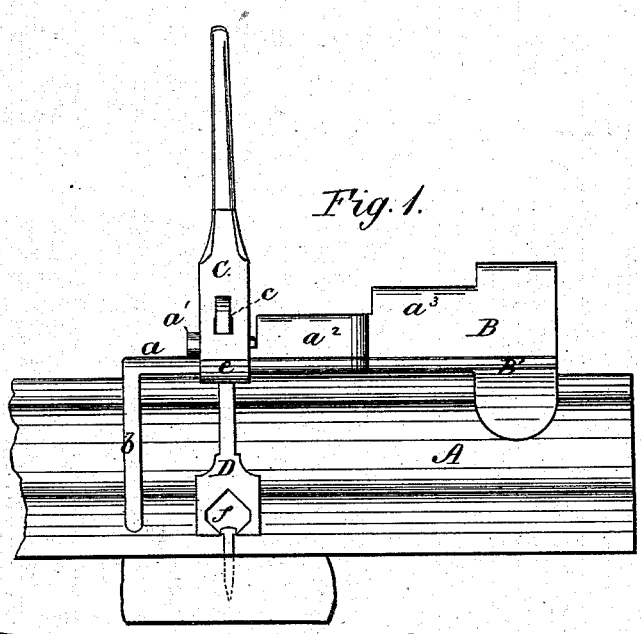


Fig. 2.

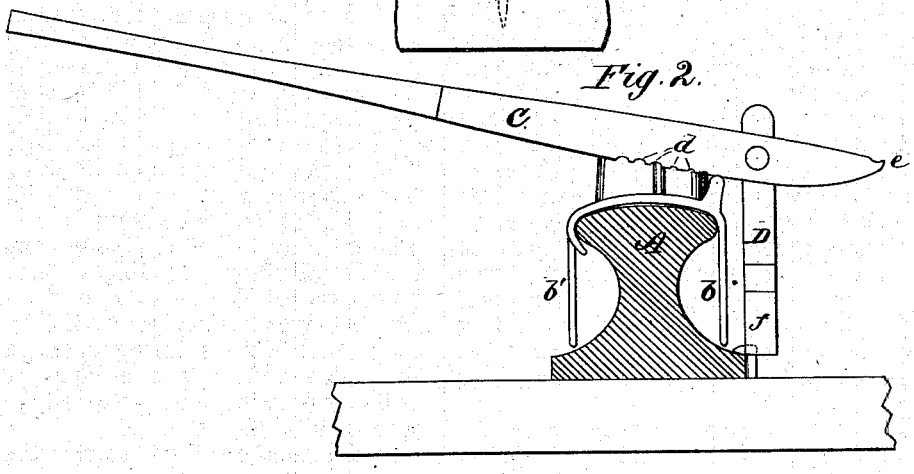
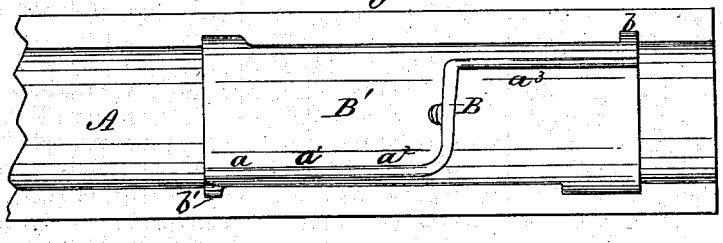


Fig. 3.



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JOSEPH DOUGLASS, OF McCONNELLSTOWN, PENNSYLVANIA.

IMPROVEMENT IN SPIKE-PULLERS.

Specification forming part of Letters Patent No. **186,546**, dated January 23, 1877; application filed November 23, 1876.

To all whom it may concern:

Be it known that I, JOSEPH DOUGLASS, of McConnellstown, in the county of Huntington and State of Pennsylvania, have invented an Improvement in Spike-Pullers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 is a side view of a fulcrum and an end view of the lever as applied to a rail. Fig. 2 is an end view of the fulcrum and side view of the lever applied to a rail. Fig. 3 is a plan view of the fulcrum applied to a rail.

My invention relates to a novel construction of devices for extracting railroad-spikes. It consists in a sliding fulcrum arranged to rest upon the surface of the rail, provided with legs to prevent it from turning, and having upon its upper surface graduated steps of increasing elevations, in connection with which a lever carrying a pivoted grapnel of peculiar construction is adapted to operate, the grapnel being arranged to clutch the head of the spike, while the lever is operated upon the different steps of the sliding fulcrum, beginning with the lowest until the spike is extracted, as hereinafter more fully described.

In the accompanying drawing, A represents a section of a railroad-rail, upon which my devices are arranged in position to extract the spikes that secure the rail to the cross-tie. B B′ represent the sliding fulcrum, which consists of a plate, B′, curved to conform to the upper surface of the rail, and provided upon its upper surface with a succession of steps, a a^1 a^2 a^3, of gradually-increasing elevation. These steps are formed upon a bar, B, of metal, which crosses the base-plate of the fulcrum transversely near the middle, and is then extended longitudinally upon opposite sides of the plate near its edges, which arrangement enables me to have the actual working-fulcrum close to the strain of the spike in starting the same, and farther away from it and with a freer movement of the lever, to permit the removal of the spike after it is started. This bar B is attached to the base-plate in any suitable manner, and at the opposite ends of the fulcrum is extended downwardly in the form of two legs, b b', one upon each side of the rail, which bear upon the bottom flanges of the rail, and serve to hold the fulcrum steadily upon the top of the rail, so as not to be displaced by the action of the lever.

C is the lever, which is formed of a strong bar of metal, or metal and wood, having near its end a slot or mortise, c, for the reception of one end of the grapnel D. This bar is also provided with a series of notches, d, upon its under side, which receive and fit over the upper surfaces of the fulcrum-steps, and prevent the lever from slipping when the power is applied to withdraw the spike. The end of this lever is also brought to a flat curved point, e, so as to permit the lever to be used as a crow-bar for prying when the grapnel is detached. This grapnel is loosely pivoted in the slot or mortise of the lever, so that it can work freely, and may be easily applied or removed. Its lower end is forked at f, and provided with a double clutch or claw, so as to slide under and fit upon both sides of the head of the spike to be drawn.

In making use of the spike-extractor as thus described, the sliding fulcrum is arranged with its lowest step next to the spike, and the lever resting above the spike, with one of its notches fitting upon the lowest step. The grapnel is then fitted about the head of the spike, and power applied to the lever to start the spike.

As soon as the spike is started the fulcrum is moved along, and the lever is transferred to the next, and so on through the remaining steps successively, until the spike is entirely withdrawn.

Having thus described my invention, what I claim as new is—

1. The fulcrum herein described, consisting of a plate provided with supporting-legs, and the graduated steps a a^1 a^2 a^3, arranged to operate in connection with the lever and grapnel, substantially as described.

2. The combination, with the lever having a loosely-pivoted grapnel, of a sliding fulcrum, having its graduated steps of increasing elevation, partly upon one side and partly upon the other of the fulcrum, all constructed to operate substantially as and for the purpose described.

JOSEPH DOUGLASS.

Witnesses:

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