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T. W. HARBER.

SPIKE PULLER.

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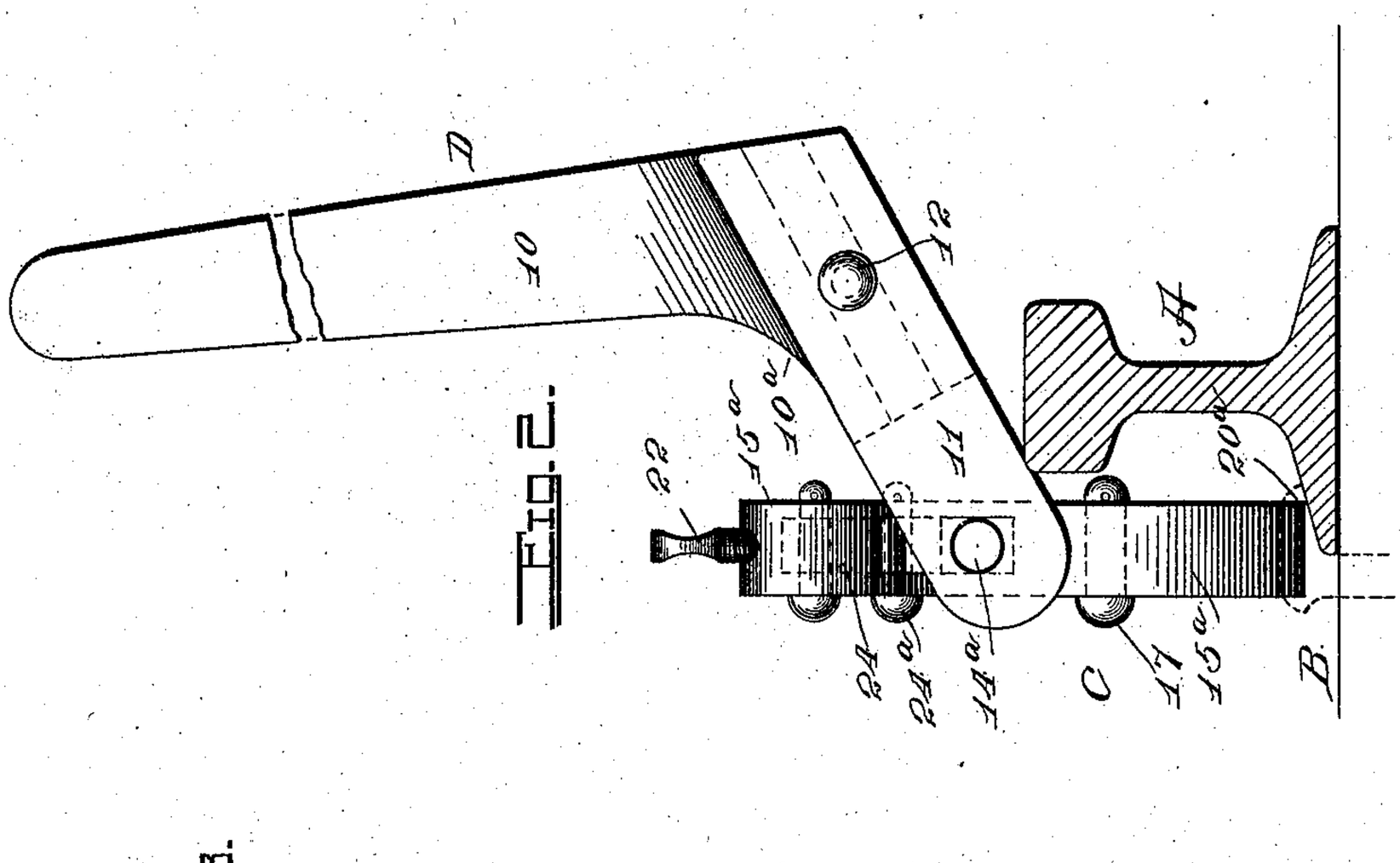

FIG. 2.

