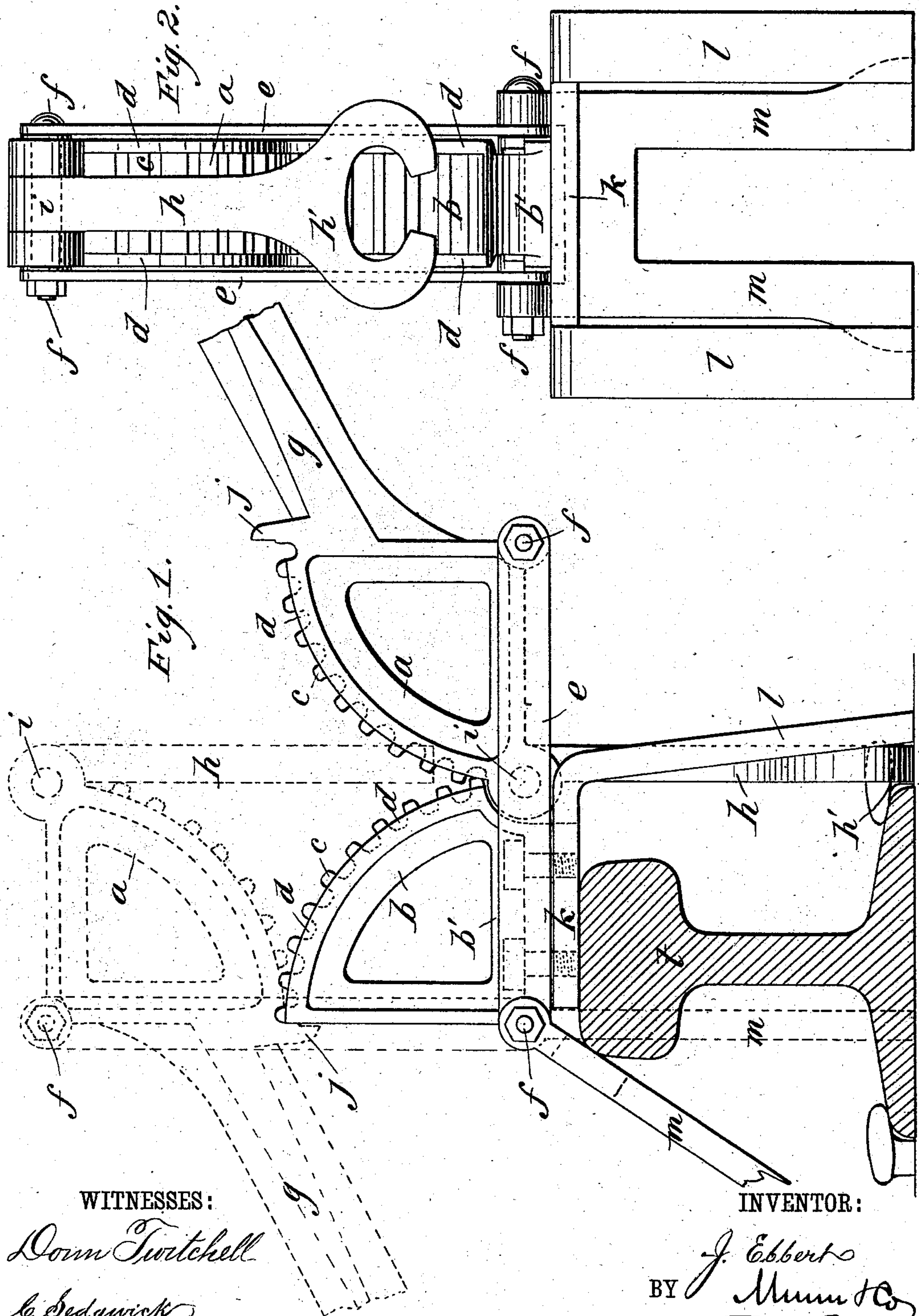


(No Model.)

J. EBBERT.
SPIKE EXTRACTOR.

No. 290,011.

Patented Dec. 11, 1883.



WITNESSES:

Dom Twitchell
C. Sedgwick

INVENTOR:

BY *J. Ebbert*
Munn & Co
ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN EBBERT, OF ROCKAWAY BEACH, NEW YORK, ASSIGNOR TO PHILIP A. HALL, OF CHICAGO, ILLINOIS.

SPIKE-EXTRACTOR.

SPECIFICATION forming part of Letters Patent No. 290,011, dated December 11, 1883.

Application filed May 5, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN EBBERT, of Rockaway Beach, in the county of Queens and State of New York, have invented a new and Improved Spike-Extractor, of which the following is a full, clear, and exact description.

The object of my invention is to provide a tool or implement for pulling nails or spikes easily and quickly.

10 The invention consists of a pair of quadrantal toothed sectors pivoted to each other at the angles by a pair of links or radius-bars in a manner to permit and compel the engagement of the curved sectors with each other by
15 mesh of their teeth, one of the sectors having a hook or claw for engaging the spike, pivot-jointed at one end of its toothed rim, and a lever secured at the opposite end or side of the toothed rim, which lever may be worked to
20 rock its sector on the relatively-stationary sector for raising the claw-head and extracting the spike.

