W. H. PENROSE.

Track-Lifters.

No. 150,605. Patented May 5, 1874.

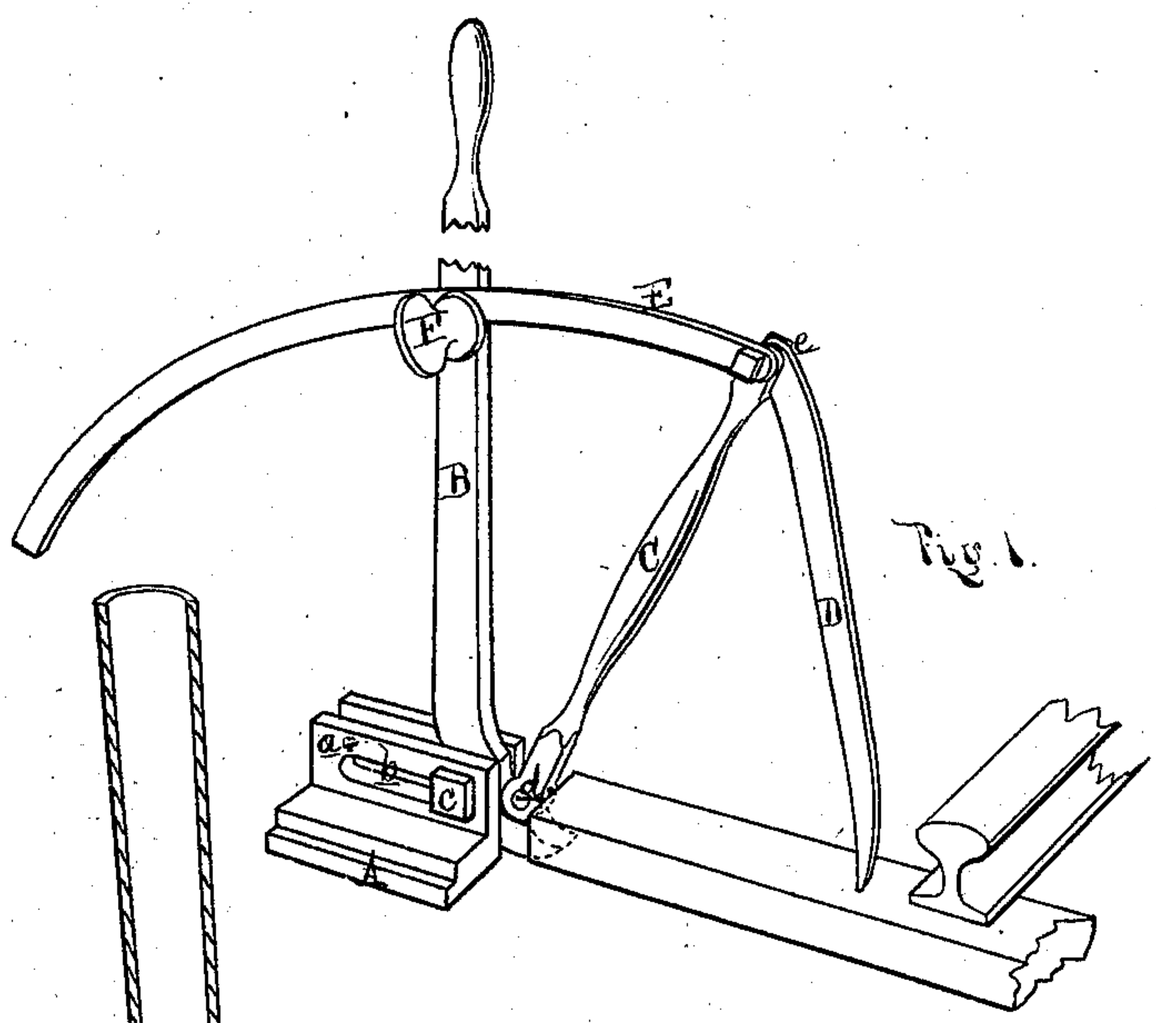

Fig. 1.

Fig. 2.