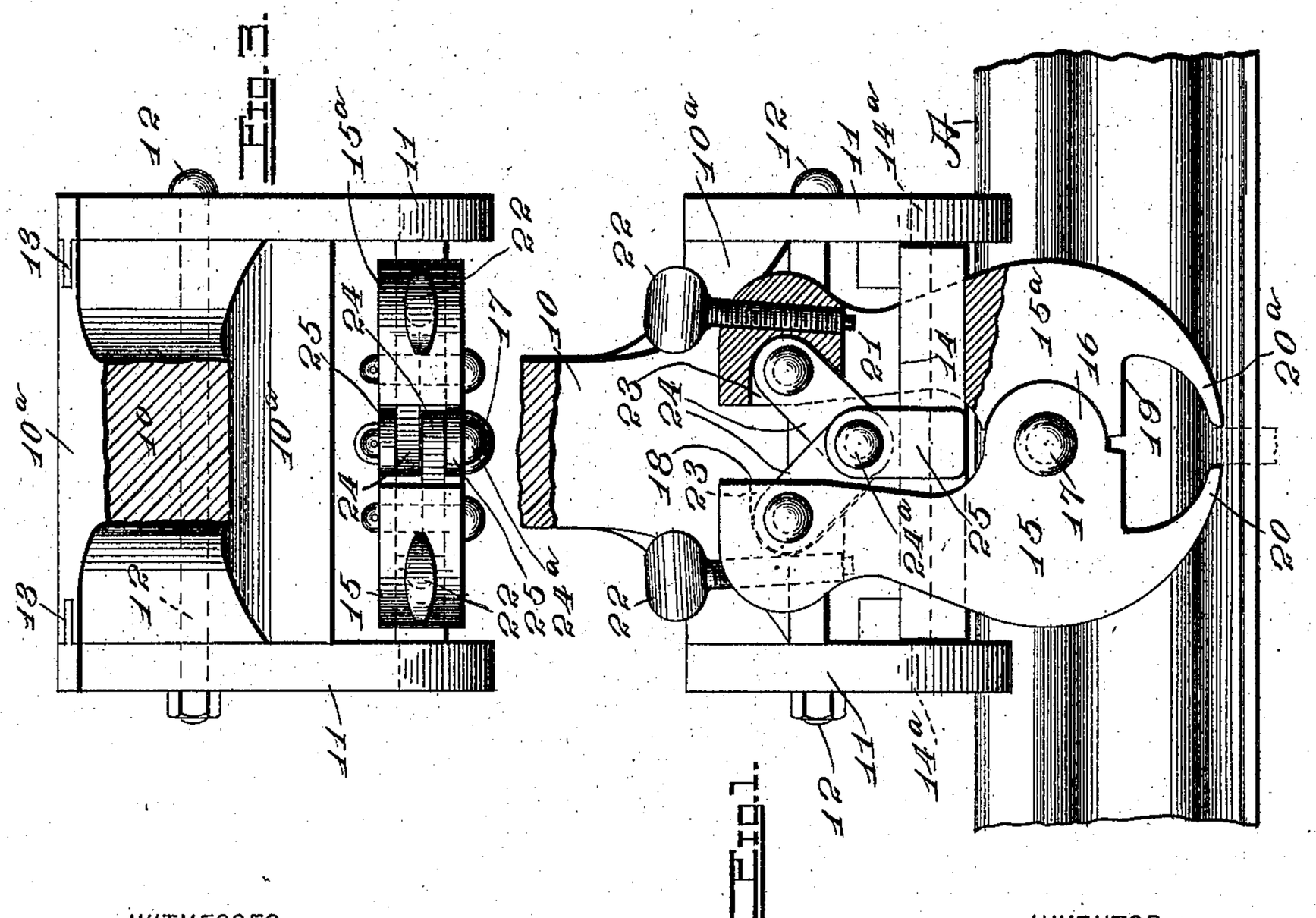

FIG. 3.

FIG. 1.

WITNESSES:

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SPIKE-PULLER.