The invention includes, also, a special construction of a supporting-shoe or fulcrum-block in arched form, and with one side or leg support pivoted for swinging upward, to permit resting the head of the fulcrum-block on a raised surface—such as a railway-rail—while
25 avoiding contiguous obstructions, the folding leg-support being adapted, also, to be swung down to form, with the fixed leg or foot, a substantial support to the tool for working it in
30 extracting spikes from plane or flat surfaces, as hereinafter fully described and claimed.

35 Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

40 Figure 1 represents in side elevation and in full lines the tool as applied to start the embedded spike, the dotted lines indicating the positions of the parts when the spike has been fully drawn; and Fig. 2 is a front view with the extracting-claw shown raised and the parts
45 in full lines.

a and *b* represent two quadrant-shaped sectors, toothed at their curved or peripheral edges, at *c*, and in like pitch for engagement with each other, the throats or spaces of the teeth, preferably of both sectors, being sunken below the
50 pitch-line of the teeth, to cause the points of the

teeth to work between the side ribs or guards *d*, to thwart a tendency to lateral displacement, the sectors *a b* being pivoted or linked to each other by the links or radius-bars *e*—one at each
55 side—which connect the sectors by their angles at *f*, to permit and compel their teeth to mesh uniformly as the sector *a* is rocked over the relatively-stationary one *b* by the stout
60 lever *g* on sector *a*, for causing the hook or claw *h*, which is strongly pivot-jointed to the sector *a* at *i*, to rise after the claw-head *h'*, preferably of the open-eye form shown, has
65 been swung beneath the shoulders of the spike or nail head for withdrawing the embedded spike or nail, any suitable stop or detent, *j*, being provided on sector *a* to limit its backward swing and prevent disengagement of the
70 sectors by contact with the edge of sector *b*, as in dotted lines in Fig. 2.

To support the sector *b* against the downward thrust on it of withdrawing the spike, I fit it to a fulcrum-shoe consisting of a head-plate, *k*, having downwardly-projecting and
75 fixed supporting legs or feet *l*, which are placed apart sufficiently to permit the claw-head *h'* to pass freely up and down between them, the extreme lower end of the feet *l* resting on any
80 base or surface—as a railway-tie—a little beyond a vertical line drawn through the center of the bars *e* and the mesh of the teeth when the segments are in position to engage the
85 head of the embedded spike, as in full lines. Fig. 1, so that the line of outer support of the tool in starting the spike of a railway-rail, *t*, will fall a little outside of the claw-head,
90 for more effective and steady action of the parts. The head-plate *k* is firmly bolted to the side *b'* of sector *b*, which forms its base and finishes flush on each side with the side edges
95 of the segments, to permit the bars or links *e* to work past them to the horizontal position of Fig. 1.

As thus far described, the shoe *k l* is completely adapted for supporting the device in
100 conjunction with a railway-rail head or other surface raised sufficiently to act with the legs *l*; but it is desirable to adapt the fulcrum shoe or rest to support the tool independently of such rail-head or other raised surface, and to this end I pivot to the head-plate *k*, or on the same joint-pin which connects bars *e* with the sec-

tor *b*, the auxiliary bar or foot *m*, which, with the shoe *k l*, constitutes an arch or bridge capable of supporting the tool independently of any other rest therefor.

5 It will be noted that by the pivotal connection of the foot *m* with the head-plate *k* or sector *b* said foot *m* may swing off freely beyond or at the side of the rail opposite the claw *h*, to permit the claw to be adjusted to railway-
10 spikes at the edges of rail-base flanges of different widths, and to permit, also, a rocking of the head-plate *k* on the heads of rails *t* of different heights, while securing a firm rest for the feet *l*; and the pivoted foot *m* may also be
15 swung up to or above a horizontal position, to avoid frog or switch points or other contiguous obstructions which would interfere with the proper support of the tool in pulling the spike, and when the tool is to be supported on
20 the arch or bridge *k l m* independently of a rail or other raised surface the foot *m* will gravitate to a position for properly seating itself, as in dotted lines, Fig. 1.

It will be noticed, also, that the greatest leverage is obtained when required in starting the
25 spike, and that the action may be as rapid as desired in completing the withdrawal of the loosened spike, the entire operation being quickly and easily performed.

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

1. A spike-extractor constructed with two intermeshing toothed sectors connected at the

angles by links or radius-bars, to one of which
sectors is connected a working-lever, and a
35 pivoted hook or claw for engaging the spike, the whole adapted to be sustained by a suitable support, substantially as shown and described.

2. The combination of sector *a*, having handle-lever *g* and pivoted hook or claw *h*, and the relatively-stationary sector *b*, connected to
40 sector *a* by radius-bars *e*, with the fulcrum shoe or support *k l*, secured to sector *b*, substantially as shown and described.

3. The combination, with sector *a*, having handle-lever *g* and pivoted hook or claw *h*, and the sector *b*, connected to sector *a* by the radius-
45 bars *e*, of the fulcrum rest or support *k l* and the pivoted foot or rest *m*, substantially as shown and described.

4. The combination, with the support *k l*, the intermeshing sectors *a b*, connecting radius-
bars *e*, the lever *g*, and the claw *h*, of the stop
50 *j* on the sector *a*, substantially as shown and described.

5. The combination, with the support *k l*, the intermeshing sectors *a b*, radius-bars *e*, the lever *g*, and hook or claw *h*, of the guards *d*
60 at the sides of the sector-teeth, substantially as shown and described.

JOHN EBBERT.

Witnesses:

HENRY L. GOODWIN,
C. SEDGWICK.