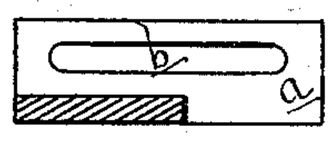

Fig. 3.

Fig. 4.

Fig. 5.

ATTEST:
A. Sprague
Chas E. Questis.

INVENTOR:
Wm H. Penrose
per attorney
R. S. Sprague

UNITED STATES PATENT OFFICE.

WILLIAM H. PENROSE, OF UNITED STATES ARMY.

IMPROVEMENT IN TRACK-LIFTERS.

Specification forming part of Letters Patent No. **150,605**, dated May 5, 1874; application filed October 27, 1873.

To all whom it may concern:

Be it known that I, WILLIAM H. PENROSE, of United States Army, have invented an Improvement in Track-Lifters, of which the following is a specification:

The nature of this invention relates to an improvement in that class of machines which are used for lifting or raising a joint in one of the lines of rail in a track, and sustaining it while the cross-ties are being tamped up; and it consists in the construction and peculiar arrangement of the lifting-lever and its attachments, whereby a weight of one hundred and fifty pounds applied to the long arm of the lever will exert a lifting power at the toe of three thousand pounds at any and through every point in the arc described by the lever, lifting the tie ten inches, if desired, and sustaining it in its elevated position.

Figure 1 is a perspective view of the device as it appears when lifting a cross-tie. Fig. 2 is a detached perspective view, partially in section, of the lower part of a modified form of lever having a socket for the reception of a wooden handle or lever. Fig. 3 is a vertical longitudinal section of the base-plate. Figs. 4 and 5 are, respectively, a side elevation and section of a modified form of base-plate, by the use of which the lever is enabled to lift ten inches in height.

In the drawing, A represents a cast-iron base-plate about six inches square having two angle-iron ribs, *d*, bolted thereto parallel with each other, and each having a horizontal slot, *b*, through which passes a bolt, *c*, to secure the heel of the lever B between the ribs. The lever is hook-ended, and has a rounded or eccentric heel, which bears upon the base-plate. To a rib in the hollow of the lever-toe is pivoted at *d* the forked lower end of a standard, C, also forked at its top, in which is pivoted by a bolt, *e*, the end of a curved finger, D. The same bolt also pivots to said standard one end of an iron arc, E, which rests upon the shank of a clamp-screw, F, tapped into the lever between it and the shoulder of the screw.

To lift a joint in the track, throw a shovelful of dirt from the end of the cross, if necessary; set the machine so that the front of the base is against the ends of the tie, taking care that the ends of the bolt *c* lie in the outer ends of the slots *b* in the base-plate; put the toe of the lever under the tie, resting the sharpened end of the finger upon its top face; loosen the clamp-screw and depress the lever until the joint is raised to the required plane; then clamp the arc with the set-screw and release the lever, when the tie and joint will be suspended, so that the tamping can be proceeded with. When finished, loosen the set-screw, raise the lever, and fold the arc and finger alongside it, when the machine is ready for transportation. The length of the lever being five feet, and the short arm three inches, one man can lift three thousand pounds weight of track, the height of the lift being about three inches.

Where a greater lift, up to ten inches, is required, another form of base-plates, shown in Figs. 4 and 5, may be used. In this base-plate the slots are eccentric segments in the opposite direction to the eccentric heel of the lever. The bolt *c* plays in these slots, and as the long arm of the lever is depressed the bolt travels up these slots, carrying forward the lever, so that the distance from fulcrum to point remains three inches, while the tie is lifted perpendicularly.

Among other advantages I claim for this device is that, with one man to operate it, it is more powerful than any other track-lifting lever operated by two men; that it weigl s less, is more readily transported, and can be used anywhere having six inches space to stand on, and it costs less than a machine of equal power adapted to the purpose.

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

The construction and combination of the slotted base-plate A, lever B, bolts *c d e*, standard C; finger D, arc E, and clamp-screw F, substantially as and for the purpose set forth.

WILLIAM H. PENROSE.

Witnesses:

JNO. B. THOMPSON, U. S. A.,

C. A. REYNOLDS, U. S. A.