No. 815,701. Specification of Letters Patent. Patented March 20, 1906.

Application filed September 11, 1905. Serial No. 277,910.

To all whom it may concern:

Be it known that I, THOMAS W. HARBER, a citizen of the United States, and a resident of Dudenville, in the county of Dade and State of Missouri, have invented a new and Improved Spike-Puller, of which the following is a full, clear, and exact description.

The purpose of the invention is to provide a device for pulling spikes used in connection with railway-rails or bolts or common nails, even though said articles be headless, and to so construct the device that the jaws may be adjusted to close properly on the articles to be drawn, and so that as the device is applied to such articles the jaws automatically open and then automatically close as the device is put in withdrawing action, tightening their grip correspondingly to the applied withdrawal force.

A further purpose of the invention is to construct the device in a simple, durable, and economic manner and so that it may be conveniently packed for shipment and operated with the least possible exertion on the part of the operator.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional front elevation of the device in operative position. Fig. 2 is a side elevation of the device, the rail upon which it is fulcrumed being in transverse section; and Fig. 3 is a plan view of the body of the device, the handle being in section.

A represents a railroad-rail, and B a spike to be drawn by means of the improved device.

The device consists, primarily, of a body-section C and a handle-section D. The handle 10 may be of any desired length and is upright, having more or less of an inclination to the rear, and said handle is provided with a horizontal wide foot 10^a. At each side of the said foot a cheek-piece 11 is attached, and said cheek-pieces extend forwardly beyond the forward edge of the foot 10^a of the handle. The cheek-pieces are held to the foot 10^a of the handle preferably by means of a bolt 12, so that the handle can be separated from the cheek-pieces 11 for the purpose of compactness in transportation; but in order that too much strain shall not be brought to bear upon the bolt 12 when the device is employed to draw heavy spikes, for example, the cheek-pieces 11 are provided with tongues 13, which enter grooves in the foot 10^a of the handle, as is shown in Fig. 3.

The trunnions 14^a of a spindle 14 are mounted to turn in the forward ends of the cheek-pieces 11, and the said spindle 14 is polygonal, preferably rectangular in cross-section. In connection with the said spindle two jaws 15 and 15^a are employed, and these jaws adjacent to their lower edges at their inner faces are provided with knuckles 16, the knuckle of one jaw entering the knuckle of the opposing jaw, and the two knuckles of the jaws are pivotally connected by a bolt 17, as is shown best in Fig. 1. Above the knuckle 16 a space 18 intervenes between the opposing faces of the jaws 15 and 15^a, and below the said knuckles 16 a segmental opening 19 is produced in the connected jaws, forming thereby opposing gripping-fingers 20 and 20^a, which are curved in direction of each other, which fingers are adapted to engage with opposite sides of the spike B or other article to be drawn. A vertical slot 21 is produced in each jaw 15 and 15^a above their pivotal connection, and the spindle 14 passes through the said slots 21, and the slots 21 are of such length that the jaws have vertical movement on the said spindle. When the jaws are in their lower positions—that is to say, when the upper walls of the slots 21 engage with the spindle 14—the gripping-fingers 20 and 20^a are brought together; but when the jaws assume this position more or less space may be had between the said fingers 20 and 20^a when in their closing position by placing adjusting-screws 22 in the upper portions of the jaws 15 and 15^a, the lower ends of which adjusting-screws enter the upper portions of the slots 21. These adjusting-screws are employed so as to adjust the jaws to automatically receive any particular article upon which they are to be operated.

A recess 23 is produced in the inner edge portion of each jaw 15 and 15^a near their upper ends, and links 24 are pivoted at their upper ends in the said recesses 23, as is particularly shown in Fig. 1, and the two links 24 are pivotally connected by the same pivot-bolt 24^a to a yoke 25, attached to and extending upwardly from the central portion of the spin-

dle 14. In this manner a toggle connection is obtained between the upper portions of the jaws 15 and 15ª and the said spindle 14.

