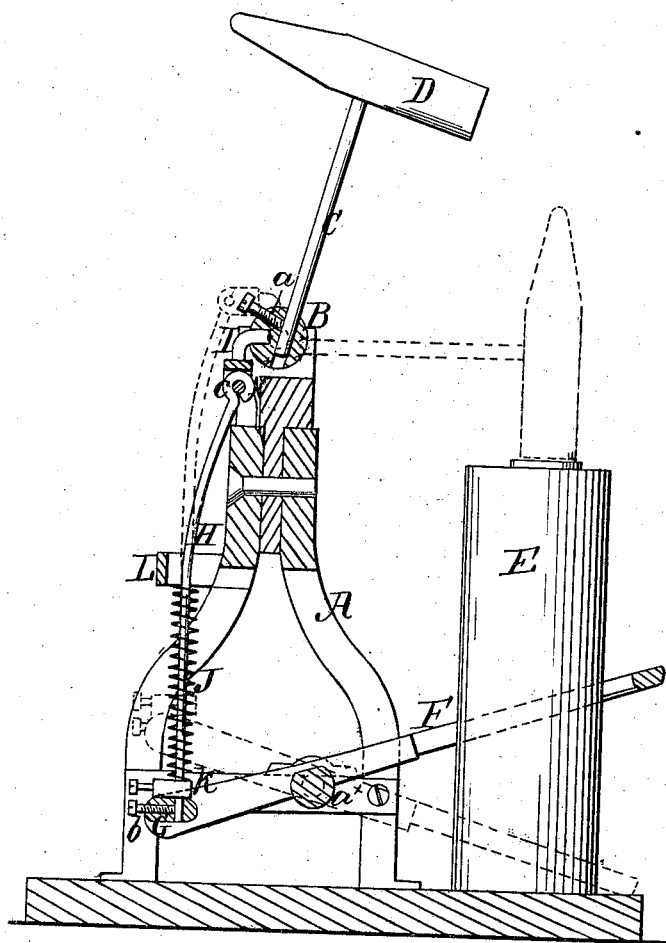


*T. J. Root.*

*Trip Hammer.*

*N<sup>o</sup> 46,267.*

*Patented Feb. 7, 1865.*



*Witnesses:  
Henry Morris  
C. L. Topliff*

*Inventor,  
T. J. Root  
Per *Wm. H. Le*  
Atty*

# UNITED STATES PATENT OFFICE.

T. J. ROOT, OF GALENA, ILLINOIS.

## IMPROVED TRIP-HAMMER.

Specification forming part of Letters Patent No. **46,267**, dated February 7, 1865.

*To all whom it may concern:*

Be it known that I, T. J. Root, of Galena, in the county of Jo Davies and State of Illinois, have invented a new and Improved Trip-Hammer; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, said drawing being a vertical central section of my invention.

This invention consists in attaching the rod of a hammer to a rock shaft or head, which is connected by means of a bent arm and rod to a treadle, the treadle-rod having a spring applied to it and all arranged in such a manner that the operator, by means of his foot acting upon the treadle, is enabled to give the proper movement to the hammer, the latter after giving its stroke quickly rising and operating smoothly throughout without any irregular movement and with but a moderate effort on the part of the operator.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a framing, on the upper part of which there is fitted in suitable bearings a rock-shaft or rock-head, B, in which the rod C of the hammer D is secured by a screw, *a*.

E is an anvil, on which the work is placed for the hammer to act upon, and F is a treadle, which is placed in the lower part of the framing A, and is attached to a shaft, *a*\*. This treadle F may be constructed in the form of a frame, so as to extend around the anvil. In the back part of the treadle F there is fitted a shaft, G, which is allowed to turn freely on

journals, and this shaft has the lower end of a rod, H, secured in it by a set-screw, *b*. The upper end of rod H is connected by a joint, *c*, to the outer end of a bent arm, I, which projects from the rear of the rock-shaft B. On the rod H there is placed a spiral spring, J, the lower end of which rests upon an adjustable-hub, K, on said rod, the upper end of the spring bearing against an arm, L, which projects from the framing A.

From the above description it will be seen that when the front end of the treadle F is pressed down the rear will be moved upward and the hammer D forced down by the action of the rod H and arm I on the rock-shaft B. As the hammer is forced down the spiral spring J is compressed, and consequently gives, when the treadle is relieved from the pressure of the foot at the termination of the upward movement of its front end, a quick rising movement to the hammer, and the latter is made to operate rapidly and smoothly without any jars or concussions, and with but a moderate expenditure of power.

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

The rock-shaft B, with hammer-rod C attached, in combination with the knuckle-jointed arm H I, provided with the spiral spring J and treadle F, all constructed and arranged to operate as and for the purpose herein set forth.

T. J. ROOT.

Witnesses:

M. WERTENBERGER,  
S. CUNNINGHAM.