In operation the foot portion 10ª of the device is placed upon a rail, as is shown in Fig. 2, and the body portion of said device is directed to and over the article to be drawn. When the handle is tipped forward or so as to bring the weight of its foot and attached cheek-pieces directly on the spindle 14, the spindle is forced down in the slots 21, and the links 24 of the toggle connection between the jaws and the spindle are carried upward in direction of each other, bringing the upper portion of the jaws together and separating the lower portion of the jaws as the said lower portion of the jaws are brought in engagement with the flange of the rail, for example, on the tie, thus permitting the gripping-fingers 20 and 20ª to receive between them the spike at the head or at a point below the head. When the foot-section of the handle is dropped rearward, so as to fulcrum on the rail A, as is shown in Fig. 2, the spindle 14 is carried up, thereby forcing the gripping-fingers 20 and 20ª to close firmly upon the article between them and the upper portion of the jaws to open, and the more prying force that is applied to the device the firmer the gripping-fingers will cling to the article to be drawn.

The device is exceedingly simple, it is economic in its construction, as well as durable, and, as stated, may be successfully used for drawing a headless nail as for drawing a headless spike.

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

1. In a spike-puller, a handle-section having cheek projections, a spindle mounted in the said projections, jaws pivoted together and having vertical movement on the said spindle, and a toggle connection between the upper portion of the said jaws and the spindle.

2. A spike-puller, consisting of a handle having forwardly-extending cheek-pieces, a spindle mounted in said cheek-pieces, polygonal in cross-section, jaws pivoted together and having vertical slots above their pivots through which the said spindle loosely passes, said jaws having vertical movement on the spindle, means for limiting the movement of the jaws on the spindle, and a toggle connection between the upper portion of the said jaws and the said spindle.

3. In a spike-puller, a handle-section having forwardly-extending cheek-pieces, a spindle pivoted in the said cheek-pieces, polygonal in cross-section, jaws having opposing gripping-fingers at their lower portions, knuckles above the said fingers and pivoted together, and a space intervening between their inner faces above the knuckles, each jaw being provided with a vertical slot through which the spindle loosely passes, an upwardly-extending yoke attached to the said spindle, and links pivotally connected to the upper portions of the said jaws and to the said yoke.

4. In a spike-puller, a handle-section having forwardly-extending cheek-pieces, a spindle pivoted in the said cheek-pieces, polygonal in cross-section, jaws having opposing gripping-fingers at their lower portions, pivotally-connected knuckles above the said fingers and a space intervening between their inner faces above the knuckles, each jaw being provided with a vertical slot through which the spindle loosely passes, an upwardly-extending yoke attached to said spindle and links pivotally connected to the upper portions of said jaws and to said yoke, adjusting-screws passed through the upper portions of the jaws into the slots therein, the inner ends of the adjusting-screws having a position above the said spindle, and means for removably connecting the cheek-pieces of the handle-section with the handle of said section.

5. A spike-puller, comprising a handle having an angular foot and cheek-pieces projecting beyond the foot, a spindle mounted in the cheek-pieces, jaws pivoted together and having slotted shanks through which loosely extends the spindle, and a toggle connection between the shanks of the jaws and spindle.

6. A spike-puller, comprising a handle having an angular foot and cheek-pieces projecting beyond the foot, a spindle mounted in the cheek-pieces, jaws pivoted together and having slotted shanks through which the spindle loosely extends, the shanks of the jaws being recessed on their inner faces near the ends thereof, a yoke secured to the spindle at about its center of length, and links pivoted in the recesses of the jaw-shanks and to the said yoke.

7. A spike-puller comprising a handle having an angular foot and cheek-pieces projecting beyond the foot, a spindle mounted in the cheek-pieces, jaws pivoted together and having slotted shanks through which the spindle loosely passes, links having one end pivotally connected with the spindle and their other ends pivoted to the shanks of the jaws, and adjusting-screws passing through the shanks of the jaws into the slots thereof.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS W. HARBER.

Witnesses:
W. H. SHEPHERD,
JOHN ELLIOTT.